Appropriating and Legitimating Chinese-English Dual Language Education: A Multi-sited Ethnographic Study of Language Policy, Repertoires, and Socialization

By

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ABSTRACT

Studies in dual language contexts have examined the discourses and ideologies in classroom pedagogies and highlighted the issue of equity, hegemony, and power imbalance. Yet, it remains relatively unknown how multiple social actors in disparate communities appropriate dual language policy, learning, and teaching locally. Similarly, experiences of students from diverse social, linguistic, racial, and ethnic backgrounds have not been adequately included in the literature. To address this gap, this year-long multi-sited ethnographic study investigates the social dynamics, ideologies, and agency influencing the local appropriation of dual language education. This study reveals the social processes and practices of how multiple social actors re(interpret) and (re)negotiate dual language education to uphold their social interests at multiple levels, and how students from diverse backgrounds are socialized into dual language learning and bi/multilingualism across temporal and spatial scales.

Focusing on lesser-researched Chinese-English dual language contexts and drawing on an ecological framework, this study adopts a comparative lens and includes two types of 50/50 dual language programs from two disparate communities: one a K-5 one-way dual language (foreign language immersion) school in a suburb located in the Midwestern U.S., and the other a Prek-8 two-way dual language (bilingual) school in an urban neighborhood in the Northeastern U.S. Findings reveal that, in both schools, the language separation policy is enforced at the official school level but translanguaging is appropriated unofficially at the classroom level, although the policy is practiced in different ways and guided by different school missions in response to the discourse of neoliberal multilingualism and English-monolingual assessment. In alignment, pedagogical repertoires are strategically assembled in the classrooms in both schools for particular pedagogical, social, and ideological functions. Findings also reveal that while dual

language education supports some learners which the program aims to serve, it is not an automatic solution to support all minoritized learners: unequal access to learning and hegemonic spaces are (re)produced and (re)created where some learners struggle in gaining legitimacy.

DEDICATION

This work is dedicated to the students, teachers, principals, and parents in Forestview International School and in Er'yu Bilingual School. Thank you so much for opening the door and welcoming me to your worlds, sharing your stories with me, and trusting me. 感谢你们对我的信任。

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Chapter One: Introduction

With research pointing to various benefits for students, including academic achievement, multicultural awareness, metalinguistic development, and second language skills (e.g., Bialystok et al., 2014; Howard & Christian, 2002; Lindholm-Leary, 2001; Potowski, 2007), dual language education has been flourishing across the U.S. as a gateway to promote bi/multilingualism, diversity, and language skills. On one hand, its popularity is tied to the promotion of responsive foreign and world language education to meet the significant demand for multilingual human capital in global and U.S. labor markets (Damari et al., 2017). On the other hand, it responds to the call to address the linguistic and academic needs of multilingual learners[1] and linguistically minoritized communities for social justice.

"Dual language education" is a broad term which can encompass various K-12 bilingual programs[2]. The term "dual language education" used throughout this dissertation follows the definition provided in the third edition of *Guiding Principles of Dual Language Education*:

> the term dual language refers to any program that provides literacy and content instruction to all students through two languages and that promotes bilingualism and biliteracy, grade-level academic achievement, and sociocultural competence—a term encompassing identity development, cross-cultural competence, and multicultural appreciation—for all students. (Howard et al., p. 3, 2018).

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[1] I intentionally adopt the term "multilingual learners" to replace "English language learners "or "emergent bilinguals" throughout the dissertation. The choice of this term aims to valid learners' rich and diverse linguistic and cultural resources and knowledge.

[2] "Dual language" is sometime used more narrowly as a synonym for "two-way immersion" or "dual language immersion" programs (e.g., Baker & Wright, 2017; Cervantes-Soon et al., 2017; Edwards, 2009; Lindholm-Leary, 2001).

Howard et al.'s (2018) definition includes both one-way and two-way dual language programs. In alignment with their definition, there are four major types of dual language programs: 1) one-way immersion language programs, which are generally known as foreign language immersion programs, where most or all the students in the program are dominant in the majoritized[3] language (often English) at the time of enrollment; 2) two-way immersion programs, which include an almost equal number of students who are dominant in the majoritized language and in the minoritized language; 3) heritage or indigenous immersion programs; and 4) transitional bilingual programs, which allow minoritized students to use their home languages temporarily but the ultimate goal is for these learners to master the majoritized language, exit the bilingual programs and fit into the "mainstream" school. To highlight the different sociocultural goals and student demographics of dual language programs, Flores and Beardsmore (2015) claim that immersion programs are "elite bilingual programs", which are different from from "dual language bilingual" (DLB) programs. For DLB programs (including both one-way and two-way), as they claim, the goal is to support minoritized students' home languages and cultures with the ultimate aim of helping them become balanced bilinguals. In this study, one research site matches the characteristics of one-way (foreign language immersion) dual language programs that serve majoritized students and the other research site matches the characteristics of

[3] I use "majoritized" and "minoritized" languages, learners, and communities instead of "majority" and "minority" throughout the dissertation. The rational is to emphasize the power dynamics of the languages, communities and learners in the society and the role of social structure in determining the power dynamics. The majoritized language is often predominant or "official" language of exchange and schooling in the society. In this study (Chinese dual language contexts in the U.S.), the majoritized language is English and the minoritized language is Mandarin Chinese. The majoritized learners and communities in this study are those from Anglo, English-dominant and middle (upper-middle) class households.

two-way dual language bilingual programs that serve minoritized learners (see more about the different types and models of dual language programs in Chapter Two).

Despite increasing research on dual language education, there is no research so far that has examined language policy, teaching, and learning in both one-way and two-way dual language programs that serve different student groups and have different program goals. In fact, investigating issues such as these in these two types of dual language programs can have significant implications for the future development of dual language programs in different languages to benefit different sociocultural groups and communities. This year-long ethnographic study adopts a comparative lens in investigating dual language policy planning, teaching practices, and learning socialization in two Chinese[4] dual language classrooms in disparate communities. This study aims to diversify voices in dual language education research by including under-researched Chinese-English dual language contexts, incorporating voices of stakeholders from various racial, cultural, and socioeconomic backgrounds, and empowering minoritized students' voices and experiences, which are underresearched in dual language research.

This study is framed by an ecological framework of dual language learning and teaching which I have developed from the field of linguistic anthropology and language ecology theories (see Figure 2.1 in Chapter Two). The framework consists of and examines three domains: the ecology of semiotics, the ecology of language development, and the ecology of language planning, through two key constructs—language ideology and agency. This ecological

[4] The term "Chinese" can refer to multiple languages, dialects, cultures, and ethnic groups. In this dissertation, Chinese is referred to as the Mandarin Chinese language, which includes both the simplified and traditional forms.

framework guides my research design, data generation, and analysis in order to generate a more holistic understanding of issues regarding dual language policy planning, teaching, and learning practices from micro to macro across multiple spatial and temporal scales. It aims to inform effective, appropriate, and equitable language policy planning and curriculum development in various dual language settings.

Foci of the Study

Two Types of Chinese-English Dual Language Programs

This research focuses on policymaking, language teaching, learning, and socialization in Chinese-English dual language contexts; it is also a case to reexamine the use of classroom resources in teaching, participating in, and socializing into the world of bi/multilingualism. Chinese dual language programs have growing exponentially and become the second-largest language focus of dual language programs (after Spanish dual language programs) in the U.S. Since the first Chinese immersion school was established in 1981 in San Francisco, the number of Chinese dual language programs in the U.S. has swelled from 8 in 1998 to over 300 across 34 states in 2019 and across various socio-cultural communities (2019). However, this learning context is under-researched. The literature on bilingual education and immersion education has heavily centered on French immersion in Canadian contexts (e.g., Dagenais, 2003) and Spanish two-way immersion education in the U.S. (e.g., Potowski, 2007). Due to the particular socioeconomic, historical, and political discourses of Chinese dual language programs as well the particular linguistic and semiotic features of Chinese languages, existent findings from other dual language contexts may not be adequate to inform Chinese-English dual language policy and pedagogies.

In order to capture the complexities of dual language programs and to demystify the policy planning, teaching practices, and learning socialization in these different contexts, this study aims to present two contrasting Chinese-English dual language classrooms in two disparate communities and schools. One site—Forestview International School—is a K-5 one-way dual language school located in the suburban Midwestern U.S., where most students are from affluent Anglo, English-monolingual majoritized households. The second site—Er'yu School—is a Prek-8 two-way dual language school with over half of the students from language-minoritized (Chinese-dominant) backgrounds, and the other half from language-majoritized (English-dominant) backgrounds. The second site is located in a Chinatown in an urban community in the Northeastern region of the U.S., where the majority of students are from economically disadvantaged and ethnically minoritized households. By including these two types of Chinese-English dual language schools, this research aims to understand holistically and ecologically how the process and practices of Chinese-English dual language learning interact with the linguistic, social, cultural, and institutional discourses in their respective contexts.

Examining Agency in Dual Language Education

This study focuses on the issue of agency in dual language education, amidst the sociocultural discourses and societal structures. It centers on bottom-up power in shaping and promoting dual language learning. The issue of agency is investigated through two major areas, the area of language policy and planning (LPP) and the issue of learning and teaching.

The field of LPP for language education has been studied to understand the issue of multilingualism in the U.S. As claimed by Wiley and García (2016), one striking feature in the context of the U.S. society is lack of an "official", overarching, and explicit language policy across educational contexts, and the potential explicit language policy is enacted at the state,

local or institutional levels. In this sense, beyond these "formal" and "top-down" explicit policies, implicit language practices and policies have the potential to play a big role in influencing language behaviors, uses, and learning (Wiley & García, 2016). Given the number of languages that are spoken and the educational contexts where different languages are taught in the U.S., local actors can play an important role in shaping local language policy and planning. In the LPP literature, there is also increasing scholarly attention to the vital role of local agents (Johnson & Freeman, 2010). Some of this is framed as agency in language policy and planning (e.g., Bouchard & Glasgow, 2019; Wiley & García, 2016). While LPP is often interpreted as micro-level responses from local actors toward the implementation of macro-level policies, this notion of "agency" involves the ideological decisions used both individually and collectively to "normalize particular forms of understanding and approaches to language maintenance, and in a broader sense, to reinforce unequal distribution of power and resources at the agentive level" (Bouchard & Glasgow, 2019, p 3). In this sense, the process of policy is both an ecology and discourse that involve multiple processes and layers of policy negotiation (Hornberger & Johnson, 2007) where policy is (re)interpreted, (re)presented, and (re)negotiated by local actors within sociocultural contexts and structures (Levinson et al., 2009).

The issue of local language planning is also connected to the process of learning and teaching. Studies have demonstrated how educators are the major agents of change in local language policymaking (e.g., Henderson, 2017; Menken & García, 2010) and how teacher and student ideologies shape local language policy and language practices during classroom instruction and interactions (e.g., Henderson & Palmer, 2015; Martínez et al., 2015). This study further investigates the issue of agency in language and learning from an ecological lens. First, agency is explored through how teachers' repertoires are strategically appropriated to promote

particular ways of dual language learning and to achieve pedagogical goals. From this perspective, the ecology of the resources is examined in relation to the locally constructed sociocultural discourses of learning in order to understand teachers' agency, guided by their ideologies and orientations toward learning and teaching. Second, agency is explored from how students from diverse social, cultural, and linguistic backgrounds participate in dual language learning and navigate the trajectories of be(com)ing bi/multilingual.

Diversifying Voices in Dual Language Education Research

This study aims to contribute to dual language education research by incorporating multiple voices. One way to diversify representations of voice, from a methodological point of view, is by conducting research in the lesser-researched Chinese-dual language context as well as incorporating both one-way and two-way dual language programs. Besides broadening the scope of research contexts, this study holistically investigates multiple stakeholders' perspectives, orientations, and actions in interpreting local language policy and the discourses around dual language education. Interviews are conducted with multiple stakeholders, including principals, Chinese-medium teachers, English-medium teachers, parents, and students. Diverse voices are also made possible when these stakeholders are from different backgrounds in terms of race (e.g., Anglo, Asian), ethnicity (e.g., Taiwanese, Mainland Chinese), social class (e.g., upper-middle class, working-class), sociocultural communities (e.g., second-generation Chinese immigrants, new immigrants), cultural "heritage", and linguistic backgrounds. In addition, instead of focusing on the two traditionally recognized student groups in dual language programs—the students dominant in the minoritized language and the students dominant in the majoritized language—this study also investigates the language socialization and learning trajectories of students who speak a third language at home.

Research Questions

My year-long ethnographic research adopts a linguistic anthropological and discourse analytical framework. Methodologically, it adopts a multi-sited collective case study approach (Stake, 1995) and a comparative lens in answering the following three research questions:

1. What is the local actors' appropriation of language policy at multiple levels in the two schools? And what ideologies or beliefs of local actors in this sociocultural context are evidenced in shaping the appropriation of these language policies?

2. How do teachers, influenced by multiple ecological factors, organize learning resources and materials spatially, socially, and linguistically, and how does their organization shape the ecology of dual language classroom practices, discourse, and participation?

3. How do students from diverse social, cultural, and linguistic backgrounds perceive, navigate, and socialize into their Chinese-English dual language learning across spatial and temporal scales?

Chapter Outlines

In Chapter One I have described the major foci of my study and the three research questions. Chapter Two presents the theoretical framework and synthesizes the bodies of literature that have informed my work. This chapter explains the theoretical framework—the ecological framework in dual language learning and teaching that guides my inquiry. This framework is developed by me from major theories in linguistic anthropology and language ecology theories, where I situate dual language learning and teaching as a trajectory of socialization through its social, historical, cultural, and ideological interpretations and realities. This framework centers on agency and language ideologies as key notions to understand three domains for dual language learning and teaching—the ecology of semiotics, the ecology of language development, and the ecology of language planning. Within this framework, each domain itself is an ecology itself but all three domains are interlinked and work together in forming the ecology of dual language learning and teaching. I then review the literature in dual

language education, including the terminologies, histories, the overarching ideological debate of dual language education and major areas of research in the current scholarship. Additionally, I turn to the social, historical, political, and economic discourses of dual language education and Chinese dual language education in the U.S., as well as the small yet growing scholarship in Chinese dual language learning and teaching.

In Chapter Three, I describe the research context of the two focal schools and the two focal classrooms (one per school). Since these two schools are located in disparate geographic and sociocultural locations in two different U.S. states, I elaborate on the ecology of each research site by attending to its demographics in the neighborhoods, the school districts, and the histories of the schools. I also explain the backgrounds, training, and some articulated beliefs of school principals and teachers in the sites. Presenting these details is in alignment with an ecological orientation that understands language planning, teaching, and learning as situated within sociocultural, institutional, and political environments. This chapter shows the particular features of the sociocultural communities within which these schools, classrooms, and participants are embedded.

Chapter Four describes the research methodology: the design, methods, timelines, three stages for data generation, and two stages of data analysis. I also explain how data are analyzed via different approaches to answer the three research questions, respectively. I explain how the process of research design, data generation, and analysis are framed to answer the research questions in alignment with the overall theoretical lens. As an ethnographic study in two different sites, I pay attention to how the dynamics of researcher positionality play a role in access, rapport building, data generation, and analysis. At the end of this chapter, I also address the validity and limitations of this research.

In Chapter Five, the first findings chapter, I explain the local appropriation of dual language education from multiple layers in the two schools—Forestview and Er'yu. Framed by the ethnography of language policy and an ecological perspective, I analyze the particular language policy of dual language education at the school-wide official level and at the classroom unofficial level through multiple forms of ethnographic data. I also analyze how the ideologies of major social actors, such as principals and teachers, as well as some shared ideologies around the mission of dual language education and bi/multilingualism, shape these local interpretations, negotiations, and appropriations of the 50/50 dual language model. I show that, in both schools, language separation is enacted officially at administrative levels, and translanguaging is practiced unofficially at classroom levels, though in very different ways, to achieve contrasting school missions that are geared toward and benefit students with particular sociocultural backgrounds. The locally appropriated language policy is also a tactic for academic achievement measured by standardized testing and the socio-cultural functions of bi/multilingualism. The research reveals how local policies are shaped by key social actors with social and institutional power, but also the process of (re)negotiating, resisting, and appropriating—at multiple layers—by different actors. I argue that locally appropriated policies from various levels are ingrained with particular sociocultural discourses of the school communities, the ideologies of key stakeholders, and the stated school missions, as well as the negotiated process of defending interests. The differences across the two schools/classrooms show how agency is enacted through the sociocultural context and how it shapes the local structures. However, it is also interesting to see whose agency is being promoted and validated, and which groups' interests are defended in the local language planning process and discourses.

Chapter Six examines repertoires and classroom discourses of dual language teaching and learning. Framed by the classroom as ecology and the trans-orientations towards language use, this chapter analyses how the assemblages of teacher repertoires (including linguistic, semiotic, material, and physical) shape the discourses of dual language learning and teaching. The chapter starts with a discussion about the two Chinese classrooms in Forestview and Er'yu respectively, as well as the two teachers'—Ms. Xie's and Ms. Ma's—orientations toward teaching practices. I then address three issues: how teachers' assemblages of resources are enacted for multiple pedagogical outcomes, how teachers' assemblages of resources mediate local discourses and the culture of learning, and also mediate issues of legitimacy, access, and learning opportunities in the classroom. I illustrate how the assemblages of resources and repertoires are agentively appropriated by teachers, within the ecology of dual language learning and teaching, to realize language, content, and assessment outcomes, but also to socialize students into particular cultures, ideologies, and ways of behaving. This socialization, which also causes an imbalance in students' access to learning opportunities, embodies the political and institutional goals of the local communities as well as the local social dynamics. The chapter concludes with some implications for dual language pedagogy and class organization.

In Chapter Seven, I turn to students' perspectives and experiences with dual language learning, which are situated in a scalar approach and language socialization theory. The first part of the chapter presents an analysis of student interviews across the two sites and explains how students from different backgrounds perceive bi/multilingualism and dual language learning. Differences are revealed from the analysis, which illustrate a dichotomy between students from monolingual and bi/multilingual households, and also between which site they are situated in, in relation to the characteristics of socioeconomic class and linguistic backgrounds. The second half

adopts scalar analysis to examine two focal learners' (one from Forestview and one from Er'yu) trajectories of language development and social identifications across spatial and temporal scales. The analysis looks beyond classroom language learning and use, highlighting the dynamic, agentic, and fluid nature of language socialization at multiple scale levels and the learners' agentic scaling practices across spatial and temporal scales. The investigation also goes beyond the binary divide between "English-dominant" or "Chinese-dominant" student groups to include multiple student voices from different class, cultural, racial, and linguistic backgrounds, who have navigated the issue of gaining legitimacy and marginalization in similar and different ways.

In Chapter Eight, I conclude by explaining the pedagogical implications, as well as theoretical and methodological contributions of this study. I suggest future studies that can further inform the research questions and how my findings can inform equitable and effective dual language pedagogy, policymaking, and learning.

Chapter Two: Conceptual Framework and Literature Review

This study is informed by scholarship on bilingual education and an ecological lens on language policy and planning, language development[5], learning, and socialization. This chapter first explains an ecological framework I have developed for dual language learning and teaching, drawing from theories in the field of linguistic anthropology (ethnography). The ecological framework includes three domains of ecology (i.e., the ecology of semiotics, the ecology of language development, the ecology of language policy planning) and two key constructs—language ideologies and agency. I then review the scholarship in the field of dual language education that informs my study. I first set out to define the terminology of "dual language education" and how it is used in different contexts (e.g., in Canada and in the U.S.). I then describe the history of dual language education, the different models and types of dual language programs, the overarching ideological debate (i.e., monoglossic versus heteroglossic) in dual language education, and the major research foci of existing research. The literature review also includes the ecology of Chinese dual language education in the U.S. by examining the history, the socio-political, and economic discourses of Chinese dual language education, as well as the scholarship conducted in this context.

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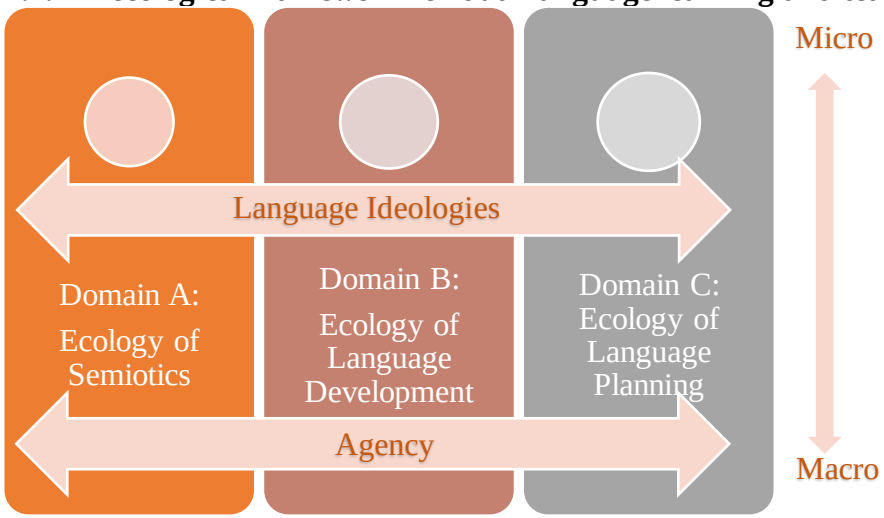
[5] I choose to use "language development" instead of "language acquisition" throughout the dissertation. "Language development" views language acquisition as a process that is complex, dynamic, and ever-developing, and "acknowledges the interdependent norms" of bi/multilinguals" (Larsen-Freeman, 2015, p. 491). Here, language development is broader than language learning: language development includes various contexts and processes of language learning and acquisition (e.g., both formal and informal learning, both conscious and unconscious process of language development, both first and additional language acquisition), and it emphasizes the social process of language uses, interactions, and practices.

Conceptual Framework

An Ecological Framework for Dual Language Learning and Teaching

My understanding of the topic and the three research questions is grounded in an ecological perspective. An ecological perspective examines language learning relative to collective and interdependent factors at personal, situational, cultural, institutional, and societal levels. Influenced by language ecology theories and the field of linguistic anthropology, I developed this ecological framework (see Figure 2.1) as a tool to examine the complexities of dual language learning and teaching from multiple layers, including the micro-level interactions of signs and tools in the process of learning and teaching, the indexicalities of signs and tools, the multiple levels of discourses around bi/multilingualism, the language socialization and practices of bi/multilingual learners, and the appropriation and practices of dual language policies.

Figure 2.1. An ecological framework for dual language learning and teaching



This section explains the three domains of this ecological framework for dual language learning and teaching—the domain of semiotics, the domain of language development, and the domain of language planning. The three domains, which are interconnected and collective, comprise the ecology of dual language learning and teaching. Each domain is an ecology itself that works as an ecosystem with multiple factors that are embedded in the larger social structures and discourses. This framework centers language ideology and agency as mediators in this ecology, which exist across the three domains and impact the process of dual language learning and teaching. While all of the domains in this ecological framework are interconnected and collaboratively shape my exploration of each research question, some of the domains are more relevant in answering a particular research question than others, which I will explain in the next section.

Domain A: The ecology of semiotics

The first domain of this ecological framework is the domain of semiotics. Van Lier (2004) views semiotics as the study of meaning-making and sign-using practices. As he claims, semiotics and ecologies are always interconnected. He proposes an ecological semiotic approach where "language leads to a placement of learning within a semiotics of space, time, action, perception and mind" (p. 55). Signs are everywhere in the human world, including those naturally, physically, and culturally manufactured, and everything human beings see, hear and can feel can become a sign, carrying meaning (van Lier, 2004). Scollon and Scollon (2001) also point out the ecological relationship between signs and argue that mediated actions occur through a combination of mediated means or tools that include language, gestures, materials, objects, and institutions within which these signs are situated. In this sense, signs consist of multiple formats and are connected through social actions and practices. Two important notions

in the domain of semiotics are: the interactions between the signs/semiotics and the indexicality of signs/semiotics.

Interaction of semiotics

The field of interactional sociolinguistics has explored this ecology of signs by identifying various contextual components, discursive relationships, and participation patterns. Dell Hymes' (1962,1964,1974) notion of "ethnography of communication" brings anthropological standpoints into linguistics and offers a framework to analyze contextual variations of linguistic patterns within speech communities systemically. Hymes promoted the SPEAKING model for systemic analysis of language units through speech acts to study major contextual components—Setting, Participants, Ends, Keys, Instrumentalities, Norms, and Genres. Similarly, Gumperz (1982) introduced "contextualization cues" to understand participants' "ongoing process of interpretation in conversation and on particular constellations of cues in reacting to others" (p. 4). According to Gumperz, contextualization cues include both verbal (linguistic production) and non-verbal cues (e.g., paralinguistic features, body language) that construct the interpretive refereeing process in different contexts. As Gumperz noted, employment and variations of contextualization cues shape communicative functions and outcomes. He thus called for a social, interactional, and functional model of language usage (see also Halliday & Hasan, 1989). This ecological lens toward signs is further expanded in recent scholarship to highlight how the hybridity of sociolinguistic, semiotic, spatial, and material resources plays out in language use, learning and teaching, which was termed by Hawkins and Mori (2018) as the trans-perspectives in language studies. Terms sharing this theoretical orientation have emerged across disciplines and across global landscapes (e.g., Canaragajah, 2013; Hawkins, 2018; Pennycook, 2010; Rampton, 2011; Rymes, 2010; Toohey, 2018). This

conceptualization of languages and semiotics highlights the flexible, agentive, hybrid, heteroglossic, and dynamic nature of language use, and views individuals' different languages, linguistic, and semiotic resources as one repertoire that is flexible, dynamic, and fluid.

Indexicality

One guiding concept in the ecology of semiotics is the characteristic of "indexicality". Charles Peirce's theory of semiotics believes in an arbitrary and dynamic relationship between the signifier (words or signs) and the signified (the object). Influenced by Peirce's theory of semiotics, my stance is that linguistic and semiotic resources used by individuals index particular social and cultural meanings based on the context. This is usually referred to in the literature as indexicality—the sign is a tool to signify cultural and social referents, norms, and identities (Silverstein, 1976). As van Lier (2004) explains, signs show relevant relationships between people and the world physically, socially, and symbolically. Linguistic anthropologists and sociolinguists have, from various angles, studied these sociocultural and contextual indexicalities, including identifying various contextual components (e.g., Hymes, 1964; Gumperz, 1982) and exploring participation patterns (e.g., Goffman, 1981).

Additionally, indexicality refers to socially and historically constructed ideologies around languages. This social-ideological nature of language has been evident in many classic works, including Bakhtin's (1981) and Voloshinov's (1973) work on a social-historical and social-ideological perspective on language. From this perspective, signs or languages are perceived "as a worldview, even as a concrete opinion, insuring a maximum of mutual understanding in all spheres of ideological life" (Bakhtin, 1981, p. 271). This dialectic or dialogic nature has a twofold meaning: (1) ideologies shape and are shaped by dialogic and social interaction; (2) historical flows of language index circulating ideologies. Building on Bakhtin's theory, Agha

(2003) discusses the notion of enregisterment as a process "through which a linguistic repertoire becomes differentiable within a language as a socially recognized register of forms" (p. 231). Agha (2003) favors the significance of contextualized analysis of micro-interactions by focusing on an enregisterment process, where one situated speech event at a time actually forms structures of speech chains that are interlinked to values, and to cultural/linguistic/semiotic forms. This process of enregisterment is impacted by multiple layers of structures including institutional discourses of schools. As Wortham (2001) claims, enregisterment (Agha, 2003) helps interpret learning in terms of how ideologies about languages and semiotics influence classroom interactions, how teachers' and students' positioning is co-constructed and transformed in educational settings, and how social reproductions happen in classrooms and schools.

In summary, in the ecology of semiotics there is an interconnected relationship between different formats of signs, signs that mediate social actions through social relationships and contexts, and how signs index sociocultural meanings, ideologies, and values. This lens shapes my understanding of micro-level interactions in communication, classroom learning, and teaching. It also frames my analysis in answering the first and second research questions.

Domain B: The ecology of language development

The second domain of this ecological framework is the ecology of language development, which builds on the conceptualization of semiotics as ecology. First, the ecology of language development recognizes language as social and interactive. Language development includes the process and practices happening in formal and informal setting, first language development and bi/multilingual development. The process of language development is practiced in a dynamic manner through socializing with other people, cultures, communities, and the world across multiple contexts, time, and space. Second, this domain views classroom learning, where

language development happens formally, as ecological microsystems relevant to various personal, interpersonal, institutional, and societal factors that shape language practices.

Language development through interactions

Linguist Einar Haugen (1972) proposes language ecology as a new approach to study language development and use in society. As he explains, there is both a psychological and sociological perspective in language ecology: part of language ecology is psychological due to its interaction with other languages in bilingual and multilingual speakers' minds; another part of language ecology is sociological due to its function in mediating communication in societies. Applying this ecological perspective into language learning, van Lier (2004) emphasizes that the focuses of language learning should be on relationships between people and the world, on context as defining language and being defined by language, on language as patterns of patterns and systems of systems, and on language learning as emergent, value-based, and activity-based. In this case, language learning is a process that is emergent and dynamic, and is a practice that involves interactions with the world and socialization through and into ideologies, values, and activities.

One way interaction and practice occur is through language socialization. As Schieffelin and Ochs' (1986) early work shows, adult-child interaction is crucial in the context of first language acquisition where children socialize into their communities through languages and are socialized into languages through community interactions (see Kulick, 1992). Socialization patterns, apprenticeships, and interpersonal relationships in communities, which often last for a relatively long period of time, shape language development and are internalized into individuals' repertoires through time (Duranti, 1997). Language development, in this case, involves socialization across multiple communities, contexts, activities, and institutions. This is the same

for additional language learning as well. Kramsch and Steffensen (2008) add time and space as important aspects of ecology in understanding language development in multilingual societies where individuals develop language competence across different contexts. They claim that an ecological analysis of multilingual interactions helps interpret interactions "as complex dynamic systems where the usual axes of space and time are reordered along the lines of various histories and subjectivities among the participants" (p. 667). In this sense, not only does language development happen over time, but language use embodies and indexes histories and positionalities of language users.

The process and practices of language development and learning through socialization are often connected with the language user's or learner's social identifications. As Wortham (2006) defines, learners' social identifications are indexed and embodied through various behaviors that are positioned by themselves and others across different social contexts and timescales; social identifications are also sedimented through critical events over time:

> Individuals behave in certain ways or possess certain characteristics, and those behaviors or characteristics are interpreted by the individual and by others as signs of identity, as indications that the individual belongs to a recognized social type… Any accounts of social identifications must explain how social identification gets accomplished in particular events as people react to or characterize others as having recognizable identities. (2006, p. 30)

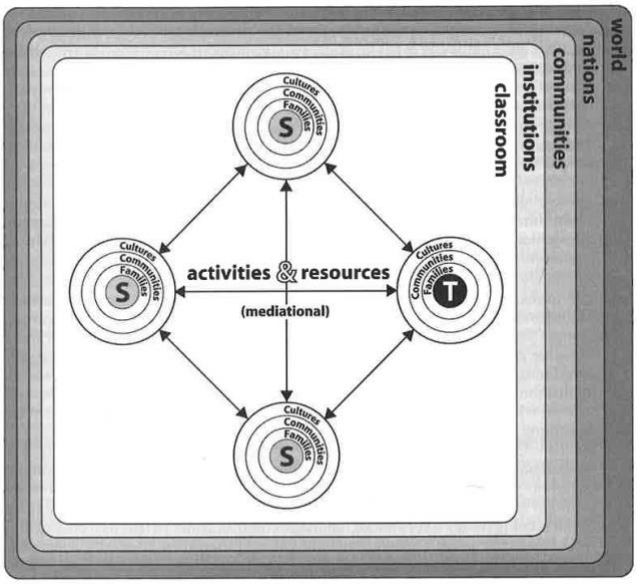
Social identifications are not static but dynamic, fluid, discursively co-constructed; social identifications change and emerge dynamically across contexts and may influence learners' choices, processes, practices, and investment (Peirce, 1995) of their language development.

Classroom learning as ecosystems

Classrooms, where language learning and teaching occur formally most of the time, are also viewed as ecological microsystems connected to multiple personal, interpersonal, and societal factors that shape language practices (Blackledge, 2008; Creese & Martin, 2008). Within

classroom learning and teaching, micro-interactions are shaped and framed by participants' (including teachers' and learners') positioning of themselves and others, classroom norms, practices, social relationships, and ideological perceptions, which go beyond the classroom itself to learners and teachers' personal lived experiences and to broader social structures. Language classrooms are connected to issues and situations within schools, families, and communities as well as the associated ideological and cultural pressures (van Lier, 2007).

Figure 2.2. Hawkins' (2005) framework of classroom as ecosystem



Hawkins' (2005) framework of classroom learning, for example, identifies key theoretical constructs that shape the understanding of classrooms as ecology and the understanding of classroom language and literacy practices (see Figure 2.2 above). These key theoretical constructs are community of learners, zone of proximal development, identities, power, multiple languages, multiple literacies, and classroom-as-ecology. In this framework, Hawkins highlights that learners engage in the socially situated activities of the classroom

through mediated resources and activities; learners are apprenticed into the learning communities and specific cultural knowledge and literacy practices, which are productions and reproductions of the social status of languages, literacies, and sociocultural structures. The micro-interactions and participation situated in the learning contexts, as Hawkins highlights, are complicated integrations of multiple factors, such as participants' own sociocultural trajectories, their co-constructed relationships with others across time, and the larger societal settings where these relationships and interactions take place. The locally occurring interactions cannot be separate from the power dynamics occurring in and outside of the classroom.

Informed by the classroom-as-ecology lens, studies have examined learners' bi/multilingual practices and ideological constructions in classrooms. Creese et al. (2014), for example, adopted a classroom-as-ecology lens to investigate their linguistic ethnographic study of a Punjabi complementary school in UK. They found that learners' local practices and employment of linguistic materials embodied "native speaker" ideologies; the status of language use was locally negotiated by the learners but also reflected larger social discourses of language status and ideologies. Dávila's (2017) study in a multilingual Swedish school revealed that students utilized the heritage language to develop belonging within their multicultural communities and to resist assimilating. It also showed that students agentively used their languages to assert influence on classroom pedagogy and to assert their identifications.

In sum, this domain—ecology of language development—views learner and language development in relation to the social environment, contexts, communities, and social structures. It recognizes that language development is practiced across time and space through socialization into ways of communication and relationships. Also, classroom learning, where language learning occurs formally, is a complex microsystem where multiple elements are interdependent.

Language development is practiced through the mediation of classroom language and literacy practices that are shaped by their interaction with the communities in which they are located, the locally constructed ideologies and norms, the socio-political discourses outside of the classroom, as well as the power dynamics among involved individuals and institutions both locally and in the broader society. This helps frames the analyses in answering the second and third questions.

Domain C: The ecology of language planning

The third domain of this ecological framework is the ecology of language planning. The context and development of dual language learning and teaching cannot be fully captured without attending to the issue of dual language planning.

Hornberger (2002) applies language ecology theory to the field of language policy and planning. She highlights a multilingual approach where linguistic rights and multiple cultures should be preserved. She claims that different languages co-exist and evolve in an ecosystem, and they interact dynamically with social, political, economic, institutional, and cultural environments. In alignment, Ricento (2000) notes that research on language policy and planning should consider issues of identity, language interaction, and behaviors at the micro and individual level but also at the macro-level of investigation. The ecology of language planning examines the relationship between multilingualism in society and individuals' language choices and uses, as well as how these relationships can be best managed (Ricento, 2000). Similarly, Mühlhäusler (2000) favors an ecological approach to language planning that centers on diversity as a key and rejects static or prescriptive management to fix language planning problems. As Mühlhäusler (2000) believes, language policy management and planning rely on detailed knowledge of what is being planned in a specific context and the need to involve as many stakeholders as possible.

As Hornberger and Hult (2008) describe, an ecologically oriented approach to language policy and planning helps account for the complexities and dynamics of sociolinguistic factors and helps further investigate to what extent these factors are addressed in the policy and planning. They believe that it is a conceptual approach without a specific methodology but they propose several questions and recommend multidimensional data to reflect an ecological orientation. For example, how are relationships between different languages reflected in policy documents? How does language policy relate to individual experiences with language and beliefs around languages? How do language policies at multiple levels of social organization interact? Do policies promote equitable multilingualism? (Hornberger & Hult, 2008, p. 285).

In sum, the ecology of policy planning considers social interactions between different languages and cultures, and centers on multiple layers (individual, micro, and macro), multiple sociolinguistic factors, and multiple social actors in the process of language policy. This lens helps frame my understanding and analyses in answering the first and second research questions.

Key theoretical constructs in this ecological framework

Two theoretical constructs are essential across the three domains in this ecological framework. These constructs are language ideologies and agency, which are crucial in understanding the complexities of the ecologies and individuals' choices and actions in shaping the ecology of dual language learning and teaching.

Language ideologies

Language ideology has evolved from a marginalized field to a central topic in the field of linguistic anthropology (Kroskrity, 2004) and has been gaining increasing scholarly attention in examining dual language learning and planning (e.g., Henderson, 2017). Michael Silverstein brought out the idea of "linguistic ideologies" in 1979, putting it as "sets of beliefs about

language articulated by users as a rationalization or justification of perceived language structure and use" (p. 193). Irvine later defined "language ideologies" as "the cultural system of ideas about social and linguistic relationships, together with their loading of moral and political interests" (1989, p. 255). In their interpretations, language ideologies are often associated with groups' cultural perceptions and orientations toward language structures and language use in relation to socioeconomic and political interests. "Language ideologies" was recently framed by Kroskrity as "beliefs, feelings, and conceptions about language structure and use" that are indexicalities of political economies of individuals or groups (2010, p. 192) where language ideologies are not only oriented from groups' but also from individuals' perceptions. Kroskrity (2004, p, 501) describes five levels of language ideologies to understand the concept and to understand it as a concept in research: 1) group or individual interests, 2) multiplicity of ideologies, 3) awareness of speakers, 4) mediating functions of ideologies, and 5) role of language ideologies in identity construction.

Language ideologies are essential in this ecological framework for dual language learning and teaching. As Blackledge (2008) points out, "language ecologies include the discourse which constructs values and beliefs about languages at state, institutional, national and global levels" (2008, p. 27). Ideologies are co-constructed at different societal levels and are also socially situated and embodied through interaction during the process of language use and learning in the classroom (Blackledge, 2008). Language ideologies are also embodied and disseminated through classroom teaching practices and through particular language use and choices, which in turn shapes classroom learning and teaching outcomes (e.g., Martínez et al., 2015; Henderson & Palmer, 2015). The ideological components are also central for language policy planning (e.g., Shohamy, 2006; Tollefson, 1991; Ruiz, 1984) because language users' practices and interactions

with languages as well as their beliefs about these practices and interactions shape decisions made in language planning.

In this regard, language ideologies exist and mediate all domains of the ecological framework of dual language learning and teaching. The choice and use of languages index and are mediated by language ideologies, in and out of classroom learning spaces, which constructs and shapes learning development between individuals, sociocultural groups, environments, and structures. The process of dual language planning at multiple levels is also influenced by the dynamics and complexities of the language ideologies asserted by major actors in relation to the economic, linguistic, and political interests of individuals or groups.

Agency

The other essential element throughout this ecological framework is agency. As Duranti confesses, it is a difficult task to define "agency" in language. He proposes the working definition of agency (2004, p. 453) as below:

> Agency is here understood as the property of those entities (i) that have some degree of control over their own behavior, (ii) whose actions in the world affect other entities' (and sometimes their own), and (iii) whose actions are the object of evaluation (e.g., in terms of their responsibility for a given outcome).

As Duranti (2004) elaborates, these three properties are interconnected. Agency often has some degree of control over human behaviors, which includes both the intentional and unconscious planning of a given act (such as intuition, which has no consciousness but does have the power of making an effect). Agency also involves evaluation, which includes how the speakers' projection and evaluation of how the presentation and performance of themselves and their knowledge are understood through their language use by others. In that case, agency is also part of the speakers' evaluation of the projected consequence of particular language use. In this sense, the use of linguistic and semiotic resources which have their indexed social, historical, and

ideological meanings is agentive, to some degree, to achieve certain goals in connections with the projected outcomes.

The notion of agency has been taken up in understanding language learning, development, and planning. Agency is closely connected with the concept of "investment", a construct first introduced by Peirce (1995). As Peirce (1995) explains, investment represents learners' constructed relationships to the target language, which is realized through practicing, socializing into communities, through which process more symbolic and material capital may be achieved. Meanwhile, investment is also connected with issues of the power of languages within both institutional and community contexts (Bourdieu, 1977). The investment, however, is restricted by the language users' access to the materials and forms of capital which are determined by the societal power structures. From poststructuralist perspectives (e.g., Bourdieu, 1977; Weedon, 1987), individuals are viewed as dynamic, diverse, contradictory, and struggling over time and across contexts; subjectivities are also socially and historically embedded (Peirce, 1995). Agency is often discussed together with this view of identity in the field of second language acquisition (Norton & McKinney, 2011). Through this lens, agency, or investment in Peirce's (1995) term, echoes Duranti's (2004) view that agency only has a limited degree of power over individual actions and consequences.

Gao (2010) reconceptualizes the role of agency in strategical language learning, arguing that learners' critical understanding of particular social contexts or "micro-political capacity" (p. 158) helps develop a more critical understanding of the sociocultural practices so that learners can better assert their learner agency in achieving language learning goals. From a micro-level analysis of language usage, research from multimodal communications has also demonstrated how learners negotiate agency in achieving learning goals in classrooms through their interaction

with certain tools (Bezemer, 2008; Bourne & Jewitt, 2003). Agency, which is realized through management of various semiotic resources, as Pinnow's (2011) study shows, also requires a set of social, linguistic, cultural, and political knowledge.

Agency is considered as an important construct in language policy and planning. As Johnson and Johnson (2014) believe, language planning is a process of creation and interpretation where individuals exert agency to shape decisions and practices for language planning. They use the notion "appropriation" to replace "implementation" in order to highlight language planning "as a form of creative interpretive practice necessarily engaged in by different people involved in the policy process" (Levinson et al., 2009, p. 768, as cited by Johnson & Johnson, 2014). This agency, however, does not necessarily lead to the same outcomes or exert the same amount of impact for actors from different social, ethnic, and cultural backgrounds; there often exists an imbalance of power among policymakers.

In sum, this ecological framework of dual language learning and teaching centers on human agency in dual language learning, teaching, and policy planning. From using and choosing languages, tools, and semiotic resources in learning, to navigating classroom interaction, pedagogy, and learning, to multiple layers of dual language planning, different dual language learners and classroom participants, although restricted by social structures and factors, are agentive actors and policymakers that shape the ecology of dual language learning and teaching.

Literature Review

The Ecology of Dual Language Education in the U.S.

The terminology, history, and types of dual language programs

The term "dual language" is used in various ways in the immersion and bilingual education scholarship. "Dual language education" is often used as an umbrella term that can refer to various bilingual education models. As mentioned in the introduction chapter, Howard et al. (2018) state that "dual language" refers to "any program that provides literacy and content instruction to all students through two languages and that promotes bilingualism and biliteracy, grade-level academic achievement, and sociocultural competence" (p. 3). Their definition includes French models of immersion education (which go by various terms in the U.S. context that I will explain shortly) and programs of developmental or maintenance bilingual education (see also Howard et al. 2018; Genesee & Lindholm-Leary, 2008). Fortune and Tedick (2008) list three major types of dual language immersion programs: 1) one-way (foreign language) immersion programs which are also called one-way dual language programs (e.g., Mandarin immersion school in the U.S. where most students are from English-monolingual families; French immersion schools in Canada); 2) two-way immersion programs which are also called two-way bilingual programs, two-way dual language programs, or dual language immersion programs (e.g., Spanish two-way dual language immersion programs in the U.S. which consist of a balanced number of English-dominant and Spanish-dominant students); and 3) "indigenous" or "heritage" language immersion program (e.g., Native language immersion programs in Alaska). The term "dual language" used in this study is aligned with the definition provided by Howard et al. (2018) and this study includes two types of dual language immersion programs as listed by Fortune and Tedick (2008): one-way foreign language immersion programs and two-way

immersion programs. The term "immersion" used in this dissertation refers to bilingual immersion programs originated from French immersion programs in Canada, rather than the structured English immersion programs that commonly exist in the U.S. for multilingual learners (more detail will be provided later). In what follows, I will first explain the history of dual language education and its evolution in U.S. contexts, before I describe the different types and models of dual language programs. To make clearer distinctions between different dual language programs, I use more specific terms such as "one-way" and "two-way" immersion in the following discussion.

The term "dual language education" was first used to refer to the Canadian language immersion model. The immersion model was first developed in the mid-1960s in Canada to provide more effective French education amidst some political and social movements in redressing the power imbalances between Francophones and Anglophones (Genesee & Lindholm-Leary, 2008). The emergence of the immersion program was a response to Francophones' demand for linguistic and cultural equality as well as a response to Anglophones' needs for English-French bilingual learning opportunities to gain linguistic and cultural capital in the market (Lindholm-Leary, 2001; Potowski, 2007; Roy & Galiev, 2011). The first immersion program was initiated in the early 1960s by a group of English-speaking parents from the suburban community of St. Lambert outside of Montreal because these English-speaking parents were not satisfied with the second language education provided by mainstream English schools. Thus it was established with the hope that it could help develop a better understanding and respect for the French-Canadian cultures and people, and that the majoritized learners (English-speaking learners) would be secured with high-quality French learning opportunities. Driven by these benefits for both the language-minoritized and language-majoritized populations, more

language immersion programs for other languages grew in Canada, such as immersion programs in German, Polish, Mandarin, and Hebrew. Genesee and Lindholm-Leary (2008) describe that there are in general three types of student populations in these Canadian immersion schools: students from minoritized backgrounds who learn English as their first language but hope to learn the minoritized language as a "heritage language"; students from majoritized backgrounds who hope to learn the minoritized language as a second or foreign language; students from minoritized language backgrounds who are in the process of learning English but need support in their minoritized language for learning English as a second language (ESL).

The French immersion program, as Baker and Wright (2017) point out, differs from the structured immersion program in the U.S. As they explain, the Canadian immersion programs are bilingual programs that have bilingual and biliteracy as outcomes, have bilingual certified teachers, use students' first (home) languages in classrooms, and have pluralism as the underlying ideology. The structured English immersion programs in the U.S., however, are considered as monolingual programs with an assimilative ideology where students' first languages and cultures are not promoted, and teachers are often English monolinguals. Bilingual immersion programs often adopt total or partial immersion based on the percentage of instruction in each language, and choose early, delayed or late immersion based on the grade level at which the immersion commences (Baker & Wright, 2017; Lindholm-Leary, 2001). For early total immersion, for example, students start learning in the minoritized language 90 to 100 percent of the instructional time during Kindergarten and first grade, and the percentage gradually reduces to 80 percent and then ultimately to 50 percent. For partial immersion, which is most common, the curriculum is often 50 percent immersion in the minoritized language and the other 50 percent immersion in the majoritized language.

This immersion model was then followed by programs in the U.S. in the 1970s, with very different socio-political discourses around immersion programs and different types of immersion programs. Immersion education is not just an educational initiative but also predicated on societal, political, and economic rationales that differ from society to society (Baker & Wright, 2017). As Baker and Wright point out, for example, some immersion programs in the U.S. aim to revive indigenous languages (e.g., Navajo, Hawaiian), although most immersion programs are considered as foreign language immersion programs that advocate language-majoritized students' bilingual skills. Two-way immersion programs are unique in U.S. context, where there is a more balanced number of "native speakers" of two languages in the same classroom, and subjects are delivered to all students in both languages. Most two-way immersion programs adopt the 90/10 or the 50/50 model. Just like the partial and total immersion for the one-way immersion model: for the 90/10 two-way immersion model, 90 percent of instruction time is in the minoritized language starting in kindergarten and decreases gradually; the 50/50 model equally distributes instructional time for both languages,

One-way and two-way immersion programs are similar in structure (e.g., both adopting either the 90/10 or the 50/50 model) but differ in one important factor—student composition (Lindholm-Leary, 2001): a general criterion for a program to be considered as a two-way immersion (or dual language) program is that the number of either the language-majoritized or the language-minoritized students should be between one third and two thirds of the student population. However, scholars also emphasize the different sociocultural goals for the different types of programs, depending on the demographics and profiles of students the dual language program aims to serve. Scholars seem to use the terms intentionally with socio-political considerations: critical scholars, for example, tend to use "immersion" for programs that serve

majoritized students while using the term “bilingual” or “dual language bilingual” for programs that serve minoritized students (although most of them serve majoritized students as well). For example, as Cervantes-Soon et al. (2017) state, dual language programs in the U.S. often include 1) immersion programs primarily serving majoritized student groups, and 2) two-way bilingual programs where students are from both majoritized and minoritized backgrounds. Flores and Beardsmore (2015) claim that immersion programs are “elite bilingual programs”, and the goal of immersion programs are different from “dual language bilingual programs” (both one-way and two-way). Dual language bilingual programs have the goal of supporting minoritized students’ maintenance of home languages and cultures. Flores and Beardsmore believe that distinguishing the programs based on students’ linguistic backgrounds is oversimplified; in fact, the real classroom demographics are often more complicated than a simple divide between “language-minoritized students” and “language majoritized students”, and between “foreign language learners” and “heritage language learners”.

So far, I have explained the development of dual language education in the Canadian and U.S. contexts, and described the different types of dual language programs based on the immersion models and the student composition. As I have emphasized, scholars have distinguished the different dual language programs based on the sociocultural backgrounds of the students and communities that the programs aim to serve; these differences are reflected by their choice of terms to represent the program. As stated in Chapter One, my study contrasts two different Chinese-English dual schools and classrooms which both have the goal of supporting students to develop Chinese-English bilingualism and biliteracy but they serve different communities: I describe one school as a one-way dual language (foreign language immersion) school and the other one as a two-way dual language (bilingual) school. Both schools adopt the

50/50 (partial) immersion model and divide the subjects: 50 percent of the subjects are taught in English and 50 percent of the subjects are taught in Chinese (see more in Chapter Five).

Socio-political discourses in the U.S.

In the U.S., dual language education, particularly dual language bilingual education that serves minoritized communities, is closely connected to the complex discourses of the bilingual education movement. As Crawford (2004) emphasizes, "language diversity in North America has ebbed and flowed, reaching its lowest level in the mid-20th century. But it has existed in every era, since long before the United States constituted itself as a nation" (p. 59). However, the movement toward bilingual education is never natural and easy, due to the overall discourse of linguistically and culturally assimilating multilingual population into the "English-only" environment (Nieto, 2009). Bilingual education is tied to the changing immigration patterns of immigrant communities and civil rights movements in the U.S. (e.g., Civil Rights Act of 1964; Lau vs. Nichols Law Case in 1974). Throughout the 19th to the 21st century, there have been competing political discourses around bilingual education according to different political administrations, in particular in the past five decades, although bilingual education exists across communities (Freeman, 1998). Bilingual education, in this sense, often marks the social justice goal of validating immigrant communities' linguistic and cultural backgrounds in the English-dominant society. The term "bilingual education" often has very strong historical roots in immigration and marginalized groups (Flores, 2016). Besides the immigration patterns and movement in the U.S., the ups and downs of dual language education, in particular those one-way dual language (foreign language immersion) programs (and world language programs) are also influenced by the global political atmosphere and agendas. For example, in response to the Soviet Union launching Sputnik and geopolitical events such as 9/11, the U.S. government made

great efforts to introduce "critical languages" in schools in order to develop U.S. students' foreign language skills (Genesee & Lindholm-Leary, 2008).

As is generally believed in the literature, dual language education is favored both to support minoritized students who are from immigrant households, and (especially by foreign and world language teachers) to promote foreign language skills for students with English as their home language. Besides, research conducted in dual language contexts has demonstrated positive outcomes, such as high academic achievement, bilingual and second language skills, and multicultural respect (e.g., Howard & Christian, 2002; Lindholm-Leary, 2001; Potowski, 2007). Since the first two-way dual language school—Coral Way Elementary—was established in Miami in 1963 (see Coady, 2019), dual language programs have been expanding quickly across the U.S. As indicated in the directory created by the Center for Applied Linguistics (n.d.), there are currently 866 dual language programs in the U.S. as of April 2020, including both one-way and two-way dual language programs in Spanish, French, German, Japanese, Mandarin, Arabic, and Russian.

The ideological debate: Monoglossia versus heteroglossia

One big ideological debate in bilingual education is monoglossia versus heteroglossia in conceptualizing bilingual learning, pedagogy, and language policymaking. Dual language programs have historically favored the separation of the two instructional languages according to subjects, teachers, time, and day as a guiding principle (Howard et al. 2018). The dominant approach and theoretical orientation in bilingual education has been language separation and the language monoglossic orientation, which frames bilingualism as double monolingualism for two languages (García, 2009). This monoglossic orientation, particularly in the past decade, is criticized in scholarship as rejecting the realities that learners are dynamic bilinguals (Bailey,

2007): it is built on deficit views toward multilingual learners (Flores & Schissel, 2014) and it ignores the current social environment that exhibits hybrid and mobile contacts of languages, semiotics, and cultures through urban development and globalization (Canagarajah, 2013; Rampton, 2011). García (2009), for example, calls for heteroglossic language ideologies, which perceive different languages as interacting and co-existing in complex ways for bi/multilinguals.

This fundamental difference in conceptualizing bilingualism is significant. First, it reconceptualizes the understanding of students' language learning processes and repertoires. Instead of approaching students' learning from a monolingual and static point of view, a heteroglossic orientation explores how learners develop and communicate their languages and practices through fluid, dynamic, agentic, and contextualized interactions. Hornberger (2005) claims that "learning is maximized when they are allowed and enabled to draw from across all their existing language skills (in two+ languages), rather than being constrained and inhibited from doing so by monolingual instructional assumptions and practices" (p. 607). Learners' own bottom-up language practices and realities, rather than idealized language practices and separation, are built on from this orientation (Flores & Bale, 2016). In this case, learners'—especially minoritized learners'—language backgrounds, knowledge of language resources, and their multilingual repertoires, are validated in classroom learning and practices. Secondly, this heteroglossic orientation re-examines the dominant language pedagogy and classroom language policy in English as a second language and dual language contexts. Alternative ways of teaching and classroom language planning, rather than strict language separation, are being promoted for teachers to draw on multiple language resources for the flexibly use of language learning, communication, and interactions (see more studies on this issue in the next sections). This study is built on the heteroglossic ideology for data analysis to respond to the research questions.

Studies on dual language education

Parents' and students' experiences with dual language education

A substantial amount of research has been conducted to understand students' initial enrollment into, as well as parents' and students' experiences with dual language programs. In terms of initial enrollment, findings show that parents are strongly motivated by the expected outcomes of dual language education. Major motivators for enrollment include parents' expectations of cognitive, academic, and professional benefits for their children from mastering bilingual skills (Howard et al., 2003; Lao, 2004; Lindholm-Leary, 2001; López, 2013; Wesley & Baig, 2013; Whiting & Feinauer, 2011), parents' expectations toward maintaining their family and cultural backgrounds (Ee, 2018; Lao, 2004; Lee & Jeong, 2013; López & Tápanes, 2011 Shannon & Millian, 2002), and the expected outcome for their children of increasing awareness and respect for other cultures (Craig, 1996; Lao 2004; Lindohlm-Leary, 2001; López, 2013; Wesley & Baig, 2013; Shannon & Milian, 2002; Whiting & Feinauer, 2011). Findings also demonstrate that parents have overall high satisfaction with dual language programs (Craig, 1996; Lindholm-Leary, 2001; Ramos, 2007).

Studies in this area have demonstrated different characteristics among parents with different social, linguistic, and cultural backgrounds. The initial enrollment motivations vary depending on the student and parent population. For example, studies conducted in Spanish dual language programs reveal that the pragmatic benefits drive English-dominant parents more while the cultural and language maintenance aspect of the dual language programs is more appealing to Spanish-dominant parents (e.g., Parkes, 2008; Whiting & Feinauer, 2011). Additionally, some studies show that parents' social backgrounds (e.g., education, socioeconomic backgrounds, religion) also affect their enrollment decisions (e.g., Ee, 2017; Whiting & Feinauer, 2011). In

terms of parents' experiences with dual language programs, some studies show an imbalanced power dynamic between different parent groups. Lee and Jeyong (2013), for example, found that Korean-dominant and English-dominant parents participated in the Korean-English dual language programs at very different levels: there was no close alignment between these two cultural groups of parents, which might be a result of cultural differences, the unfamiliarity of bilingual development, and different expectations.

Relatively few studies have focused on students' experiences in and their perceptions toward dual language programs. Several studies have shown that students are able to perceive bilingualism as positive and to build social networks through bilingual learning (e.g., Thomas & Collier, 2002). They tend to be proud and satisfied with their dual language learning (Lindholm-Leary & Borsato, 2001). Studies have also shown some consistent findings that Spanish-dominant and English-dominant students have demonstrated very different attitudes toward dual language learning, with English-dominant students driven more by the instrumental factors associated with bilingualism (e.g., Bearse & de Jong, 2008; de Jong & Bearse, 2011). Kibler et al. (2014), for example, adopted a sociolinguistic approach to investigate the linguistic resources that students of different groups used. They found that both English-dominant and Spanish-dominant students developed cross-cultural appreciation and a high sense of confidence through dual language learning. They also found that English-dominant students tended to be learning the second language although they did not feel they lived with the language on a daily basis.

Dual language pedagogy and classroom learning

Much recent research in the field of dual language and bilingual education examines teaching pedagogies, learning practices, and interactions. One focus is to examine dual language teachers' language practices and pedagogies. Earlier conceptualizations around separated and

sheltered language learning, for example, promotes the use of a long period of monolingual instruction in dual language contexts. Studies have demonstrated that the separated and sheltered language learning provides opportunities for learners to make sense of the meaning and to develop the targeted language alongside their home language (e.g., Swain, 1985; Lindholm-Leary, 2001). It is also believed that this approach prevents language-minoritized students from ending up speaking the majoritized language (Cummins & Swain, 1986).

As described earlier, the new lens that adopts a heteroglossic ideology in understanding language use as a holistic, dynamic, and fluid repertoire, however, rejects these essentialized and monolingual norms for bi/multilingualism (see more in the section of monoglossic versus heteroglossic on p. 35-36). One emergent focus in dual language research is examining the affordances and limitations of teachers' translanguaging in classrooms. Translanguaging, as García (2009) claims, conceptualizes bilingualism as a dynamic and unitary repertoire rather than two interdependent language systems or "double monolingualism" for bilinguals to choose or shuttle between. From this perspective, individuals deploy multilingual and multimodal features in different contexts to reach different communicative goals (García & Li, 2014). Vogel & García (2017) listed three core premises for translanguaging: 1) it believes bi/multilinguals select and deploy resources from a unitary linguistic repertoire; 2) it believes bi/multilinguals privilege their own dynamic multilingual and multisemiotic practices beyond the nation-state conceptualization of named languages; and 3) it recognizes the material effects of structuralist ideologies of named languages, particularly for speakers of minoritized languages. Translanguaging as a dual language pedagogy is drawn on and discussed further in Chapter Five.

Gort and Pontier (2013), for example, found that teachers' strategic and flexible use of resources from their bilingual repertoires in a Spanish dual language preschool helped

accommodate students' learning needs and achieve communicative, academic, and management functions (see also Gort & Sembiante, 2015; Hamman, 2018; Portier & Gort, 2016). Students' simultaneous use of bilingual resources serves as a mediational tool to facilitate content learning in dual immersion learning (Martin-Beltrán, 2010). In an earlier study (see Zheng, 2019) which I conducted in a 4/5th-grade classroom in a Chinese immersion school, I found that the classroom norm of translanguaging maximizes students' full language capacity to perform their understanding of the content knowledge. However, I found that when translanguaging is encouraged in a one-way immersion context with mostly language-majoritized learners, it is challenging for the teacher to secure a space that protects the minoritized language.

In addition to a focus on language practices and pedagogies in dual language classrooms, there is a scholarly focus on the identity aspect of students' learning. As Reyes and Vallone (2007) note, it is important to recognize that bilingual programs are also multicultural programs. Future studies should "take a focused look at the impact of identity construction on not only linguistic and academic achievement but also on the psychosocial health of linguistic minority children and children of linguistic minority heritage" (Reyes & Vallone, 2007, p. 10). The call for cultural diversity in dual language contexts is being addressed by more recent studies on pedagogies that promote positive identity development of students. Studies demonstrate that teachers' translanguaging pedagogies encourage language brokering where language integration rather than separation is celebrated, and it validates students' linguistic and cultural backgrounds and helps develop their positive bilingual identities (e.g., García-Mateus & Palmer, 2017; Gort & Sembiante, 2015; Lee et al., 2008). These studies show empirical evidence that language-minoritized students can be encouraged to feel confident about their bilingual identities. More recently, Hamman and Palmer (2020) discuss this topic of identity development of dual language

learners, particularly through learners' own perspectives and classroom interactions. They claim that learners' intersectional identities out of the classrooms are not often well acknowledged in the dual language classrooms and dual language education still tends to favor the binary labeling of students.

Studies on dual language pedagogy have also examined how students' language practices and classroom interactions are affected by classroom norms and ideologies of teachers and students. Scholars have emphasized that teachers, along with their ideologies around bilingualism and multilingualism, shape the effectiveness and outcomes of the pedagogy (e.g., Menken & García, 2010). For example, Martínez et al. (2015) studied two teachers' language ideologies in two Spanish dual language elementary schools. Their study shows that pedagogies echo and embody, but also sometimes contradict the teachers' ideologies of linguistic purism and language separation. Henderson and Palmer's study (2015) also claims that while teachers' articulated and embodied ideologies are crucial in their classroom planning and pedagogy, students are agentive policymakers of their own classroom practices and expectations of language pedagogies. Their resistance and actions are embodied in their language practices and their engagement with the classroom learning process.

Equity, neoliberalism, and power imbalance

One focus in scholarship is examining equity in dual language education (Cervantes-Soon et al., 2017). As Guadalupe Valdés noted as early as in 1997, dual language immersion has the neoliberal risk of benefiting families from certain racial, social, and linguistic backgrounds; this risk has raised more concerns in recent scholarship connected with neoliberal discourses of education policymaking and practices (Cervantes-Soon, 2014; Flores, 2013). The issue of inequality is closely connected to the discourses of promoting bi/multilingualism. Although dual

language programs do show benefits of cross-cultural awareness and higher respect for other cultures, people, and languages, one essential factor that accounts for the popularity of dual language programs, as noted, is the "enrichment" foreign language opportunity for English-monolingual students. That is to say, these are noted benefits for students with English as their home language.

A highly relevant phenomenon is the commodification of language skills in general. Multilingualism and language experiences are regarded as linguistic, social, and cultural capital (Bourdieu, 1977; Heller, 2011), which is relevant to the demand for multilingual human capital in the context of global capitalism, the demand for multilingual and cross-cultural communicative skills, and the ideology of competitiveness in the market (Paquet & Levasseur, 2019). Kubota (2016) proposes the notion of "neoliberal multiculturalism" and claims that promoting multilingualism is to further privilege middle-class groups. Dual language programs, in this regard, are also criticized by scholars as marketed toward the goal of achieving global competitiveness and toward the garnering of resources to gain capital in the global marketplace (e.g., Valdez et al., 2016). This emphasis on competitiveness and capital is also ingrained by neoliberalism in educational discourses, particularly represented in the monolingual testing system in the U.S. (Cervantes-Soon, 2014). Although dual language programs promote the use of two languages, the fact that students' achievement and outcomes are measured in the English language significantly undermines the goal of biliteracy and biculturalism.

Another significant criticism of equity in dual language education is the longstanding unbalanced power dynamics among stakeholders from various backgrounds. This unequal relationship shapes many areas of dual language programs such as policymaking, classroom learning, and pedagogy, which produces and reproduces isolation and marginalization among

students, teachers, and parents. Among these tensions, one big issue is the hegemony of the English language and Whiteness (Flores, 2016). During classroom learning, for example, it is natural that English tends to be more privileged than the minoritized language and English tends to dominate the informal interactions among students (Potowski, 2007; Zheng, 2019). This prevalence of English in classroom learning further advantages English-dominant students for higher academic learning outcomes and social interactions, while marginalizing minoritized students.

Unequal power relationships are also evident in different parent groups' influence on local education and language policy. Several studies have documented that Anglo middle-class parents have a more influential role in shaping dual language programs in order to benefit their children. Dorner (2011), for example, found that White English-monolingual families dominated the public discussion about the planning and development of a Spanish two-way immersion program and voices from immigrant communities, in contrast, are absent in this public debate. I also found that White middle and upper-middle class families made major decisions in a Chinese one-way immersion public charter school and influenced the school district's language program planning (Zheng, 2020). Often times, dual language programs thrive not because of the influx and the needs of immigrant families but more because of the "enrichment" needs of English-dominant White families (Paciotto & Delany-Barmann, 2011). Parents from nondominant socioeconomic, racial, and ethnic backgrounds also encounter unequal status in dual language communities (e.g., Feinauer & Whitning, 2014; Lee & Jeyong, 2013). In this sense, although dual language programs attempt to promote two languages, they do not necessarily integrate the languages, students, parents, and teachers from disparate linguistic, socioeconomic, cultural, racial, and ethnic backgrounds. People from different groups do not benefit equally from dual

language learning opportunities and do not have equal access or power in influencing language policy and pedagogy, which further sustains segregation and marginalization.

The Ecology of Chinese Language Education in the U.S.

A brief socio-political history

The development of Chinese language education[6] in the U.S., in general, is connected to several waves of immigration and various socio-political movements. The earliest Chinese language schools were established by immigrants from South China in the late 19th century as isolated and unofficial learning spaces within Chinatowns. The second wave of immigrants from Taiwan and Hong Kong and the third wave of immigrants from the People's Republic of China in the 1960s brought more afterschool and weekend programs to develop Chinese immigrant children's heritage skills (Tsung & Cruickshank, 2010; Wang, 2008). From the early 1960s, Chinese language teaching, Mandarin Chinese in particular, entered into U.S. mainstream schools through two major private initiatives: one from the Carnegie Foundation and the other from the Geraldine Dodge Foundation. Since then, there has been a surge of Mandarin Chinese as a foreign language programs in U.S. K-16 mainstream educational settings. This surge is a result of the increasing economic impact of China, the Chinese government's critical role in promoting Mandarin Chinese in the U.S., and the U.S. government's efforts to teach Mandarin Chinese as a critical language after 9/11 (Wang, 2008). A detailed historical overview of Chinese language education is provided by Wang and Ruan (2016), where four stages of development are

[6] The term "Chinese language education" includes both learning and teaching of Cantonese and Mandarin Chinese. "Mandarin Chinese" is used in this section if the language is Mandarin.

presented: the beginning years from 1871–1940, the emerging years from 1940–1960, the developing years from 1960–2000, and the rapid expansion years from 2000–present.

As for Chinese dual language programs in particular, the first Chinese dual language school was established in 1981 in San Francisco. As Lü (2019) claims, two non-profit organizations are currently profiling the expansion of Mandarin immersion programs across the United States—Chinese Early Language and Immersion Network (CELIN) of the Asian Society in New York and Mandarin Immersion Parent Council (MIPC). As Lü's (2019) study reveals, up through August 2018 there were 247 Mandarin immersion programs or schools across 31 U.S. states, with 11 schools slated to open in the 2018-2019 academic year. Her study shows that California (n=61), Utah (n=46), Minnesota (n=13), Arizona (n=11) and North Carolina (n=10) are the states with the most Mandarin Chinese immersion programs. Eighty-four percent of the programs are categorized as one-way and sixteen percent as two-way immersion programs. Eighty-four percent of the programs have Mandarin immersion housed in a traditional school, while thirteen percent of them are independent schools with only Mandarin immersion pedagogy. Many of these Mandarin immersion programs are funded by federal initiatives, and they are offered in public schools as foreign language learning opportunities. Examples of these schools include the famous Utah Chinese dual immersion programs (see more in Sung & Tsai, 2019), the Portland Public schools K-12 Chinese language programs in Oregon, and Yinghua Academy in Minnesota (Asian Society, 2010). Both of the Chinese immersion schools in my study are independent schools with Mandarin immersion pedagogy: one of them is a one-way immersion program that provides majoritized English-monolingual students with foreign language learning opportunities (similar to the Utah Chinese dual language programs); the other one is a two-way immersion school which primarily serves immigrant communities.

The socio-political discourses

The ebbs and flows of Chinese language education are closely connected to socio-political movements (such as immigration and bilingual education movement) as well as initiatives from both the Chinese and the U.S. government to promote Chinese as a foreign or critical language. Chinese language learning, as part of the bilingual education movement, has been developed through the heritage language for Chinese immigrant communities (e.g., Lau v. Nichols Law Case, 1974). Chinese families and immigrants in diaspora communities started to develop their own schools through churches or rented classrooms for maintaining Chinese heritage and cultures (Wang, 2008). One research site in my study was established by Chinese immigrants in this diaspora community in 1998 to promote Chinese heritages and cultures. The increasing Chinese-speaking population is marked by immigration. According to Zong and Batalova's (2017) report from the Migration Policy Institute, the population of Chinese immigrants has reached 2.3 million in 2016, an over six-fold increase since 1980. Multilingual learners whose home language is Chinese now rank as the third largest population of multilingual learners, after Spanish and Arabic (National Centre for Education Statistics, 2017). In this case, there are a large number of multilingual learners in U.S. mainstream classrooms who speak Chinese at home and need responsive bilingual pedagogical support or Chinese "heritage" learning opportunities at schools.

On the other hand, the Chinese (Mandarin) language has witnessed its construction as a foreign language in U.S. society through initiatives from the U.S. and Chinese governments. The U.S. government started to fund K-16 language programs to develop students' language skills—in particular, the "critical languages" (including Mandarin Chinese)—for the sake of national security after the 9/11 attack in 2001. Several government initiatives have been established that

enhance the expansion of Chinese language learning. One of them is the National Security Language Initiative (NSLI) enacted in 2006 that stresses the national need for language competence and security through education (Wang, 2008). Another federal initiative is STARTALK which offers extensive summer opportunities for language learning for teachers and students in K-16 educational settings. Additionally, Language Flagship programs have also been developed, which are usually housed in universities with support from the federal government to train college students with foreign language skills for national security and economic competitiveness. All of these have created top-down opportunities for the development of critical language skills as a foreign language taught in schools for U.S. students, with Mandarin Chinese being one of the critical languages.

On the other hand, the Chinese government has carried out a series of policies and initiatives to internationalize the Chinese language (Mandarin) and culture on a global scale since the early 2000s (Li & Wang, 2016). One influential institution in the process of internationalizing the Chinese language and cultures is the Confucius Institute Network, a non-profit educational organization sponsored by the Chinese organization Hanban, the Confucius Institute Headquarters. The Confucius Institute Network develops its networks from two major platforms: Confucius Institutes (often in higher education) and Confucius Classrooms (often in K-12 schools). As described in Li and Wang's (2016) article, there were (at the time of the article's publication) 440 Confucius Institutes and 646 Confucius classrooms in 120 countries and regions. In terms of investment, the Hanban annual report describes an amount of $396 million for the Confucius Institute Network in 2012 (Hanban, 2012). Hanban offers support to Confucius Institutes and Confucius Classrooms in various ways, such as sponsoring educational and material resources, offering teacher education and volunteer teachers, sponsoring Chinese

proficiency tests, facilitating research and academic collaboration between China and other countries, providing scholarship programs for Chinese learners, and funding learning contexts and academic trips to China. One school in my study has built connections with Hanban and one classroom (within this school) in my study is featured as Confucius Classroom.

The expansion, popularity, and internationalization of the Chinese language through Hanban is also under criticism, given the social, political, and ideological influence from this government-sponsored organization. The Confucius Institute Network is believed to be a cultural diplomacy and political strategy through the teaching and learning of Chinese languages and cultures (Starr, 2009; Wheeler, 2014). Yang (2010), for example, argues that this internationalization of education through the Confucius Institute helps promote the Chinese model of governance abroad. Ding and Saunders (2006) claim that this is part of soft power diplomacy in promoting the cultural influence of China. Meanwhile, ideological legitimacy is believed to be achieved through the process of learning and teaching Chinese languages and cultures. Stambach (2015) claims that "hegemonic forms of cultural production" of "Chinese culture" are produced and reproduced in college classroom practices for classroom associated with Hanban (p. 68). Hong and He (2015) analyzed a collection of Confucius Institute textbooks and found that the cultural and political representations of messages, information, and cultures are aligned with the overall publicity of cultures by the Chinese government that lacks multiculturalism, although there are a variety of cultural and ethnic groups in China.

The economic and neoliberal discourses

The rapid expansion of Chinese language education is also closely connected with the economic discourses of language learning at the local, national, and global scale. Besides the grants and economic support from federal and government initiatives as demonstrated above,

state and local organizations, business leaders, and stakeholders have also foreseen China as a future economic power and urge the incorporation of Mandarin language learning into K-12 education in the U.S. (Sung & Tsai, 2019). Meanwhile, increasing calls rise in the U.S. mainstream society for American students to learn Mandarin for pragmatic purposes (Tsung & Cruickshank, 2010). As was mentioned earlier, some U.S. states have initiated Flagship programs and Language Roadmaps that promote foreign language development (though not solely Chinese) and work with business sectors to evaluate the need for a multilingual workforce and economic development in the market. The Utah Chinese dual language immersion program, for example, covers 38 public and private schools and one charter school across 12 districts that offer Chinese immersion curriculum, most of which are categorized as one-way (foreign language) immersion programs (Asia Society, n.d.). These Chinese programs are designed to "address the need for language skills in business, government, and education" (Asia Society, n.d.). From this perspective, learning foreign languages is a way to meet the demand for multilingual human capital (Damari et al., 2017), and learning Chinese as a foreign language is critical due to the increasing business collaboration with Chinese companies and the increasing global influence of China in the international market.

The issue of learning a foreign language and developing multilingual skills in the context of global capitalism is also under criticism in scholarship. It is believed to promote neoliberal discourses in education and eliteness, which emphasize the ideology of competitiveness (Paquet & Levasseur, 2019). Barakos and Selleck (2019), for example, describe how languages such as Mandarin have risen into the status of "elite language" in the global market (see also Codó & Sunyol, 2019; Paguet & Levasseur, 2019; Zhu & Li, 2014). The Utah model of dual language immersion is also controversial. As Freire et al. (2017) claim, dual language programs in Utah

target Caucasian, wealthy, and English-speaking households while marginalizing or silencing Latina/o interests. Moreover, there is a restriction of minoritized students' enrollment in many one-way immersion programs in Utah (Sung & Tsai, 2019) where linguistically and socioeconomically minoritized students do not have equal access to these learning opportunities.

Studies on Chinese dual language contexts

The context of Chinese dual language programs has only received scholarly attention in very recent years. The relatively sparse literature on Chinese dual language contexts has examined the effectiveness of these programs in terms of academic achievement as part of the immersion scholarship (Lindholm-Leary, 2001). Recently, some studies have focused on literacy development and learning in Chinese immersion settings. Lü' (2017), for example, studied the role of pinyin in developing Chinese-English biliteracy skills. She found that pinyin supported second-grade learners of Chinese with no risk of harming their acquisition of English literacy skills. Lü (2019) further investigated literacy acquisition for Mandarin immersion learners' various literacy aspects, including vocabulary learning, oral development, and reading skills. Her research was conducted in one-way Mandarin immersion contexts in the state of Oregon. Zheng (2019) examined the classroom discourse and the implementation of translanguaging in a one-way Mandarin immersion classroom in a public charter school. She found that translanguaging validates learners' communicative repertoires and helps develop learners' content understanding, but she also called for attention to the imbalanced learning opportunities in immersion classrooms. Tian (2020) worked with a Chinese dual language teacher and implemented translanguaging pedagogy in a third-grade classroom. His study found that translanguaging pedagogy, when strategically implemented, can help students develop content knowledge and positive bi/multilingual identities, while protecting a learning space for Mandarin.

Another area of research in Chinese immersion contexts has been parents' experiences with Chinese immersion programs and their enrolment decisions. Lao (2004) used a large-scale survey-based approach to study Chinese-English bilingual preschools in California. Findings from this study show that both Chinese-dominant and English-dominant parents value the practical advantages of bilingualism. Meanwhile, there was a different expectation between Chinese-dominant and English-dominant parents in terms of children's literacy levels: English-dominant parents wanted their children to continue the program until high school, but Chinese-dominant parents just expected their children to stay until middle school. A more recent book (Sung & Tsai) about Mandarin Chinese dual language immersion programs was published in 2019. This book looks into Mandarin dual language programs in Utah and adds much-needed sociocultural perspectives, which have been applied in a very limited fashion in Chinese immersion literature. Sung and Tsai (2019) explore various stakeholders' points of view toward Chinese immersion programs from interviews. They found that parents, most of whom are from White middle-class backgrounds, claim that there is a lack of support for their children's Chinese language development and it is difficult to keep "native-speaking" Chinese teachers. Additionally, there is a divide between dual-language and non-dual-language students in the school where Chinese dual language is adopted in some classrooms rather than the whole school: non-dual-language "mainstream" students in the school exhibit negativity toward the dual-language students in the Chinese dual language classrooms.

Chapter Three: Context of the Two Schools and Classes

In this chapter, I describe the context of the two schools, including the demographics and backgrounds of the school districts, the neighborhoods, and the histories of the schools. I also provide some context for the curriculum and schedule in the two fourth-grade classes in Forestview International School[7] and Er'yu Bilingual School (respectively), where the backgrounds of students, teachers, and principals are discussed. More demographic, social, and linguistic background about particular student and parent participants are provided in Chapter Four: Methodology.

First Research Site: Forestview International School

The School District and Neighbourhood

Forestview International School is located in Greenville, a suburban town with an estimated population of 30, 000 and a median household income of $66, 110[8], in the Midwestern U.S. Greenville is between Lakeville, a capital city (with a population of around 260, 000 in July 2018), and Forestville, another suburban town (with an estimated population of 13, 000 and a median household income of $87, 536). The school district where Forestview International School is located primarily serves residents in the two suburban towns—Greenville and Forestville.

School district demographics during the 2018-2019 school year indicate that the student population was 63 % White, 20 % Hispanic, 7 % African American, and 10 % others, with 6.6%

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[7] All names for the schools, places, and participants are pseudonyms throughout the dissertation.

[8] Demographic data were retrieved on March 1, 2020 from the United States Census Bureau Website https://www.census.gov/quickfacts/fact/table/US/PST045218

of students having special needs and 25. 9 % qualified for free and reduced lunch (Forestville School District Website, 2020). The school district has seven elementary schools, two middle schools, and one high school, three of which are public charter schools. The overall mission of this school district, as presented on their school district website, is “Every student MUST be Successful!” (capitalization in original). The components identified to achieve this goal include equity, excellence, engagement, expectations, and empowerment (Forestville School District Website, 2020). To meet this goal, the Forestville school district emphasizes several foci in curriculum designing and planning that are very relevant to the findings presented in Chapter 5.

One focus is the development of an individual learning plan with the goal of equality in learning: “in a personalized learning environment, students are given more choices in how they pursue and pace their learning as well as how they achieve and demonstrate the mastery of the specified academic content standards” (Forestville School District Website, 2020). The school district also emphasizes digital skills and the use of technology in classroom learning and family communication, focusing on “1:1 technology for all of our students and will be implementing Common Sense Media’s digital citizenship K-12 lessons this year.” Another focus of this school district is to promote dual language programs and to develop students’ bilingual and biliteracy skills. This promotion of bilingualism is highly connected to the mission of developing pathways to graduate with the state’s Seal of Biliteracy. As is stated on their website, the Forestville school district is one of three districts in their state authorized to award graduating seniors with the state’s Seal of Biliteracy. Chinese immersion is offered in Forestview International School, and Spanish two-way immersion programs are offered in two other elementary schools and one middle school.

The School

Forestview International School is the only Chinese immersion school in this state. This public charter school was founded in 2010 by a group of English-speaking parents who saw benefits for their children in becoming English-Chinese bilinguals in a globalized world. The first enrollment consisted of around 40 students and two classrooms (one kindergarten and one first-grade class). The 50/50 partial immersion model was adopted to separate Chinese instructional time and English instructional time. Students spend half the school day learning subjects in the English classroom with the English teacher and the other half of the school day in the Chinese classroom with the Chinese teacher. Students learn Chinese language arts, science, and math in Chinese in K-1 and learn Chinese language arts, science, and social studies in Chinese from 2nd grade to 5th grade. Forestview International School is described on their school website as a 50/50 Chinese immersion school that aims to learn foreign language and develop global competence. “One-way foreign language immersion” or “one-way dual language program” is the label that I chose to represent this school type. During the 2018-2019 academic year, 104 students (63.5% White, 6.7% Latino, 1.0% African American, 14.4% Asian, and 14.4 % two or more races, with 6.7% economically disadvantaged, 9.6% English learners, and 3.8 % with special needs) were enrolled in Forestview International School, as listed in the state Department of Education report card. Most students are from English-monolingual households; while some students are of Asian descent, very few students are from Chinese-speaking households.

Due to the relatively low enrollment, each grade only has one class. Three certified Chinese teachers teach two classes and two grades because of the limited number of Chinese teachers. Since its establishment in 2010, this school has been struggling to secure its own

physical space. In the early years, this school shared some classrooms with a larger public elementary school and shared some classrooms in a nearby middle school located in another building. Now all of the classrooms are located in the same building, but it still shares space and staff (e.g., ESL teachers and special education teachers) with another elementary school, which is a different elementary school. Students do some activities such as fire drills together, but it seems these two schools have very separate communities: students from Forestview do not interact with students in the other school. Several students, during the student interviews, told me that they feel weird sharing the school space with the other elementary school.

Forestview International School's mission is to "educate Global Citizens: to prepare children for the demands and responsibilities of Global Citizenship by providing the knowledge, skills, and experience needed to move naturally between different languages and cultures" (Forestview International School Website, 2020; capitalization in original). To reach this goal and to seek more resources, the school has built a connection with Hanban and received recognition as a Confucius Classroom since the year 2015 (see more details about Hanban in Chapter 2). In addition to being granted funding and receiving educational and cultural resources from this connection, Forestview International School also had two Hanban teachers, besides the three main certified Chinese teachers, staying in the school to provide additional support during the 2018-2019 academic year. The school also partners with several elementary schools and colleges in China to enhance international and cultural immersive visits. In its local community, Forestview is active in hosting Chinese cultural events and fundraising events, such as reading Chinese stories and making crafts in Greenville and Forestville public libraries. These activities, resources, and partnerships are often secured by its governance council which "consists of parents, staff and community members which makes high-level decisions in terms of the

operation of Forestview" (Forestview International School Website, 2020). As their website highlights, this council makes decisions for budgeting, grant proposals, curriculum, assessments, policies, goals, mission and future of the school. The leading actors in this council are parents, all of whom are English monolingual parents. According to Principal Milton and some parents from my previous study (see Zheng, 2020), the school was established only because of the parents' strong motivation and work while the school district did not have any intention of starting this school in the first place. Throughout the years, parents have been very involved in the survival and development of this school.

Principal Milton

Principal Milton is White and English-monolingual. She started her new position in Forestview in 2018 and simultaneously works as the principal for another public charter school in the school district, so that she travels between these two schools almost every day. Principal Milton has been part of education since 1995. She had many years of experience as a librarian before she got her teacher's license. That experience makes her very attentive to the development of students' individualized reading skills. During the individual interview, Principal Milton emphasized several times that students in Forestview are strongly exceeding academic expectations. She also passionately described the need to learn about different cultures. For her, it is essential to provide curriculum that promotes individualized learning, maximizes students' potential, and uses authentic materials to immerse students into learning Chinese language and cultures fully. From her point of view, learning should be authentic and should represent the real scenarios in China so that students can use them in real life. That might explain why the school actively promotes international exchanges and immersive cultural events between students and families in Forestview and those in China.

The Fourth-grade Class

The school day is divided into morning time in Ms. Jones' classroom from 7: 35 to 11: 00 a.m. and afternoon time in Ms. Xie's classroom from 11: 40 am to 2: 35 pm (see Table 3.1 for Forestview daily schedule). Students need to carry their belongings when they switch classrooms because they share the two classrooms with the fifth graders. Ms. Jones' and Ms. Xie's classrooms are also located at the two ends of the hallway so that they are quite separate from each other. For this grade, English language arts (ELA) and math are taught in English while science and Chinese language arts (CLA) are taught in Chinese. Every morning, students also have a global art class where the art teacher, who is also the ELA teacher for the 5th-grade class, joins the class for projects about other cultures and languages. In the afternoon, students often have a 30-minute Chinese-only instructional time with Ms. Song, the Hanban teacher, to work on literacy skills such as pinyin, handwriting, and reading. As shown in Table 3.1, it is uncertain where the content of social studies fits into the dual language curriculum. During my observations, I noticed that social studies and science curricula are often incorporated into Ms. Jones' classroom as part of ELA curriculum. In this case, although there seems to be a clear-cut division for which subjects are taught by which teacher, all content across subject areas are covered in the English instructional time by Ms. Jones.

Table 3.1. The Forestview 4th-grade class's Tuesday schedule

Morning: Ms. Jones' classroom in English		**Afternoon: Ms. Xie's classroom in Chinese**	
7: 35 - 8: 00	Morning Meeting	11: 00 - 11: 40	Lunch & Recess
7: 50 - 8: 30	Shared Reading (20 min) Independent Reading (20min)	11: 40 - 12: 10	Read aloud/ mini lesson
8: 30 - 9: 00	Global Arts (GA) with the GA teacher	12 :10 - 1: 30	Daily Five (Independent Literacy Practices)
9: 00 - 9: 20	Independent Reading/Groups	13: 00 - 13: 30	Literacy with Ms. Song
9: 20 -10: 15	Shared Writing (20min) Independent Writing (20min)	13: 30 - 13:50	Recess

	Word work (15min)		
10: 15 - 11: 00	Math	13: 55 - 14: 35	Science

The fourth-grade class has fourteen students in total: one student moved to Germany at the start of the semester due to his parents' overseas work, so he was not included in my research. Twelve students participated in my study, and ten of them participated in the individual interviews (see more in Chapter 4). Out of the fourteen students, two speak Mandarin at home, as one's family is from China and another one's family is from Taiwan; two of them speak Spanish at home with their parents. Another three students have Asian heritage because one of their parents is Asian, but two of them do not speak Asian languages. The rest of the class are from White English-speaking monolingual families. Most students from this class are from middle-class (and many from upper-middle-class) households. Three students—Wilson, Yuchi, and Kevin—are the focal learners that I have followed and interacted most closely with during my fieldwork to understand their language practices and development. I have interviewed the parents of these three children and also conducted a home visit with Kevin and Wilson. More details will be presented in Chapter 4 and Chapter 7.

Ms. Xie, the Chinese teacher

Ms. Xie is a female teacher in her mid-thirties and has two children herself. She has been a Mandarin immersion teacher at Forestview International School since the 2017-2018 academic year. Back in China, she worked as an editor in a publishing company in Beijing after college and taught Advanced Placement courses in an international school. She then moved to the U.S. in 2013 and has worked as a part-time substitute teacher for several years. During these years, Ms. Xie also pursued a master's degree and teaching certification and has earned teaching licenses in social studies, ESL, bilingual education, and world language (Mandarin). While

working as the full-time Mandarin immersion teacher in Forestview, Ms. Xie was also pursuing a regular elementary teaching license in a local private college, for which she needed to take evening and weekend classes. Ms. Xie thinks what benefited her most for this new bilingual teacher's role is the bilingual education program she attended. It seems she has been applying a lot of theories and techniques from the program. For example, she used theories of translanguaging and project-based learning in her teaching and planning, which she learned from the courses in the bilingual education program.

Ms. Xie has encountered several challenges in this job. One challenge is to teach both grades and all the subjects except for math: "that's a lot of subjects to prepare, basically learn Chinese language arts, social studies, and science for two grades." (Interview, Ms. Xie, 10/10/2018). Another challenge, as she describes, is the responsibilities and duties as a classroom teacher. This is Ms. Xie's second year as a full-time classroom teacher rather than support staff; she confesses that she is still learning about all of the details such as setting up mailboxes, the systems, and the rules. In terms of teaching, Ms. Xie is happy about her separate classroom space, which is far away from the students' English classroom. She thinks that works well for her because students know her classroom is the space where they need to speak and learn Chinese. Ms. Xie has an assistant teacher, Ms. Song, who is a Hanban visiting teacher, who used to be a high-school English teacher in the Northeastern part of China. Ms. Song started working here in 2017 and had a two-year contract with Hanban and Forestview International School. Ms. Song only speaks Chinese to students and switches between the 4th-grade, 5th- grade, 2nd-grade, and 3rd-grade classes. In this fourth-grade classroom, she usually gives whole-class lectures on pinyin, character writing, or sometimes story-reading. She also provides small group or one-on-one support for some students with lower Chinese proficiency.

Ms. Jones, the English teacher

Ms. Jones is a White female teacher in her early forties. She graduated from college in 2002 and worked as a second-grade teacher for over 12 years in another region of the same state. After staying at home for several years, she had just started working again as a part-time resource teacher in the public elementary school with which Forestview International School shares the building. Beginning in the 2018-2019 academic year, Ms. Jones started teaching as the English teacher for the fourth-grade class in Forestview, but also worked as a resource teacher three days a week for both schools. Working in this dual language school is a challenge for Ms. Jones, although she has worked as a resource teacher in Forestview before. One big concern for Ms. Jones is to fit in the curriculum and meet all the standards within a minimal time frame:

> What surprises me, so in my second-grade classroom we had several meetings and um, it was very clear that most of our day was literacy and math, and then you would try to squeeze in some social studies or science, but it was really like 45 minutes of every day and the rest was, you know, sort of really, really focused on literacy and math. Math was 70 minutes. And right now I'm working at 45 minutes most days and some days are only about 30. So trying to figure out what, what needs to be taught and what can go, it has been tricky. And then, um, with literacy, making sure that I'm hitting the standards that I need to teach fourth graders and they're not the same as fifth grade. So it needs to be very specific to what they can do. But also knowing it is the Common Core and trying to meet all of those. And there are a lot of lot of language and reading and speaking and listening standards. So just trying to make sure I get all those in, but also making sure that they're prepared for what they're doing in Chinese. (Interview, Ms. Jones, 10/08/2018)[9]

Different from Ms. Xie, who appreciates the private classroom space, Ms. Jones wants to have more close physical connections with the Chinese classroom. She confesses that she has not had much training in immersion teaching, but she needs to align the curriculum with Ms. Xie's. She hopes that there is an open door between the two classrooms so that she can constantly

[9] All of the excerpts from interviews throughout the dissertation are verbatim.

communicate with the Chinese teacher and students. She feels that co-planning is not carried out systematically, and it often happens very casually during chats. Speaking of the discourses of teaching and learning in Forestview, Ms. Jones claims that she feels that this school is quite different from where she used to teach. For one thing, she thinks students in Forestview seem very mature and independent about what they need. She attributes these unique characteristics of the fourth graders to the fact that this school is a Chinese immersion charter school where student and parent populations are not "random" or "natural":

> I think we have parents who, language is really important to them and knowing more than one language. Um, so then we, we just get a different population than what you would get in a, in a neighborhood school, public… Just if you think of like for every student that's here, their parents chose for them to be here, you know. And so there's something to be said for parents who would make that choice, they're going to have different values and um, abilities, so we ended up just getting a, not a natural, random group of students. You get students who are travelers who may or may not speak another language, who, um, whose parents are doctors and lawyers and businesspeople who think Mandarin Chinese really important. (Interview, Ms. Jones, 10/08/2018)

During the second teacher interview, Ms. Jones referred back to the issue of parent backgrounds and involvement: she perceives parents as more active in supporting the Chinese side of the teaching in donating and volunteering. In addition, she also confesses to some struggles in teaching at two schools and in navigating her "mainstream" colleagues' opinions toward teaching in a Chinese immersion school. As she claims, she needs to defend this immersion school and defend this need for learning Mandarin, which is not widely accepted in the community. This negativity is also evident in Sung and Tsai's (2019) study, in which they found that students and parents from non-Chinese-immersion classes hold negative opinions of the Chinese immersion classes and students. Ms. Jones wonders whether people's opinions would be different if the immersion language were not Mandarin but French:

> I find that I have to defend it sometimes. But people, I feel like I'm going to speak specifically about Mandarin, but people are like, why? Why would you want your child

> to learn Mandarin? Why would people go to that school? And I think there's a lot of not understanding how big a language Mandarin is and how useful it could be to your child. And then speaking from a language standpoint how good it is for their brains to be learning. I mean in the United States, English, right? It's pretty much it, but our world is continually changing, continually changing and um, we have access to one another, you know, across the globe. And I feel like kind of these kids are getting a really good experience. I do, I feel like, you know, people are like, especially in the other school I work, like "What's going on here? What is this? Why, why would anyone want to do that? Strange." Whereas I wonder if it was French, you know, which is, you know, it would be different. (Interview, Ms. Jones, 01/08/2019)

The Second Research Site: Er'yu Bilingual School

The School District and Neighbourhood

Er'yu Bilingual School is located in a large U. S. city on the East Coast, with a population of over eight million residents. The Department of Education of the city itself is quite large, serving over 1 million students in more than 1, 000 primary and secondary schools. The school district where Er'yu is located consists of one area of the metropolitan region and has 20 PreK-12 schools. The state education department website shows that PreK-12 enrollment for the 2018-2019 academic year in this particular school district was 10, 525 students in total; student demographics are listed as 41% Hispanic, 22% Asian, 18% White, 15% African American, and 3% multiracial, with 9% English language learners, 24% with disabilities, and 64% economically disadvantaged. The school district, as some school staff mentioned to me, is one of the best public school in this metropolitan area. As their website describes, the vision of the district is to ensure equity in their diverse community of learners: "all learners will have access to high-quality, innovative learning environments in each of our unique schools to inspire them to participate as active learners and informed citizens in our community." (School District Website, 2020).

The neighborhood this school district covers has historically served generations of immigrants, but now it has more trendy businesses, restaurants, and places due to gentrification.

More expensive housing projects are also progressively expanding in this area. One big area in the school district is Chinatown, which has the highest concentration of Chinese people outside of Asia. The earliest immigrants from China arrived here in the 1850s with a population of 200 but it attracted more residents during the Chinese exclusion period in the late 19th century. After 1965, there was an influx of Cantonese speakers from Hong Kong and Guangdong Province, and later an influx of Fuzhounese-speaking immigrants from Fujian province arrived in the 1980s and 1990s who speak Mandarin and Fuzhounese as their dialects. It is claimed (anonymous to protect confidentiality, 2009) that Mandarin Chinese is becoming the future of Chinatown and serves as the alignment of the Chinese-immigrant community, although the Cantonese-speaking and Fuzhounese-speaking Chinese immigrants are still the dominant residents in Chinatown.

The School

Er'yu is a public PreK-8 bilingual elementary and middle school located in this Chinatown. Er'yu Bilingual School is described on their school website as a "dual language bilingual school". The school has a long history of being a top-scoring school serving primarily Asian families who expect their children to be fluent English-Mandarin bilinguals, but there are an increasing number of non-Asian students enrolled in the school now. Admission is by lottery, and priority is given to those who already have siblings in the school. As the school report card shows, the student demographics during the 2018-2019 academic year were 70% Asian, 13% Hispanic, 7% White, and 4% Black, with 15% English language learners, 17% students with special needs, and 67% of students qualified for free lunch. During the 2018-2019 academic year, 642 students from PreK-8 were enrolled in Er'yu (Department of Education Website, 2020).

Er'yu was established in 1998 as the first English-Mandarin bilingual school in the city. Although students are from primarily low-income families and minoritized backgrounds, students' academic performance excels and Er'yu maintains nearly perfect attendance, partly because of its high expectations and support from community and parents. However, this school is also high-profile in the local community due to some issues surrounding race, fees, and school policies. Although Er'yu was established as a Mandarin dual language bilingual school as early as 1998, the school, in fact, maintained English-only instruction: Chinese language and cultures were only offered in afterschool programs for an additional fee. Er'yu Bilingual School was not truly a dual language bilingual school until Principal Tsai was appointed in 2011 and implemented the school-wide dual language curriculum. As Principal Tsai described, she started to establish the dual language program in kindergarten and first-grade classes during her first year as the principal; since then, she has grown the dual language program one grade every year, so the 2018-2019 year was the first time the school had dual language programming across the school from kindergarten to eighth grade. Principal Tsai believes that her dual language proposal has worked so far, and that students learning two languages for content areas are excelling academically: she obtained student data to prove to her staff and parents that the dual language program worked. As she remembers, the process of building the dual language program caused a lot of pushback from parents and even teachers, because parents worried that learning two languages would negatively affect students' performance:

> My first couple of years here, parents were against my um, initiative of rolling out the dual language program. They <u>didn't want</u>[10] the dual language program. Their excuse was if it was not broken, why change it? Because the school was a good school at that time when it was English only during the day. Why do we want to take time to learn Chinese

[10] Underlined phrases show that they are produced with higher volume as an emphasis.

> during the day? They don't see the needs of doing that. I had parents protested outside, put our poster yellow ribbon. All kind of craziness and TV station was outside. So they did not want the. Even though the name of the school is "Er'yu" ("Two languages"), it's not two languages. They just want the kids to have Chinese as an afterschool enrichment program. So I have to use my test score to prove to the parents that their worry is not valid. We actually, we actually have better score than English-monolingual students. (Interview, Principal Tsai, Er'yu, 03/21/2019)

As the school website mission describes, "Er'yu incorporates a dual language and dual culture approach with parental involvement and community support to prepare our children to attain the highest standard in an increasingly global society." (Er'yu Bilingual School Website, 2020). The school uses both languages, and all materials (e.g., school websites, flyers, newsletters) to the public are presented in both English and traditional Chinese formats. Staff with Chinese backgrounds, including immigrants from various regions in Mainland China, Taiwan, and Hong Kong, comprise the majority of the school staff, but not all teachers can speak Mandarin. The school offers weekly parent language workshops to teach English and Chinese: non-Chinese-speaking parents can learn Chinese and Chinese-speaking parents—those who are newly immigrated in particular—can attend the ESL workshop.

Principal Tsai

Principal Tsai started teaching in 1987 in this city as an ESL teacher and left in 1990 for a marketing job in Taiwan. She came back in 1995 because of some family issues, later working as ESL teacher, Chinese as a foreign language teacher, instructional specialist for English language learners, and assistant principal in different schools. Principal Tsai believes that her educational experiences as an ESL teacher made her realize that the ESL program does not help minoritized students, which motivated her to do research and implement the dual language program in Er'yu:

> From my experience working with English language learners, I realized the stand-alone ESL program doesn't work. It doesn't, you know, it does not work when the students are learning English in isolation, not related to their content. It does not help them prepare for the standardized tests. The state does not give English language learners time, to learn

> English first and then learn the content subject. They are all required to do a standardized test starting the second year in this country. So by teaching them English in isolation, deprive them the opportunities to learn the content knowledge alongside with their peers, which is not the best educational approach… I was regional instructional specialist, I wrote a new school proposal for dual language school, English and Chinese dual language school grade six to twelve. Um, that proposal caught the chancellor's eyes, I think. (Interview, Principal Tsai, 03/21/2019)

Implementing this dual language program was not easy, and she has encountered many challenges. In addition to the criticism from parents, Principal Tsai also described her efforts to prepare materials and develop teacher training programs. As she stated, finding qualified bilingual teachers in the city is very hard because not many teachers are certified Chinese-English bilingual teachers. In order to pick qualified potential bilingual teachers, she reached out to a university and made a contract to make Er'yu a "lab site" for the bilingual education department where student teachers received training.

The Fourth-grade Class

The class that I conducted research in is one of the three classes in the fourth-grade team. Three content teachers—one bilingual Chinese teacher (Ms. Ma), one English language arts teacher (Ms. Lin), and one math and science teacher (Ms. Leung[11]) work as a team to teach three 4th-grade classes. All three teachers are of Chinese descent, although only Ms. Ma is Mandarin-English bilingual. Each teacher has their own classroom; the Chinese and English classrooms are across the hall from one another and the math/science classroom is next to the English one.

[11] Ms. Leung is a young teacher in her twenties. I visited her classroom for observations and communicated with her regularly but did not include her for interviews or videotape her classroom.

Table 3.2. The Er'yu 4th-grade class weekly schedule

	Monday	Tuesday	Wednesday	Thursday	Friday
8: 20 – 9:05	Gym	Social Studies with Ms. Ma	Maths with Ms. Leung	ELA with Ms. Lin	Social Emotional Learning
9:05-9:50	ELA with Ms. Lin	CLA with Ms. Ma	Science with Ms. Leung	Social studies with Ms. Lin	ELA with Ms. Lin
9:50 – 10:35	ELA with Ms. Lin	ELA with Ms. Lin	ELA with Ms. Lin	Science with Ms. Ma	Maths with Ms. Leung
10: 35 – 11: 25	Maths with Ms. Leung	Music	Social studies with Ms. Lin	Science with Ms. Leung	Science with Ms. Ma
11: 25 – 12: 15	Lunch				
12: 15 – 13:05	Science with Ms. Leung	Dance/Theater	Math with Ms. Ma	Maths with Ms. Ma	Art
13: 05 – 13: 50	Math with Ms. Ma	Math with Ms. Leung	CLA with Ms. Ma	Art	Technology
13: 50 – 14: 35	CLA with Ms. Ma	Math with Ms. Leung	Art	Math with Ms. Leung	ELA with Ms. Lin

Students switch classes regularly to attend different periods within the "departmentalization" structure of the curriculum (more details in Chapter 5). Students start schooling in the classroom of a particular subject and then need to switch classrooms. Most students carry a suitcase with all of the books and materials every day. Ms. Lin's class often focuses on literacy exclusively and sometimes incorporates social studies; Ms. Leung only teaches math and science in English. Ms. Ma, however, needs to cover all the subjects, although her primary focus is social studies and Chinese literacy. Officially, the class periods are evenly divided among these three major areas, with each teacher having nine 45-minute periods of instructional time each week (see Table 3.2 above). In reality, teachers often adjust their daily teaching schedule based on the testing schedule. For example, Ms. Ma focused on literacy and social studies in the first half of the semester and focused more on the math and science curriculum in the second half due to the state-level math and science test in April. The team works closely to make sure the topics and strategies are aligned in the three major content classes with a very well laid-out schedule. As Ms. Lin described:

> For example, we do two weeks of fiction texts and then two weeks of nonfiction texts for each month. So whenever the science topic comes up within that month, that week we'll do science and then social studies. That week we'll do social studies. Topics might be different. The strategies are supposed to match across all the subjects. So like there's a general umbrella of what we're covering for the month... We plan out we co-plan. So we talk about, like what we're going to cover for each unit. (Interview, Ms. Lin, 02/11/2019)

The fourth-grade class has twenty-two students: seventeen students participated in my study, and twelve participated in the individual interviews. Out of the twenty-two students, sixteen students have Chinese "heritage" and have family members who speak Mandarin, Cantonese or/and Chinese dialects. The other six come from non-Chinese-heritage families; five of them speak English and at least one additional language at home. Students' demographic information and linguistic backgrounds are included in Chapter 4. Three students, Camila, Caitlin, and Sarah are the focal learners that I have followed closely during my fieldwork. I also conducted individual interviews with Camila's mother and Caitlin's father.

Ms. Ma, the Chinese teacher

Ms. Ma is a female teacher in her early fifties and a first-generation immigrant from Taiwan. She still goes back to Taiwan every year to visit family. Ms. Ma started teaching in Er'yu 20 years ago after graduating from a university in the city with a Bachelor's degree in finance and later a Master's degree in elementary education. She first worked in Er'yu as a PreK and Kindergarten teacher for 12 years before moving up to teach higher grades. The 2018-2019 academic year was her fourth-year teaching fourth graders. Speaking of challenges in teaching, one issue, as Ms. Ma pointed out, is there is not much time to cover all the topics that she wants to cover, which is the same challenge as Ms. Jones—the English teacher in Forestview—reported. Another big challenge is the lack of resources in Chinese. Most of the resources, as Ms. Ma claimed, are in English and it is hard to find appropriate Chinese materials:

> Most of the resources we find is in English. So if you want something in Chinese it's

> always, you need to go the extra mile to look for either create or look for cause we always, all the Chinese teachers face the same challenges because we all had to create our own packets and we need to look for, it's hard to find appropriate, passages or articles to teach them good skills and like the, you know, the English part because you know, the publisher companies, they compile everything… We follow a new curriculum, we follow the new program and then when the Chinese part, we need to think about do we want to drop everything we did before and then follow the English? But you know, Chinese takes many years to build and all of a sudden you said English, you're switching to a new program. Now what do we do? You know, you want to start over again? (Interview, Ms. Ma, 02/13/2019)

Ms. Ma has high expectations for the students in terms of meeting her standards, finishing homework on time, and getting their homework signed by parents. As she believes, students need to do these tasks because it is important for their outcomes and future:

> Like we built it into our routine because they need to have it. They need to have your test signed. They had to have, they had to correct a test. If you don't, if you don't give it back to me, I'm going to deduct 10 points from your grade. So after they start to care more because they don't want to get 10 point deducted ((laughing)). So make sure your parents sign and make sure you correct the all. Otherwise I am gonna take away the points. (Interview, Ms. Ma, 02/13/2019)

Ms. Lin, the English language arts teacher

Ms. Lin has Chinese "heritage", but she is English monolingual. Ms. Lin was in the profession of banking for ten years before starting her teaching career. As with Ms. Ma, Er'yu is the only school Ms. Lin has taught at, and she has been teaching here for 14 years. She started off as a second-grade teacher for about 5-7 years and then switched to third, fourth, and fifth grade. Ms. Lin has her Master's in childhood education and then got both ESL and special education certification as well. Sometimes Ms. Lin needs to administer the ESL tests for students. Her primary teaching responsibilities focus on English literacy skills; the social studies content is incorporated into her literacy curriculum. As Ms. Lin perceives, because of the structure of the classes, she has honed in on knowing how to teach English literacy. Meanwhile, she perceives herself as not as much of an expert in math or science anymore.

Ms. Lin focuses a lot on students' development of metacognitive skills and the ability to solve problems for high academic performance. Although students are at very different levels, Ms. Lin emphasizes their individual responsibilities for academic performance. Her teaching focuses on learning and practicing strategies. There are many classroom visual supports for students so that individual students with different levels can use these as prompts independently. But Ms. Lin thinks one negative impact of that is that it stifles students' creativity, and students with higher levels tend to copy the information rather than processing and thinking about the information. As Ms. Lin explains, developing each learner's skill in monitoring their own learning and absorbing the strategy is essential:

> We teach them accountable talk, sentence frames. We tell them to take responsibility for their own learning. So they have to, we have the essential question, which every, every time we started lessons, which starts them off with them preparing themselves, for what they're about to learn. And then we give them a learning target, which is the strategy on how they're going to, how they're going to accomplish that goal in the central question. So then at the end, so then we, we introduce that, we talk about what they already know about that I teach them the strategy, they apply the strategy. Then at the end they have a group share at the end of the lesson where they talk to each other about what they learned or what they still have questions about… I write it on their grade sheet, like "you need to work on this". (Interview, Ms. Lin, 02/11/2019)

So far, I have described the research context of these two Chinese dual language schools, including the demographics and histories of the communities and the schools. I have also described the backgrounds of the 4th-grade classes, the principals, and teachers in Forestview International School and Er'yu Bilingual School respectively. To situate the understanding of language practices, policy, and socialization within the particular sociocultural and historical contexts, I elaborated on how the two schools were founded and how principals and teachers in the two schools perceive the school curriculum, culture, and dual language learning. As this chapter shows, both Forestview and Er'yu adopt the 50/50 model of Chinese dual language model and set separate classrooms for instruction in Chinese and in English. Nevertheless, the

two schools are situated in disparate communities and neighborhoods and are founded with quite different motivations. Forestview was founded very recently in an affluent suburban community by a group of Anglo parents with the goal of developing Chinese foreign language and cultural skills for their children. The school establishes close connections with resources and organizations in China to secure funding and learning opportunities, and most students are from non-Chinese-speaking households. In contrast, located in the Chinatown of a big city, Er'yu has a long history as a Chinese-English bilingual school that serves primarily Chinese immigrant (particularly low-income) households. It has the goal of bilingual and bicultural learning and of high academic achievement. It was founded by Taiwanese immigrant communities in the first place and has been using resources and materials from Taiwan. The student and teacher population in Er'yu is more diverse but most of them are from Chinese immigrant households. These differences can be somewhat indicated by their school names: while Forestview is named as an "international" school, Er'yu self-identifies as a bilingual school.

Chapter Four: Methodology

This chapter describes the overall research design and rationale for my research inquiry. The chapter starts with the design and methodological approach, then describes the process of gaining access to the two research sites and the three stages of data generation across the 2018-2019 academic year, including the data sources, methods, and participant information. I then elucidate the two stages of data analysis, which included two cycles of coding and categorizing for the whole dataset and focused analysis in answering the three research questions respectively. I then discuss my researcher positionality and reflexivity, and how it has affected the process of data generation and data analysis. This chapter concludes with a discussion of the validity, reliability, and limitations of my study.

Overall Research Design

The overall goal of my study is to understand how Chinese-English dual language programs are implemented locally through multiple layers of appropriation, how dual language teaching is organized within them linguistically, socially, and spatially, and how dual language learners participate in and make sense of dual language learning. My research adopts a constructivist stance to understand participants' perceptions and the local discourses of policy and practice. As Cresswell and Miller (2000) claim, one important element of conducting constructivist qualitative research is "to build trust with participants…establish rapport so that participants are comfortable disclosing information and reciprocate by giving back to people being studied" (p. 128). My study is both exploratory and explanatory (Marshall & Rossman, 2016), aiming to investigate (1) what's going on in the classroom, (2) what are factors that might shape classroom interactions, and (3) what is being constructed and negotiated through these interactions.

Maxwell (2013) argues for the need to use multiple methods in qualitative research. As he describes, there are two major advantages: (1) using multiple methods works as a check on one another for a more secure understanding of the issues, (2) using multiple methods helps provide information for different aspects of the phenomenon or different phenomena that researchers are studying. Greene (2007) calls the use of multiple methods a dialectic stance where researchers are able to reexamine the inquiries with depth and validity. To answer the research questions and to understand participants' perspectives with more depth and higher validity, I combine the methodology of instrumental multi-sited case study, an ethnographic approach, and classroom discourse analysis, which honors my epistemological commitment in representing and exploring both nuances and complexities in my research practices.

Multi-sited, Instrumental, and Exploratory Case Study

This research follows Stake's (1995) collective (or multiple) qualitative case study. In qualitative case studies, researchers explore a "real-life, contemporary bounded system (a case) or multiple bounded systems (cases) over time, through detailed, in-depth data collection involving multiple sources of information" (Creswell, 2013, p. 97), together with the "uniqueness and complexity of it, and its embeddedness and interaction with its contexts" (Merriam, 2009, p. 16). Collective case study "involves collecting and analyzing data from several cases and can be distinguished from the single case that may have subunits or subcases embedded with "(Merriam, 2009, p. 49). The collective cases will demonstrate the variation across the cases and lead to more compelling interpretation. Since there are overall two types of dual language programs—one-way dual language and two-way dual language—my study adopts a multi-sited case study methodology to purposely explore two, respectively representing each.

As Stake (1995) reminds us, one criterion in designing a collective case study is to include multiple representations in order to maximize understanding. From a theoretical perspective, a few cases can be studied in depth, where certain activities and issues will come up as a pattern that leads to certain generations of theoretical models, principals, and analyses (Stake, 1995, p. 153). From a methodological point of view, by investigating cases that share similarities or contrasts, researchers can "understand a single-case finding, grounding it by specifying how and where, and if possible, why it carries on as it does" so that the findings can be ensured with precision, validity, and stability (Miles & Huberman, 1994, p. 29). In alignment with these claims, I use "purposive sampling" (or "critical case sampling"). As Dörnyei (2007) maintains, researchers are deliberate in targeting cases, through purposive sampling, that offer "a dramatic or full representation of the phenomenon, either by their intensity or by their uniqueness" (p. 128). I purposefully selected two schools and classes that reflect contrasting features such as geographic locations, school types, histories, and diversity in terms of students' linguistic and socioeconomic backgrounds (see details in Chapter 3). Within these two cases, I also purposefully selected six focal students with diverse backgrounds for closer observation and analysis.

My case study aims to be both instrumental and exploratory. For one purpose, findings from this research offer the opportunity to theorize through the detailed analysis of the cases. As Merriam (2009) describes, the instrumental case provides insights and understanding of a bigger issue or phenomena while the actual case itself of secondary interests. Findings from this study aim to gain insights into the phenomenon of dual language learning and policymaking and are instrumental in informing policy, design, pedagogy, and multilingual development for dual language education in general. For another purpose, the case study is exploratory, as the research

questions also aim to answer "how" and "what" in order to gain an extensive description of certain social phenomena where there are no predetermined outcomes (Yin, 2014). This study therefore explores the social phenomena in these two bounded cases (two schools) in order to gain an extensive understanding of "what" and "how": investigate "what" the practices and process of the dual language learning, teaching, and policy planning look like, and "how" the practices and processes are operated in certain ways.

Ethnographic and Discursive Approach

This study adopts an ethnographic and discursive approach, which have been influential in the field of linguistic anthropology. As a well-known qualitative research approach, ethnography focuses on the study of human society and culture; *culture* "essentially refers to the beliefs, values, and attitudes that structure the behavior patterns of a specific group of people" (Merriam & Tisdell, 2015, p. 29). Ethnography involves *thick description* of social and cultural behaviors and beliefs through researchers' immersion in the communities, groups of people, and cultures. Discourse analysis, "which focuses on the language of the story or the spoken text, and also attends to the speaker's intonation, pitch, and pauses" (Merriam & Tisdell, 2015, p. 35) is a qualitative approach used to explore beliefs, language use, and sociocultural understandings of community and individuals. Combing these two approaches into an ethnographic and discursive approach has been increasingly used by sociolinguists to study language development and use across different social and cultural groups. This approach is essentially aligned with the ecological theoretical framing of this research and the paradigm that has guided my research design, data generation, theorizing, and analysis.

My epistemological stance, which is social constructivist, needs an ethnographic approach to explore the locally constructed, interpreted, and negotiated norms around

language/semiotics, cultures, and learning. From a linguistic anthropological lens, language is viewed as "a cultural resource and speaking as a cultural practice" (Duranti, 1997, p. 6) where speakers are social actors and speaking involves ideologically mediated interactions where cultural practices, identities, and social memberships intersect. The two research sites and schools in my research have demonstrated sociocultural and historical characteristics that require an extended and emic inquiry in decoding the interaction between culture, society, language, and literacy practices. An ethnographic and discursive approach has been used to examine linguistic features, verbal and nonverbal communication styles, and narrative traditions in different speech communities and culturally relevant school settings. Philips, for example, documented children's use of speaking, listening, and nonverbal cues on the Warm Spring Reservation in Oregon in her work *The Invisible Culture (1983)*, and Boggs explored meaning-making and narratives of Hawaiian children in his work *Speaking, Relating and Learning: A Study of Hawaii Children at Home and at School (1985*). Similarly, Heath (1983) conducted ethnography and presented different ways of speaking, reading, and writing for children coming from Black and White working-class and White middle-class communities in the southern United States. These studies, among others, present revealing evidence that people are socialized into and use different but equally logical ways of communicating in their communities, and people actively build and rebuild their worlds through languages, resources, and interactions.

Second, an ethnographic and discursive approach has been very useful to analyze on-going and micro-level interactions in understanding learners' discursive and literacy patterns in their home communities and the expected linguistic codes in school settings, which further informs appropriate language practices that address cultural and social differences (e.g., Cazden, 2001; Erickson & Shultz, 1982; Gee, 2012). Classrooms work as cultural institutions where

learners are required to achieve particular sociocultural tasks (Bloome et al., 1989). Micro-level classroom interactions can illustrate important messages about learners' discursive practices and participation that enact ideologies and power dynamics (Bloome et al., 2005; De Costa, 2011; Gutiérrez et al., 1995). Examining micro-level classroom interactions can also help improve effective and appropriate teaching (e.g., Dorr-Bremme, 1990; Schultz, 2003; Rymes, 2016; Zheng, 2016). In this sense, an ethnographic and discursive approach will guide my research to understand how the language teaching and policy model is realized and implemented through multiple layers of school cultures (Freeman, 1998). It will also guide me to investigate the micro-level language practices, ideological constructions, and social interactions that shape learners' bi/multilingual development in my study. To aid that, I chose two frameworks of classroom discourse analysis (Rymes, 2016; Bloome et al., 2005) to inform how I analyze classroom data (more in data analysis section).

Data Generation Process and Methods

Site Recruitment and Access

My research took place throughout the 2018-2019 school year, from late August in 2018 to the end of May in 2019. Before I embarked on this study, I had carried out a pilot study on the topic of classroom language practices in a Chinese immersion class during the 2016-2017 academic year in the first research site—Forestview International School (see Zheng, 2019). In this site, I gradually built rapport with the parents, students, teachers, and principals from volunteering and research work prior to and during the pilot. I started volunteering in this school as the assistant Chinese teacher in early 2016 and have participated in events such as spring concerts and field trips. From the year 2016 to the year 2018, I observed three Chinese teachers' classrooms; two of them had left and the previous principal had retired when I reached out to the

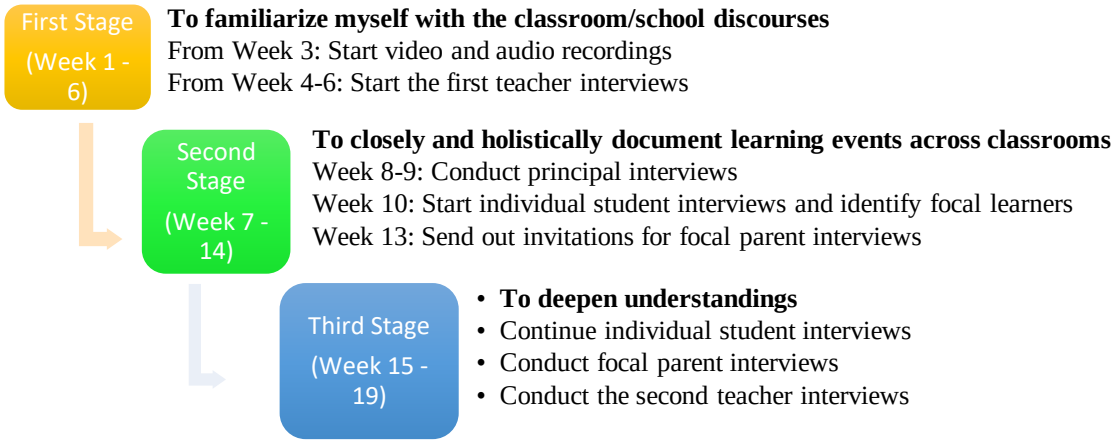
new principal in the spring of 2018 about my interest in conducting this study. The new Principal, Ms. Milton, met with me in April and was excited about my research project. She wrote a support letter and later invited me to attend the all-staff meeting on August 30, 2018. I participated in the all-staff meeting and later communicated with the two focal teachers of this study in person for their consent before commencing fieldwork.

For Er'yu Bilingual School, I started reaching out via email to the principals of several public Chinese dual language schools in this city in the beginning of 2018. I had done some online research about these schools before I scheduled school visits to three of them in April 2018. These schools were selected depending on my judgment of the school context (e.g., the student demographics, the geographic location, the curriculum organization, and the interaction with the principals). In April 2018, I spent three days visiting these three schools, observing some classrooms, and talking to the school community. During the visit, I got very interested in Er'yu and received strong support from Principal Tsai for my research topic, so I selected Er'yu as my second research site. After clearing local and human subjects permissions processes, I conducted a semester of data generation in the first research site in the Fall semester, then for the Spring semester I moved to the city where Er'yu was located and collected data there until the end of May.

Data Generation Stages

For each research site, I conducted research over the course of 4.5 months (19 weeks), visited each class twice per week, and spent significant time observing both classroom and out-of-classroom activities. For one research day, I usually spent the whole school day. The length of the visit on the second day ranged from 3 hours to the whole school day, depending on the particular class and curriculum schedule.

Table 4.1. Three stages of study data generation



The first stage of data generation

The process of data generation remained the same across these two sites and went through three major stages. Throughout the three stages of data generation, I participated in multiple school and classroom events (e.g., New Year Celebration, class field trip, class exhibition for parents) where I got to know some parents, and more members of the school communities and the neighborhoods.

For the first stage—from the 1st week to the 6th week, I tried to understand the school/class environment, to build relationships with students, and to observe classroom interaction closely. This stage involved close classroom and school observation, active communication with school staff, intensive notetaking, and the collection of classroom artifacts and photographs. At around the 3rd week, I started videotaping and audiotaping classroom interactions occasionally. I also conducted the first semi-structured interview with the teachers from the 4th week to the 6th week and had informal conversations with students, teachers, and other school staff. At the end of this research stage, I had developed an understanding of the class routines and had developed a closer relationship with students and teachers.

The second stage of data generation

From the 7th week to the 14th week, I recorded micro-level classroom interactions intensively to capture various classroom learning activities, which included whole-class instructional time, group work, pair work, and independent work. I also started to collect work from individual students, attend more activities with the students outside of their class time (e.g., lunch hour, recess time), and observe classes such as gym, art, and music. With more knowledge about the school and more targeted questions, I conducted the principal interview at the beginning of this research stage (at the 8th or 9th week). Through these interactions and observations, I started to identity focal students for closer study through reviewing my field notes and classroom video/audios. Potential focal learners were selected based on two major rationales: 1) to include students with diverse backgrounds (e.g., racial, ethnic, linguistic, social and cultural, and gender backgrounds); and 2) to select students who had developed stronger relationships with me and who were excited to be in my project. From the middle period of this stage (the 10th week), I interviewed students individually: I started with students who were not initially noted as potential focal learners, and then focal learners. Starting from the 13th week, I sent out invitations for parent interviews. The invitation for parent interviews went out in two steps. For the first step, I selected parents for five students in each site who I noted as potential focal learners and gave these students a letter of invitation. If I did not receive responses, I reached out to them informally and give them a second copy of the invitation. Meanwhile, I gave invitation letters to three additional students who were identified as potential focal learners.

The third stage of data generation

For the last stage of data generation (the 15th week to the 19th week), I continued the on-going video/audio recordings, interviews with students, and collections of artifacts and

classroom learning material. Additionally, I conducted individual interviews with focal parents as well as the final individual interview with the teachers. At this stage, the goal was to understand the focal learners' language development and socialization in and out of the classroom space. I also aimed to capture the teachers' perceptions of their pedagogical changes and their reflections on their pedagogy. Table 4.1 above captures the major research events and purposes for the three major stages of data generation. Intensive fieldnotes, close observation, collection of artifacts, and informal communication with school staff, students, and teachers were continuous throughout the research stages.

Data Source and Methods

"Data are not simply discovered by the researcher but are jointly produced in the encounter between researcher and researched" (Bucholtz, 2011, p. 37). This philosophy guided every stage of my data generation. I believe that the various aspects of my background, and my interaction with and positionality in relation to the particular social and physical spaces, the participants, and the timescales while I was in the field shape the nature of data generation methods and data sources (see more in the researcher positionality section below). The nature of my data generation was dynamic, and shifted in different stages, the different classrooms, and schools. The entire dataset is comprised of video and audio recordings of classroom events, ethnographic field notes from participant observation of 55 class visits over 268 hours, 17 audio-recorded individual interviews with school principals, teachers, and focal parents, 22 video-recorded individual interviews with students, over 600 photographs of artifacts, four researcher journal entries, and continuous informal conversations with teachers, staff, students, and parents (see Table 4.2 for the whole dataset).

Table 4.2. Research dataset

Research Site	*Forestview International*	*Er'yu Bilingual*
Class Video	11 hour 40 minutes	6 hours 30 minutes
Class Audio	1 hour 20 minutes	3 hour 15 minutes
Field Notes	160 hours' observation of 30 class visits	108 hours' observation of 25 class visits
Videotaped Student Interview	10 Interviews & 10 participants	12 Interviews & 12 participants
Audiotaped Teacher Interview	5 interviews & 3 participants	4 interviews & 2 participants
Audiotaped Principal Interview	1 Interview & 1 participant	1 Interview & 1 participant
Audiotaped Parent Interview	4 Interviews & 4 participants	2 Interviews & 2 participants
Photos of Artifacts	393	231
Researcher Reflective Journal	2 Journal entries	2 Journal entries

Participant observation

As Dewalt and Dewalt claim, participant observation is both "a data collection and an analytical tool" (2011, p. 10), which enhances the quality of data collected, the quality of the interpretation of data, and the process of formulating new questions. Participant observation was a crucial data source for me to understand the school discourses, classroom interactions, and participants' linguistic, social, and cultural worlds. It was also critical for me to build rapport with participants in order to understand the locally constructed discourses around language use and learning outcomes. It gave me clues to decide when to ask further questions and what questions to ask after each research date to understand participants' points of view.

My participation in classroom events varied from marginal to more involved, depending on the different activities and the nature of the classroom organization. For overall classroom observation I had "moderate participation", where a researcher is "identifiable as a researcher but does not actively participate or only occasionally participate" (Dewalt & Dewalt, 2011, p. 23). It often involved a structured observation protocol with sometimes more active and higher participation. Observing classroom events and instruction in English and Chinese instructional

times were major research activities. This type of observation is more moderate, and I followed an observational protocol (see Appendix A) to capture the different aspects of interaction, such as social interactions, physical spaces, discursive features, and students' and teachers' interactions with tools, resources, and materials. I observed these classrooms twice a week and often stayed in the classroom the whole time. I often sat on the back of the classroom (with my laptop and camera) to avoid any interruption when I observed the whole-class lessons; I often joined the groups, pairs, or individuals and communicated with them more openly during break-out times with a small notebook in hand. In addition to the major classroom events, I occasionally followed the students into other classes (e.g., gyms, art, music) after getting the teachers' consent. For these classes, I only brought my notebook and mingled with the students more, which offered more active participation and communication. For example, I played Taichi in the Forestview gym with students; I went to the music/art classes and learned the techniques together with the Er'yu students. For these classrooms, I only took field notes without videotaping or audiotaping.

In addition, I participated in other events such as public library field trips, the New Year celebrations, the science exhibition, and joined students and teachers for recess time and lunch hours. These events involved more "active participation" (Dewalt & Dewalt, 2011), where the ethnographer shares and acts like others to learn the cultural practices (e.g., talking about my own life during teacher lunch hour). I used these opportunities to learn the school discourses, to observe the socialization patterns among students, and to communicate informally with participants. Overall, I had more opportunities in Forestview than in Er'yu. One big reason is that students in Forestview often gathered as a class during these events, but students in Er'yu were often split into many small groups with their fourth-grade peers from two other classes.

Moreover, there are more restrictions to enter the dining areas in Er'yu, which makes socializing with students in Er'yu during these times more difficult.

Ethnographic field notes

As I mentioned earlier, I often jotted down notes on my laptop or in my notebook during participant observation. The notes could be short phrases, sentences, paraphrases, symbols, and sometimes drawings to track students' movements and seating. At the end of each research day, I organized my notes and spent hours writing extensive field notes on my laptop. The narrative was often chronological and described the major pedagogical events that had happened. I also described some scenarios with details such as dialogues, direct quotations of participants, and depiction of details. These details were often accompanied by other pictures and video/audio data. For example, I usually added a link to the image/video/audio to contextualize the field notes. As Emerson et al. (2014) remind us, writing ethnographic fieldnote heightens and frames the "interpretive and analytic process" where the researcher is making sense of the moments by "intuitively selecting, highlighting and ordering the details" as well as making potential links between data and events (p. 79).

In addition, I kept reflective notes for analytic purposes, which can be categorized as "in-process memos" (Emerson et al., 2014). I recorded some incidents with some interpretive thoughts or questions. For example, I connected some data to some theories or analytical pieces I had read before. I also asked questions, made connections (e.g., comparing and contrasting), and sometimes added comments to remind myself of follow-ups (e.g., to ask the teacher a question or adjust the focus of videotaping). Sometimes I questioned my interpretation and my positionalities and tried to reflect on my potential bias in understanding. Ethnographic field notes are crucial in ethnographic research, but it should be noted that, "all descriptions are selective,

purposed, angled and voiced because they are authored" (Emerson et al., 2014, p. 126). This is the same with participant observation as "there is no 'view from nowhere,' no gaze that is not positioned" (Irvine & Gal, 2000, p. 36).

Class videos and audios

Since one central focus of the research is on the use of linguistic, semiotic, spatial, and material resources in dual language teaching and learning, video recordings of class events capture essential sociolinguistic data. Video recordings preserve and present not only the linguistic, semiotic, and material resources that learners are engaged with, but also the micro-interactions involved in the process of learning and teaching. Each video and audio was reviewed at the end of the research day and supplemented with the contextual information (see details in the data analysis section).

In terms of video recording, I chose to use my camcorder most of the time although I sometimes used my iPhone if I needed to mingle with the small groups. In terms of setting up the equipment, I often held my camcorder and walked in the back of the room to record whole-class instruction. I sometimes switched the position and camcorder lens (zoom in and out) to capture some central figures or artifacts used in the particular lesson. These artifacts were often photographed as well. Occasionally, I set the camera on the trifold if it was a very long whole-class session, and when students did not move around throughout the lesson. To record the group, pair, and individual learning events, I sometimes held the camera and occasionally used my own iPhone in order not to interrupt the group dynamics and to capture the fluidity of micro-level interactions by switching, zooming in and out to focus on particular angles.

I was planning to video record whole-classroom instruction and group work once respectively in the Chinese instructional time and the English instructional time each week. In

reality, the frequency of whole-class lessons is higher than that of group lessons, particularly in Er'yu. The frequency and duration of the video recordings are dependent on the particular lesson and plans. In general, I made sure that learning events in various content areas were video recorded, including Chinese literacy, English literacy, math, science, and social studies. Some research days produced more video recordings than I planned if I perceived some classroom interactions or lessons would be meaningful to address my research questions, or if there was a chain of learning activities to be documented. In general, the video recordings for whole-class lessons range from 5 to 35 minutes, while the videos for group or pair work last from 3 to 10 minutes. About 10 videos on average were generated from the two fieldwork days each week.

Semi-structured formal interviews

I conducted individual formal interviews with teachers, principals, students, and several focal parents (see Appendices B-E for interview protocols). These interviews were semi-structured, but I also asked follow-up questions to further elicit interviewees' explanations during the interview. To make sure I understood their points accurately, I often asked clarification questions or reframed their major points to confirm my interpretation. Interviews with teachers, principals, and parents were audio recorded while interviews with students were video recorded. During the interviews, I also jotted down notes such as nonverbal cues or questions for future analytical purposes. Interviews provided significant insights from participants' point of view but also demonstrated how they interacted with me. From this perspective, the interview data with its nonverbal cues, together with the material, semiotic and spatial organization of the places within which the interviews take place, reveal messages such as interviewees' understandings and their perceived relationships with me.

Semi-structured formal interviews with teachers

I interviewed the English (Ms. Jones and Ms. Lin) and Chinese teachers (Ms. Xie and Ms. Ma) individually twice at each school. The first interview was conducted in the first research stage, and the second one conducted in the third research stage (as described above) in both research sites. The first formal interview aimed to know more about these teachers' linguistic and educational backgrounds, professional training, teaching philosophies, overall academic goals, as well as students' backgrounds. The second interview aimed to capture teachers' reflections on their practices, perceptions toward students' classroom learning progress, as well as thoughts toward the dual language learning models (see Appendix B1 and B2 for Teacher Interview Protocols). Before starting the interview, I asked the teachers whether they would like to use Chinese or English for the interview (if the teacher was English-Chinese bilingual). Both of the Chinese literacy teachers chose to use English, but they translanguaged throughout the interviews. These interviews were conducted at school during lunch hour and recess time. Each individual interview lasted between 25 and 45 minutes. For the Forestview site, I conducted an additional interview once with the assistant teacher Ms. Song from Hanban, and she preferred to use Chinese only. Since she had worked with this class for over one year at the time of data generation, I wanted to get some of her perspectives on the students and the school discourse.

Semi-structured formal interviews with principals

I interviewed the school principals—Principal Milton in Forestview and Principal Tsai in Er'yu—at the beginning of the second research stage. The semi-structured formal principal interview asked questions about the histories and vision of the school, the educational and professional backgrounds of the principals, the background of the student and staff population, the nature of parental involvement, as well as the principals' perceptions toward the dual

language education model (see Appendix C for the Principal Interview Protocol). Principal Milton in Forestview is English monolingual, so that interview was conducted in English; Principal Tsai in Er'yu is bilingual, and she preferred to use English but translanguaged throughout the interview. Both interviews were conducted in the principal's office and lasted 60 to 75 minutes. Besides these formal interviews, I had informal talks with both of them and asked additional questions before I started data generation, and before I left the site. Principal Milton also asked me to report a summary of the findings, so I met with her in September 2019 and presented some initial findings.

Video recorded individual interviews with students

At the second research stage, I started to conduct individual formal interviews with all students who gave me consent (see Table 4.3 below for the linguistic backgrounds of students interviewed). The interview questions (see Appendix D) were designed to understand: 1) students language use across contexts; 2) students' perceptions of learning in the dual language school; 3) students' motivations and attitudes toward learning Chinese and toward bi/multilingualism; and 4) students' hobbies and extracurricular activities. For each interview, several questions were framed to connect with the particular students' classroom learning events, if I needed additional explanations from them. All students used English throughout the interviews, although I started the interviews by asking their preferred language. I also informed them in the beginning that this interview was not to evaluate their language skills, and there was no right or wrong answer as the purpose was to learn from their experiences and thoughts.

Student interactions in the interviews varied from person to person: some of them were very expressive storytellers and the interview took much longer, while some of them appeared to be less talkative. Depending on the very different ways of interaction, I asked questions in

different ways: for some students, I needed to ask many follow-up open-ended questions, and for some other students, I needed to sometimes gently bring them back to the topic by asking them clarification questions. I was also cautious to ensure that I understood their points accurately so that I asked many clarification questions, had confirmation checks, or requested them to explain some points further. These interviews were video recorded intentionally to capture their non-verbal cues. Demographic and language backgrounds of participants are elicited as self-identified during individual interviews (see more in Chapter 7).

Table 4.3. Backgrounds of students interviewed

Students from Forestview	**Gender**	**Home languages[12]**	**Students from Er'yu**	**Gender**	**Home languages**
Wilson Taylor	Male	English	Camila Jansen	Female	English & Spanish
Yuchi Zhang	Female	Mandarin & English with siblings	Caitlin Suzuki-Nilsson	Female	Japanese, Swedish & English
Kevin Martin	Male	English & Spanish	Sarah Liang	Female	Taishanese, Mandarin & English
Emily Roberts	Female	English	Abigail Heng	Female	Cantonese, Mandarin, Malay & English with siblings
Brady Johnson	Male	English	Edison Reed	Male	English & a little Spanish
Elena Miller	Female	English & Thai	Elizabeth Dai	Female	Cantonese, Mandarin & English
Ken Lee	Male	English	Gary Woo	Male	English & Mandarin
Rebecca Moore	Female	English	Jennifer Chen	Female	Mandarin & Fuzhounese
Summer Santos	Female	English	Leo Bryne	Male	Spanish & English
William Anderson	Male	English	Scott Lin	Male	Cantonese & English with siblings
			Weijia Lou	Male	Mandarin
			Luxi Rodriguez	Female	Cantonese, Mandarin, Spanish & English

[12] The languages are listed as students self-reported during the interview. The sequence is aligned with students' perceived frequency of or comfort in using the languages outside of school with family members.

Semi-structured formal interviews with focal parents

Interviewing focal parents was vital for me to further understand the focal learners' language development and socialization outside of school; it was also essential for me to understand more about their families' linguistic and social backgrounds and students' learning trajectories over time. The parent interview questions were designed to examine learners' exposure to and experiences with language(s), learners' literacy practices at home, learners' family trajectories and family language policies, parental involvement and rationales for enrolling their children in this dual language school (see Appendix E for parent interview protocol). After receiving my invitation letter, these parents reached out to me via email and expressed their interests. I recruited seven parents of the focal learners, five parents of four students in Forestview and two parents in Er'yu (see Table 4.4 below for parents' backgrounds). Only one interview was conducted in Mandarin Chinese, as this parent requested. These interviews were conducted at a location of the parents' choice. Two interviews were conducted at the students' households, which provided me with additional knowledge of their family backgrounds. One parent interview was conducted in a coffee shop and three were held in the public library. Most interviews lasted 60 to 70 minutes. All interviews were audio recorded.

Table 4.4. Background of parents interviewed[13]

Research Site	Parent Participants	Student Name	Relationship	Race/ Ethnicity	Language Spoken
Forestview	Wanzhen	Yuchi	Mother	Asian	Mandarin & English
Forestview	Candice	Kevin	Mother	White	English & Spanish
Forestview	Lisa	Summer	Mother	White	English
Forestview	Charles & Linda	Wilson	Father & Mother	White	English

[13] The languages, race and ethnicity are listed as participants self-reported during interviews.

Er'yu	Owen	Caitlin	Father	White	Swedish & English
Er'yu	Valerie	Camila	Mother	Latinx	Spanish & English

Photographs of school and classroom artifacts

Throughout the data generation, I photographed various types of school and classroom artifacts. One significant type of artifact is student work, which helped me understand how learners made sense of the content, what resources they were using, and what ideologies and identities were reflected through their work. Student artifacts, both individual and collaborative ones, are also helpful when coordinated with other sources of data, such as video recordings, to understand their learning practices and socialization. In addition, I collected classroom learning and teaching materials, including pages from textbooks, worksheets, posters, flyers, articles, and visual support to help understand the locally constructed norms, language policies, linguistic/semiotic learning, curriculum, and assessment tools. Besides these two major types of artifacts, photographs of classroom learning spaces, decorations, and other public school artifacts such as flyers, school rules, and posters were also photographed to show (and be able to analyze) the local social and physical environment.

Informal conversations with participants

Throughout the data generation, I had informal conversations with participants, teachers, and learners in particular, as well as other school staff. During participant observation, I usually recorded some questions in the research fieldnotes and reminded myself to ask these questions to understand the particular learning moments further. For example, I often had informal conversations with teachers during lunchtime or at the end of the research day to confirm some of my thoughts, and to capture further their ideologies and their interpretations of classroom practices. Similarly, I had ongoing conversations with students, focal learners in particular. It

was common for me to observe students' learning processes and ask them questions during the independent, group, and pair work. In this case, I was able to further understand their indexical beliefs around using the languages and resources, as well as to capture their interpretations of some classroom interactions. Some of these informal conversations were audio-recorded, video-recorded, or documented in the field notes. Besides the conversations with students and teachers, I also communicated with some school staff regarding particular questions. For example, I had conversations with the ESL teacher in Forestview for additional information about the ESL model as well as the specific learners' language development in this classroom. I also communicated regularly with an assistant teacher in Er'yu during lunchtime to seek an insider's view about the assessment and policies of this school and school district.

Researcher reflective journal entries

During the fieldwork stage, I wrote reflective journal entries to document my reflections of my presence in the site, my relationships with the participants, and my feelings. These research journal entries were written extensively to record my point of view as a researcher. These journal entries also reflected on the changes in my thinking and relationships in the research sites, which have been vital for me to reflect on my researcher positionality. I wrote two entries in each site, one in the earlier stage and another in the later stage of data generation.

My Role in Forestview and in Er'yu

In general, I position myself as a researcher, but this role varied in different classrooms depending on the teacher's expectations toward my participation and my interaction with the students. I feel that my role in Forestview was also constructed by students as an assistant or classroom support, especially in the Chinese classroom. Ms. Xie occasionally needed my help in translating some literacy books for her, and students also formed the habit of asking me for

linguistic support. Since the assistant teacher, Ms. Song, was only present in their classroom half of the time, and I usually sat at Ms. Song's desk when observing the whole classroom instruction, this might be why they started seeking help from me. During the English instructional time, students sometimes came to me for questions. In Er'yu, however, my role as a researcher was more clearly defined. Teachers seldom asked me for help, and I often did not interrupt their pedagogy. In both sites, I was invited by the teachers to attend activities (e.g., cultural events, field trips). Students in both sites tended to gradually view me as a frequent visitor, invited me to their events, and shared personal stories over time.

Data Analysis Process and Methods

Initial Organizing and Memoing during Fieldwork

The analytical process started during the data generation. At the end of each research day, I spent hours organizing and memoing the different types of data. Firstly, I transferred the video, audio, and image files from the camcorder and the iPhone to the laptop. Then, I reorganized all of the notes, including words and graphics, and documented them on the computer for fieldnotes. I completed writing and organizing field notes by including four types of memos: (1) my initial analytical interpretations and questions on the particular data, (2) notes to link some excerpts with other relevant data such as videos, audios, and images, (3) notes about questions or data that I needed to potentially gather in the future to understand the issue, and (4) my perceptions of my positionality during the particular interaction. For audio and video data, I viewed and listened to each segment and created a word document that included information for each. The following types of information were added: the caption, the length, participants, the content focus and goals, the context, and notes for future analysis purposes (see Table 4.5 below for an example). For photographic data, each picture was renamed with a title indicating date, the class, and the

context in which it was taken (e.g., 01282019_C_Space). Meanwhile, data from each research day was organized in a single folder (e.g., 09302018) on my laptop with sub-folders according to the different types of the data (e.g., images, class videos). At the end of the research period, I had 55 folders indicating the various data for each class visit throughout the fieldwork.

Table 4.5. Example of adding video information

Video information:	Video 2 09272018_E # whole Math Duration: 5:37 Participants: Whole class Content focus/goals: Modeling for a math task Context: At 10:24, the class moved on to work on math. The teacher first showed them what they can do as a whole class before they moved and formed their own group for writing. When students were working on their math problems, they sat together and also had some random conversations.
Notes:	This video needs to be transcribed. This classroom video has a lot of information about the English teacher's language uses, questions, and material organization when giving the content instruction.

The First Stage of Data Analysis

The first stage of data analysis was to make sense of the whole dataset, to triangulate different types of data sources across the dataset, and to find major emerging themes. After the fieldwork, I spent two months transcribing all of the interview data with students, teachers, principals, and parents. When transcribing the interviews, I went back to the notes I took when conducting the interviews and added extra contextual information (e.g., some critical nonverbal cues) to the interview transcripts. All interviews were transcribed verbatim as I believe these cues are also essential to reflect participants' repertoires, their insights, and their interactions. After finishing the complete transcript, I also included some initial reflections and questions. All the field notes and interview transcripts were then de-identified and updated to the MAXQDA 2018 software for the first round of coding. Data from the two sites were imported as two

different data sets. The rationale of organizing and coding all of the data from the two sites was to find common themes and compare the differences across the various data sources and sites.

After transcribing all the interview files, the whole dataset was reviewed and organized on a visit-by-visit basis. To track the data generation agenda and types on each research day, I created and updated a master data generation spreadsheet to record the dataset. The master spreadsheet includes: 1) the date and length of the research day; 2) the different types (e.g., class video) and the amount of data (e.g., length of the video) collected on the particular research day; 3) the curriculum focus and learning activities of each class I visited; and 4) additional notes for further analysis purposes (e.g., links of some data to other visits). The spreadsheet was color-coded to indicate relationships and to help quickly get the information for further data analysis purposes. Reviewing the data one by one through the master sheet aims to: 1) develop a holistic understanding of the dataset, the learning progression, and curriculum planning; and 2) triangulate the different types of the data to find themes across contexts.

The first round of open coding

For this first round of coding, codes were developed inductively through the whole database (see Saldaña, 2015). This round of coding was to make sense of the whole dataset by triangulating and decoding information. All of the picture data that capture the classroom artifacts were reviewed and organized into five major folders based on the themes of the pictures: 1) classroom space; 2) classroom norms and policies; 3) learning and teaching resources and tools; 4) learning products/student work; and 5) school environment and space. These themes emerged during this process of categorizing. All of the classroom videos and audios were carefully listened to and viewed for the second time, together with the contextual information written during the data generation process. During this process, each audio/video

was coded, with notes indicating the initial coding of certain segments. For example, I took notes on one video: "from the 3'10'', the teacher emphasized the rationale of self-evaluation, indicating some expectations of the classroom norm". Then this note was put in a master word document called "video/audio analytical record." This video was subsequently copied and pasted to the folder for pictures— "classroom norms and policies". Gradually, more videos and audios were added to the five major folders for the pictures, but not all the videos and audios fit into the five categories. In the "video/audio analytical record" word document, each video was then color-coded to indicate major categories, which included more categories than the five themes of the picture dataset, such as "language policy", "negotiation of meaning", "students' learning attitude", "assessment", and "content-integrated language teaching". All of these major categories emerge from the dataset. In this case, I was able to see the aligned themes of the picture and video/audio data; meanwhile, I was able to capture the themes of each video and audio, which supported the next steps of focused analysis (which I will explain later).

Interview transcripts for students, teachers, and principals, as well as the field notes for 55 research visits were coded inductively[14]as well. The rationale for inductive coding was to fully capture the themes and patterns to understand the whole dataset. Field notes were coded using a combination of process codes (e.g., "protecting Chinese space") and descriptive codes (e.g., "separate responsibilities"); interview data were coded using a combination of element methods (i.e., processing, In Vivo, descriptive coding) and affective methods (i.e., emotion coding and values coding). Affective coding methods help to highlight participants' beliefs,

[14] Parent interview transcripts were not coded in this round of data analysis. They were later analyzed to answer the third research question. Parent interviews from Forestview, together with those collected in the pilot study, were analyzed in another journal article (see Zheng, 2020).

emotions, and ideologies around certain issues. The rationale for combining these coding methods was to find the major themes from the dataset and to highlight participants' understanding of local policy, their learning, and language use. Some segments were also double coded. The applications of different coding methods are presented below (see Saldaña, 2015).

Table 4.6. Examples of element coding: descriptive, process and In Vivo codes

Descriptive Codes:	Applications: Descriptive codes use noun phrase(s) to describe the space, materials, conditions, content or topics. Descriptive codes are applied during my first round of coding for field notes, memos, and interview data. Goal: The major goal is to document the representation of issues across the database	
Examples of initial codes and coded segments	"standardized test"	At 9:05, the class started with a mock test. (*Me: Their frequency of taking a test is so high*!!). I took a look at the teacher resource book for READY 4th grade CCLS ELA textbook and took some pictures of their texts. Today, they class work on their mock test on the genre of poem, the title of one of their test questions is *Dandelion*. The class is organized as row-by-row at today's class because they need to do testing rather than regular learning. (Field Note, 03/15/2019)
Process Codes:	Applications: Processing codes use "-ing" words to connote actions that imply routines, identities, and interactions. Goals: to search for consequences of actions or interactions within the processes.	
Examples of initial codes and segments	"complaining"	Some students were complaining that they did not know anything about using the greenscreen and that was why they found that to be very confusing. (Field Note, 09/17/2018)
In Vivo Codes:	Applications: In Vivo coding uses words or phrase as part of the actual language or dialogue from the original data. Goals: to prioritize the participants' own voices and to deepen researchers' understanding of their cultures and point of views.	
Examples of initial codes and coded segments	"but now I am doing very well" (double coded as "parents' decision")	I think my mom, wanted me to, Um, become like, learn English, but also she realized that there was another language and she wanted me to try that language when I was little because I went from a different country, Mexico, to here and I barely spoke umm English and she just wanted me to get into a school. She realized that they had Chinese and she wouldn't, she didn't think that I would have done good, but I, but now I'm doing really well. (Interview, Student, Edison, 03/27/2019).

Table 4.7. Examples of affective methods: emotion and values codes

Value Codes:	Applications: Value coding focuses on participants' values, attitudes, perspectives, and world views. It includes three major elements: attitude, beliefs, and values. Goals: to explore major belief systems, identity, experiences, and actions in case studies, ethnography, and other qualitative studies

Examples of initial codes and coded segments	"disfavouring separation"	Right? I feel like, um, I don't know. Honestly, I feel like I'm just getting used to it, I am getting closer so you can. You know, so as far as space goes, like physical space, it would be nice if we were closer to the Chinese classroom and things we could do maybe together. But I understand she says she's got a class in there. I've got a class in here and we're so spread apart. But physical space would be nice. A lot of the other classrooms, I don't know if you know, they have an open door between them and they, and students can go from one end to the other two. So that's seen as a unit for the grade, instead of English is here and Chinese is here. and sometimes if I needed to go chat it's kind of like, oh, okay. (Interview, Ms. Jones, 10/08/2018).
Emotion Codes:	Applications: Labels emotions that are recalled, expressed or experienced by participants or interpreted by the researcher for the participants. Goals: to explore deep insights of participations world words and to read participations' social relationships through interactions.	
Examples of initial codes and coded segments	"uncomfortable"	Brady was reading by himself carefully and he read books only in Chinese. When asking why he chose that, he said he just picked that naturally. He also showed me his worksheet and he marked down the questions in yellow. He told me that he can read all the questions, but he did not understand the questions. It is interesting when he wrote down the sentence in the screen for me: "I know most of the Chinese means besides the questions, otherwise I feel very comfortable". I think he implies that he was not comfortable. (Field Note, 09/25/2018).

As the coding process continued, some initial codes were modified to make them clearer for coding, and some of them were divided into more sub-codes. For example, the original code "mismatches" was divided into" 1) "mismatches—between content and language"; 2) "mismatches—between materials and students' levels"; and 3) "mismatches — between English and Chinese classes". The original code "translanguaging" was modified into: 1) "translanguaging for communication"; 2) "translanguaging for teaching content"; 3) "translanguaging for learning purposes"; 4) "translanguaging as everyday encounters"; and 5) "translanguage as the classroom policy". A memo was attached to about 10% of the initial codes to describe the rationale or to clarify. For example, the memo for the code "agency for policymaking" is:

> This is to describe how different participants voice themselves or make their own influence in shaping the local policy of learning and learning, as well as making decisions for their learning. This is different from the code "motivation for enrolment," where the focus is more on agency in choosing the school.

In addition to developing initial codes and coding the data, I also kept track of my analysis process, reflection, and my own researcher positionality. Analytical memos were also added in certain chunks of the data, or certain pieces of data in the MAXQDA software, or linked to particular codes. Instances of member checks, interaction with participants, and my reflections were coded from field notes, memos, and my research journal entries. After the second round of coding (which I will explain below), for example, there is a category of "research notes" that includes parent codes: "member check with students", "member check with teachers", "memo, analysis, and prediction", "memo and reflection", "interaction/relationship with participants". These codes and the process of coding represent the analytical process I was going through both in the data generation and data analysis stages. At the end of the first round of coding, 291 initial codes were developed from the database for the two research sites with 1,521 coded segments.

The second round of coding

The second round of coding aimed to organize the initial codes into overarching parent codes (Saldaña, 2015) and categories for emergent themes. After the initial codes were established, these codes were pattern coded into smaller categories. Pattern coding is an approach to group summaries into a smaller number of subcategories and categories to find emergent themes (Saldaña, 2015). All the 291 initial codes were grouped into parent codes. For example, the initial codes "separating Chinese space", "maximizing Chinese use", and "reinforcing Chinese use" were put under the parent code "protecting Chinese space". All the parent codes were then pattern coded into 42 subcategories and later grouped into ten major

categories. These ten major categories are: 1) Language Policy and Planning; 2) Ideologies; 3) Social Realities; 4) Discourse of Classroom Learning; 5) Resources of Language and Teaching; 6) Discourses of Assessment; 7) Emotions toward Bi/multilingualism and DL; 8) Thoughts on DL Programs; 9) Research Context; and 10) Researcher Notes. To give a clearer picture, I present below the subcategories of the first major category "Language Policy and Planning" as an example:

Category 1) Language Policy and Planning
- Subcategory1: agency in language policy
- Subcategory2: local implementation
- Subcategory3: classroom language policy
- Subcategory4: family language policy
- Subcategory5: micro-level language use

After these two rounds of coding, a clearer picture of the major themes was established. I then connected the codes and major categories from MAXQDA to the folders created for the video/audio and photograph data. Relevant categories and folders, together with the data analyzed in MAXQDA, were selected to identify major themes. The category "research context" and "research notes" are referred to throughout. During this process of data analysis, new themes emerged that became central topics, as indicated by the dataset. For example, one central theme that emerged from the analysis is the local implementation of dual language policy and the locally constructed ideologies around dual language learning and policymaking. To better present the data and themes from this study, I thus revised the three research questions which were predetermined when writing the dissertation proposal: I added a new research question as the first research question and merged two research questions into one as the second research question. The three research questions which I have been referred to throughout this dissertation are the revised ones, reflecting issues that emerged after the two rounds of coding.

The Second Stage of Data Analysis

As I have described in detail above, the first stage of analysis was to make sense of the whole research dataset, triangulate from multiple data sources, and organize my data to find patterns and emergent themes. After the first stage, the second stage of data analysis involved focused coding and discourse analysis of classroom video/audios triangulated with other ethnographic data. Before describing the particular methods for the analysis, I first describe the rationale for and approaches to classroom discourses analysis, which is one analytical tool used throughout the analysis for all the three research questions.

Classroom discourse analytical tools

As mentioned earlier, videos and audios were selected, categorized, and coded during the earlier stage of analysis. Selected videos and audios were also transcribed following the transcriptions convention in Table 4.8. Following Rymes' (2016) three dimensions of viewing and transcribing—social context, interactional context, and individual agency, I made sure that I referred back to other ethnographic data (such as my drawing of seating organization, field notes, and the attached notes for the particular audio and video files) and that I marked the different ways of speaking and interaction by individuals if needed. The details of transcription also varied depending on the nature of the communication and the analytical goals. For example, when transcribing language and literacy events for the pedagogical outcomes of teachers' assemblages of repertoires including linguistic, semiotic, material, and spatial resources (see Chapter 6), I included very detailed cues to indicate these elements in the transcripts. When the analytical rationale was to focus on the content of the talk rather than how talk is carried out (e.g., interview data, dialogue, or most learning events presented in Chapter 7), I included fewer detailed cues to highlight the content rather than the paralinguistic or nonverbal cues.

Table 4.8. Transcription conventions

.	end of intonation unit
?	fall–rise intonation end of intonation
underline	emphatic stress; increased amplitude; careful articulation of a segment
::	prolonged length
=	latching; no pause between intonation unit
(.) or ,	0. 5 seconds or less
(2.0)	measured pause of greater than 0.5 second
[ ].	overlapping speech
(( ))	body language
< >	translation

In terms of analysis, I analyzed classroom interactions from several approaches. First, the micro-level interactions, including linguistic and semiotic features, were analyzed to understand the classroom organization, learning practices, and interactions, as presented in Chapter 5 and Chapter 6. The analysis of language and literacy events was also incorporated along with the spatial and material perspectives in understanding the pedagogical and social discourses of classroom organization, as presented in Chapter 6. The analysis of classroom discourse and interaction was guided by the framework of Rymes (2016) and the approach of Bloome et al. (2005). Rymes' (2016) framework guided my analysis by focusing on micro-interactions (i.e., turn-taking resources, contextualization resources, narrative resources, and framing resources) through the components of social context, interactional context, and agency. Her framework helped identify and make sense of the various cues. And the approach suggested by Bloome et al. (2005) guided my analysis by attending to classroom events with the exploration of cultural practices, social identity, and power relations, which helped to connect the analysis with theoretical framings, ideologies, and the ecology of classrooms. It also offered insights into

analyzing learning events through a comparative lens and multiple learning periods. Their frameworks have been essential in analyzing both classroom events and individual learners' socialization trajectories. For Chapter 7, for example, the focus was to understand students' orientations toward dual language learning and bi/multilingualism, as well as focal learners' trajectories of socialization and learning across time and space. Thus, I used this approach (Bloome et al., 2005) to establish connections between multiple events and to connect the analysis with broader discussions on culture, society, and power dynamics.

Focused analysis for each analytical chapter

The particular steps of data analysis, which I explain below, are different when answering each research question. Table 4.9 shows the alignment of research questions and data sources.

Table 4.9. Connections between research questions and data sources

Research Questions:	Fieldnote	Video/ Audio	Teacher Interview	Student Interview	Principal Interview	Parent Interview	Photos	Informal Checks
#1: Dual language policy planning and appropriation	X	X	X		X		X	X
# 2: Dual language pedagogy, classroom organization, and repertoires	X	X	X	X	X		X	X
#3: Students' perspectives toward and socialization into bi/multilingualism and dual language learning	X	X		X		X	X	X

First Research Question: What is the local appropriation of the language policy at multiple levels in the two schools? And what ideologies or beliefs of local actors in this sociocultural context are evidenced in shaping the appropriation of these language policies?

In answering this research question, all of the initial codes and coded segments from the MAXQDA Category #1 "Language Policy and Planning" (see page 100 for subcategories),

Category #2 “Ideologies” (with the subcategories “ideologies around learning” and “ideology around language”) and Category #3 “Social Realities” (with subcategories “social class”, “Discourses and realities”, “English-dominant society”) were reviewed and recorded to identify certain themes. Each video/audio and photograph data in the folder “school environment and space”, “classroom norms and policies”, and “learning products/student work” were reviewed and coded to find the characteristics of themes across the two research sites. Sample pictures and classroom data were then selected for analysis to demonstrate the major themes with other qualitative data. Data from different sources are triangulated and analyzed to look for patterns and themes.

Second research question: how do teachers, influenced by multiple ecological factors, organize learning resources and materials spatially, socially, and linguistically, and how does their organization shape the ecology of dual language classroom practices, discourse, and participation?

To answer this second question, all of the initial codes and coded segments from the MAXQDA Category #4 “Discourse of Classroom Learning”, Category #5 “Resources of Language and Teaching”, and Category # 6 “Discourses of Assessment” are reviewed and recoded. Category #4 is: “Discourse of Classroom Learning” (with subcategories “classroom routines”, “curriculum focus and goals”, “learning environment”, “classroom rules”, and “student behaviors”); Category #5 is: “Resources of Language and Teaching” (with subcategories “for planning”, “for learning” and “for teaching”); Category # 6 is: “Discourses of Assessment” (with subcategories “dynamic assessment”, “peer feedback”, “peer assessment”, “self-assessment”, “standardized testing”, “assessment performance”, “assessment tools”). The approach of “compare groups” for qualitative analysis featured in MAXQDA analytical software was used to compare the data in the two research sites from the three categories mentioned above. Tables and visuals were created from this MAXQDA software tool to demonstrate the

differences of classroom organization and the employment of resources in learning and teaching in both Er'yu and Forestview. The comparison charts include both the initial codes and the coded segments, which helped understand the contexts of these differences. Additionally, each piece of video/audio data and each photograph in the folder "learning and teaching resources and tools", "classroom space" and "learning products/student work" were reviewed to look for findings for the spatial, semiotic, material, and linguistic organization of the learning space. Sample video/audio and transcripts were selected and analyzed using classroom discourse analysis (Bloome et al. 2005; Rymes, 2016) to demonstrate themes across the dataset.

Third research question: How do students from diverse social, cultural, and linguistic backgrounds perceive, navigate, and socialize into their Chinese-English dual language learning across spatial and temporal scales?

Analysis to answer this research question went through two steps. For the first step, all the initial codes and coded segments included in MAXQDA Category #7 "Emotions toward Bi/multilingualism & DL" (with subcategories "perceptions toward DLE classes", "self-identification", "emotions toward learning Chinese", and "emotions toward bi/multilingualism") were reviewed and recoded. All student interview transcripts were coded for the second time with focused codes that are relevant to students' emotions and beliefs around bi/multilingualism and around dual language learning. This step was to situate further their perceptions within the social contexts in connection to their ideologies. And the videos of student interviews were viewed for a second time. The rationale was to further understand the coded excerpts by paying attention to students' nonverbal cues and ways of speaking in the videos. For the second step, two focal learners' language development and social identification were closely analyzed using a scalar approach and language socialization approach (more details presented in Chapter 7). Every piece of data (e.g., classroom audio, video, field note, student work, individual student

interview), where the two students were involved were extracted from the dataset and put into a single folder together with the interview with their parents for triangulation and analysis.

Researcher Positionality

Researchers will never be able to see the full reality, and it is always positioned as particular "prism" where "what we see depends on our angle of repose" (Richardson, 1994, p. 60, as cited in Cresswell & Miller, 2000). In the next section, I elaborate on how my researcher positionality and social interactions with participants influenced the processes of data generation and data analysis. I first reflect on how my researcher positionality—my linguistic, social, cultural, and professional identifications—affected this research. I then move to discuss the dynamic, changing, and multiple relationships that I built with the participants in the two sites.

My linguistic, sociocultural, and professional identifications

The researcher's background and positionings such as race, gender, age, immigration status, personal experience, and ideological stances will all affect the research process (Berger, 2015), which further determines the affiliation with participants. Berger (2015) underscores three ways that researcher positionality impacts the research outcome: 1) the access to the "field" as it affects how participants share their experiences; 2) the nature of researcher-participant relationships; and 3) how the researcher's views and background affect the way he/she interacts with the participants, constructs the world, and makes sense of the information. These linguistic, sociocultural, and professional identifications are important for the process and outcome of this research.

As an international student from China who has studied in the U.S. for over seven years, I am fluent in using both Mandarin and English daily. Growing up in a middle-class family in a Mandarin-speaking region in East China and later teaching English in private organizations in

Shanghai, I have worked with students with more privileged backgrounds in East China. Although I had exchange learning experience in Hong Kong, I was not able to speak or use Cantonese fluently; I have never been to Taiwan. My ethnicity is Han Chinese, which is the majoritized ethnic group in China. As a graduate student in the U.S., I self-identify as a foreigner and have had very limited access to Chinese-American communities. My knowledge about the U.S. school system is mainly from my graduate study, including various research and volunteering experience in the classrooms, but I was never a full-time teacher in U.S. K-12 educational settings. I was in a Master's Program in TESOL in Philadelphia where I started to teach ESL to immigrant and refugee populations from marginalized backgrounds, which challenged a lot of my assumptions as a teacher and as a potential researcher (see Zheng, 2016). During my doctoral study in Madison Wisconsin, I volunteered and conducted research in different ESL and bilingual classrooms and gradually developed more understanding of the U.S. educational system. My marriage into an upper-middle-class White family later offered me access to some insider perspectives toward family discourses and ideologies of those who may reside in a suburban school district, which I was unfamiliar with before.

My bilingual background and transnational experiences have supported the rapport building with teachers, students, and parents with Chinese backgrounds. For instance, I find there are many shared transnational experiences between me and Ms. Xie in Forestview, and my Chinse language background granted me access to Er'yu. My background has offered me tools to decode sociocultural elements of the resources and understand the sociocultural messages conveyed by the language, such as the sources, the history, and cultural originals of the linguistic/semiotic forms. I was able to read sources in both languages and across national borders online and was able to develop a critical and comparative eye in observation and

analysis. As Heath and Street (2008) claim, constant comparison is crucial in resisting preconceptions in understanding the patterns of language and literacy practices among sociocultural groups. The constant comparison, as they point out, involves the process of using accurate observation to find out "what is already known – and to whom, for what, and under what kinds of circumstances" and through the ethnographers' "place and tools of practices" (p. 32). In this sense, my identifications give me advantages in building positive interactions with the local "insiders" to discover and validate patterns. Meanwhile, I have to resist the "ethnography bias" and continually re-evaluate my stances and carefully distinguish what the participants explicitly describe and what I perceive in the processes of both analyzing and writing.

On the other hand, my background and identifications create challenges. First, my lack of teaching experiences led to some limitations in understanding classroom discourses, which required extra work. For example, I was not familiar with the terms and standards in subjects such as science, and I needed to ask the teachers and administrators many questions. I was also learning some common practices and policies that are unique in U.S. schools, such as assessment agendas and responsibilities of different school staff. Second, my social background sometimes makes it difficult to have access to participants' lives. As I mentioned earlier, I self-identify as a Chinese international student from a middle-class background in East China. This positionality helped me to build rapport with teachers and students in Forestview that maintain a close partnership with organizations in China, but it prevented me from developing deeper relationships with teachers (who resisted the connection with the People's Republic of China) and students in Er'yu: most students in Er'yu are second-generation immigrants from South China and Taiwan and from lower-income households, with whom I do not share many

experiences. It was also hard for me to understand Er'yu students' everyday encounters with learning and living in the big city, since I never lived there before. Additionally, as a young student who did not have children at the time of data generation, I was neither part of the parent community in Er'yu nor in Forestview, which prevented me from getting a fuller picture of the interaction among parents, and between parents and school communities. All of these aspects of my background have limited my access to the participants' perspectives and the understandings of school/classroom discourses.

The "insider"/ "outsider" continuum

As I described above, my identifications affect the process and outcomes of my study. However, these identifications are not static but co-constructed and dynamically situated in the interactions. The interaction with participants was carefully documented in my field notes, memos, and reflective researcher journals to demonstrate my perceptions about my presence. Rather than perceiving myself as either "insider" or "outsider", I view the status more of a dynamic continuum depending on the participants, context, and issues for inquiry. There are more complexities of researchers' fluid and complicated positioning in the insider-outsider continuum, and the status is not solely determined by some of these features. For example, I think I am more of an "insider" in Forestview because I have conducted research in that school for over three years and have known a lot of parents, staff, and students. Yet, I do not feel that I am an "insider" of the parent community because of my age and sociocultural backgrounds. Similarly, although I feel I am an "insider" in terms of the cultural affiliation in understanding curriculum and cultural aspects in Er'yu, I feel I am an "outsider" in terms of my ethnic/social background in understanding students' everyday lives in this big city. I constantly reflected on how the different aspects of my background affected the social relationship (and the scope and

the amount of qualitative data that I was able to get). As I documented in my researcher reflective journals about my presence in Er'yu, I feel there was comparatively limited free time that I could get to know students and teachers' personal stories due to environmental factors such as the school culture, rules, and free time available for participants.

> I feel very different in this site (Er'yu), both of a sense of familiarity and a sense of unfamiliarity. In terms of familiarity, I feel everything just feel at home for me. First, there are so many faces in the school and people all talk in Chinese. It seems so natural to speak both languages. Second, the curriculum was designed in a way that I am familiar with and that I grew up with... At the same time, however, I feel very strange in the school site because of my role. In the classroom, there is usually no assistant and the teacher fully used every second for the teaching so that it is strange for me to ask them questions or interrupt. At the same time, the students change classrooms all the time…. Besides, all teachers are just very busy so that I really feel that I do not have too much space to interact…I feel that how I behaved as a researcher really is dependent on these different contextual factors, the organization of the school, the rules, the curriculum and responsibilities of the teachers, the backgrounds of the teachers, and my rapport with them. (Reflective journal, Er'yu, 02/06/2019)

The trajectories of the social relationships were changing and dynamic throughout the fieldwork as well, which shaped my access, interpretation, and representation of their points of view. Besides comparing the discourses in Forestview and Er'yu by connecting to various ecological factors, I was also making sense of my presence and trying to make adjustments:

> Although I still chose not to interact the classroom a lot, I feel I am reaching out to more of an audience and getting to talk to different staff in the school so that I can get more insights about how the school culture looks like… The communication with the students is also more intimate… The general vibe in the school now is that I feel I am a student teacher or regular observer and students are comfortable with my presence at the school. I feel very appreciated how the teachers and the principal are super collaborative. At the same time, I also notice that I am still not very familiar with the discourses and are interested to understand how learning woks and why it happens. At this stage, I've discovered some differences between this site and the other site. I am also sometimes trying to figure out how these differences occur and try to understand the factors that can account for the differences. (Reflective journal, Er'yu, 03/27/2019)

Validity

Maxwell (2013) claims that researchers can never really fully capture "reality" or "truth". Validity is relative because human beings are the "primary instrument of data collection and analysis" in qualitative research and the main actors in accessing and interpreting through multiple data sources (Merriam & Tisdell, 2016, p. 243). As Merriam and Tisdell describe, internal validity refers to the strength and rigorousness of the study, and external validity refers to, "the extent to which one study can be applied to other situations" (p. 253) or the "domain to which a study's findings can be generalized" (Yin, 2014, p. 46). I followed various strategies that are aligned with my paradigm to ensure the validity and rigor.

Internal Validity

Meriam and Tisdell (2016) propose five ways to ensure internal validity of data collection and analysis—triangulation, member checks, adequate engagement in data collection which purposefully looks for variations in understanding participants' point of view, researcher reflexivity/positionality, and peer review. The validity of my research findings is ensured through these major areas. As I have explained earlier in this chapter, I spent months in the sites for an extended period of time and built rapport with the participants before the fieldwork. As for triangulation, Meriam and Tisdell (2016) explain that it refers to triangulation with multiple data sources, methods, investigators, and theories to ensure validity. As I have presented, different methods of data generation and data sources were drawn on and triangulated to answer the research questions through the ethnographic and constructivist paradigm. From the initial recording (e.g., writing field notes) and categorizing (e.g., creating information for video/image data) during the fieldwork to the two stages of data analysis, I carefully connected the different

data through recording and coding. Memos and notes were constantly attached throughout the data analysis process to ensure this triangulation.

Member checks are important to ensure that participants' points of view are not misinterpreted. Member checks happened in several ways during my research. First, during the interviews, I made sure that I asked clarification questions and reframed my understandings to align with those of the participants. I also took down notes during the interview and asked further questions at the end of the interview to ensure that there was no misunderstanding. Second, I held informal conversations with participants throughout the data generation. For example, I checked with the teachers after each class to ask particular questions or confirm my prediction of their intention. These informal checks were recorded in field notes, audio, and video recordings. I also tried to conduct member checks after the data analysis. For example, I presented the data to the principal in Forestview and checked her perceptions toward some of my findings. The parallel check in Er'yu was not carried out because of the limitation of distance and the fact that the principal retired after that year. As for peer examination or review, I sought some peer support when transcribing and interpreting some of the audio and video data. I presented some de-identified classroom video/audio data to an individual with English as his first language and compared my notes with him to make sure that I heard all of the linguistic features accurately. Lastly, I have elaborated on the researcher positionality and reflexivity and clarified how my own background, experiences, and identifications shaped the data generation and analysis. Clarifying researchers' perspectives, biases, and assumptions is not to eliminate researchers' "theories, beliefs, and perceptual lens. Instead, qualitative research is concerned with understanding how a particular researcher's values and expectations influenced the conduct and conclusion of the study" (Maxwell, 2013, p. 124).

External Validity

Merriam and Tisdell (2016) describe that external validity (or generalizability) in qualitative research is more concerned about whether the findings can apply to other situations based on the reader's or user's perspective. And the researcher can provide a detailed description and context to enable the reader to decide the "fit" of the findings in other contexts. Rich and thick descriptions, thus, are important. Another strategy, as they point out, is to seek variations or diversity in sample selection, which can allow broader applications for readers into more varied situations and contexts. These two strategies are also followed in my research design to increase external validity and generalizability. First, I provide rich and thick descriptions with multiple ethnographic data and contextual information for the cases, including the two schools, two classrooms, and focal learners. Second, the cases are carefully selected to ensure diversity. I have selected two representative Chinese dual language schools that are contrasting in school history, student and teacher demographic, ideological orientation in learning, and geographic locations (Midwest versus Northeast, suburban versus urban). I believe that including these two cases will give insights applicable to other dual language contexts that share similarities with either or both of the sites. In terms of focal learners, students and parents with very different backgrounds were presented in detail, together with the analysis of the whole interview dataset for all students in Forestview and Er'yu, which represents diversity in terms of socioeconomic, racial, ethnical, linguistic, and cultural backgrounds. As Yin (2014) notes, posing the "how" and "why" questions for the case studies can be important to enhance the external validity. As Yin points out, augmenting the case study design with "how" and "why" questions will help strengthen the theoretical development and justifications of the findings, what can be understood and applied in other contexts. As I have presented in the beginning of this chapter, my study was designed to be

both instrumental and exploratory in order to investigate "what" the practices and processes of the dual language learning, teaching, and policy planning look like, and "how", and sometimes "why" the practices and processes are operated in certain ways.

Limitations in Methodology

There are certainly some limitations in designing and carrying out my research. One limitation is the restrictions I had for staying in the second research site—Er'yu—for a more extended period. As I have described earlier, different from Forestview where I was able to conduct the pilot study and build rapport with the school for over three years due to the close proximity to my Ph. D institution, the length of data generation in Er'yu was limited primarily due to the geographic location and the financial burden for extended fieldwork in the city, where research expenses were very high. Also, since Er'yu is a much larger school located in one of the largest cities in the U.S., students all lived in different parts of the city, giving me fewer opportunities to meet most parents in person. Nevertheless, I visited the school in April 2018 and returned the following year to spend five months in the class and school with frequent visits and close observation, reaching out to parents, communities, and teachers for closer rapport building in order to obtain as complex and layered of a picture as possible.

This also connects to the second limitation. I was able to follow focal students from diverse backgrounds and understand their perspectives from home visits, out-of-school events, and parent and student interviews. For example, I was able to closely follow Camila and Caitlin, who are from different linguistic, cultural, and racial backgrounds through community visits, and parent and student interviews; I was also able to document additional focal learners' language development through multiple forms of classroom data. However, I was not able to seek enough parent participants in Er'yu to understand other students' home experiences, especially for those

from Chinese-immigrant households and from lower socioeconomic backgrounds, which is the case of most Chinese-American students in Er'yu. Two parents who are Chinese immigrants did respond to me, but they told me that they were not able to meet with me because they were working seven days a week. Also, I was informed by both teachers that many students often lived with their grandparents as their parents were working outside of the state, which might explain the low response rate of these parents. In this case, these parents' voices are missing from my research to present a fuller picture of some students' dual language learning.

Additionally, this study primarily focused on the two schools and classrooms, with the exception of several parent interviews to understand focal learners' language development and social identifications. Yet, I was not able to conduct an ethnography that included students' everyday encounters and language use outside of the school spaces, which could have offered a broader view toward students' dual language learning and social identifications.

Chapter Five: Dual Language Policy and Planning: A Comparative Lens

Er'yu Bilingual School incorporates a dual language and dual culture approach with parental involvement and community support to prepare our children to attain the highest standard in an increasingly global society. (Mission Statement, Er'yu Bilingual School website, 2020).

The mission of Forestview International School is to educate Global Citizens: to prepare children for the demands and responsibilities of Global Citizenship by providing the knowledge, skills, and experience needed to move naturally between different languages and cultures. (Mission Statement, Forestview International School website, 2020).

Introduction

Language policy is a sociocultural process where "modes of human interaction, negotiation, and production (are) mediated by relations of power" (McCarty, 2004, p. 72). An ethnographic lens toward language policy, rather than overemphasizing top-down authorized power in policymaking, highlights this sociocultural process of interpreting language policy at the local level and people's engagement with the policy planning process (Levinson & Sutton, 2001). Choices of program models and curriculum are made at multiple levels with an interplay among various ecological factors and actors that affect multilingual students' learning opportunities for school achievement (Hawkins & Cannon, 2017). When an official language policy is mandated or implemented, the policy is (re)interpreted and re(negotiated) by local actors at different levels (Hornberger & Johnson, 2007). This local negotiation, interpretation, and even resistance also creates an ideological and implementational space where actors take part in different levels of policymaking to defend their interests (Hornberger & Johnson, 2007; Johnson, 2009).

One essential element in shaping the local ecology of language policy and planning is the ideology or perception around language use and language learning (Freeman, 1998; Shohamy, 2006), which has been referred as language orientations (Ruiz, 1984), language

attitudes (Baker, 1992), or language ideologies (Kroskrity, 2010) in the literature. In terms of the local actors in language policy and planning (LPP), previous researchers have explored the powerful role educators can play in creating their own ideological spaces for appropriating their language policies that lead to social changes in bilingual education (e.g., Ball, 2006). In the field of dual language education, recent studies have been exploring how teachers' ideologies shape their classroom practices and discourses, and how teachers act as policymakers in dual language classrooms (e.g., Henderson, 2017; Martínez et al., 2015; Zuniga et al., 2018). Zuniga et al. (2018), for example, examined how two dual language bilingual education teachers reflected on their language ideologies and experiences as well as their professional goals to appropriate their classroom language policy in creating an equitable space. Henderson and Palmer (2015) investigated both students' and teachers' ideologies and how these ideologies shaped classroom language practices. While these studies closely examine the classroom-level language practices, it remains under-researched how ideologies of multiple stakeholders orient and negotiate local language use and policies using an ecological and ethnographic lens. For instance, how is the local appropriation of language policy relevant to the process of (re)interpretation and (re)negotiation within particular sociocultural communities or contexts? What are the interactions of language policies and actors at multiple levels of social organization?

As I have elaborated in Chapter Two, there are both one-way and two-way dual language programs and there are different models of dual language programs depending on the language allocation and the duration of the programs. In terms of language allocation, as Howard et al. (2018) claim, one issue for consideration is the use of English and the use of the partner language (the minoritized language) for instruction (90/10 or 50/50); the other issue is whether content knowledge should be taught in two languages every day or whether instruction should alternate

between the two languages daily or weekly. In Chapter Three, I have provided details of the curriculum structures in Forestview and Er'yu and have made the case that both schools adopt the 50/50 dual language immersion model. In this chapter, I explore the ethnographic context and the local implementation of the 50/50 dual language model in Forestview and Er'yu. In particular, this chapter explores the local ecology of language policy and planning through two major questions: 1) what is the local appropriation of language policy at multiple levels in the two schools? And 2) what ideologies or beliefs of local actors in this sociocultural context are evidenced in shaping the appropriation of these language policies? Both Forestview and Er'yu adopt a 50/50 dual language immersion model to allocate the subjects, learning, time, classrooms, and languages, building on the fundamental principle of language separation. Similarly, both schools' mission statements recognize the need for learning languages for a globalized society. However, how this 50/50 model is appropriated at the school level and classroom level, and how curriculum across subjects is designed and assigned vary greatly between Forestview and Er'yu, which are associated with many sociocultural factors of the school community. These differences are also closely related to the major goals envisioned by key stakeholders and dominant ideologies in the schools.

In this chapter, I first describe the discourses of language policy and planning in Forestview and Er'yu, respectively. For each school, I elaborate on the local implementation of policy at the administrative level, which comprises school-wide official language policies, and at the classroom level, which reflects unofficial language policies. I also pinpoint the articulated and prevalent ideologies among local actors that shape their decisions and choices in the process of language planning. At the end of this chapter, I tie the ideological and implementational

spaces in both schools together and discuss some themes, including agency, ideologies, and perceived mission of dual language education.

Dual Language Planning and Ideology in Er'yu

School-wide Official Language Policy

Er'Yu is a PreK-8 urban public school with whole-school Chinese-English dual language education from Kindergarten throughout 8th-grade. As Er'yu's mission statement reveals, a dual language and dual culture approach is valued in this school with an expectation of the highest standards in students' academic achievement. Overall, this school favors a bilingual and bicultural approach with high standards in content learning and assessment. The curriculum and language planning are also framed and separated strategically to achieve these major goals. As I have explained in the research context chapter, Er'yu is located in Chinatown within a large city and serves students from primarily low-income, minoritized Asian households, but has recently attracted students with other racial, social, and linguistic backgrounds. Er'yu, in this sense, is historically, and still now, a cultural and social space shared by a Chinese-speaking immigrant community. The school has a very large and independent building for PreK- 8 classrooms. Most students with Chinese backgrounds also speak a Chinese dialect rather than Mandarin so that most of them are also learning Chinese (Mandarin) language and literacy as a "heritage" language. Students' academic performance in Er'yu excels and they maintain nearly perfect attendance, partly because of the school's high expectations and support from the community and parents. The two principals at Er'yu since its establishment in 1998 are both Taiwanese immigrants. Principal Tsai, the principal of Er'yu during my fieldwork, implemented the dual language program in 2011 (see more in Chapter 3).

Language separation and "departmentalization"

At the elementary level in Er'yu, although the instructional time for Chinese and English remains 50/50 across Kindergarten to fifth grade, the model of dual language immersion is purposely designed at the administrative level based on the content standards in different grade levels. As Principal Tsai explained during the interview, Er'yu adopted the self-contained "roller coaster"[15] immersion model for Kindergarten and 1st grade and the "side by side"[16] immersion model for the 2nd and 3rd grade, both of which have a clear distinction between Chinese and English time. When students reach the 4th and 5th grades, however, the school "departmentalizes" with different periods, but all disciplinary subjects are covered in the Chinese instructional time. As Principal Tsai confesses, this "departmentalization" is a "compromise" to meet the content standards and assessment needs of the program:

> Our fourth and fifth grade, you don't see that [50/50 divide] clear cut. It was because we implemented Algebra um, in our math curriculum starting fourth grade and in the DOE's Algebra for all initiatives they require, we have a specialized Algebra teacher teaching math. When, once you have a subject specialized teacher, then it's difficult to find the bilingual teacher. So my fourth-grade teacher who got trained in Algebra for all teaching method is not bilingual. She is English dominant. So it, it's impossible for her to teach the Algebra curriculum in Chinese. Therefore, we have to departmentalize the periods. So you, that's what you see today. In my fourth grade, Ms. Ma is the Chinese bilingual teacher. She would teach us the subject in social studies, math in Chinese, Chinese language arts, and then Ms. Lin teaches ELA and social studies in English only. And then Ms. Leung teaches math and science in English only. So then you can see, that unfortunately based on the programming issue and the needs of the programming, the Chinese language instruction becomes less, not evenly 50% it's probably 40% at this

[15] This means that the day begins in one language in the morning and switches to the other language in the afternoon, and the second day starts with the afternoon language the day before.

[16] This means one day it's Chinese day with the Chinese teacher, one day is English with the English teacher.

> time...But Chinese covers all core subjects…That's a way of compromise. I really say it's a compromise. (Interview[17], Principal Tsai, Er'yu, 03/21/2019).

As Principal Tsai describes above and as I have described in the research context chapter, one bilingual Chinese language arts (CLA) teacher, Ms. Ma, who is English-Mandarin bilingual, one English language arts (ELA) teacher, Ms. Lin, who is English-monolingual, and one maths/science teacher, Ms. Leung, who is English-Cantonese bilingual, work as the team for the three 4th-grade classes; each of them has their own classroom. Students switch classes constantly to attend different periods within the "departmentalization" structure of the curriculum. Officially, the class periods are evenly divided among these three major areas (see Chapter 3). In addition to the rationale for balancing language learning, content learning, and assessment, this form of "departmentalization" is believed to be "very much influenced by the Asian culture" because that's "how the kids' parents were taught and that's how they expect their own children to be taught", as Principal Tsai claimed (Interview, 03/21/2019).

As illustrated, the dual language model varies at different grade levels but one underlying coherency across grade levels is the strict separation of the languages and subjects. As for the higher-grade levels, this separation is more strategically designed to achieve content standard goals in Er'yu. While the fourth-grade teachers consider this "departmentalization" policy as an "administrative decision", they also perceive it as positive in terms of developing teachers' expertise in content areas and enhancing students' concentration on rigorous content:

> This is more like a, an administrative decision. So it's not, but it has its benefit because, yeah, and time, right? So if you, if you focus on one or two subjects, you can, you can become, more, I guess you can become the expert of that subject and you don't have to plan. So I mean, especially when it gets to third, fourth and fifth grade the, the content is more intensive. If you do social studies, it's really hard to plan social studies and also do

[17] All the interview quotes in this chapter are verbatim. This interview was conducted in English.

> math. They're very different and it's very, it's really rigorous. So that one single subject. So the benefit of departmentalize is that because you can concentrate on social studies and then math teacher can concentrate on math and science, math and science. Um, but I guess obviously the downside is that we don't get to see the students that much. We're losing, we don't have enough time. (Interview, Ms. Ma, Er'yu, 02/13/2019)

Teachers also believed that departmentalization relieves teachers' planning and supports students' content learning in higher grades. As the ELA teacher, Ms. Lin, describes:

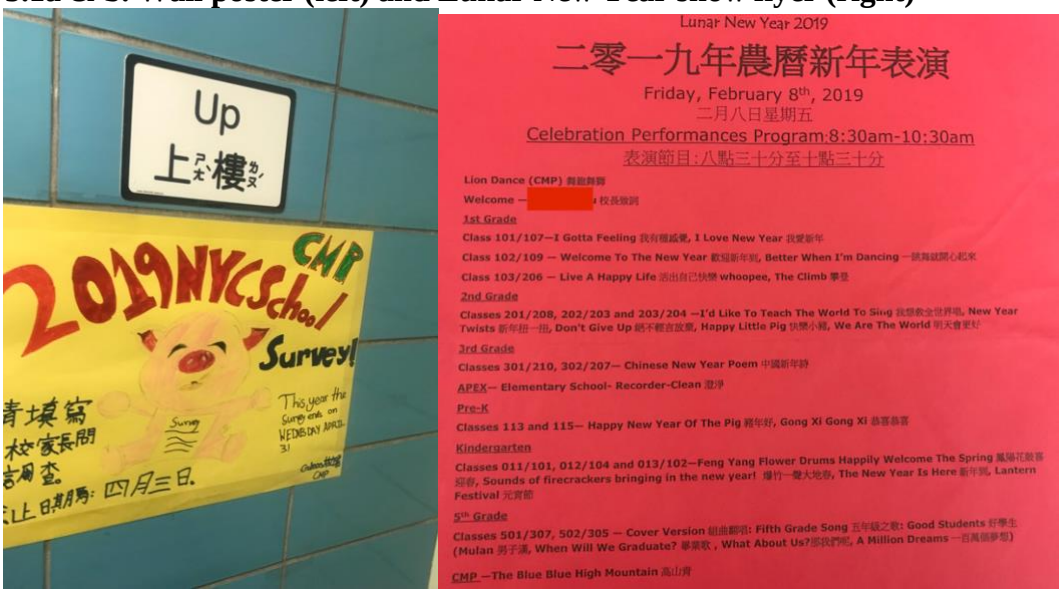
> It works better in terms of planning for the teacher, that students have to get used to it, a little bit, because it's a lot of transition and they have to, like kids who are unorganized, don't do as well with this, with this kind of programming... Well, and then the student gets more of a focused sort of a learning when they go to each subject. But um, in the lower grades it wouldn't work as well if they had to transit as much. Because teachers are more of an expert at that area and they need to, they need a little bit more information than just general information which you get from the lower grades. (Interview, Ms. Lin, Er'yu, 02/12/2019)

The bilingual and bicultural space

Ideally, language separation and allocation should be enforced through the "one language only" policy to maintain the clear cut of the 50/50 divide, as is claimed by Principal Tsai. Principle Tsai is against "mixing languages" during teachers'—particularly Chinese teachers'—designated instructional time. However, she also understands the realities of different students' learning and language needs during classroom practices at all grades:

> So we do want the teachers to make sure that they don't mix the languages during the specific designated instructional time. So say English time, we want the teacher to use English only, Chinese time want the teacher to use Chinese only. But in reality, I saw that the teachers have difficulty in carrying that out because students' language proficiency level varies so much. And there were some kids whose second language proficiency level is so low. If you don't help them with their first language, either English or Chinese, they cannot carry on the learning task. So they, you become, it becomes necessary for teachers to mix the language in order to. So I call that a sheltered language environment. So you do, from teacher's point of view, you do whatever is necessary to help the kids learn. (Interview, Principal Tsai, 03/21/2019)

Figure 5.1a & b. Wall poster (left) and Lunar New Year show flyer (right)



In fact, although language separation is the overarching norm in the school curriculum policy, the school and classroom spaces do not strictly privilege one language over another. The school tries to cultivate a bilingual and bicultural environment where students are comfortable in using two languages and cultures, and to learn about the different cultural norms, Chinese cultural norms in particular. This is evident in the visibilities of languages in the school building and school activities. From building signs, school flyers, and letters to parents to classroom decorations, the school uses both languages and elements of both cultures. As the two school artifacts show, school flyers and signs are all written in both languages that incorporate some sociocultural features of both English and Chinese languages. One poster (see Figure 5.1a) was put on the wall below the stair sign to encourage parents' participation in an annual school survey. On the poster, a pig was drawn in the middle of the poster with red coloring filled in for its nose and ears. It is interesting to notice that 2019 is the year of the pig in the Chinese calendar, and red color is also associated with luck in the Chinese tradition. This poster includes both traditional Chinese characters and English text for the audience. The stair sign, similarly,

incorporates both languages as well as the phonetic symbols[18] which are widely used in Taiwan. The second artifact (see Figure 5.1b) is the playlist for the Lunar New Year Performance; each grade has one showcased in English and one in Chinese. As I documented, this performance was mainly targeted to parents rather than the school community. The classes only came to the auditorium before their show time and had to go back to class right after their performance:

> It was a room with the stage in front of it and there are chairs lined up row by row. I predicted there are over 300 chairs. The room was very dark and there are some framed pictures set up at the end of the room. It seems those are pictures of famous buildings in the City and the school planned a silent auction where parents can put down their bid for the particular painting and then donate the piece to the school library. The different grades have their scheduled time for their performance, and they will go to the stage when their time is up (see the playlist in red). Before that, students were having classes as normal. The audience are most parents. I watched the song, traditional classic poems recitation, dancing, and middle school hip hop dance. I am very impressed with how these cultures/traditional elements are well preserved in the school space. The playlist, for example, was printed in red and the music they were using are the ones that I grew up listening to. The music, though, seems to be originated from Taiwan (such as the Taiwanese drum and the music of Taiwanese minority ethnic region in particular). (Field notes, 02/08/2019)

Both languages exist in official and unofficial learning practices. While staff with bilingual backgrounds usually draw on both languages for pedagogical purposes and communication, monolingual staff do not prescribe specific language norms in their classroom. As I observed, learning Chinese cultural practices seems naturalized through bilingualism in their music class:

> They are using the Chinese flute and need to do some bamboo dancing. It seems that they all know how to play with this particular Chinese instrument which I learned as well when I was young. And the music teacher used both languages to make sense of her teaching and explained the practices for dancing and singing. (Field notes, 04/15/2019)

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[18] Zhuyin, also called Bopomofo, is the system of phonetic symbols for Taiwanese Mandarin that consists of 37 characters and four tone markers.

Classroom Unofficial Language Policy

Goal-oriented and testing-shaped flexibility

Although the official school policy encourages bilingual and bicultural practices, it favors language separation according to instructional time, physical space, teachers, and subjects. Nevertheless, pedagogies, curriculum, and assessment at the classroom level do not seem disconnected because of this separation. In fact, teachers in the 4th-grade team work closely together, appropriating their classroom policy and adapting their class schedule frequently to achieve their academic and assessment goals. Out of the 25 research days I spent in the 4th-grade classrooms, about 50 percent of these days involved a schedule change on the teachers' end. As I wrote in the field notes, sometimes the CLA (Chinese language arts) or ELA (English language arts) class got cancelled to prepare for math/science state-level testing. Sometimes, they changed their schedule to make sure that all of the three 4th-grade classes were at the same pace and progress in terms of content and language learning. For example:

> The class was in the "wrong" classroom again: they were supposed in the CLA class but they were all in the ELA class and Ms. T, the special ed teacher, was helping them with some science test rather than having the ELA curriculum. (Field notes, 05/21/2019)

As was mentioned earlier, all subjects need to be covered in the Chinese instructional times to make sure that students are fully bilingual in understanding the content areas. In this case, the CLA teacher has more responsibilities in keeping up with the other two teachers. As Ms. Lin, the ELA teacher, informed me, subjects can be covered in depth, but teachers work together to make sure students are exposed to both languages for the same topics:

> Ms. Lin: That's why she (Ms. Ma) has a big job to do, because she has to cover everything that we're teaching plus her own curriculum that she's teaching too. So she's,
> Zheng: So for example, she is teaching literacy but at that same time she needs to know what's going on in your classrooms to, use the vocabulary for them?
> Ms. Lin: Right. Which is why it always seems like she's a little bit behind, because

> she can't cover everything as in depth as us. But then at least she gives them exposure to what, like to the topic that we're learning.
> (Interview, Ms. Lin, 02/11/2019)

In addition to the team-level coordination, teachers in their own classrooms also strategically appropriate their class-level language and curriculum policy to achieve their teaching goals and combat challenges. Since the ELA teacher and the math/science teacher could not speak Mandarin, English was the only instructional language during their classes, although students could use other languages if needed. In the Chinese instructional time, however, there were more dynamic policies and norms in terms of language use. In the next section, I use examples from the CLA teacher's classroom to demonstrate these classroom-level language policies.

Content-specific classroom language policy

The CLA teacher, Ms. Ma, carefully and strategically adapts her repertoires to achieve specific teaching goals; how her repertoires are adapted is largely determined by students' language proficiency and knowledge levels of the specific content area, the goals of the curriculum, and the learning targeted in the particular subject areas. Some language policies and norms are implicitly or explicitly conveyed in the classroom, which is goal-oriented and content-specific. I will explain two major language policies in learning and teaching in the Chinese instructional time—the implicit use of translanguaging and the explicit emphasis on "using Chinese only to explain Chinese" for learning and teaching purposes. Although Ms. Ma is strongly advised to speak Chinese only during her instructional times, she confesses that she "switches languages"[19] all the time. She officially follows Principal Tsai's demand, but she

[19] The choice of term such as "switching languages" or "translanguaging" is based on what the teachers describe. I kept them as what the teachers identified because it shows their orientations and their trainings. For my own analyses, I adopt the term "translanguaging" as my theoretical orientation. While I view the

strategically switches between the two languages frequently for students with different language proficiency levels to support their understanding.

> Our principal, she doesn't like it when we switch [languages]. She wants us to keep it. But after teaching for so many years, I, I, think whatever, doesn't matter which language you speak to, you want the kids to understand. So whichever language that helps them more effectively, that's the one I'm going to use. And sometimes it's both. Sometimes it's one or the other. So, but then I know principals don't like it. They, they, they, and also textbook, right? Cause it says you shouldn't code switch so much… Yeah. So whatever I do, I want, I prefer to do it in both. So it might not sit well with the principal. But I'm bilingual. So when I learned anything new, personally, I always want to know both. So it makes no sense for me to just, just teach them only in Chinese and not a word of English because I don't learn that way either. So I think by fourth, by fourth grade, a lot of kids, they are proficient enough, they should be able to know both. So if I'm teaching them something new I'm doing it in Chinese, I also want them to do it in English because ideally we both covered the same topics. So if they'd learn from me in Chinese, they'd learn from her in English, but it's really hard. (Interview, Ms, Ma, 02/13/2019)

Her rationale for "codeswitching" is beyond enhancing students' understanding through the use of multiple languages. She also sees the significance of processing the content information through two languages for bilingual students. She informed me that she learned the term "codeswitching" in college over 10 years ago but was discouraged by her professor from codeswitching in teaching. As she claims, she resonates with "codeswitching pedagogy" because she personally learned content through two languages so that bilingual approaches made sense to her. She thinks that many students in Er'yu are not proficient in either of these two languages, because either they do not have enough exposure to English outside of school or the Chinese languages (dialects) they use are not the academic Chinese they are learning in this school space.

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students' and teachers' bi/multilingual repertoires as a unitary repertoire and rejects the essentialized use of named languages, I do use term such as "Chinese" or "English" to identify the feature of their use of linguistic and semiotic resources. It should be noted that it is by no means to regard these resources as separate components in their repertoires.

For her, students need to hear and use both languages in the Chinese time so that both the content knowledge and languages can be reinforced and connected through both classes. In the next example (see Excerpt 5.1), Ms. Ma strategically uses two languages to make sure certain terms are understood and connected to the English curriculum. In this transcription I have used English where she did, and Chinese where she did with the translation for the Chinese following the Chinese characters.

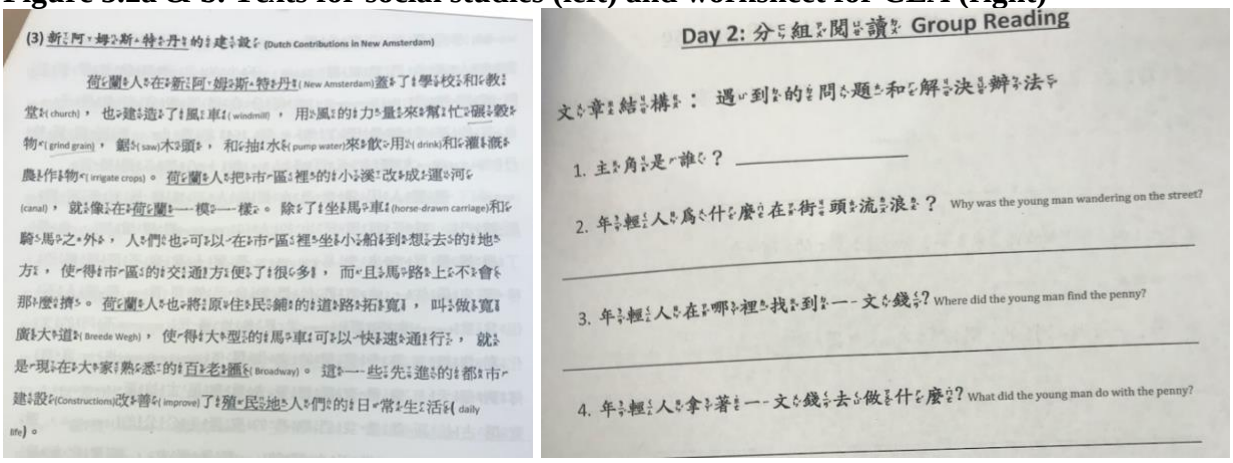
Excerpt 5.1. First and second accounts

1.	Ms. Ma:	那<So>:: (.) 你在 Ms. Lin 那里是不是有讲过<didn't you have already discussed in Ms. Lin's class> (.) first accounts 还有<and> second accounts?
2.	Ss:	有 <yes>
3.	Ss:	=Yes
4.	Ms. Ma:	什么是<What is> first account? 什么样的<What type of > document 叫做<is called> first accounts?
5.	Ss:	((raising their hands)) Journals.
6.	Ms. Ma:	对<Yes>. 就是<Just> 写的人<the person who wrote it>在那里 <was there>(.)那我给你们看的这些都是<So all the ones that I am showing you are categorized as> first account 因为都是那些<Because all these are written by>explorers 自己 < themselves>他们的<their> journals(.)他们的<their> document, 他们的<their> letters(.)那么什么是 <Then what are> second accounts?
7.	Ss:	((Silence))
8.	Ms. Ma:	那就是后来的人写的啦 <Then they are written by people after then>. 如果你呢<So if>(.)我叫写一篇<I ask you to write a>(.)写一篇<write a> essay(.)讲说<say>(.)欧洲人回到新大陆来殖民和探险<European came to the new land for colonization and exploration>(.)你们写的就是 <then what you write is>
9.	Ss:	=Second account
10.	Ms. Ma:	Second account(.)因为你们那个时候不在嘛 <Because you were not there at that time> (Transcript of class video, Er'yu, social studies, 03/25/2019)

From Excerpt 5.1, we can see that Ms. Ma tries to connect to what students have learned in the ELA class about first accounts and second accounts. In Turn 1, she refers to what they have discussed in the ELA class, and wants to elicit students' understanding of the differences between first accounts and second accounts. In Turn 4, she keeps the use of "first accounts" and "second accounts" but keeps other components in Chinese. As she describes, she uses the words in Chinese that she thinks students are able to understand. From Turns 4-10, she keeps words such as "essay", "first accounts", "second accounts", "journals" in English while using complete

sentences in Chinese. Again, one reason for this is to help students make close connections with what they've learned from the ELA class, although these terms are all taught in Chinese as well. Meanwhile, Ms. Ma also strategically selects certain phrases to translate but keeps certain phrase in Chinese, most of which are the learning target of the social studies curriculum, such as 欧洲人回到新大陆来殖民和探险<Europeans came to the new land for colonization and exploration>.

Figure 5.2a & b. Texts for social studies (left) and worksheet for CLA (right)



(3) 新阿姆斯特丹的建設 (Dutch Contributions in New Amsterdam)

荷蘭人在新阿姆斯特丹(New Amsterdam)蓋了學校和教堂(church)，也建造了風車(windmill)，用風的力量來幫忙碾穀物(grind grain)，鋸(saw)木頭，和抽水(pump water)來飲用(drink)和灌溉農作物(irrigate crops)。荷蘭人把市區裡的小溪改成運河(canal)，就像在荷蘭一模一樣。除了坐馬車(horse-drawn carriage)和騎馬之外，人們也可以在市區裡坐小船到想去的地方，使得市區的交通方便了很多，而且馬路上不會那麼擠。荷蘭人也將原住民鋪的道路拓寬，叫做寬廣大道(Breede Wegh)，使得大型的馬車可以快速通行，就是現在大家熟悉的百老匯(Broadway)。這一些先進的都市建設(Construction)改善(improve)了殖民地人們的日常生活(daily life)。

Day 2: 分組閱讀 Group Reading

文章結構：遇到的問題和解決辦法

1. 主角是誰？ _____

2. 年輕人爲什麼在街頭流浪？ Why was the young man wandering on the street?

_____

3. 年輕人在哪裡找到一文錢? Where did the young man find the penny?

_____

4. 年輕人拿著一文錢去做什麼? What did the young man do with the penny?

_____

This strategy and language norm is also implicitly demonstrated in students' worksheets. As Figure 5.2a above shows, the teaching text for social studies was created with three major linguistic resources—traditional Chinese characters, Zhuyin symbols, and English translations. While the sentences are kept in Chinese as much as possible, certain Chinese characters are followed with English words. These words are selected based on the teacher's prediction of whether students will be able to make sense of the content by themselves and to learn new Chinese vocabulary. Besides the goal of providing linguistic support for content knowledge, translanguaging is also a common and habitual practice for Ms. Ma outside of her formal instructional time with students. As my field notes show, Ms. Ma consistently used both

languages when she was rehearsing the class for the coming Lunar New Year performance:

> At 1:10, the class started with the practicing dancing where the girls work on the umbrella part and ribbon part. I was observing and also tried to trace out the seating of the students (see the chart I created). The other students were sitting on their own table, working on their own worksheet and singing out the songs by themselves. The teacher used a combination of English and Chinese and she was very hard on students' performance. She gave directions and students followed without any complaints. I have not heard a single complaint from the students. (Field notes, 02/06/2019)

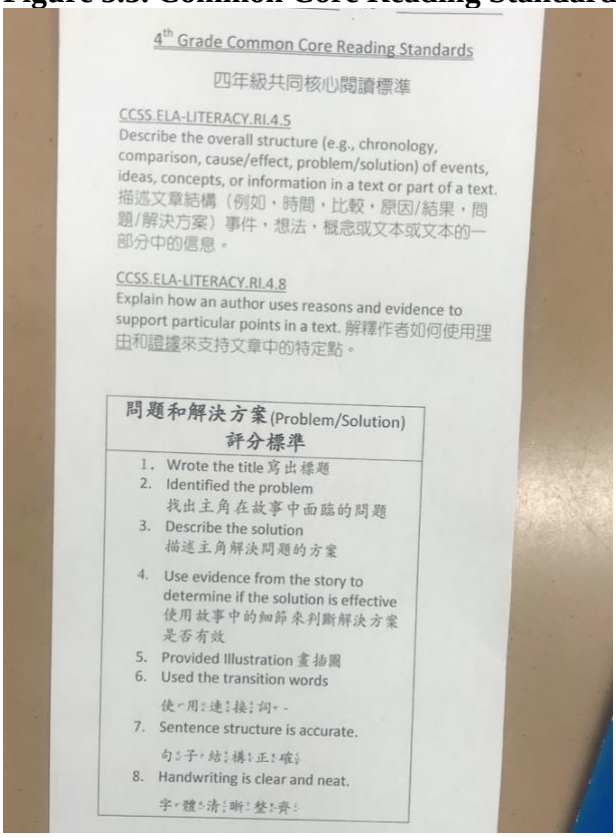
Although translanguaging is a common practice as Ms. Ma's pedagogical and communicative means, it is not explicitly encouraged for students' learning practices. In fact, language rules and norms are carefully planned out to meet the content and language learning goals. As I explained earlier, Ms. Ma draws on translanguaging to teach social studies in both the oral and written form. In CLA class, however, Ms. Ma prevents students' use of translanguaging but strongly promotes the norm of "using Chinese to explain Chinese". As the following field note illustrates, Ms. Ma has very different expectations for different subject areas. For both social studies and math, Ms. Ma allows, although does not encourage, students' use of both languages; however, she is much stricter about using complete Chinese sentences during Chinese literacy classes:

> The teacher explains the math test questions using both languages. Their worksheet has two languages as well. At 1:45 pm, the class switched to the Chinese literacy session and they started to read an academic text: 一文钱 <One Penny>. She listed the learning goals. Day 1 *practice vocabulary* and Day 2 *group work*, reading comprehension (the class interaction was captured in audio). The students need to read the paragraph and ask the group to work on the contextual information of the vocabulary using the logic. Each group works on one vocabulary and will have to present in front of the whole class. During the process, she keeps saying: "请用中文解释中文" <Please use Chinese to explain Chinese>, "这么简单的问题你都不能回答我，我觉得很可怕" <I feel horrified that you could not even answer such as simple question>. (Transcript for class audio, Er'yu, CLA, 02/11/2019)

Worksheets for Chinese language arts are organized in different ways in terms of the layout of the linguistic resources, compared to the worksheet used for the content classes such as

social studies or science. While English vocabulary is embedded in certain Chinese sentences in the text for social studies (Figure 5.2a above as an example) where both languages seem more aligned, English and Chinese sentences remain separate in the CLA worksheet (see Figure 5.2b above as an example). Sentences remain intact with a translated version of the same sentence to make sure that students are exposed in two languages to the same skills and literacy strategies, as aligned with ELA classes to meet the standards. This is also reinforced through a very explicit process of evaluating students' work. As the student guide shows (see Figure 5.3 below), the 4th-grade Common Core ELA Reading Standards are presented with translations in Chinese. They are used to evaluate students' work in CLA. Students' work is evaluated in five major areas, which are aligned with the ELA standards through stages of self, peer, and teacher evaluation.

Figure 5.3. Common Core Reading Standards presented bilingually



4th Grade Common Core Reading Standards

四年級共同核心閱讀標準

CCSS.ELA-LITERACY.RI.4.5
Describe the overall structure (e.g., chronology, comparison, cause/effect, problem/solution) of events, ideas, concepts, or information in a text or part of a text.
描述文章結構（例如，時間，比較，原因/結果，問題/解決方案）事件，想法，概念或文本或文本的一部分中的信息。

CCSS.ELA-LITERACY.RI.4.8
Explain how an author uses reasons and evidence to support particular points in a text. 解釋作者如何使用理由和證據來支持文章中的特定點。

問題和解決方案(Problem/Solution) 評分標準
1. Wrote the title 寫出標題
2. Identified the problem 找出主角在故事中面臨的問題
3. Describe the solution 描述主角解決問題的方案
4. Use evidence from the story to determine if the solution is effective 使用故事中的細節來判斷解決方案是否有效
5. Provided Illustration 畫插圖
6. Used the transition words 使用連接詞
7. Sentence structure is accurate. 句子結構正確
8. Handwriting is clear and neat. 字體清晰整齊

As I have argued in this section, both Chinese and English are common and visible in the Chinese instructional time. In fact, Ms. Ma strategically translanguages to help students understand the content areas. However, translanguaging is not explicitly encouraged, and the language norms are different based on the learning target and the content areas. While students have more leeway in mixing languages in subjects such as math and science, Chinese language arts strictly separates Chinese and English texts. All of these different norms are appropriated by Ms. Ma for verbal instruction and curriculum materials to make sure that students in dual language education contexts hit the mainstream standards for the standardized tests and master both the content and languages.

Ideologies in Local Language Policy Planning

In this section, I describe some of the ideologies that are explicitly articulated or implied in my findings in Er'yu. Major articulated ideologies from participants in Er'yu are connected to the ideologies around learning in general and around the mission of dual language learning.

Ideologies around learning

Individual accountability

One predominant ideology among the school staff and in various classrooms is the norm of "individual accountability, "motivation", and "hard work". This ideology is reflected in two major areas: first, individual responsibility and efforts are foregrounded in teachers' interviews and highly associated with success; second, students' social backgrounds and language backgrounds are viewed as irrelevant to their language learning outcomes and academic success, and what counts is students' own hard work toward success. All teachers in the 4th-grade team emphasize high standards and raise students' awareness of working hard toward their academic success. In my field notes, I documented a classroom monologue showing how Ms. Ma

emphasized her standards for some Chinese homework:

> “这个我上课都讲过了，怎么都拿不到100 分呢。很搞笑， 有些同学跟我说我家里没有人能帮我中文，那我觉得很搞笑，我们上课都讲过了，为什么还需要家里有人来帮你写作业呢，那我之前前两个星期的中文上课都白上吗？” <I have taught this lesson. Why could not you get 100 points? It is funny: some students told me that there is nobody at home that can help you with your homework. But I think it is funny, because we have covered these contents in the class, why do you still need someone at home to help with the homework? In that case, all the Chinese lessons that I have taught in the past two weeks ended up in vain?> (Field notes, 01/28/2019)

As Ms. Ma emphasizes, no Chinese language support at home is not an excuse for students' failure in getting a perfect score here since all content knowledge has already been covered and explained in previous classes. This celebration of individual accountability for academic success is also prevalent in school-wide activities. As my field notes state:

> In the middle of the literacy block, there was a broadcast of Ms. Principal announcing and congratulating those 8th-graders who have got into their dream schools. Ms. Ma then explained that 8th-graders' process of getting to the dream school and emphasized strongly that they needed to get really good scores and to work hard. (Field notes, 03/19/2019)

"Language is not a problem"

One ideology that is highly related to this view of individual accountability is "language is not the problem", which is shared among all the 4th-grade teachers. For teachers, language itself is not a hindrance or obstacle to students' academic performance; strategies and skills are what determine whether students can successfully meet academic standards. Although learning the content in Chinese does add another layer of difficulty for some students, the skill itself is perceived as more of a factor in understanding. As Ms. Ma describes:

> Usually what they struggle with is the, is reading comprehension and answering short response questions because they struggle with that in English anyway. So they, when it's done in Chinese, it makes it even harder. They don't read as much in Chinese as they read in English… Also, skills. Because if they're already struggling… with the main idea, picking out the main idea. So that's a strategy that they, that's a skill they haven't really mastered. Whether in English or in Chinese, when you add on the language component, it

makes it more difficult. (Interview, Ms, Ma, 05/24/2019)

This ideology of "language is not a problem" is also reflected in teachers' perceptions toward students' home languages and socioeconomic backgrounds. For teachers in Er'yu, the fact that students' home languages are different from school languages does not determine students' success or failure in school. Teachers also tend to hold an asset-based view toward students. As Ms. Lin claims, although some students are from poor families whose parents can only speak Chinese to them, parents' great investment and positive encouragement for their children to learn and thrive in this society transfer to their students' agency in learning:

> There are some people that are from like a lower socioeconomic background. But you can tell their parents are like very, like they're not educated, **but they're so driven** that they really like, their **philosophy behind, um, like the motivation** is there and their motivation transfers to the to their child. And they are poor. So it's, it's, and it's not language and they only speak to their child in Chinese. But this child knows so much. Yeah. It's sort of like, and **even if they don't have the language to, um, to even support it, whatever language they have in English, they try to explain it and you're like….**They are trying so hard to get it because of the way that, you know, because of just like, because their parents showed them so much love and so much. So much like they care about what their child is learning and how their child is doing, even though, like, they're just like explaining, like they're pointing out all these things in the world as they're walking down the street kind of thing. And that's why this kid is like, "wow, I can see everything". And even in the writing is like, "wow, it writes so many insightful things and it's because of their parents". (Interview, Ms. Lin, 02/11/2019, emphasis mine)

Meanwhile, in terms of whether students' home language should be supported in the school space and whether speaking a home language that is not English or Mandarin affects their school practices, it is believed by Ms. Lin to depend on the individual student: "It depends on the student. For students who are able to handle multiple languages, it helps them. For students that (are) on the lower side, it, it makes it exactly, as confusing for them." (Interview, Ms. Lin, 02/11/2019). While being asked whether providing multilingual support such as Spanish will help some students to be successful in this school, Ms. Lin claims that it won't make a difference because "even the kids that speak Spanish, they don't, they probably don't use it that much. They

probably just understand it" (Interview, Ms. Lin, 02/11/2019). Here, Ms. Lin thinks that those students with other language backgrounds at school use English in general, and that their home language skills are weaker than their English skills anyway, so providing this multilingual support in the school space does not necessarily help them with content learning. Again, students' academic success at school is believed to be more relevant to individuals' investment in learning and skills in learning, rather than their social or linguistic backgrounds.

Ideologies around dual language education

The mission of the dual language school

The teachers' perceptions toward languages and their appropriation of local classroom policies are also closely connected to their interpretation of the school mission, particularly the mission of a dual language school. As I presented at the beginning of this chapter, the official statement of the school mission in Er'yu emphasizes the dual language and dual cultural approach. As Principal Tsai highlights, she herself benefits from being a Chinese-English bilingual in her own career so that she highly values the skills of bilingualism. Her strong motivation for creating the school-wide Chinese-English dual language program at Er'yu largely came from her own experiences as an ESL teacher who witnessed the unequal access and opportunities of ESL students at school. As Principal Tsai contends, one major school mission is to develop students' bilingual skills through the learning of content knowledge, and part of this rationale is to support students who are lacking in English language proficiency.

> So from my experience working with English language learners, I realized the stand-alone ESL program doesn't work. It doesn't, you know, it does not work when the students are learning English in isolation, not related to their content. It does not help them prepare for the standardized tests. The state does not give English language learner, time, to learn English first and then learn the content subject. They are all required to do a standardized test starting the second year in this country… We must teach content and integrate English language learning in the content knowledge learning. (Interview, Principal Tsai, 03/21/2019)

Principal Tsai's vision, however, is only partially shared with the 4th grade teachers. For the 4th grade teachers, the perceived mission of this school determines the "suitability" of students and families. As Ms. Ma describes, there are many Chinese-English dual language programs in various public schools in the city, but she regards most of these schools or programs as transitional bilingual programs with the ultimate goal of testing out of ESL status. For her, the huge difference between this dual language education school and other schools Chinese immigrant children attend is the opportunity Er'yu offers to achieve the highest academic proficiency in both languages and in content knowledge. She believes that the current 50/50 model is not realistic for this school mission and that the percentage of Chinese instructional time should be cut down as students grow older:

> But our school is different, we want, we want the kids to be as proficient as possible in Chinese language. so now that's why. So you need to do content teaching in Chinese. So that's really hard. **But in a way it's good for the kids who are, who would, who are proficient in Chinese and who just come to the States from China.** They, they, they don't, they get to connect where they continue to, to learn at their level in Chinese. So they don't, they don't miss out in content. So it has its benefits, it definitely has its benefits, but as the kids get older, especially in testing grade, um, cutting, cutting the percentage and the time in Chinese, it would be a better idea. **They still learn just not as much cause we need to save time for English and math. Yeah. So the reality, the scores are based on English and math**. (Interview, Ms. Ma, 05/24/2019, emphasis mine)

In fact, the ESL model in Er'yu is pull-out and two students in my focal class, both of whom speak Mandarin at home, needed to have additional pull-out ESL support twice a week, as Ms. Ma and Ms. Lin informed me. Interestingly, as Principal Tsai describes, this school was established to support ESL students with Chinese as their first language, and it aims for Chinese-English bilingualism. However, the pull-out ESL model is supported by the teachers. Ms. Ma emphasizes, for example, that this dual language program itself is not an ESL program, and students need to get extra support in small groups to develop academic English skills:

> A lot of the bilingual schools, they don't have ESL teachers because technically it, but no, but it's not the same [as ESL program]. They just need ESL pull-out, it's better that way… I think they still need pull-out. Because then the English teacher, the ESL teacher can work on, you know, specific things in small groups. Now I can't do Ms. Lin can't do, we don't have time to do that. We do more like a comprehension, like, you know, we don't do small stuff. We don't have time to work on specific things. So, so ESL teacher, they work in small groups so they can do that. But yeah. But you don't, unfortunately, we only have one ESL teacher. (Interview, Ms. Ma, 02/13/2019)

What Ms. Ma emphasizes is that the content skills in the instructional times are highly demanding and she does not have time to specifically focus on the ESL aspect of learning, although she does mention earlier that ESL students, especially those that are newcomers from China, find it more comfortable to study in this school and to maintain the Chinese language levels they had before coming to the U.S. Nevertheless, she does not consider this school as an ESL program. This perception of the school mission further leads to the issue of the "suitability" of the student population. As Ms. Lin claims during one interview, for this dual language school to be successful, there are several important issues to take into consideration. The first is about the collaboration and coherency of teaching across subjects to ensure that the curriculum is aligned and that the same set of strategies or content is delivered to students. The other one is about the selection of the students for this school. She hopes that this school has more control over the students who are being accepted:

> It's important for us to choose the… And it's hard to do this in a public school where we have to accept all the students that want to like all the, the families that want to be a participant in this program. **But this program is not really geared for every student. You can't, it, it really has to be geared towards a high achieving student.** And it even, even for students that are Chinese dominant at home. Yeah. It's, it's like, it's sort of like, um ((thinking in pause))… well, high achieving, well, high achieving or at least above average. (Interview, Ms. Lin, 02/11/2019, emphasis mine)

In the second interview conducted at the end of my research, Ms. Lin revisited this idea of more control over the students, emphasizing that only students who are "risk-takers" and more "social" students, and whose family are highly "motivated" in learning two languages, will be

successful in this dual immersion school. As my findings indicate, both the CLA and ELA teachers perceive the mission of this dual language school as being to develop high standards in both languages and content, rather than to support English language development of students who speak Chinese at home. In their perspectives, students' success in these goals is highly related to their learning aptitude as well as their individual and familial investment in learning.

Cultural ways of learning

In addition to positioning dual language education as a special program for bicultural skills with high standards, Er'yu teachers also tended to associate the culture of learning with how well teaching works and how teaching should be. When describing the dilemma of balancing verbal skills and metacognitive skills, Ms. Lin highlighted her understanding of the cultural foundations of learning in this school. In Ms. Lin's opinion, many students with Chinese "heritage" in this school have been used to and been taught not to share their opinions at home so that they are not good at verbalizing in their ELA classes; however, communication and effective sharing of opinions are the expectations in American society and schooling. Furthermore, Ms. Lin associated students' learning styles with the teaching culture in this school. As she maintained, this school is teaching in a "non-Americanized" way, which still incorporates Chinese philosophy of teaching that affects learners' learning styles and outcomes:

> It has something to do with culture, right? Well Chinese kids are not really asked for their opinions at home. So it's really hard for them to say, I think this, and you know, right? Because it's not something that they're used to that, um, right? So not only they don't give their opinions, **they don't, they don't voice their thoughts often because, right, because you're, as a Chinese kid, you are only supposed to follow what the adult says and you don't even question it kind of thing.** So it's hard for us to, uh, do the opposite way. Well, in school that's, this is what you're supposed to do or in, you know, **as part of American society, this is like, you're always supposed to, um, take in information and then, uh, and then make an inference about what you think about that topic**. It is hard for them to… But then, but then I go to other schools where this population is very similar also. But the teacher population is different. **Like, like the student population is similar but because they have more like Americanized teacher.**

> **Americanized teachers.** If you teach it from when they're very young, then they can pick it up. (Interview. Ms. Lin, 05/21/2019, emphasis mine)

Not only are cultural ways of learning indexed through the ways of teaching, as Ms. Lin claimed, cultural beliefs and norms are also closely embedded in the teaching curriculum. It seems to me that teachers' conceptualization of "cultural way", "Chinese" and "cultural norms" are essentialized identities that teachers assign to the students. In the Chinese literacy class, for instance, students need to recite classic ancient Chinese poems and explain the essence of some ideologies (see more in Chapter 6). It is also typical for teachers to highlight culturally shared norms when teaching linguistic targets of Chinese. As I recorded in my field notes, Ms. Ma played a very popular Chinese song that I grew up listening to with the theme of respecting one's mom and taking in mom's suggestions. The day before, the class focused on a reading and listening test, the content of which was about buying iRobot for their grandmothers on Mother's Day so that their grandmothers could be relieved from housework:

> At the end of the class, Ms. Ma asked students to gather in front of the screen again and then told them that it will be Mother's Day. She played a song of Jay Cho 听妈妈的话 <*Listen to your mom*> and stopped a couple of times to explain the lyrics (see audio/video recordings). She emphasizes that they need to listen to what their mother says. If mother wants them to do homework, then they should do the homework, because when they get older, they will understand that everything mom said was right. It is fascinating to me that learning and understanding and following these cultural norms are very important cultural practices in this learning process. (Field notes, 05/09/2019)

As I have argued in this section, Er'yu is a bilingual and bicultural school space that favors language separation as the official policy. In the classroom space, however, the teachers tolerate but do not encourage language mixing, and strategically leverage it for pedagogical purposes. The classroom-level language norms and rules are also varied according to the content areas and learning targets to maximize the outcomes of content learning and to meet the standards. Just as Martínez et al.'s (2015) study shows, dual language teacher ideologies shape

their pedagogical moves, which are also informed by and reflective of the broader policy of language separation and English-monolingual discourses. Ms. Ma's classroom-level practices are shaped and also responsive to the school-level policy of language separation and the academic goals of high academic performance in the English-monolingual state-level testing. Meanwhile, teachers do not seem to position this dual language program as an ESL program but highlights the strict bicultural and biliteracy goals for the students along with the pressure for academic excellence in content areas. The principal and the teachers play a big role in shaping the learning space and local language policy in order to achieve the perceived mission for this dual language school which focuses on bilingual/bicultural development and high academic achievement. This local appropriation of dual language policy seems closely connected to and indexes these main social actors' ideologies around learning, cultures, and dual language education, which are important for them to support the socioeconomically disadvantaged learners which this school was founded to serve.

Dual Language Planning and Ideology in Forestview

School-wide Official Language Policy

Forestview International School is a K-5 public charter school with a whole-school 50/50 Mandarin immersion curriculum located in the suburbs. Most students and parents are from English-monolingual households with very few students who speak Chinese as their first language. This small school community features Chinese class for half of the day and the English class for half of the day. Overall, this school separates the classes, teachers, and classrooms. Although this is a dual language school for students to learn both English and Chinese across content areas, I claim that this school is still English-dominant with the goal of learning Chinese

for foreign language enrichment rather than the goal of developing balanced bilingualism and biculturalism.

As described in the research context chapter, Forestview shares the same building with a major English-monolingual elementary school and uses the common spaces (i.e., library, main office, and playground), but these two schools are two independent different schools. As described before, Forestview was founded by a group of White, English-monolingual parents to promote Chinese as a foreign language and global communication skills. In fact, parents have a large role in making decisions for the school, mainly through the existence of a governance council that consists of parents, staff and community members. The leading actors in this council are parents who are primarily White, English-monolingual parents. Different from Er'yu, where the principal and teachers have the most power in making decisions on curriculum and assessment, a group of parents in Forestview have more power in making those decisions. As I documented in field notes, parents in Forestview are believed to be vital in bringing funding and making major decisions that shape classroom learning, teaching, and curriculum:

> At 9:30, the class started the global art and I went to the library. One staff was there, and she started talking to me. She referred to the exchange events hosted between Forestview and some international schools/colleges in China. She told me there were a lot of fundraising events from parents and these events were brought by the parents. (Field notes, Forestview, 10/10/2018)

Language separation

> When talking with her (the English teacher Ms. Jones), I realize how these two spaces are so separate although the content is being bridged. It seems that these are two different spaces for students. (Field notes, 1/4/2019)

Language separation is the founding norm in this school and is strictly applied in terms of the physical organization of the classes, official language policy, and the allocation of the curriculum. As Principal Milton describes, when she came to this school, this 50/50 dual

language model had already been in place for a few years, from the time the school was first founded. The fourth-grade Chinese classroom and the English classroom, for example, are located on two opposite ends of the hallway. As Principal Milton describes, she prefers two separate classrooms rather than have students stay in the same classroom all day. In her view, having the Chinese-only classroom and English-only classroom makes students more focused on the Chinese learning time so that English is not taking over the Chinese space:

> And for the teachers it helps them with their organization of their classroom, and it allows the Chinese classroom to have that Chinese focus. **So everything in that room can be in Chinese and everything in the English room can be in English**. And see what we've, we had the experience, um, for a couple of years where the fourth and fifth graders were in one room. The Chinese teacher taught in the morning and the English teacher taught in the afternoon and the children, they'll, those children never switched classes. So there had to be both English and Chinese in that classroom. **And what happened was the children were pretty comfortable floating back and forth between English and Chinese, but English was definitely taking over in that classroom**. And now when I am with the very similar children, some of them were, were part of that last year. Now when they are in the class, the Chinese classroom, they're staying much more focused in the Chinese language because they know this is their space that they have to do it. So it really divides it off. (Interview, Principal Milton, Forestview, 10/28/2018, emphases mine)

Besides the rationale for protecting the Chinese learning space, Principal Milton also believes that strict separation eases teachers' burdens for lesson planning. She claims that the Chinese teacher and the English teacher have very different materials so that it is easier for them to have their own materials in their own classroom. The fact that teachers have different materials is very evident in the allocation of subjects. Different from Er'yu, where all of the vocabulary and strategies in other subjects are covered in the Chinese class as well, Forestview favors a strict allocation of subjects in two languages: math is taught in English only along with English language arts, and science is taught in Chinese along with Chinese language arts. However, teachers in Forestview do try to bridge their curriculum to some degree by reviewing the same set of vocabulary in English and Chinese. Interestingly, compared to Er'yu where the

Chinese class provides additional space for learning and reviewing subject-specific content in Chinese (i.e., science and math, and literacy strategies), in Forestview the English class is the space where additional content is being taught in English to make sure students' content knowledge can catch up with the standards. For example, although science is supposed to be assigned to the Chinese classroom, the English teacher Ms. Jones often incorporates the science knowledge, such as vocabulary and content, in her literacy block to make sure students already know this content information before they learn it in Chinese. In this sense, rather than learning Chinese through content, Chinese is learned as a foreign language subject through the content knowledge that students are already familiar with. As Ms. Jones describes, it is challenging when Ms. Xie, the Chinese teacher, requests her to teach some vocabulary or content during her English instructional time:

> It's been interesting, but she (Ms. Xie) needs them to have specific knowledge of vocabulary before she can try to teach the same things in Chinese. So like today she came in and was wondering about the word atmosphere and if we've, you know, talked about the word atmosphere, well no, we haven't. And so, you know, then trying to build that into something that I have planned for this week, that to make sure they are prepared. (Interview, Ms. Jones, 10/08/2018)

This separation of languages is also reflected in how teachers perceive different learning spaces. It seems that Ms. Jones perceives that literacy-based learning happens in the English class while projects and hands-on experience occur more in the Chinese class. The following dialogue occurred after Ms. Jones read a non-fiction text about different types of rocks during the literacy block before students started learning this science content in Chinese:

> Rebecca: Now can we go out and get rocks!
> Ms. Jones: This book is to raise your interest in the topic, and it is very successful. But in English class, we are doing reading and writing. You will work on science in Ms. Xie's class. (Field notes, 11/06/2018)

The understanding around the "English time" and "Chinese time" seems to imply some shared assumption of half-day "content time" and half-day "Chinese language learning time". As Principal Milton describes, it is really hard because English time is cut in half, but all of the subject content is covered in the English time so that they can hit the standards. During one conversation with Ms. Jones, she told me, "I feel I am teaching everything and every subject is fit into the half-day English class" (pc, Ms. Jones, 01/04/2019). It seems that it is perceived, at least by Ms. Jones, that content is only seriously learned in the English instructional time rather than the Chinese instructional time. This is in stark contrast with the situation of Er'yu where all of the content is covered in the Chinese time so that students are learning content in Chinese:

> Some of the challenges are that, when you only have half your day for English side of our, our teachers, they have to get English literacy and math and, or English literacy and another subject area in half a day. And then the other half of the day is Chinese. And so we're, we need to, um, have that cross curricular connection so that students are getting their science and their social studies. And we have to have that either in the Chinese or the English side. Um, but when you have roughly two and a half hours, so for example, for the English side, they have two and a half hours and they're trying to fit all of that in. (Interview, Principal Milton, 10/28/2018)

In regard to the school-wide policy of separating subjects, languages, and physical space, the English and the Chinese teacher hold opposite attitudes toward it. Ms. Xie strongly favors this language separation and appreciates her own classroom space. For her, the separation of the physical space is perfect because it provides a space and atmosphere where students need to use and learn Chinese. Her reasoning is aligned with Principal Milton's:

> Zheng: And how do you feel about the separating of subjects and the space? Would that make it more challenging for you to work with the English teacher?
>
> Ms. Xie: No, I think it's perfect. It's perfect. It's fine. Like when kids are switching to my classroom, they know they're going to speak. They are supposed to learn Chinese instead of English.
> (Interview, Ms. Xie, 10/10/2018)

Ms. Jones, however, hopes that there can be more connections between the two classrooms so that she will be able to communicate with the Chinese teacher closely and share more responsibilities together. As she comments, close proximity such as an open door between classrooms could make the two classes more connected, so that she can also find the students easily. As she describes, in that case, the two classrooms are more likely to seen as "as a unit for the grade, instead of English is here and Chinese is here" (Interview, Ms. Jones, 10/08/2018). As Hornberger and Johnson (2007) point out, the local negotiation, interpretation, and even resistance create an ideological and implementational space where actors take part in policymaking to defend their interests. It is interesting how the policy is interpreted differently by Ms. Jones and Ms. Xie, and their interpretation seems to be connected with how well they will be able to take control of their content and teaching.

English-dominant space with a global vision

Although two languages are taught in Forestview, English is the dominant language. In fact, Chinese is only visible during the Chinese instructional time and when Chinese is exhibited to showcase students' learning of a foreign language. In terms of the school space, Chinese work is usually exhibited outside of the Chinese classrooms but not in other Forestview classrooms. Also, Forestview shares the same building with another English-monolingual elementary school and English is usually the only language visible in common spaces (i.e., library, main office, and playground). Different from Er'yu where bilingual books, signs, worksheets, and flyers are spread throughout the school, Chinese resources seem to be confined to only the official Chinese instructional time and space in Forestview. The school website, for example, uses English only throughout all of its pages (Spanish translations are included in the 2020-2021 academic year but not Chinese translations), although a lot of the content is about Chinese language learning.

Similarly, while school newsletters and flyers are designed bilingually in Er'yu, flyers in Forestview are printed in English only. Chinese only appears very rarely in the area of newsletters where certain students' work in Chinese is sometimes highlighted to inform parents or communities what they have learned at school. I argue that Chinese in this school is regarded more as a subject for learning than a culture that students and parents are immersed in; the targeted families in this school are also English-dominant rather than Chinese-dominant, which might be is why all messages are delivered in English.

Interestingly, although this school is English dominant and homogenous in terms of learning practices, the school mission highly values the cultivation of students' global and multicultural awareness. Besides the Chinese language and culture, this school strongly focuses on the development of "global arts". Each day students have one period of global arts, which, as their school website states, engages "students to explore a combination of music, art and/or PE instruction with a focus on the global community…exposed to a variety of internationally-influenced related arts" (Forestview School Website, 2020).

Classroom-level Unofficial Language Policies

As I mentioned earlier, strict language separation and a one-language-one-classroom policy are generally enforced in Forestview at the administrative level. In Ms. Jones' English class, it seems that students do not use Chinese, and Chinese language and content are seldom brought up, according to my observation. As I captured in the field notes, Ms. Jones shared with me that she had never heard students use Chinese in her classroom:

> She (Ms. Jones) was curious about whether students spoke Chinese to each other or English in the Chinese instructional time. I told her that most of the time they spoke English. She said that they did a parent-student conference with the Chinese teacher where the students verbally showed their Chinese. She said she was very amazed because she did not hear that in the English class from them. (Field notes, 01/04/2019)

Other languages such as Spanish are not visible in the classroom either. The ESL teacher sometimes came and gave extra support to two students, but she never used a language besides English during these ESL support sessions. While language policy is English-only in the English classes, the one-language policy is not strictly enforced at all in the Chinese classes. As Ms. Xie describes, students are "reminded" but not "enforced" to use Chinese in her classroom. In fact, translanguaging is a language policy and norm that is explicitly explained, encouraged, and practiced in Ms. Xie's class. Students actively engage in and learn about this translanguaging policy and also sometimes negotiate their own classroom policy during their learning practices. Meanwhile, Ms. Xie struggles to make students speak Chinese while creating a fun and linguistically flexible learning space through translanguaging. It seems that she has the dilemma of promoting translanguaging while protecting Chinese as the minoritized language. In the next section, I elaborate on the classroom-level classroom policies and practices, particularly in Ms. Xie's classroom.

Translanguaging as a learned and promoted practice

In the Chinese classroom in Forestview, students are used to drawing on both Chinese and English for learning. Instruction is almost always delivered bilingually. Moreover, Ms. Xie explicitly promotes the use of both languages and strategically adapts her own repertoires for various teaching and learning purposes (more discussions in Chapter 6). Promoting translanguaging, as Ms. Xie, describes, fits in her own teaching philosophy, that is, to make students feel comfortable and safe in a second language learning context. Although she intends students to speak more Chinese, she does not think a one-language-only policy works in real classrooms. Ms. Xie promotes translanguaging because she feels that it is essential for students to negotiate meaning and to communicate in a way that makes sense to them. It is also because

promoting translanguaging is a way for students to feel that their home languages and linguistic/cultural identities are valued in this classroom:

> However, sometimes like, like if you want to talk about, uh, like deeper meanings that you have to, I have to switch back to English. However most of the time I ask him to do, um, to answer speaker listening more like input output in Chinese, or translanguaging, **actually I promote translanguaging** cause I think it's very essential and vital for the kids so to, to negotiate the meaning and communicating and using the language they feel comfortable… I think it's really important actually translanguaging everybody's using that. Native speakers are using that too… So the goal is to be Chinese only. But I don't like the, well pedagogy philosophy nowadays. The training is not to just like a swim, like you survive or sink, I don't like that… So I don't, I don't just to say, "Hey Chinese only". I, **I tried to promote, I respect the kids' background and then linguistic background, cultural background. So that's why I promoted the, uh, translanguaging so they can bring what they know.** Also they learn Chinese and they can move, uh, **towards Chinese only in the sense that they feel comfortable and feel they are valued in my classroom.** (Interview, Ms. Xie, 10/10/2018, emphasis mine)

In fact, translanguaging is explicitly taught as a pedagogy and policy in Ms. Xie's classroom with reminders given to the students. The next classroom interaction (see Excerpt 5.2) shows how Ms. Xie teaches this strategy and encourages students to understand the rationale of translanguaging. As Excerpt 5.2 shows, Ms. Xie is raising students' awareness of why she does or does not translate the English words into Chinese during their morning meeting. Students try to distinguish between "translation" and "translanguaging" in this interaction as a whole group. For example, in Turn 4, Elena claims that because Classkick[20] is a whole phrase it should not be translated into Chinese. After students identify that as "translanguaging" in Turn 7, Ms. Xie raises students' awareness of whether "translanguaging" is evaluated as right or wrong. In Ms. Xie's standards, not translating "Classkick" in this sentence is not considered wrong because it does not make sense to translate it into Chinese since this Classkick program does not exist in Chinese. By this explicit emphasis and awareness, Ms. Xie aims to develop students' awareness of using translanguaging for pedagogical purposes and to make her assessment criteria clear to

[20] Classkick is an app on the teacher's and students' devices to communicate for assignments and feedback.

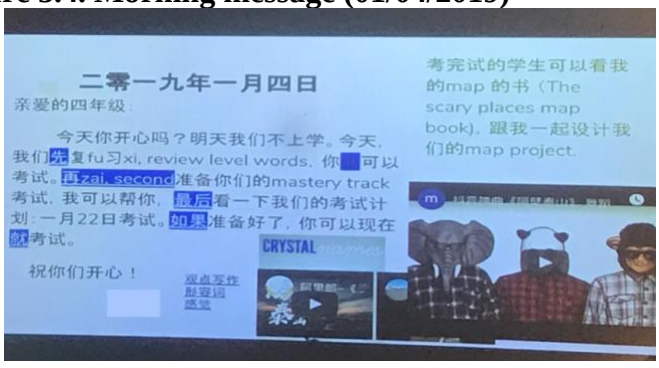
the students. As Figure 5.4 below shows, messages are written in both languages where certain Chinese words are followed with some Chinese translation (e.g., “review level words”) as scaffolds while some words remain in English (e.g., “map project”).

Excerpt 5.2. What is translanguaging?

1. William: 不是<No> (.) 是<It is> translanguaging=
2. Ms. Xie: =Translanguaging
3. Elena: Yeah
4. Ms. Xie: 这是两个很不一样的<These two are very different>(.) [是不一样的<They are different> Okay (.) 三 <Three>(.) 二 <Two> (.) 一 <One> (.)
5. Wilson: [They are not the same?
6. Ss: 看一看我们的 Classkick ((Student starts to read the morning message in Chinese which is displayed on the screen)).
7. Ms. Xie: 这是什么? <What is this> 这里为什么我不把它翻译？<Why did not I translate here> “班级典籍” 为什么我不翻译？<Why did not I translate “Classkick”>
8. Emily： Because it is the whole sentence.
9. Ms. Xie: 对(.) <Yes>这个就是<This is>translanguaging (.) 我这里呢有一些中文也有一些英语 <Here we have some Chinese and some English> (.)我不会把它翻译因为没有意义 <I do not translate them because it is not necessary> (.) It doesn’t make any sense. I don’t have to do it. 所以呢我保留了<So I kept them>(.)所以这样说没有关系的<So it is okay to say it like this> (.)我鼓励你们用这样的<I encourage you to use sentences and words like this> (.)有问题吗<Do you have any questions> ？ 能听懂吗<Can you understand> ？ 我刚才说了什么<What did I say just now>？
10. Elena:： 它<it> (.)这个是<This is> translanguaging.
11. Ms. Xie: 这个错了吗<Is it wrong>？
12. Elena: 不错 <Not wrong>.
13. Ms. Xie: 为什么没有错<Why isn’t it wrong>？
14. Elena: 因为中文里 <Because it does not exist in Chinese>.
15. Wilson: 没有说<It did not mention>.
16. Ms. Xie： 中文里没有这个词 <This word does not exist in Chinese> Classkick (.) 对<Yes>(.)它也没有中文版所以我不需要翻译<There is no Chinese version so that I do not need to translate>.

(Transcript of class audio, Forestview, CLA, 09/25/2018)

Figure 5.4. Morning message (01/04/2019)



Students often need to be aware of this language policy and try to make sense of their learning through the use of translanguaging when working on their individual and group tasks. They sometimes negotiate which linguistic forms, beyond which languages, to use for the particular learning assignments. In the next interaction (see Excerpt 5.3), Ms. Xie is setting language rules for the group assignment: students need to work together for a creative science project over the next few months and use Chinese to demonstrate their understanding of some science concepts. For this particular lesson, students need to work in groups and write a short introduction for their science project on their iPads. As the excerpt shows, Ms. Xie emphasizes the use of bilingual texts, and students ask whether they are allowed to translanguage. Emily is asking whether they can use Pinyin and Ms. Xie clarifies that she prefers Chinese characters over pinyin. We can see that students' awareness of bilingual composition and the rule of translanguaging are explicitly raised.

Excerpt 5.3. Setting the language rubrics

1.	Ms. Xie:	Bilingual (.) 什么意思<what is the meaning>?上面是中文 <Chinese on the top> (3.0) 下面是英语<English on the bottom> ((drawing it out on the white board))
2.	Ss:	Ohhhh::
3.	Elena:	Like in the Chinese section you can use a little English?
4.	Ms. Xie:	=You can use translanguaging.
5.	Emily:	((Raising her hands)) 那可以用pinyin吗? <So can we use pinyin>
6.	Ms. Xie:	最好是字<Chinese characters are preferred> (.) <u>translanguaging</u>
7.	Elena:	It has to be (.) at least one paragraph or?
8.	William:	Wait (.) what (.) what is the?
9.	Ms. Xie:	=Any questions about the level sentence patterns? 还有吗? 还有问题吗 <Any other questions? Any other questions>?
10.	Wilson:	How many?
11.	Ms. Xie:	=Sentence patterns (.) questions about it

(Transcript for class audio, Forestview, CLA, 11/06/2018)

Students seem aware of this language policy and sometimes make their own choices in showcasing their understanding. During their group work after the whole-class instruction, the class was separated into four groups and started their own projects. I took a video of one group

where four students were working on their paragraphs on their individual iPads. As discussed earlier, students are reminded to use bilingual texts, and Chinese characters are preferred. It seems that students also communicate with each other explicitly about the referred language norm in particular tasks; they seem agentive in choosing specific language or language forms to showcase their projects, depending on their perceived audience and purposes. The following dialogue (see Excerpt 5.4) emerged from their group work where students reminded each other of the translanguaging policy.

Excerpt 5.4. "You can translanguaging"

Ken: You can use translanguaging, you can use English and Chinese.
William: Yes, you can translanguaging…I am gonna do pinyin, to make it look really awesome.
(Transcript of class video, Forestview, CLA, 11/06/2018)

Dilemma in using Chinese

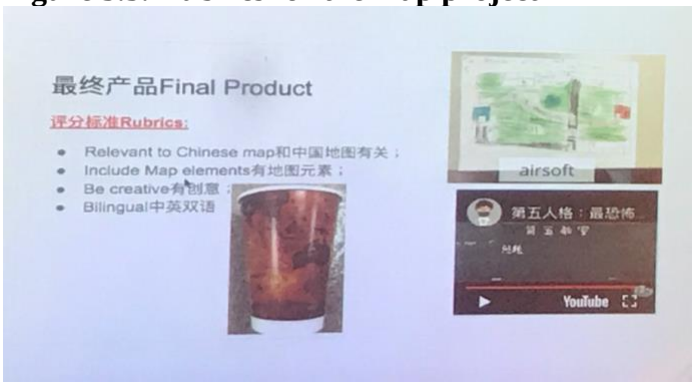
Despite the affordances of translanguaging, one drawback is that students feel that they have leeway to use more English so that they sometimes resist the use of Chinese. One major challenge is to balance the process of learning through students' communicative repertoires or translanguaging with maximizing their Chinese language use throughout the content-learning process. It was very common, especially at the beginning of the semester, that Ms. Xie constantly reminded them to use Chinese when some students resisted. In one class, Ms. Xie had to stop teaching and seriously discuss the issue of learning Chinese in this Chinese classroom. She told students that everything she was doing has a learning purpose, and that she tried to make learning fun for them. But if they chose not to speak Chinese, then it was a serious issue to think about why they came to the school. As I documented:

> At 1: 20pm, the teacher asked them to sing the song of the solar system. The song has a Chinese and an English version. The teacher asked the assistant to put all the text (Chinese character and pinyin) on the screen as linguistic scaffolds. After playing the song in both languages once, she started to use the Chinese part for some linguistic

> forms and so she skipped the English part but sing the Chinese parts. Some students resisted and explicitly said it was the worst part. Some students, however, depended it, (Kevin) claiming that was his favorite part. Ms. Xie got very frustrated and spent 10 minutes highlighting this issue. Later Ms. Xie told me that it was important for them to let them know how important they should follow the rule of speaking Chinese in Chinese classes, otherwise they took for granted that they do not need to speak Chinese at all. (Field notes, 09/21/2018)

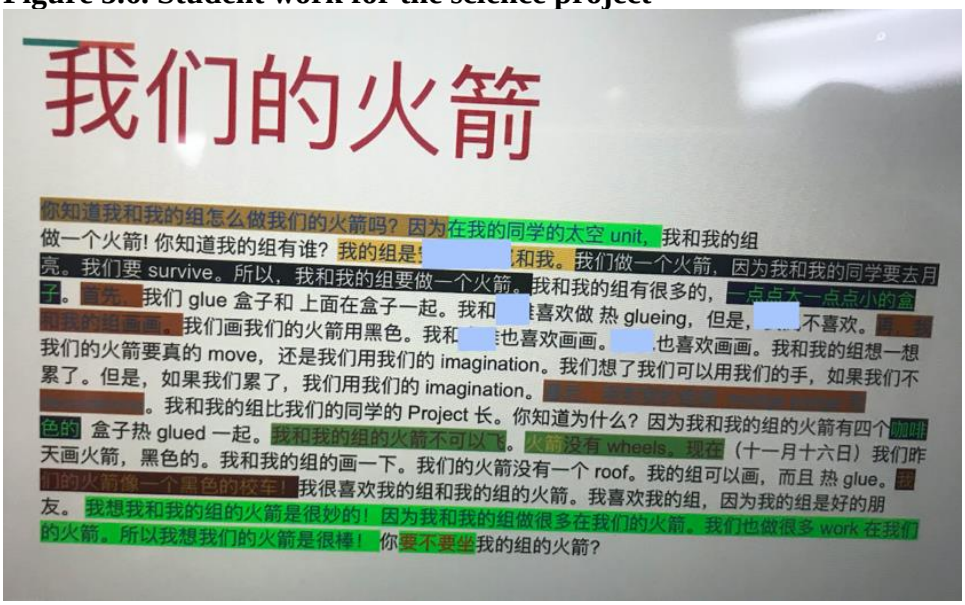
To overcome this challenge, Ms. Xie utilized multiple ways to promote the use of Chinese in the classroom. Constant reminders for students to use Chinese were very common. She either used body language and/or verbal language to stop them and remind them to speak Chinese. She also had a reward system to encourage students' use of Chinese. As I documented "through ClassDojo, Ms. Xie will give them points by the amount of Chinese they produce. Today each student got an extra point for their act of speaking Chinese" (Field notes, 11/06/2018). Another consistent approach was to give very explicit assessment rubrics that prescribe language use. Depending on the different learning tasks, Ms. Xie set up explicit and different expectations of rubrics prescribing a specific set of assessment goals in areas such as language forms, content knowledge, and participation. Figure 5.5 is a screenshot of teacher criteria for a group project—a map project after learning some information about Chinese geography. As the image shows, there are four components of criteria: relevant to Chinese map, include map elements, be creative, and be bilingual.

Figure 5.5. Rubrics for the map project



Similar to this group map project, Ms. Xie's major goal for the group science project was for students to creatively showcase their knowledge in their research and reading for the particular science project. Students often used English for group discussions when designing the science product using various materials collaboratively (see Excerpt 5.4). In addition, students needed to work out a presentation in Chinese. This presentation was to be given in front of their parents and other classes. For the presentation, however, students' Chinese language skill was strongly emphasized. As I documented, "four groups presented as a practice and then at 12: 45pm, students then went back to their own group to work on their speaking in Chinese as the teacher told that that was the part where she will give them grades" (Field notes, 12/07/2018). Figure 5.6 is part of a group's slides for their group presentation; students incorporate Chinese as much as they can in constructing the sentences. Meanwhile, they incorporate some English that they perceive as necessary to translate (i.e., "unit") or where they may have been unable to figure out a way to translate (i.e., "roof", "wheel'"), as they told me during their work.

Figure 5.6. Student work for the science project



Ideologies in Local Language Policy Planning

When I described language policy at the official and unofficial level in Forestview earlier, I included some beliefs from teachers and school staff that were relevant to their choices. In addition, there are several school-level ideologies around learning and language that emerged in the findings.

Ideology around language learning

Authenticity and immersion

In Forestview, one predominant ideology in planning the language policy, organizing curriculum at the administrative level, and developing curriculum at the classroom level is to offer "authentic" Chinese language and cultural resources as much as possible. This strong preference for authenticity can be seen in the creation of school-wide Chinese cultural events and the choices of instructional resources. In addition to the three certified Chinese teachers, two teachers funded from Hanban and the Chinese government (see more in Chapter 3) were also working in Forestview as classroom assistants. This school has established a relationship with Hanban and received sponsorship, materials, and opportunities to visit China. Principle Milton feels that resources from the Hanban teachers are valuable and should be fully utilized in this school. She particularly emphasizes the role that Hanban teachers can play in creating some cultural activities and in modeling what they do in China so that students can be immersed in an authentic Chinese environment:

> The teachers here all are very familiar with their families just going clean crazy and cleaning to prepare for the Chinese New Year. So, so whatever traditions they had in their own home or their own, um, their own part of China where they lived, they have brought here to bring it to life for them. And our Hanban teachers have indicated that it was so similar. They felt like they were home because they were playing games and they were doing different things. They were preparing the food and I mean all of the things that they were doing, they try to model it after what they would really be doing when they were, if they were in China preparing for the Spring Festival…**They just made it as**

> **realistic as they possibly could**. So, and then they, the culminating activities of performance. So in their global arts time, they're learning music and dances and then they prepared an actual Chinese festival with the Chinese dragon walking through and the kids putting fake money into the dragon's mouth. I mean everything. They just really just took it, you know, to the full extent…**This is a very awesome experience for our kids to have.** (Interview, Principal Milton, 10/28/2018, emphasis mine)

Besides the creation of these cultural events and resources in an authentic way, Principal Milton also emphasizes the use of authentic and native materials from China. She has a librarian background, and she wants the materials to be as realistic as possible so that students can really relate to the experiences in China, and she also emphasizes the use of online resources and social media to show the authentic and immersive environment. For her, it benefits teachers as well:

> You want the children to be looking at materials that children in China would be looking at so that it's about as realistic as it can possibly be. So it's as if we are either trying to teach children here with materials that children in China might actually see. And that's, that's, it's key for the teachers too, because then they can relate to what it is that they have are working with and teaching, teaching here in the United States is different than what they experienced as children in China. So the structure, behaviour management, all of those things are very different for that. But at least if they're working with materials and they have a personal connection or they can go on YouTube and get little videos and songs that they had, they had where we were growing up, they can put their whole heart into this and they can bring the children along with it because they have personalized it for them. So I would just, um, it just want, you know, what it is that they're looking at. I would like the illustrations, the different things that they're looking at to be as, as realistic and connected to the Chinese culture as possible. (Interview, Principal Milton, 10/28/2018)

This strong emphasis on authentic learning materials is also reflected in Ms. Xie's use of curriculum and learning resources. Rather than focusing on the ancient poems and classic literature as in Er'yu, curriculum and learning materials in Ms. Xie's class focuses on the authentic materials and contemporary cultures that students in China are exposed to. As Figure 5.4 (see above) shows, social media and digital resources such as popular songs, apps, and online videos in China are included in the morning meeting. As Ms. Xie emphasizes, using authentic

materials is more engaging to students, "I use Douyin[21], YouTube videos. I think the major benefit is authentic. It's real. It's not just faked. So they can be more like it's engaging (Interview, Ms. Xie, 01/04/2019).

Ideologies around the mission of dual language education

"Learning Chinese as a window"

This strong emphasis on authentic learning experiences with authentic learning materials seems aligned with the ideologies around the school mission, which centers on cultural competence and flexibility. The perception toward school mission in Forestview contrasts with that in Er'yu, where English-Chinese bilingual and bicultural knowledge is critically emphasized and embedded in their curriculum. As Principal Milton in Forestview elaborates, the school's mission is to, "help students become global citizens. So not just focusing onnthe Chinese culture during global arts especially. So there's other cultures that the students will be learning about" (Interview, 10/28/2018). While learning Chinese is one major outcome and mission of this school, it seems that learning Chinese also works as a door to cultivate global citizens that are equipped with a skillset with various languages and cultures. This seems aligned with their school mission statement, in which case learning Chinese language is the window to develop the social and cultural competence of being a qualified "global citizen" that can be engaged in international communication in the future. As Principal Milton emphasizes, learning the Chinese language is not only to learn the language itself, but to develop some interest in language learning that will open students' minds to the world:

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[21] Douyin (Tiktok) is a Chinese social media video app that is very popular for creating and sharing short videos.

> And so if they leave our school and they choose not to continue with Chinese, we do hope that they continue with some other language learning that this has inspired them to recognize how this just opens their world. And so that, that, that idea that we are guiding students to be, um, you know, world citizens, cultural citizens so that they, they have that ability to leave here and go do other things that did, that connects them outside of this space. (Interview, Principal Milton, 10/28/2018)

As I have argued in this section, Forestview is an English-dominant school space that adopts 50/50 Chinese dual language model as a language enrichment program. Parental involvement is vital to this school and plays a big role in shaping learning space and local language policy, along with the school mission. The school strongly favors language separation as the official policy and emphasizes the "one-language-only" policy as the founding principle of the school and of curriculum development. Chinese is only visible in the Chinese instructional times, and most school materials are presented monolingually to parents. This separation, as Principal Milton and Ms. Xie believe, does help protect the space of learning and using Chinese. In the classroom space, however, the Chinese teacher strongly supports and promotes translanguaging. Translanguaging is explicitly taught for students to draw on their repertoires creatively for language and content learning purposes. Meanwhile, students often resist the use of Chinese in the Chinese classroom so that Ms. Xie has to give very explicit rubrics to highlight the Chinese learning components. Ms. Xie's appropriation of language policy and pedagogy is aligned with the school mission of cultivating students' multicultural awareness and skills for being "global citizens" and with the major language ideologies of "authenticity" and communicative skills.

Discussion and Conclusion

As Hornberger & Hult (2008) point out, ecologically oriented investigations of language policy and planning look into issues such as the relationship between: different languages; language policies and individual experiences; language use and beliefs around languages;

language policies and sociolinguistic contexts; language policies and equitable multilingualism; and the interactions of language policies at multiple levels of social organizations. Findings from my analysis of the ecology of local language planning in Er'yu and Forestview reveal some common but also contrasting features in all of these areas, grounded in their particular sociolinguistic contexts.

My analysis shows the 50/50 dual language policy and model are strategically appropriated locally in these two schools in terms of class structure, subject allocation, curriculum design, literacy, and language practices. 50/50 language separation is the founding philosophy of both schools where separate physical spaces are established and is also believed to facilitate teachers' curriculum planning. While the official policy of language separation in Er'yu tends to ensure the students' knowledge in content areas and secure high academic achievement in a Chinese-English bicultural school environment, in Forestview it tends to secure a protected space for Chinese learning time in an English-dominant school environment. The relationship between the two languages is also represented in contrasting ways in the school spaces. In Forestview, Chinese is considered a unique feature of the school as, in effect, a foreign language, where it is usually exhibited to showcase students' achievement to parents and communities, and it is usually visible only in the Chinese instructional space. In Er'yu, however, Chinese is not only a language but also a cultural practice that all students are expected to engage with, and it serves as a communicative tool to bridge parents, communities and student learning. This decision is highly relevant to the social-historical backgrounds of the two schools, the major social actors in decision-making, and the primary student groups that the school aims to serve, all of which are different in Forestview than in Er'yu.

In terms of language policy at multiple levels, although language separation is favored by administrators in both schools, translanguaging happens and is enacted in both Chinese classrooms. Nevertheless, translanguaging means something different in each school. While translanguaging is explicitly taught, encouraged, and reinforced as a norm and assessment rubric in Forestview for developing individualized and motivating curriculum that still protects a Chinese space but encourages students' communicative repertoires, it is an implicit and hidden language policy strategically used by the teacher in Er'yu for targeted linguistic, content, and assessment outcomes. While students in Forestview often use translanguaging as a way to showcase their understanding and their bilingual skills, students in Er'yu normalize translanguaging as natural practice outside of the classroom but often avoid it during official classroom practice to maximize their Chinese literacy development. The local development of language policies is strongly connected to the ideologies and beliefs around dual language learning, which are interpreted by individuals and promoted by institutions at multiple levels. Teacher beliefs around language and learning shape how they make choices over their language policies in the classroom and how they appropriate their curriculum that is somewhat against the administrative requests (Freeman, 1998). Their beliefs can be different, but overall, the motivation of teachers and administrators is aligned to achieve the goals set for the particular school.

Both schools are identified as high-achieving schools in their school districts, and both of their school missions describe the cultivation of language skills in the globalized world. Nevertheless, a different emphasis on school mission is articulated and enacted to different degrees in these two schools that connect to global structures and sociocultural issues. In Er'yu, the local appropriation of language policy and curriculum is rooted and reflects the school-wide

ideology of individual accountability, perfection, and language separation. These ideologies are explicitly promoted by most stakeholders, officially and unofficially, as critical gateways and social ladders for their socioeconomically disadvantaged minoritized students. This appropriation is also advocated by the administrator and educators as a compromise between maintaining Asian identity and battling with the competition of standardized assessments in their social and educational realities. In alignment with these ideologies, class structures, curriculum and assessment are strategically designed to make sure that students are fully developed in both languages and both cultures and to ensure high achievement in standardized testing. In Forestview, the local appropriation of language policy and curriculum reflects the widely promoted ideology of bi/multilingualism(culturalism) as a set of unique, market-needed skills where multicultural competence and awareness are highly stressed. These ideologies are explicitly promoted by most stakeholders as critical opportunities for students to stand out and be competitive for their futures. Authentic Chinese language and cultural resources are sought, utilized, and emphasized to develop learners' communicative skills and performances. Chinese learning is also regarded as a window to develop students' global mindsets and learn other languages in the future.

Those decisions, however, cannot be separate from an ecological look at the school communities. In both cases, it seems that there are some student groups in mind that shape the policy and learning: Er'yu seems to focus on low-income students with Chinese immigrant backgrounds while Forestview tends to benefit middle-class and upper-middle-class English-monolingual students. School is a cultural communication system (Freeman, 1998). Freeman describes how cultural identities, cultural frames, and forms (Carbaugh, 1990) differ in the dual language school and mainstream classroom. She argues that Oyster Bilingual School's (her

research site's) goal is to have space where minoritized students can create positive and alternative cultural identities that are not respected and expected in mainstream schools. In Er'yu, I feel that the school is creating a cultural communication system where alternative ways of schooling, teaching, and learning are promoted, while learning and teaching in Forestview is more similar to mainstream ways of schooling in the U.S. with the Chinese language as a special curriculum. This difference, in addition to the cultural differences, is also relevant to the local actors in the process of language policy planning (Johnson, 2009; Wiley & García, 2016). In Liddicoat's (2019) study, he argues that ideologies and institutional structures (e.g., decision-making structures, planning structures) are the mediators of agency. In Er'yu, the principal is the one who created the whole dual language programming in this school; meanwhile, the teachers are also agentive in their own classroom space and team to accommodate curriculum to achieve the language, content, and cultural goals, although the target students in their minds seem to be the minoritized students with Chinese "heritage". In Forestview, a team of parents serves as the major decision maker for the initial structure of curriculum. As Liddicoat (2019) argues, agency is enacted through the sociocultural context as well as shaping the local structures. However, it is also interesting to see whose agency is being promoted and validated in the local language planning process and discourses in these two schools.

In summary, this chapter answered the questions: 1) what is the local appropriation of the language policy at multiple levels in the two schools? and 2) what ideologies or beliefs of local actors in this sociocultural context are evidenced in shaping the appropriation of these language policies? Findings from this chapter offer insights on dual language planning by discovering how the policy is locally interpreted and negotiated in multiple layers to realize the interests of major stakeholders (including major student groups) that the schools tend to serve. It highlights local

agency in achieving these interests and benefits at multiple layers of language policy and planning, which are also negotiated, sometime resisted, and appropriated through the ideologies of major stakeholders such as individual teachers, principals, parents, and students, as well as the socioculturally shared and constructed ideologies and missions within the school communities. It contributes to dual language education by highlighting these ecological factors in language policy planning, by promoting bottom-up social actions in framing language policy, and by attending to the "appropriateness" of local language policy with the diverse needs of students and families from different backgrounds. It also demonstrates that the process of dual language policy planning needs to be grounded in the local sociocultural discourses and to seek feedback, suggestions, and input from multiple stakeholders for equitable and positive dual language policies.

Chapter Six: Classroom Organization, Repertoires and Discourses

Introduction

Anthropological stances towards language use as early as the 1960s recognized that human beings employ various linguistic and paralinguistic (e.g., contextualization cues including nonverbal cues, intonations, registers) components of communication as repertoires for social interaction (e.g., Erickson & Shultz, 1982; Gumperz, 1982; Hymes, 1964). From this perspective, human beings are social actors developing and performing cultural practices and social memberships by employing various linguistic and semiotic resources (Cazden, 2001). This anthropological lens toward language use has been applied to analyze classroom discourse and interactions (e.g., Cazden, 2001; Mehan, 1979). The process of classroom learning is perceived as engaging in social, cultural, and discursive practices where micro-level communication styles, conversational organization, turn-taking, and cultural ways of communication influence and embody learning relationships and participation (Cazden, 2001; Erickson & Shultz, 1982). In recent years, scholars have been calling for a holistic understanding of how the hybridity of sociolinguistic, semiotic, spatial, and material resources play out collaboratively in communication and learning (e.g., Canaragajah, 2013; Pennycook, 2010; Rampton, 2011). Through this lens, the nature of communication is flexible, heteroglossic, agentive, and dynamic, and exhibits hybrid and mobile contact of languages, semiotics, and cultures.

Framed by the tradition of classroom discourse and interaction studies (e.g., Cazden, 2001; Mehan, 1979) as well as the new theoretical lens that posits the dynamic nature of repertoires (e.g., Hawkins, 2018; Pennycook, 2010), this chapter aims to investigate the second research question: how do teachers, influenced by multiple ecological factors, organize learning resources and materials spatially, socially, and linguistically, and how does their organization

shape the ecology of dual language classroom practices, discourse, and participation?[22] This chapter aims to closely analyze the teachers' assemblages of resources to understand the pedagogical and sociocultural outcomes in the dual language learning process. It also aims to inform effective and equitable dual language pedagogy by investigating the impact of the explicit and implicit assemblage of linguistic, semiotic, material, and spatial resources on learning and participation.

Repertoires and Assemblages in Dual Language Pedagogy

In studying bilingual and multilingual development in classroom settings, new theoretical lenses and pedagogical approaches that highlight the multilingual and multisemiotic nature of learning and teaching have also been incorporated to some extent. Translanguaging pedagogy (Creese & Blackledge, 2010; García & Li, 2014), for instance, has gained an increasing popularity and been applied to various bilingual classrooms. Translanguaging (see more in Chapter Two), which promotes the dynamic and fluid use of two languages, is considered to be more inclusive for dual language learners because it: (1) validates fluid language practices of bilingual communities; (2) enables teachers to bridge learners' language practices in communities and those desired at school (Flores & Schissel, 2014); and (3) enables access for multilingual students to demonstrate their resources in understanding and learning the content. Empirical studies have been conducted to examine the instructional affordances and classroom discourses that emerge from translanguaging pedagogies (e.g., Lin & Lo, 2017). More studies are

[22] While the research question recognizes that the teachers' assemblages of repertoires are guided by various ecological factors, these ecological factors are described in Chapter 5. This chapter focuses on how teachers' assemblages of repertoires shape the ecology of dual language classroom learning and teaching.

also attending to the meshing of multilingual, multisemiotic, and material resources in teaching practices (e.g., Canaragajah, 2018; Pacheco & Smith, 2015; Zheng, 2019).

Canagarajah (2018) highlights the perspective of "assemblage" to emphasize this meshing. As he explains, "assemblage" implies that semiotic resources are not organized into separate domains as structuralist orientations present them. Instead, all linguistic and semiotic resources, in relation to the spatial environments and artifacts, work collaboratively and shape each other in communication. Pennnycook (2017) adds the sociocultural angle of the notion of assemblage. As he explains, this notion of assemblage:

> allows for an understanding of how different trajectories of people, semiotic resources and objects meet at particular moments and places, and thus helps us to see the importance of things, the consequences of the body, and the significance of place alongside the meanings of linguistic resources. (p. 269)

In this sense, the ecology of the resources is analyzed in relation to their social-historical and sociocultural discourses, where the resources are connected to the understanding of their social and cultural indexicalities. Hawkins (2018) extends the multisemiotic and sociocultural nature of communication and proposes five complexities of "transmodalities". These complicities are 1) modes are intertwined, and modes cannot be identified or understood separately, 2) modes are connected to material objects, and different modes function together to make sense of meaning for human agency, 3) assemblages of modes are orchestrated and negotiated in the process of production and interpretation, 4) communication is embedded in and embodies social, cultural and historical contexts in local, translocal and transnational communications, and 5) modes are always associated with access, voice, recognition and power dynamics (Hawkins, 2018).

From a learning perspective, repertoires in teaching affect engagement and access to participation. Through engagement with digital media, online games, pop cultures, and out-of-

school communities, learners develop and bring what Rymes (2010) called communicative repertoires—individual learner's dynamic repertoires of languages, modes, resources, and communicative styles—into classroom learning. The incorporation of mass media, digital forms, and pop cultures is believed to be relevant to students' social relationships and the performativity of their identities (Lotherington, 2011; Rymes, 2016). Meanwhile, as Hawkins emphasizes, the different modes and resources index power dynamics and unbalanced access to voice. In this perspective, access to classroom learning and participation can be shaped by the resources learners bring to the classroom, and the resources they are drawing on within the classroom. This ecology of assemblage is important in analyzing the teachers' repertoires in learning and teaching in the two dual language classrooms I researched.

Classroom Discourses and Learning Opportunities

Analyzing classroom discursive patterns helps us to understand how students develop their learning, language, and literacy skills (Gibbons, 2018), the sociocultural relationships in the classroom, as well as how this organization shapes learning and participation (Bloome et al., 2005; Toohey, 1998; Rymes, 2016; Wortham, 2006). Social, physical, and interactional organization of learning events, such as classroom rules, norms, seating arrangements, and participation frameworks, also affect students' access to learning opportunities and the overall learning environment (e.g., Toohey, 1998; 2018).

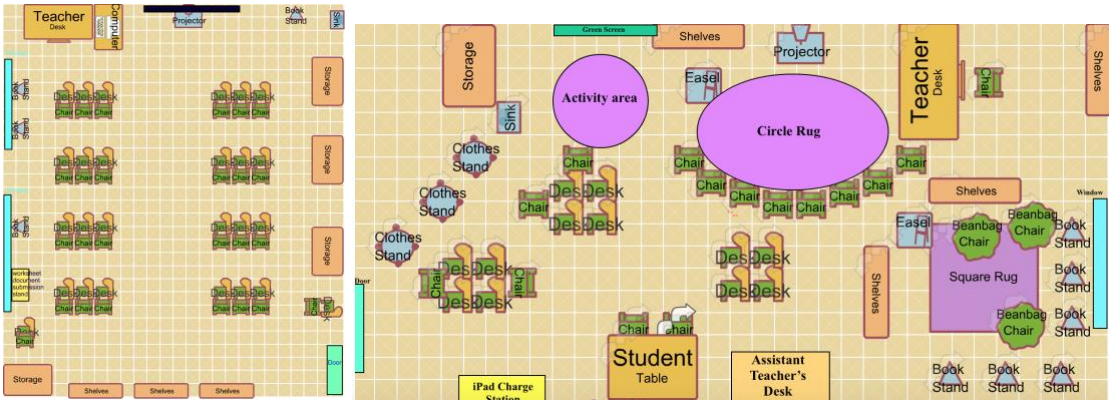
First, the micro-level interaction reflects students' repertoires and their participation in learning. Linguistic anthropologists have documented mismatches between learners' discursive and literacy patterns (e.g., linguistic features, verbal and nonverbal communication styles, narrative traditions) in their home communities and the expected linguistic codes in school settings (e.g., Boggs, 1985; Heath, 1983; Phillips, 1983). Learners bring their own repertoires,

social languages, and home literacies into classroom learning (Gee, 2012), and learners have their own cultural-historical repertoires and learning styles (Gutiérrez & Rogoff, 2003). In this case, communication in "mainstream" institutions is a set of learned patterns, meaning that language learning is not learning grammatical rules but also learning Discourses, defined as the appropriate ways to behave, talk, interact, dress, and communicate to be accepted as a member of specific communities (Gee, 2012). Second, the micro-level interaction shapes the nature of learning interactions, and the development of teacher-student and student-student relationships, which further impacts students' participation and learning opportunities. Much work in classroom discourse analysis, for example, has studied the IRF (Initiation, Response, Feedback) or IRE (Initiation, Response, Evaluation) turn-taking patterns in shaping students' language and content learning (e.g., Mehan, 1979; Lemke, 1985; Wells, 1993). As Rymes (2016) points out, "unilateral control of classroom talk can limit student engagement and achievement and create inequitable access to learning" (p. 10). This applies to peer interaction during group work as well. Van Compernolle and Williams (2013), for example, use microanalysis to examine the group dynamics between individual and group benefits in learning. As they point out, the micro-interactions and embodied actions in group work are mediated locally by the relations of power and solidarity within the group.

This chapter aims to add to the current scholarship in examining how the assemblages of spatial, material, and semiotic resources, beyond the talk, impacts learning opportunities in both whole class and group interactions. In what follows, I first describe the two Chinese teachers' orientations toward their teaching practices and their classroom organization in Er'yu and Forestview. This is to provide contextual information for the subsequent analysis. I then elaborate on three findings from classroom data and focused analysis of selected learning events:

1) teachers' assemblages of resources for multiple pedagogical outcomes; 2) teachers' assemblages of resources to mediate local discourses and the culture of learning; 3) and students' access to participation and learning opportunities.

Figure 6.1a & b. Ms. Ma's (left) and Ms. Xie's (right) classroom arrangement



Classrooms Organization and Teacher Beliefs

Ms. Ma's Classroom and Teaching Beliefs

> The classroom is well organized, and tables are lined up. All the signs are most bilingual and there is a combination of English and Chinese materials in different subjects. Most books in Chinese are written in the traditional Chinese form with the zhuyin system. Although there are some books that use the pinyin system. Most books and textbooks that I have noticed are from Taiwanese publishing companies (Field notes, 01/28/2019)

Ms. Ma's classroom in Er'yu consists of rows of desks, and students are assigned a fixed seat, which usually does not change for the whole academic year. As Figure 6.1a shows, the classroom is teacher-fronted, and students sit in a row of three desks facing the front board. Although students sit in a row of three, it does not mean that students have the freedom to communicate with each other. The three walls (front, left, and right) are full of posters such as visual support for languages, charts for content knowledge, classroom rules, and assessment

rubrics. Ms. Ma is very strict about the rule of sitting at your own desk and minding your own work. Students are not allowed to talk by themselves and are asked to pay attention to and follow the teacher's instructions at all times. Ms. Ma emphasizes that students need to study and work hard so as to be prepared for the tests. As Ms. Ma believes, students should be the ones that take up their agency to work hard and seek for help to keep up with the work. If they are not able to fully absorb whatever Ms. Ma covers in the classroom, they should use their afterschool time and work harder to catch up with the curriculum. For Ms. Ma, fourth grade is a critical year:

> But then as you get older, things get harder. You actually have to start studying, like some of these kids don't study. Even when we tell them, "okay, these are the things going to be cover and these are the pages they're going to come out of you study" and they still don't study. So I want them to get into the habit of taking notes. Start studying, prepare, get ready for middle school because you have to be independent and you have to be organized and you have to start reviewing and studying and whatever homework that we send home, if you, and they need to get ahead, get into habit of test correction. If you do something wrong, you have to go home and correct it, ask your parents or ask your teacher or as, your afterschool teacher. Whatever tests we do is to make sure that it's an assessment. So if you found out that you don't know how to do certain things, you can't just leave it alone. You have to go home and find a way, ask someone to help you as the teachers, us or ask your parents. (Interview, Ms. Ma, Er'yu, 02/13/2019)

Ms. Ma's curriculum seems to be aligned with this overall pedagogical priority—students' academic performance. Even though there are no state-wide Chinese Language Arts (CLA) Common Core Standards, the Chinese curriculum and learning tasks are designed to match the English Language Arts (ELA) Standards. As shown in Chapter 5, ELA Standards are printed and presented bilingually to make sure the pedagogy is aligned with the standards. Students' work is always selected and exhibited outside of the classroom, with a chart indicating their scores and how it will meet the standards. Students were also asked to write their yearly progress and goals in Chinese; these individual goals were later displayed outside of their classroom as a motivation. In terms of teaching resources, Ms. Ma believes in the essential function of bilingual instruction. For her, using both languages is necessary to make sure that the

content is successfully delivered to students. As she elaborates, it is unrealistic to have an ideal dual language classroom where 50 percent of students are dominant in one language; in fact, many students with Chinese "heritage" need to learn the "academic" Chinese literacy and languages in her class; she thinks that most students are not good in either language:

> But the challenge is, well, when you do this, you, when you do dual language, you want 50% of the kids to be dominant in one language. But sadly in a big city like this, a lot of immigrant, immigrant, second, second generation kids, they're not good in English or Chinese ((with rising tones)). Their English is not good because their parents don't speak English. Their Chinese is not good because they are not in China or Taiwan or Asia. So they're like, they're stuck. And is, this is really bad situation. So when I teach it like, depends on over years a little bit different. Cause sometimes most of the kids, the year, the kids know Chinese pretty well so I can use more Chinese but then not academic language. When it gets to social studies, they did certain things and even if they are fluent in Chinese, the terminologies in Chinese is really hard. So with the English to help, it's better. (Interview, Ms. Ma, 02/13/2019)

Ms. Xie's Classroom and Teaching Beliefs

Ms. Xie's classroom in Forestview (see Figure 6.1b) has more spaces where students can move around, study in groups, or find their own spot for learning. Students do not have assigned seating in this classroom. For whole-class instruction, students usually gather in the circle rug area: some of them sit on the rug, and some of them sit on the chairs. For group work, students move around in the desk area, activity area, and square rug area with their learning materials and iPads. The green screen next to the activity area is usually used as a backdrop for them to create videos on their iPads. For individual work time, students have even more freedom, and they are not required to sit at an assigned spot; the classroom has some cozy beanbag chairs in the rug areas where many students enjoy their independent reading time. Light music such as Jazz is played when students have independent reading time; Chinese pop music is often played when students are working in groups for some hands-on projects. There are many bookstands full of books, most of which are Chinese monolingual books. The classroom is decorated with many

traditional Chinese arts such as red lanterns, paintings, and calligraphy, most of which are gifts from Hanban since this classroom is sponsored by Hanban as a Confucius Classroom.

During the first interview, Ms. Xie described two major goals for the school year: first, she wanted the class to move one level up based on the Level Chinese Assessment (see more in the next section); second, she wanted the students to want to learn more about Chinese culture, rather than feel that they are forced by their parents to learn. To teach language and culture, Ms. Xie mentions that she prefers to use Chinese songs, videos, art-integrated curriculum, and more project-based hands-on activities to engage students because these are more authentic materials and are more engaging to attract students' interest:

> There is artwork piece of standards curriculum, also like as well as the learning objectives… One thing is they um, they enjoy being able to work with the groups. So the group work like collaboration, they enjoy that most of kids enjoy that. And another thing is being creative. Like they want to demonstrate their creativity through the projects, hands-on projects and they did that. It's more engaging and more multiple ways to, to demonstrate the student's learning instead of just uh, take a test, right or wrong. Yes, or no. The standardized test, which is the one like typical like that… Like because students are students that have different learning styles, not all of the kids are really good at standardized test and arts-integrated curriculum allow the kids to demonstrate their learning in a way they are comfortable with and also very engaging. (Interview, Ms. Xie, Forestview, 01/02/2019)

As I have claimed in Chapter 5, Ms. Xie promotes translanguaging. Beyond making the content comprehensible to learners, she also believes in the power of validating their linguistic and cultural backgrounds and their prior knowledge. But Ms. Xie also points out the challenge of most students being English-dominant without exposure to Chinese "native" speakers outside of the classroom:

> So prior knowledge, it can be that linguistic background and cultural background. So if I don't, acknowledge their, their home language. So, so like they will come here like a, without knowing anything actually they know a lot. I am not saying promoting their language and saying I acknowledge their values, the values of their prior, prior knowledge… Their only inputs like native Chinese inputs are from me. They don't have the surroundings, they don't have class, they don't have the, the classmates are not native

> speakers. So for the input part, like listening, reading part they have to learn very hard to grab this for, um, for other programs, like they would, if they have, like other programs, I know they have the native Chinese speakers or native English Spanish speakers for instance, the Spanish program it'd be really easy for them to learn, naturally learn that every day. They have the environment. But here it's like they don't, they have, they have to learn. (Interview, Ms. Xie, 10/10/2018)

Ms. Xie's overall classroom rules seem to be aligned with her beliefs as well. In general, Ms. Xie's instruction emphasizes students' individualized choices and paces in learning. Students have the freedom to choose their preferred books, resources, and forms of Chinese languages for most of the tasks (i.e., Chinese characters, pinyin, or visual support). Creativity and expressiveness of their understanding as well as positive attitudes and emotions toward learning are highly valued.

Findings and Discussions

The Assemblages of Resources: Pedagogical Outcomes

Sociocultural theorists perceive tools and signs as mediation of learning and cognition through activities. As Vygotsky explains, "the internalization of cultural forms of behaviors involves the reconstruction of psychological activities on the basis of sign operations." (1978, p. 57). Language learning, in this perspective, is "mediated by all the semiotic resources that are available in the learning environment" (van Lier, 2004, p. 97). These resources are by no means "passively available or 'just there'. They are actively brought in and created, shared and used under guidance from the teacher and other learners" (p. 97). Meanwhile, all of these resources are assembled and interrelated. As Canagarajah (2018) claims, the notion of assemblage helps "consider how diverse semiotic resources play a collaborative role as a spatial repertoire in accounting for the success of this activity, when language is not predefined as the sole, superior, or separate medium of consideration" (p. 39). Findings in this chapter reveal that teachers in both classrooms carefully draw on different linguistic, semiotic, material, and spatial resources in

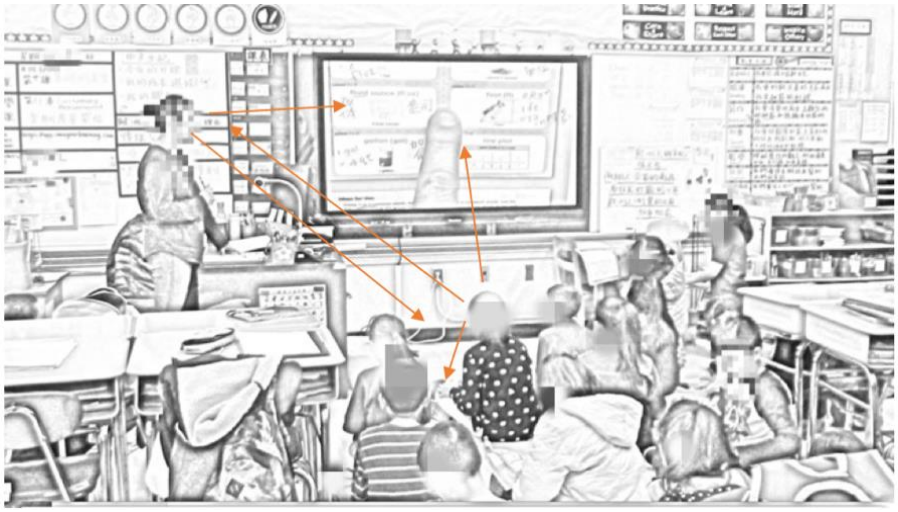
response to different pedagogical cues. How these resources are organized is dependent on factors such as content and the target learning goals. These two classrooms share some similarities in the employment of these resources. For instance, both teachers use gestures, bilingual instruction, and various forms of Chinese languages to help students make sense of the content and target language forms, although they are often used in different ways.

In this section, I focus on some language and literacy events to demonstrate how various materials and resources are selected and assembled by Ms. Ma and Ms. Xie, which realizes several pedagogical functions, such as reinforcing language forms and content knowledge. Findings from the two classrooms also illustrate some comparisons. Bloome et al. (2005) propose the need for a comparative perspective in analyzing classroom events. They point out some methodological considerations in doing comparative analysis. As they claim, "what is being compared, and how, is part of an interpretive act, and ideological formation" (p. 218). They suggest two essential questions to ask when doing comparative analysis: 1) why are the particular learning events being selected and compared? and; 2) what is the basis for these events to be compared (i.e., etic and emic perspectives)? The following three events (see Excerpt 6.1, 6.2, and 6.3) are selected because it appears to me that in them a similar set of materials are employed but in different ways. The comparison reveals insights on how teachers organize these resources in relation to factors such as pedagogical and assessment goals, classroom norms, and environments. I adopt an emic perspective to understand the interaction with evidence from teacher interviews, conversations, field notes, and observations.

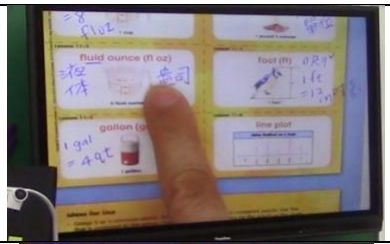
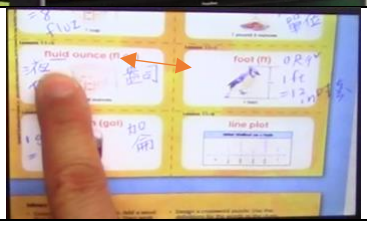
In Excerpt 6.1, Ms. Ma is reviewing some math content as the class is preparing for the state-level math test (see Figure 6.2 below). In the following excerpts, I have used English where she did, and Chinese where she did with the translation for the Chinese following the Chinese

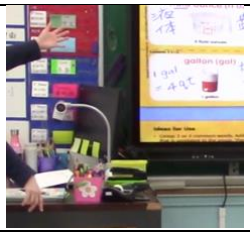
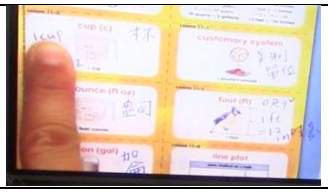
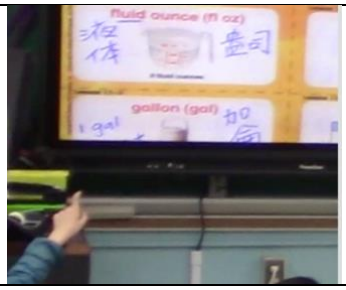
simplified characters (see Table 4.8 Transcription Conventions in Chapter Four). Also, spatial and materials resources are indicated in the pictures. Students are all seated in front of the screen and have a textbook with them to take notes on. Ms. Ma uses the projector, the screen, and the same textbook (with added linguistic and mathematical cues to aid students' understanding) as important tools. Ms. Ma's gaze is on the screen where her textbook is projected, and on the students. Students' gaze is on the screen, their individual textbooks, and Ms. Ma.

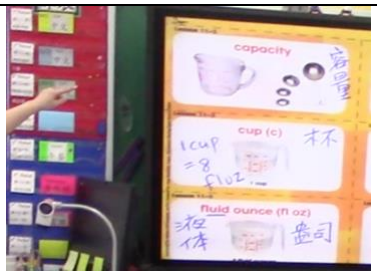
Figure 6.2. Classroom arrangement of Ms. Ma's math lesson



Excerpt 6.1. Lecture about ounce, liquid ounce, and gallon

1	T	Okay(.) 好了<Okay>:: skip 一下(.) 来 <Come on>::写成液体<write down liquid> (.)盎司<ounce>:: fluid 是液体 <is liquid>(.) liquid ((pointing the finger to the word 盎司)) (.)盎司就是<Ounce is> ounce, Okay? 因为这个盎司呢可以用来<Because this ounce can be used to> measure 那个<that> (.) weight (.) 也可以用来<and can be used to> measure liquid (.) 有两个不一样的<There are two different> ounce (.)	
2	T	所以<So> (.) when you are measuring liquid (.) 就给它一个特别的名字叫做 <people give it a special name called> fluid ounce (.) 液体 <liquid> (.) 盎司<ounce> ((moving from the word 液体 on the left to 盎司))(.) 好了吗?<are you done?>	

3	Ss	没有<Not yet>::((students were reading the screen and writing down the words on their own textbook))	
4	S1:	It's hard to see it (.)	
5	S2:	There is glare=	
6	T:	=是吗 <Really>？那你就过来一点<Then you can come over a little bit> (.)这边坐<sit over here>((one hand pointing to the front left corner seats and one hand pointing to the screen))(.)我这边看的非常清楚<I can see it very clear on my side>(.)是你自己的地方不对<your seat is not right>.	
7	Ss:	((Three students followed Ms. Ma's direction and moved from the front right to the front left))	
8	T:	你看<see> (.) 坐下来<sit down>(.)是不是超级的清楚<Isn't it super clear>? Okay::好啦<Okay>::	
9	Ss:	没有((Not yet))::	
10	T:	这是最小的单位对不对？<This is the smallest unit correct?>	
11	Ss:	是<Yes>::	
12	T:	那<So>::下一个单位是什么<what is the next unit>？	
13	Ss	Ga[llon:: [Ga::	
14	T	不是<Not yet>(.) 快到了<almost there>	
15	Ss:	Cup	
16	T:	Cup(.) 没错<Right>(.)下面这个<the one below>((moving the textbook under the projector to make sure the new content is projected on the screen))(.)杯<cup>::对不对<correct>?一杯<one cup> (.) 那一杯是多少的<So one cup equals how many> fluid ounce? ((one finger pointing to the word "cup")).	
17	Ss:	Eight	
18	T	八个<Eight>:: Okay?所以你要倒八个<so you need to pour eight) ((using her fingers to draw the word eight in the air)) fluid ounce 才可以摆满一大杯<so that you can fill the whole cup> ((one figure pointing to the measuring cup on the textbook)) (1.0) 因为它这个<Because this> vocabulary 是跳来跳去嘛<is not organized in the right sequence>:: 到时候你自己剪下来的时候啊<later when you cut the pictures off the textbook>::你今天晚上带回家<Tonight when you bring it home>(.)要把它按照顺序排好知道吗<you need to put them into right sequence, alright>?	
19	S1:	Is the fluid ounce (.) uhm:: uhm:: together? ((This student just moved from the right corner to this area earlier. She is sitting next to the teacher now and pointing to the screen)).	

20	T	是<Yes>(.)他们都是一起的嘛<they are all together>::对不对<right>?((adjusting the project and textbook to zoom in the three pictures)).有没有看到<Did you see it>?容量<capacity>((pointing to the word 容量)) 还有杯<and cup>::还有<and>fluid ounce 都是放在一起的<they are all together>(.)可是你最好是有小的先<but you need to put the small one first>((pointing to the word fluid ounce))(.) 再来中<Then the middle>((pointing to the word cup))::再来是大<Then the big>((pointing to the word gallon))::可是这个跳太快了<But we are moving too fast>(.)所以我们先等一下<so let's wait for now>.	

(Transcript for class video, math lesson, Er'yu, 04/15/2019)

During this learning event, we can see Ms. Ma strategically highlights the core vocabulary and concepts as well as elicits accurate answers from the students. One frequently used strategy is to emphasize the vocabulary, which she usually starts in Chinese and then repeats in English. This approach is evident in Turns 1, 2, 16, and 20. She often starts with the Chinese words (e.g., "盎司" <ounce>) with a high voice volume and then repeats the English translation with the same high volume and a slower pace. Another approach is to use her finger in directing students' attention to the written words in a very explicit way. For example, Ms. Ma points at the particular words or at a particular sequence to guide the students' understanding and attention. In Turn 20, for example, she accompanies the words "小", "中", and "大" with her finger pointing at "fluid ounce", "cup", and "gallon" respectively to emphasize the correct sequence. Her body language also gives students' extra support to understand her language or to provide some hints for understanding the content. In Turn 18, Ms. Ma uses her hand and draws the number "eight" in the air to emphasize that eight fluid ounces equals a cup. All of these different linguistic forms (e.g., Chinese characters), contextualization cues such as paralinguistic and prosodic cues (e.g., higher volume, slower pace) and kinesics (e.g., eye gaze, pointing and drawing numbers in the air) are simultaneously activated to highlight the content knowledge and to elicit accurate answers. This is aligned with the findings from Canagarajah's (2018) study about international STEM scholars' assemblages of repertoires (including spatial repertoires): the

assemblage of repertoires plays a role in conveying meanings, organizing thoughts, and performing effective teaching, and different resources are not organized as separate units. As Ms. Ma claims during the interview, she wants to really highlight the math vocabulary and content knowledge:

> Math is, is, is a little bit harder because the test is in, the test is in English and the textbook is in English. So yeah, we do, we do go over vocabulary to help them, because for some of the students like knowing, knowing the meaning in Chinese and do help them understand better. And I do explain in Chinese but it depends on, it depends on how much they understand because um, sometimes if I, if I use too much Chinese, they actually don't understand the concept. They kind of, it's too, their Chinese is not good enough to the point that for them to understand complicated, the procedure, the process, but definitely vocabulary that that we cover. (Interview, Ms. Ma, 02/13/2019)

This goal also seems to be reflected by Ms. Ma's use of verbal language and her responses to students' verbal language. Ms. Ma uses Chinese most of the time, but she switches to English to discuss content knowledge. In Turns 1 and 2, she repeats the important content words in both English and Chinese. Yet, Ms. Ma often uses Chinese only when she is expressing ideas that are not content knowledge. In Turn 6, for example, she asks students to move over (so that they can see better) and uses her body language clearly to describe her intention ((one hand pointing to the front left corner seats and one hand pointing to the screen)), which helps make meaning clear to all students. Students often respond in English, and Ms. Ma is not very harsh in making them use Chinese only. Ms. Ma's expectation toward students' verbal language is dependent on the words. And it is necessary to engage students with different language backgrounds and proficiency:

> Sometimes if I know it's simple enough that you can say, you can definitely say in Chinese, and obviously you say in Chinese, but if it's, you know, it is academic content language. It is too difficult. If you want to explain something, then then you could switch it to English. It's okay. But if you just, every day like we're chatting, it would just, if it's, yeah, if it's a daily language that you're able to say in Chinese, then you say in Chinese. Depending on the difficulties… If we were talking about this, all right then you know, but, but if it's entirely in Chinese, yeah, they get lost. If it's not their, you know their,

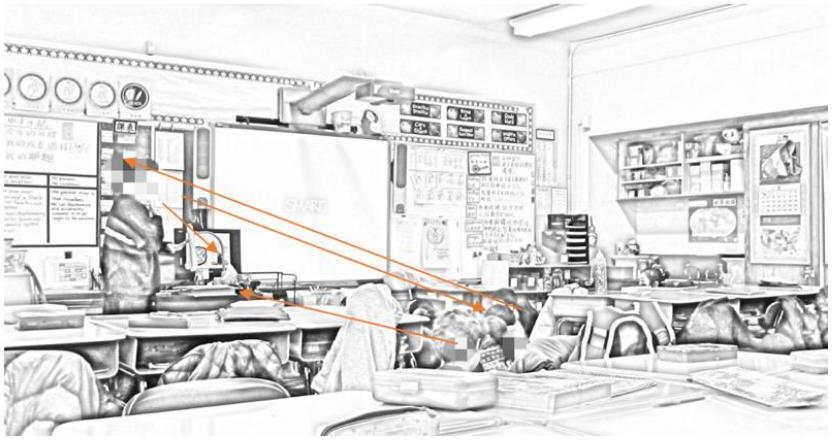
> their language because we have a few kids, right? They're not Chinese descendants so they don't hear it at all. So if you don't give them any English, they're not going to be engaged or motivated to learn. (Interview, Ms. Ma, 02/13/2019)

As this learning event shows, it is obvious that Ms. Ma holds the floor; students are only invited to take turns when there is a very particular evaluative question. Out of the 20 turns, Ms. Ma initiates 6 turns, and most turns involve multiple messages units. Students only initiate turns twice for questions or comments, both from the same student, Sarah (see Turns 4-6 and Turns 19 -20). It is interesting to note that Sarah is often considered by Ms. Ma as the "model" student. Her work or answer is also used a model, and her role is always Ms. Ma's helper in distributing materials (Field notes, 05/16/2019). Except for this particular student, other students all focus on the screen and take down notes quietly in their own individual textbooks. Most of them do not have any verbal interaction with Ms. Ma or their peers. As for the questions and interaction within the turns, Ms. Ma maintains the initiation-responses-evaluation (IRE) turn-taking pattern (see Turns 11-12, 12-15 16-18) (see Mehan, 1979). Rymes (2016) points out several pedagogical outcomes of the IRE organization, one rudimentary one being a quick way of gauging answers. As Rymes describes, this can help reinforce basic skills, but teachers might be dominant in the teaching, and it turns into a "nothing more than a human desk of flashcards" (p.107) when enforcing evaluative sequences. The question types within the IRE sequence matter too. For known-answer questions (testing or display questions), the purpose is to "prompt students to display information already know to the asker" (p. 108) where learning is very decontextualized. Ms. Ma often initiates a turn with a question and ends with an evaluation of right or wrong, and then initiates the next turn. Her questions within the turns are also closed or display questions which expect a correct answer, rather than opening up a space for questions or discussions (e.g., "what is the next unit?", "how many?").

Based on my conversation with Ms. Ma and the observation in Ms. Leung's math/science class earlier that day (Field notes, 04/15/2019), students have learned all of the concepts in English with Ms. Leung. I argue that there are two major pedagogical outcomes in Ms. Ma's assemblages of resources in this learning event: to reinforce the learning of academic content words in Chinese and to review the key math concepts. This learning event seems to serve as a quick review session for the standardized math test with directions and modelling so that students would be able to accurately capture the concept and could work on the task independently.

Excerpt 6.2 shows another learning event, but for a social studies lesson. In this event, Ms. Ma is giving a quick lecture about identifying the symbols on the City Seal. Students have learned these symbols in the previous class, and Ms. Ma is showing several examples before students move to group work on the City Seal Poster Project (Field notes, 03/19/2019). I claim that a similar set of resources is drawn on by Ms. Ma as those in the math lesson, but it is organized differently for different content-specific outcomes. Instead of heavily relying on the screen, Ms. Ma shuts down the big screen and adjusts the small screen toward the class (see Figure 6.3). She points at the four images on the screen that are part of the City Seal. Her gaze is on the screen and students while students' attention is on the screen and the teacher. Their gazes can be the indications of their attention to the content, which are also guided by the features of the spatial and material resources. Compared to the previous interaction, students' gazes do not focus on the big screen and their textbook because they do not need to copy the correct notes from the big screen.

Figure 6.3. Classroom arrangement of Ms. Ma's social studies lesson



Excerpt 6.2. Lecture before the city seal group project

1. Ms. Ma: 所以我们现在讲英文就是因为这个地方当初是被英国人占领过<So the reason why we speak English now is that this place was occupied by British people>(.)可是英国人没来之前是荷兰人<But it was the Dutch before the British came>(.) 只不过呢英国人被荷兰人又赶走了<but the British were driven away by the Dutch>(.)所以这两样东西<So these two items >(.)荷兰人最有名的就是风车<the Dutch is most famous for their windmill>(.)如果你去荷兰参观 的话荷兰到处都是风车<If you visit the Netherlands, there are windmills everywhere>(.)所以他们从<so they>(.)他们自己的国家<from their own country> 把他们这个科技这个<bring this technology this>technology 带来美洲这边因为你知道吗<bring it here to America because do you know>? 原住民自己是不可能会带风车的嘛<the indigenous people were not able to bring windmills> (.)对不对<correct>?因为原住民没有这样的<because the indigenous people did not have this kind of >technology(.)这是欧洲人带来的<this was brought by Europeans>(.)所以这两样东西代表的是欧洲的文化大家说欧洲的文化:: <so these two items represent the European culture repeat after me European culture::>=
2. Ss: =欧洲的文化::<European culture::>
3. Ms. Ma: 欧洲人的影响:: < European influence::>=
4. Ss: =欧洲人的影响:: <European influence::>
5. Ms. Ma: 知道吗<understand>?[欧洲人的历史<European history>(.) okay?
6. Ss: [欧洲人的历史::<European history::>
7. Ms. Ma: 那这个呢<What about this>？ 弓<Bow>
8. Ss: 弓::<Bow::>
9. Ms. Ma： 弓箭代表是<Bow and arrow represent>
10. S: 打::<hunting::>
11. Ms. Ma: 对原住民的<Yes the indigenous people>(.)原住民打猎的工具<indigenous people's hunting tools> (.)那这个是<And so this is>(.)欧洲人测量的工具<European people's measuring tools>一起说<say it together> ::原住民打猎的工具< Indigenous people's hunting tools> :: =
12. Ss: =原住民打猎的工具< Indigenous people's hunting tools> ::
13. Ms. Ma: 那这个铅锤是欧洲人测量的工具<so this plumb bob is European people's measuring tool>=
14. Ss: =欧洲人测量的工具<European people's measuring tool> ::

15. Ms. Ma: 那白头鹰代表的是什么 (So what does the bald eagle represent>?(.)就是北美洲<that is North America>(.)美国<the United States>(.)这样可以吗<Sounds good>? Okay 那回去之后呢<then after you get back>(.) 你看看能不能用你自己的话<see whether you can use your own words>::写一下<to write down>(.)每一个每一个<every every>image 代表的东西如果不行的话你可以过来问老师<represent and if you cannot do it you can come to ask me>(.)如果四个人讨论半天都没有人会写的话<if after discussing in a group of four for a long time and still nobody can write it>(.)我可以借你们看一下我的那个<then I can lend my sample for your group to take a look>Okay?但是我不想让你们就抄我的<but I do not want you to copy mine>(.)我这个只是很简单的那个<what I have written is very simple>definition(.)可是你在写的时候你要写一句话<but when you write it you need to write down a whole sentence(.)譬如说你要说<for example you have to say>(.)弓<bow>::代表了<represent> 我刚说什么<what did I say?[原住民打猎的工具< Indigenous people's hunting tools>
16. Ss: [原住民打猎的工具< Indigenous people's hunting tools>
17. Ms. Ma: 那铅锤代表了欧洲人[测量::的工具 <and plumb bob represent European people's measuring:: tool
18. Ss: [欧洲人测量的工具< European people's measuring tool>
19. Ms. Ma: Okay 那你们的东西在后面<your stuff is at the back of the classroom(.)我给你们 10 分钟的时间<I will give you 10 minutes to work on it>

(Transcript of class video, social studies lesson, Er'yu, 03/19/2019)

In this learning event, Ms. Ma seldom invites students to respond to her questions. The questions she asks are often rhetorical and aim to engage students' attention before she explains the content. For example, she asks a question about the bald eagle in Turn 15, but she quickly responds with her own explanations (see also Turn 7). In Turns 1 and 15, Ms. Ma elaborates the concept with detailed descriptions. These teacher monologues where "teacher holds the floor without interruptions" represents a one-way transmission of information or directions (Gibbons, 2018, p. 138). Even when Ms. Ma invites the class to take a turn, she only asks them to repeat what she says so that students are familiar with the structure and the pronunciation. These questions are not display questions to prompt some expected "right" answers from students, but to ask students to produce the target language forms. In terms of language use, Ms. Ma uses Chinese almost exclusively and only adds some words in English in case not all students understand the target word in Chinese, as she told me after class. She also ensures that students are able to respond in Chinese. This is different from the previous learning event where students

often use English, and Ms. Ma recasts it and repeats students' answers in Chinese. Ms. Ma has emphasized the rationale for her language use several times: the extent of selecting Chinese depends on her prediction of students' understanding of the content. As she explains, students are more likely to produce more Chinese in the social studies lessons:

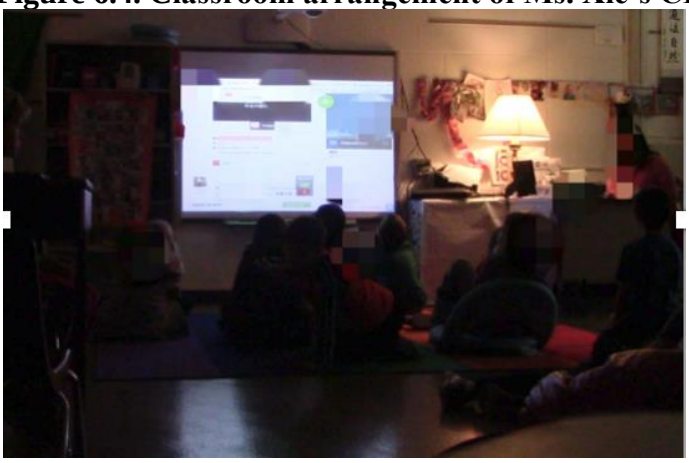
> [I incorporated] social studies content in Chinese teaching anyway because it's literacy and the textbook is in Chinese so students are able to understand most content… Sometimes all you need to do is to give them one or two, a few and then they understand. You give them a preview, you provide preview a little bit in English and then the remaining time you can do it in Chinese, but it's better cause they, they get it all. (Interview, Ms. Ma, 02/13/2019)

As for Ms. Ma's assemblages of spatial and visual repertoires, I believe that using a small screen draws students' attention to Ms. Ma's speaking, because the screen is too small for many students to read the linguistic cues. However, the images presented on the small screen can guide students to follow the questions. Whether students are able to see all of the linguistic cues attached to the images in detail seems not important for this teaching goal because most of this content has already been presented and learned before. This is evident from my communication with Ms. Ma. Interestingly, I initially waved at Ms. Ma to tell her that the big project screen was not on when I was video recording the lesson. She ignored me during the class and later told me that she shut down this big screen on purpose so that students can pay more attention to her speaking. For this short lesson, which only lasted two minutes, the purpose seemed to quickly review some language and content and to use this as modelling for the group work later (See Turn 19). Throughout the interaction, Ms. Ma gives examples about demonstrating what represents what (e.g., what does "plumb bob", "bow", "bold eagle" represent?) and inviting students to repeat after her. These words are emphasized with high volume (see Turns 7, 11, 17), as they are key words for the subsequent group task (see Excerpt 6.6 later in this chapter). I claim this learning event focuses on students' accurate presentation of the content and linguistic forms.

Ms. Ma's organization of these two teaching events seems to be aligned with her overall classroom rules and pedagogical goals for accuracy and content knowledge, as I mentioned at the beginning of this chapter. In both examples, Ms. Ma is holding the floor, and the whole-class instruction is teacher-centered. Ms. Ma emphasizes collective products from students and expects students to have accuracy rather than attending to their individual learning processes. In this case, students are required to respond, pay attention, and interact in the ways Ms. Ma requires. Students' roles are shaped by the format of learning as followers to repeat for the right answers and language forms, and there are few opportunities for students to ask questions and show their process of thinking. Gutiérrez et al. (1995) looked into how power was constructed between the teacher and students through discursive practices. They found strong conflicts between the teacher's monologic scripts, which reflected the dominant institution values, and students' counterscripts that refused to comply with the teacher. Their study thus calls for the creation of "a third space" in teaching, where the two scripts would be able to intersect and generate more authentic learning experiences. In Ms. Ma's class, it seems that students do not even have a space to produce counterscripts due to the dominant teacher power and voice. Although students are grouped closely, students do not interact with peers. Only Sarah in the front is able to interact with the teacher, and it remains unclear whether all students are engaged in this process of learning. Moreover, this limits the teacher's ability to gauge each individual student's responses and learning needs, not to mention how much individualized support they can get. It seems that students are on their own to work hard and get answers right. The less advanced students are left behind but have to catch up the lesson during their individual time such as afterschool time, as Ms. Ma believes in the importance of working hard which I mentioned earlier (Interview, Ms. Ma, 02/13/2019).

Next, I turn to Ms. Xie's classroom in Forestview to analyze her assemblages of resources for pedagogical purposes. The next learning event occurs in Ms. Xie's Chinese Language Arts (CLA) class in Forestview. Ms. Xie spends over 40 minutes reviewing each student's homework on descriptive writing. The homework was submitted to Classkick, an online classroom platform, and Ms. Xie is projecting the software on the screen. She occasionally walks to the board on the left of the screen and reviews some sentence structures written on the board. She explained to me, "I feel it is really nice activity to show their experiences and then to show their understanding and then metalinguistic awareness" (Field notes, 12/14/2018). Students' work is multimodal where they incorporate pictures, videos, and drawing. As Figure 6.4 shows, the environment in this event is very dark, which is often the case for whole-class events, and students are sitting and moving around freely (e.g., one student is sitting in a beanbag at the back). Excerpt 6.3 captures how Ms. Xie organizes the teaching tools, student work, and the classroom dialogues to teach the language forms and to engage learners. I will explain how Ms. Xie's assemblages of resources help engage students and validate students' voices while highlighting their metalinguistic awareness. Meanwhile, it creates an encouraging environment where students seem comfortable about questioning and disagreeing with her.

Figure 6.4. Classroom arrangement of Ms. Xie's CLA lesson



Excerpt 6.3. Review of descriptive writing (digital homework)

1. Ms. Xie: 然后呢这个是瑞迪的<Then this is Brady's> (.) "我喜欢<I like> Minecraft" (.) 这个可以吗？<Is this okay?>
2. Ss: 可以<Yes>=
3. Ms. Xie: =可以<Yes> (.)写的非常好 <Good job> (.)这个是个<This is> translanguaging 但是写的非常好<But it is very well written> (.) "我和<me and> classmates made private"=
4. Ss: =Pilot
5. Ms. Xie: Oh pilot 和<and>::
6. Wilson: Military base
7. Ms. Xie: Oh
8. Ken: Military base
9. S1: It isn't military base
10. S2: It doesn't matter (.) Pass
11. Ms. Xie: "我喜欢猫 <I like cats> (.) [我有 100 个<I have 100> cookies"
12. Ss: [我有
13. Ms. Xie: 很好我也想要 <Very good I want them too> ((laughing))
14. Ss: Me too ((Some noise coming out))
15. Ss: Wow:: ((students making cheering sound))
16. Ms. Xie: ((Moving the screen to show the next student Wilson's work))
17. Ss: ((Students chatting; one student started screaming when Wilson's picture appeared))
18. Rebecca: He is in the trash can!
19. Wilson: Recycling bin ((sliming and looking around))
20. Ken: He wants to be remembered [then
21. Ms. Xie: [你们要把伟森给回收掉是吗<Do you want to recycle Wilson>？好<Okay> "我叫<My name is> Wilson (.) 我喜欢河马我有三只猫<I like hippos and I have three cats" (.) 他写的对吗 <It is correct>？
22. Ss: 对<Yes>::
23. Ms. Xie： 对啦非常好<Yes very good> "我的朋友叫肯尼(.)瑞迪和威廉 <My friends' names are Ken (.) Brady and William>"(1.0) "我住在<I live in> Forestview" (.) "我最喜欢的颜色是蓝色和红色<My favorite color is blue and red"(.) "我有一个妹妹她<I have a younger sister she::" (.) dadada=
24. Ss: =dada::
25. Ms. Xie: 看一下这个对吗 <Look at this it is correct>? "她是最烦<She is is most annoying>"
26. Ss: 不对<No>;;
27. Ms. Xie: 为什么不对? <Why isn't it right> 肯尼举手了<Ken has raised his hand>
28. Ken: The way it has to be (.) hmm (.) before the "是<is>"
29. Ms. Xie: Hum?
30. Ken: I know how to correct it (.) I don't know how to say it
31. Rebecca: He knows how to correct it
32. Ms. Xie: 那你怎么改<Then how do you connect it>? 你怎么改 <How to correct it>?
33. Ken: You move the "最<most> in front of the "是<is>"
34. Yuzi： 她最是烦<She is extremely annoying>
35. Ms. Xie： 她最是[烦 <She is extremely annoying>
36. Ken: [and you get ride of each
37. Ms. Xie: That works too 她是烦< She is extremely annoying> or 她最烦<she is most annoying> (.) both are correct
38. Ken: Okay
39. Ms. Xie: You don't want to say 她最是烦< She is is most annoying > (1.0) 为什么不对啊为什么不加是<Why isn't it right why not add is>？
40. Wilson: Because it doesn't sound right?

41. Rebecca: She is 烦 <annoying> (.) Wilson (inaudible)
42. Ms. Xie: ((Walking from her teacher's table to the board and wrote down more sentences)) 是后面可以加上名词<Put a noun after the word "is"> ((underlining the word 是 on the board)) 她是瑞丽她最烦 <She is Rebecca and she is most annoying>
43. Ss: ((Silence for one second))
44. Rebecca: Hey!!That's ru:::de!
45. Ms. Xie: ((laughing)) 我没有加 "是" 因为呢形容词 "最烦" <I did not add "is" because of the adjective "most annoying"> (.) 所以不要加 "是" <so no need to add "is"> ((underling the words and then walking back to her teacher's desk)) (.) 她是瑞丽她最吵<She is Rebecca and she is most annoying>
46. Rebecca: You are rude
47. Ms. Xie: 她是瑞丽她最漂亮<She is Rebecca and she is most pretty>
48. Rebecca: Yeah!!
49. Ms. Xie: 好了我们看一下<Okay let's keep watching>

(Transcript of class video, CLA, Forestview, 12/14/2018)

During this language learning event, student-generated materials are presented and used as learning materials. Ms. Xie believes that student-generated materials can be more engaging for students. She emphasizes that everything she uses has a particular purpose: "songs, arts and digital pieces work well because they are relevant to students' lives so that they are more motivated to use the language and to enjoy learning the language" (Interview, Ms. Xie, 01/06/2019). In designing this activity, she particularly uses students' work because she wants them to show off their success and narratives (Pc, 12/14/2018). Budach (2013) analyzes classroom interactions in a German-Italian two-way immersion classroom, demonstrating that children combined artifacts with language to amplify contexts for learning. His findings show that this interplay also creates innovative ways to help children learn linguistic forms, identify people, cultures, and knowledge but also to generate discussions around the social meanings. Similar to the findings from Budach's study, students' learning processes about descriptive narratives in this example are also embedded in the process of showing and understanding peers' products. In addition to learning the particular forms, the fact that students' own artifacts are presented also creates a space to engage learning and provides a social platform for potential discussions. For example, students seem responsive to the text and images on peers' homework,

and it sometimes triggers some side talk and comments as well (see Turns 13-20).

In terms of Ms. Xie's repertoires, since the whole room is dark, and students could barely see Ms. Xie, her body language does not seem to play a big role in navigating her teaching. Students' attention is more drawn toward the text and images presented on the screen or sometimes the sentences written on the whiteboard. From Turns 3-5, for example, students detect the text faster than Ms. Xie, and they help Ms. Xie right away by telling her the texts are "pilot" and "military base". In Turn 15, students, right away, respond to Wilson's image of recycling and burst into laughter. Ms. Xie uses several strategies to raise students' attention and to direct their attention to the target linguistic forms. First, she asks frequently "Is it correct?" and "Why is/is it not correct?" to quickly check whether students are able to accurately recognize the usage (see Turns 18 & 20). She also uses some organization cues as a way to gain students' attention. In Turn 22, she notices one linguistic form that she needs students to pay attention to, so she uses this classroom organizational cue (dadada-dada), which is used throughout the semester so that students can pay attention and be prepared for this discussion. To further make sure students understand the linguistic rule, she walks back to the board and highlights the written structure again, and later uses Rebecca as an example to provide further reinforcement.

Different from the student-teacher interaction in Ms. Ma's classroom, Ms. Xie does not dominate most turns. She either gives turns to students or students can always jump into the conversation freely. In this case, the knowledge does not seem to be passed from Ms. Xie to students as one-way communication. For example, when Ms. Xie mistakes "pilot" with "private" in Turn 3, students correct her. Also, there are several overlaps between the teacher and students that reflect their co-construction of conversation (see also Gibbons, 2018). Meanwhile, students seem to discuss, agree, and disagree among themselves (see Turn 9). Ms. Xie also does not

explain all of the linguistic forms; rather, she asks the "why" question. Besides the closed yes/no questions, she also invites students to contribute to how they correct it (e.g., asking Ken to correct). In this case, her focus is not just about whether the answer itself is right or not, but whether students have mastered this rule.

Another feature of the student-teacher interaction is the way Ms. Xie responds to students' answers. First, she tends to give positive comments on students' responses. For example, although Brady uses some English in his homework, Ms. Xie frames it as translanguaging and gives positive praise. She also tends to raise students' awareness of their errors but does not directly claim those as wrong. This seems to reflect her belief about positive encouragement and the need to provide more individualized teaching (Interview, Ms. Xie, 01/05/2019). Second, she tends to connect to students' responses by giving feedback or addressing students' responses. In Turn 11, Ms. Xie responds to students' responses about the 100 cookies by saying that she wants it too. From Turn 46-49, when some students comment that Wilson is in a trash can and they have some off-topic chatting about it, Ms. Xie does not shut them down. Instead, she connects to their topic by saying "你们要把伟森给回收掉是吗<Do you want to recycle Wilson>?" But she then keeps reading the text to bring students back to the conversation. By doing so, Ms. Xie seems to present herself as an engaged participant in student conversation rather than an expert with authority who prescribes students' behaviors and answers.

Rymes (2016) discusses how teacher feedback can help teachers connect to students and give students agency in voicing themselves. In this learning event, it seems that students' voices are valued to some extent. At the same time, however, students seem very comfortable and direct in interrupting and voicing their agreement or disagreement. At the end of the conversation, for

example, when Ms. Xie uses Rebecca as an example to further describe the sentence structures, Rebecca is not happy about the example of "Rebecca is most annoying" and she directly points out that Ms. Xie is rude. It remains unknown why Rebecca is used as the example, but it seems she is the one that interrupts Ms. Xie the most, and Ms. Xie did tell me on other occasions that Rebecca is the most "difficult" student in the class. This kind of resistance and disagreement is not present in Ms. Ma's classroom where Ms. Ma has absolute authority. Ms. Xie's organization of this teaching event seems to be aligned with her overall classroom rules and pedagogical goals for making learning enjoyable and engaging. Ms. Xie gives students' freedom to express their understanding and to value students' lives and repertoires, and to promote students' positive attitudes toward learning. The teaching also centers on raising students' sociocultural awareness. This offers students spaces to convey their understandings but at the same time, students also tend not to view Ms. Xie as the expert and they interrupt teaching with side talks.

The Assemblages of Resources: Mediating the Discourses of Learning

The nature of the indexicality of languages and semiotics, as elaborated in Chapter Two, can help signify socio-cultural referents, norms, and identities (Silverstein, 1976). This notion of indexicality has been crucial in understanding contexts by connecting the way "words and other features of language-in-use connect to culturally situated meanings" (Rymes, 2016, p. 139). Besides words themselves, semiotic resources and materials such as images, layout, and dialogues can signify cultural and social meanings (Kress, 2010 as cited by Li, 2018) as they are "shaped by both the intrinsic characteristics and potentialities of the medium and by the requirements, histories and values of societies and their cultures" (Kress & van Leeuwen, 1996, p. 34). As Hawkins (2018) points out, one complexity of communication is the embedded sociocultural meanings of the different modes situated in local, translocal, and transnational

communication. Rymes (2016) also claims that the socioculturally indexed ways of learning and using language (as is well documented in the field of linguistic anthropology) are locally relevant in a multilingual and multicultural society, including in classroom learning. Dual language learning, thus, involves learning, making sense of, and drawing on linguistic, cultural, and material forms from multiple cultures.

This section involves a close analysis of learning events and the assemblages of various material, semiotic, and linguistic resources in Ms. Xie's and Ms. Ma's classrooms. Findings demonstrate that 1) the choice of these resources is agentic with a particular social, economic, political, and cultural embodiment. They also index the social-institutional contexts of the school and the broader society, and 2) the assemblage of these resources socializes students into particular ways of sense-making and learning in the classroom. These are locally and socioculturally co-constructed through the various teaching and learning practices and are guided by the ideologies and social rules set by major actors in the respective classrooms.

Sociocultural, economic and political embodiment

As I have demonstrated in the previous section, there are some similarities between Ms. Ma's and Ms. Xie's repertoires for effective teaching. But linguistic, semiotic, and material resources are also selected and organized quite differently (see Table 6.1).

Table 6.1. Major components of teaching resources in the two classrooms

Er'yu	**Forestview**
Artifacts and tools: Worksheet, Chinese books, PowerPoint slides Linguistic and semiotic resources: Gestures, bilingual instruction, various forms of Chinese language, pop music, drawing, cultural texts	

• Written standards and rubrics • Textbooks (maths, Chinese language arts, social studies) • Monthly, weekly and daily goals of work/assignments • Graphics and visual posters • Educational audios & videos • Ancient poems	• Personal iPads • Social media platforms • Digital classrooms (Google classrooms, Classkick) • Digital books (Joyreader) • Digital games & apps (Goosechase, Quizlet) • Youtube videos and website pages • Collaborative Google docs • Collage, art-based projects and artifacts

One major difference is the choice of textbooks as well as the forms of Chinese languages for learning. In Er'yu, teaching Chinese language skills (i.e., reading, writing, pronunciation, listening) strictly follows the textbook 華語向前走[23] <*Let's Learn Chinese*> and the supplementary materials. The textbook series is produced in Taiwan with complementary learning materials (e.g., audios, the teacher and student handbook, worksheets) designed for learning Chinese as a second language. From my point of view, this series of textbooks is very old fashioned, in line with the way in which Ms. Ma always uses audio-lingual and grammar-translation methods to teach literacy skills. As I commented, "it is exactly how I grew up learning English in China, and I feel predictable how teaching will be. And I wonder whether it reflects particular cultural models of teaching" (Field notes, Er'yu, 02/11/2019). Choosing these materials is a collective action, as Ms. Ma informed me. The whole team of teachers at Er'yu work out the materials together each year and repeat to use the materials the following years. Sometimes they are faced with the challenge of changing the Chinese materials completely when new standards or curriculum come out for English language arts (Interview, Ms. Ma, 05/24/2019). This decision is also determined by the administration and the school discourses.

[23] The official website that provides more information on the *Let's Learn Chinese* series: https://www.huayuworld.org/material-download.php

Er'yu prioritizes the traditional Chinese writing system and zhuyin as the official formats (see Chapter 3 for more details). As Principal Tsai informed me, the choice of Bopomofo Zhuyin system is made from two major considerations: the history of the school and teachers; and the pedagogical considerations:

> We are the only school that used Bopomofo in the city. Every other school which teaches Chinese use pinyin…That is because, um, two reason. First of all, the previous administrations, um, help the students in the afterschool program. They only use zhuyin fuhao. So the parents are used to that system. And the teachers, most of my teacher, the previous administration, when she hires bilingual teachers, she only hired from Taiwan. Oh. So then the, my majority of my dual language teacher here, they are very familiar with zhuyin fuhao. So for teachers, they don't want a new, they don't want to learn new skills. They are, they are more comfortable in using what they are familiar with…parents and teachers share with me, that the benefit of teaching zhuyin fuhao instead of pinyin in kindergarten, when they first learn Chinese is to prevent children from confuses with that, the Chinese pronunciation and alphabet system. Because the pinyin, uh, in terms of writing forms is the same as English alphabet. So it's very easy for the kindergarten students to get confused with, when they learn Chinese in pinyin, are they learning Chinese or are they learning English? But if you use Zhuyin fuhao, it's a symbol, you know, it's a complete different phonetic system and the writing looks different so they can clearly distinguish the differences. (Interview, Principal Tsai, 03/21/2019)

She also informed me that when students reach the fourth grade, they need to learn pinyin as well and simplified Chinese characters (Pc, Principal Tsai, 04/25/2018 & 03/21/2019). Pinyin and simplified Chinese characters are included in Ms. Ma's curriculum, and she sometimes asked me questions to confirm that these materials were presented to students accurately. This decision is framed by Principal Tsai as a result of the increasing call from parents to learn Chinese. She believes that learning simplified Mandarin and pinyin is now a trend and is the choice of most other Chinese dual language schools in the city. As she described, this school attracts three major types of parents, and one group focuses on their children's bilingual skills for future job markets. With China growing so fast, parents see the potential of their children seeking future job opportunities:

> A lot of Chinese new immigrant family, the reason they send their children here because, um, they feel safe and comfortable coming to the school environment where every staff in the office can speak their language, so they feel a sense of trust and belonging. So they, that's why they send their kids here…Other non-Chinese heritage family. The reason they send their kids here because China is a fast growing, developing country and they see the potential of job market when the kids grow up. If they their kids know Chinese, there is uh, uh, advantage of fluent, being able to speak both Chinese and English fluently. They want their kids to have that edge in job market in the future. So they want their kids to be bilingual. And in between, there are parents who are family who just want their kids to be in a good school with good academic performance. They care less about Chinese or English. They just want their, they just want their kids to be in a good:: and safe::school so they can get into good high school. And this is a very high performing school. (Interview, Principal Tsai, 03/21/2019)

Comparatively, Ms. Xie's classroom at Forestview is full of books that are either produced by Western publishing companies or Chinese monolingual books donated by Hanban (more details in Chapter 3). Principal Milton emphasized many times that she really appreciates the grant and resources funded by Hanban to help with the curriculum:

> And we do currently have Hanban grant as well, where we get an additional $10,000 each year in order to help with the curriculum. And it's it to wonderful amount of money. I would not deny that, but it takes thousands of dollars to, to run a school with technology fees and um, materials. I mean, just it's a nonstop experience for these parents with the fundraising that they have to do. (Interview, Principal Milton, 10/28/2019)

The books that Ms. Xie uses to teach Chinese language arts are in the Level Chinese series[24]. This series of book is designed particularly for Chinese learners in the U.S. The description on their website is:

> Combined with Common Core ELA Anchor Standards, ACTFL performance descriptors and IB, the Level Chinese Content R&D team has developed a set of scientific and concrete Chinese reading and writing levels and standard. (Level Chinese, n.d.)

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[24] The official website that provides more information on the Level Chinese series: https://www.levelchinese.com/

Mandarin and simplified Chinese are the forms that students are learning from this school; Zhuyin or traditional Chinese is not present at all. Principal Milton also connects this choice with the history and discourses of the school: the parents are the ones that started the program and chose Mandarin as the language of learning, due to the predicted market value of Mandarin (Interview, Principal Milton, 10/28/2018). The governance council of the school also actively seeks connections with private schools and organizations in China (see details in Chapter 3). As their school website explicitly points out, the perceived value of Mandarin is associated with business, dollar, and market:

> Mandarin Chinese is the most widely spoken language in the world, Mandarin Chinese is currently the most marketable language for job-seekers in global business, and the U.S. Department of Defense has dubbed Chinese a critical language and is investing millions of dollars into critical language learning. (Forestview School Website, 2020)

I claim that the choice about learning materials and language forms in these two classrooms reflects the historical flow of the school community but also embodies the economic and socio-political discourses around learning Chinese languages. There are associated capitals with linguistic and semiotic forms; these capitals are affected by the linguistic market and the economic and political power of communities and nations that are associated with the language forms (Block et al., 2012; Bourdieu, 1991; Heller, 2010). It seems that the rising power of the People's Republic of China is also increasing the capital of Mandarin and a simplified version of Chinese, which determines the forms and versions of language valued in both classrooms.

Meanwhile, the choices of these materials show the sociocultural histories of the school communities as well as the ideological actions. While Er'yu recognizes the increasing value of the simplified Mandarin and pinyin system to address the needs of parents, Principal Tsai shows reluctance to build cooperative relationships with Hanban or the People's Republic of China, although she complains about the very limited grants for Chinese dual language programs in the

U.S. and the Department of Education (Pc, Principal Tsai, 04/25/2018). Although she did not elaborate on why, I conjecture that it due to her perception of its relevance to the school community: the school was first established by a group of immigrants from Taiwan in the 1990s, and it historically (and still very much currently) serves low-income immigrants from Taiwan and Cantonese-speaking households in Chinatown. Choosing these materials and language forms for learning, it seems to me, is a socio-political choice to maintain the identity of the community. Ms. Ma and Ms. Xie also have some freedom in choosing their own materials (which will be discussed in the following section), such as online materials to supplement their content focus. Interestingly, the sources and the materials that Ms. Xie and Ms. Ma oftentimes choose derive from China or Taiwan, respectively, which seems to signify their own identifications toward the nationalities, ethnicities, and their own interactions with these resources.

Mediating learning into the localized discourses

In the classroom, the process of mediation involves both the cognitive and linguistic socialization of learners when they are guided into knowledge through the learning, sharing, discussing, and negotiating that constitute the particular educational discourses (Edwards & Mercer, 1987). As I have explained earlier, the teachers' assemblages of resources mediate the learning practices and achieve certain pedagogical outcomes. Besides mediating linguistic and content knowledge, findings also demonstrate that this assemblage helps achieve cultural and ideological functions. Just as Gibbons (2018) points out, teaching is mediation. This mediation includes the teachers' use of materials for scaffolding, the constructed interactions with students, and the construction of particular knowledge and ideas. In the process of classroom learning, students' actions and ideas are mediated through the social and cultural semiotic tools, artifacts, technological materials, and the learning practices. As Table 6.1 above shows, both Ms. Ma and

Ms. Xie use cultural texts or stories and pop music for teaching. The following analysis focuses on how the two teachers' assemblages of these cultural and social tools, including the particular set that is chosen and the particular way in which the set is organized, mediate students into certain ways and discourses of learning and socializing.

Being part of the "heritage' through learning in Er'yu

Ms. Ma incorporates some short literacy texts and poems from both ancient and contemporary cultures to develop students' literacy skills and knowledge of language use. The literacy skills and text genres on which Ms. Ma focuses are also aligned with what they are learning in their English literacy class so that students can master the skills in two languages. It is interesting to see how the particular resources are used to understand and sometimes impose ideologies on students, and to raise students' cultural awareness of their "heritage". From what I have seen, Ms. Ma seldom plays music during formal instruction, and she only, very rarely, plays a song when there is extra class time to supplement their learning content. One time the class was learning a text about Mother's Day. The text describes some activities people do during Mother's Day in China, such as cleaning homes for grandparents and making mothers happy. After the literacy block, Ms. Ma played the music video "Listen to Mother's Words," released in 2009 by famous Taiwanese pop music star Jay Chou (Field notes, 05/09/2019). Ms. Ma paused the music video in the middle after the lyric "别人在玩遊戲 我卻靠在牆壁背我的ABC<When others are playing digital games, I am leaning on the wall to recite ABC>" and told students:

> 长大以后他发现，妈妈讲的话都是对的，因为别人在玩的时候我花时间在念英文，我花时间在学音乐，我长大后我比谁都厉害，所以小的时候花很多时间在学很多东西，长大以后呢你就很厉害啦，那这些都是因为听妈妈的话的原因。因为小孩都不听妈妈的话，妈妈说赶快去读书啊，赶快去做什么啊，通通都不要，那这样就不好啦， 所以你妈妈叫你去用功，你要听妈妈的话知道吧？
> <When he grew up, he realized that everything his mom told him was right. Because when others were playing, I am spending time to learn English, I am spending time in learning music. So when I grow up, I am more competitive than others. Because some kids do not listen to what their mother say. Their mom says: do study hard and go do this

> and that. The kids do not want it and that is bad. So if your mom asks you to work hard, you need to listen to your mom, okay? (Transcript for class audio, 05/09/2019)

Gibbons (2018) claims that one way for teaching to function as mediation is the act of recontextualization, where "knowledge derived from one context is appropriated and recontextualized by the teacher in another context" (2018. p. 261). Edwards and Mercer (1987) also claim that teachers can be rewriters of history. Here, when re-narrating the lyrics, Ms. Ma seems to recontextualize the lyrics to convey her beliefs to the students, such as work hard and do what your mom says to become competitive. Gibbons (2018) posits that students often draw on semiotic or linguistic resources to "interpret the discourses of the teacher because of the opportunities for demonstration and modeling that they allow" (p. 262). In Ms. Ma's classroom, beliefs are being conveyed by Ms. Ma throughout teaching practices and texts; these ideas also seem to be taken up by students in their own work. For example, there is one classroom chart on the wall showcasing the text structure of cause and effect that they've learned. Student-generated posts are attached below the column of cause and effect. One student example on the chart is from a Chinese myth that they learned a few weeks ago: 因为吴刚沒有耐心, 所以老神仙就把吴刚送到月亮上，教吴刚做一个由耐心的人[25] <Because Wu Gang did not have patience, he was sent to the moon to become a patient person>. It seems that the student was re-constructing some logical thinking through the myth and highlighting the importance of patience. Another example is from students' own experience: 因為小野不努力讀書, 所以她考了0分<Because Xiao Ye did not work hard, she got a zero on the test>. This example seems to show students' ideological orientation

[25] I kept the original language format of the sentence as it can signify the language choices of the students and teachers. This sentence was written in the simplified format while the next example was written in traditional Chinese. I believe the choices can also show students' linguistic backgrounds or comfort in selecting the language form.

toward learning: hard work will lead to success and they will get a zero or fail if they do not work hard. This belief is repeatedly emphasized by Ms. Ma and in Er'yu as a founding philosophy (see more in Chapter 5), and it is very likely that the student is picking this up.

Ancient texts and literacy materials are widely used in Ms. Ma's classroom. These materials are used similarly as other literacy texts: to teach literacy skills and linguistic forms. Cultural knowledge is being practiced in the process of reading and answering questions about the texts. Understanding the text is also not about how they feel about the text and how they feel about themselves, as is often the case in U.S. literacy teaching and learning, but whether they can construct the text accurately as authentic representations of the Chinese heritage and culture. For example, when students learn about an ancient poem, the focus is to accurately remember the details about the cultural symbols and meanings. The next transcript shows how the teacher and students interact in the process of making sense of a Chinese classic Tang poem.

Excerpt 6.4. Learning the classic Tang Poem from Wang Wei (701-761)

1.	Ms. Ma:	那请问重阳节的时候呢有什么习俗啊？我下面有写啊，重阳节的时候要做什么事情?=<So what is the cultural tradition for Double Yang Festival? I have written it below (on your worksheet), what do people do on the Double Yang Festival>?
2.	Ss:	=登高赏秋 <Ascend to appreciate autumn>
3.	Ms. Ma:	什么叫做登高赏秋？谁可以告诉我？<What does it mean to "Ascend to appreciate autumn"? Could someone tell me that?>((4 or 5 students raising their hand)) 刘伟 <Leo>
4.	Leo:	嗯, 你要去,一个 <Emm, you, need, need, to>, you are going to the top of the=
5.	Ms. Ma:	=什么意思，谁可以帮我用中文话说啊？那个兴荣 <What does it mean? Who can help me to say it out in Chinese? Gary>
6.	Gary:	你要拿着一朵花.然后 <You need to hold a flower, and then>
7.	Ms. Ma:	什么样的花<What kind of flower>?
8.	Gary:	然后<And then>
9.	Ms. Ma:	有看到菊花是不是？好那除了看菊花以后还要做什么事情呢？什么叫做登高呢？那个<You see the chrysanthemum, right? Okay besides seeing chrysanthemum, what else do you do? What does it mean to "ascend"? >Helen
10.	S3:	去很高的地方<Climbing to a high place>
11.	Ms. Ma:	什么叫做去很高的地方锦西? <What does it mean to climbing to a high place, Jinxi?>
12.	Jinxi:	爬山 <Hiking>
13.	Ms. Ma:	去爬山嘛 <Go hiking>okay? 不管是大的山还是小的山，你可以去爬爬山啊，去

走一走啊，看看风景. 那请问重阳节是什么季节，是春天夏天还是秋天还是冬天？
<No matter it is a big mountain or small hill, you can go hiking and take a walk, appreciate the scenery. And so what is the season for Double Yang Festival? Is it spring, summer, autumn or winter?>

14. Ss: 秋天<autumn>

(Transcript for class video, CLA lesson, Er'yu, 05/16/2019)

In this learning event, students need to make sense of the poem by eliciting accurate information. The questions that Ms. Ma asks are all based on factual information that students are able to find from the text. However, because the poem is classic Chinese, many words are of traditional usage and are very hard to understand. Even though students are able to find the phrase, it does not seem enough for Ms. Ma. From Turns 1-3, although students elicit the phrase "ascend to appreciate autumn", Ms. Ma requires them to use their own language in Chinese to explain the contextual meaning of this phrase. As the next turn shows, students need to accurately signify the particular actions people do, such as holding a particular type of flower and climbing the mountain for a particular reason in a particular season. In this case, making sense of the text is beyond understanding the literal meaning of classic phrases but also knowing the sociocultural and situated meanings associated with the phrase itself. Also, given the fact that this is a Chinese literacy class, and students are expected to decode all of the literacy meanings and linguistic forms, Ms. Ma keeps the sentences intact in Chinese only (see more in Chapter 5).

Similar to what Blackledge and Creese (2008) found in complementary schools, "heritage" is often taught through a nationalist and essentialist angle and "certain sets of linguistic resources were believed to function as threads of association with historic contexts" (p. 537). As they explain, from a multimodal perspective, linguistic forms and materials should share these characteristics in the process of producing and reproducing conventions and "heritage". Here, the symbols and abstract notions such as 登高赏秋 < ascend to appreciate autumn> also signify particular historical and cultural contexts and conventions. During the

process of learning, I claim these resources are highlighted by Ms. Ma to accurately teach and represent the history, tradition, and ideologies as part of Chinese identity. Being part of the culture is also developed through being immersed in the text and the author's point of view and from accurately decoding linguistic and sociocultural meanings.

A similar learning event occurred when students were learning about some narrative text entitled 一文錢 <One Penny>. Ms. Ma tried to develop students' skills of relying on contextual clues to make sense of the content, which has been the focus in their English language arts class. Before Ms. Ma started reading this text line by line, she explained that the class needed to focus on decoding four old idioms using the skill of contextual clues. She then showed the picture of the ancient coins and explained what money looked like in ancient times. Ms. Ma also emphasized many times that direct translation is not helpful or enough, and students need to explain the underlying meaning in Chinese using contextual clues (Transcript for class audio, Er'yu, 02/11/2019).

Excerpt 6.5. Decoding the text "One Penny"

1.	Ms. Ma:	所以 "流浪" 的意思不是没钱哦, "流浪" 的意思是什么？走来走去没家可以回. 好，"有一天晚上, 他睡在一间财神庙的地上" 来,有没有谁可以告诉我, 什么是 "财神庙"？谁可以告诉我, 举手回答不要插嘴. 有没有人知道什么是 "庙"? <So "wander" does not mean that people do not have money. It means what? They walk around here and there and there is no home for them to go home. Okay, "One night he was sleeping on the floor of a god temple". Could someone tell me what, raise your hands first, do not interrupt my talk. Does anyone know what is a "god temple">
2.	Ss:	((Silence))
3.	Ms. Ma:	有没人, 没有人去庙里拜拜吗？过新年你们都没有人去庙里拜拜吗？来锦西，什么是庙？<Has anyone, has anyone been to the temple to pray? When you were spending the Chinese New Year, you did not go to pray in the temple? Come on, Jinxi, what is a temple?
4.	Jinxi:	庙就是祭拜神仙的地方 <Temple is the place that you worship the god and goodness>
5.	Ms. Ma:	祭拜神仙的地方<The place that you worship the god and goodness>

(Transcript for class audio, Er'yu, 02/11/2019)

In this example, Ms. Ma wants to make sure that students understand the contextual meaning accurately. For example, she spends a long time before Turn 1 explaining that wandering is not because people do not have money; it is because they are homeless (Transcript for class audio, 02/11/2019). The fact that students have to strictly follow the teacher's instructions seems to limit their own interpretations of the cultural events and beliefs. In fact, Ms. Ma seems to prescribe some naturalized or normalized cultural understandings that students should have. In Turn 3, for example, she expresses her surprise when nobody responds to the question about temple; she expects students to have this cultural practice of going to the temple during the Chinese New Year. She then asks Jinxi, the student who arrived from China to the U.S. last year, to give an answer. Here, she seems to teach the heritage culture as an essentialized product and seems to impose a unified identity to the students through the use and teaching of the different resources and materials, regardless of students' backgrounds. Furthermore, students do not have space to share their own interpretations by connecting to their own social lives. This essentialization of collective identity is also evident in other parts of learning. As I documented in the field note: when students were rehearsing for their Chinese New Year performance, Ms. Ma required them to use the umbrella and wear clothes in a uniform way:

> At the end of the session before the lunch break, the teacher still gave some time for students to practice their dance for the Chinese New Year, I was just so surprised that how "harsh" the teacher was to the students. She checked each girl (whose role was dancing with an umbrella) to see whether the red dress they are supposed to wear is the Chinese red that she is expecting. She needs to approve it first. Ms. Ma was not very happy when the girl was not wearing a red dress as she requested, and she said "You are not responsible. If you do not wear the red dress today, how can I trust that you will have the red dress on Friday". (Field notes, 1/28/2019)

As Heller claims, a sense of bilingualism is a set of "resources called into play by social actors, under social and historical conditions which both constrain and make possible the social reproduction of existing conventions and relations, as well as the production of new ones" (2007,

p. 15). While Blackledge and Creese's (2008) study found that students contested and negotiated "heritage" identities and ideologies, students in Ms. Ma's classroom do not seem to resist it explicitly. This might be relevant to the particular social discourse of this classroom and school, such as the overall highly disciplined learning environment. Although students do not explicitly resist it during their learning, this projection and imposing of certain identities and ideologies can potentially harm or marginalize students who are from non-Asian backgrounds or who do not wish to buy into this. Learners' cultural models, lived experiences, and family histories influence their learning/literacy practices, classroom engagement, their access to certain linguistic and literacy forms, and the degree to which their learning is legitimated in school space (Gee, 2012; Toohey, 2018; Valdés, 1997). When the school discourse is unfamiliar and students are forced into particular discourses, it can be challenging for many students to develop positive learning attitudes. As one student's (Camila's) mother confesses, Camila feels sad and confused when she is not able to follow the cultural expectations, partly due to her Latinx background:

> When there are, plays and stuff, the teachers want the kids to have their hair the same way. But Camila has very curly hair, like very curly. And so, the teacher was like, oh, I want to um, all the kids to wear their hair loose. And I was like, no, because Camila has so much hair, she will be miserable. And so I think like that it's like, yeah, like cultural things like that. (Interview, parent, 05/14/2019).

Developing cultural skills and creativity through learning in Forestview

> When the class gathered on the rug, Ms. Xie played the Chinese song from JJ Lin. She then opened the PPT titled *Chinese culture class* with some videos from Chinese online websites. It is interesting that Chinese culture is usually referred to as traditional history and myths in Er'yu, but these videos are more contemporary and connected to Chinese society. Ms. Xie first let them watch the video to figure out the context by themselves. She then played that again to explain the sociocultural meaning in the particular context. I feel it is really nice that students get exposed to this information and understand how the particular word/sentences are used in particular context with particular pragmatic meanings. (Field notes, 09/14/2018)

> Ms. Xie started the class with some Douyin (Tiktok) videos. When the music started, I was shocked. It was really high-beat style and each Douyin user re-created the sentence "

> 我怎么这么好<Why am I so cute>?" with their creative gestures and singings. Some of them were even a little goofy. Hearing these, students all started dancing with the music. (Field notes, 09/11/2018)

In contrast to that in Er'yu, "culture" seems to be defined and focused on differently in Forestview. Videos about Chinese culture and society (e.g., food, architecture, tourism) are common, but their role is more in connecting students with the target culture and raising their own sociocultural awareness. Pop music and pop culture are essential in Ms. Xie's classroom; students are engaged with them through YouTube videos, iMovie, projects, songs, and dances. Different from Er'yu, where songs are often used as a supplementary material to add more contextnor background, pop music in Forestview is often a direct learning material that is made relevant to students' lives. One major reason for choosing pop music is to make learning more enjoyable for learners and to provide more authentic materials (Interview, Ms. Xie, 01/04/2019). These materials are also designed and tailored to meet students' social and linguistic needs:

> I have to tailor them (the songs), tailor those to the students' needs. For instance, the one we are doing right now is the 学猫叫<Learn from cats to meow>. The Chinese song is like, learn 喵喵喵 <meow meow meow>. So the words in the songs are really hard, advanced level and the nuances. So to teach this song, the purpose is not to teach the song itself is to, like it might reinforce, my goal, objective is to help students to learn the pinyin. (Interview, Ms. Xie, 01/04/2019)

In what follows, I will use one example of a classroom activity to describe how pop songs are used to meet students' social and linguistic needs in Forestview, and how students participate in the process of co-constructing the culture of learning. One widely used pop song in Ms. Xie's class during the month of October and November 2018 was 阳光彩虹小白马 < *Sunshine, Rainbow and a White Pony*> which was an immediate hit among teenagers across China in 2018. The lyrics of this song encourage self-confidence and positive attitudes. The movie video includes various magical elements, body movements, and technologically modified effects that are popular among youth. As Ms. Xie emphasized during the interviews, she believes

the major benefit of using online resources and pop culture is that they are authentic and therefore more engaging; she also emphasized that everything she designs and chooses depends on her objectives and outcomes. When Ms. Xie incorporates this song into the CLA curriculum, she also includes supplementary materials such as a YouTube movie video of the song with pinyin and characters, a learning app called Quizlet, and the iMovie app installed in students' personal iPads. After weeks of learning the words through Quizlet and flashcards, learning the pinyin and singing to the songs to master pronunciation, students were encouraged to create their own individual iMovie song with dancing and singing. Students were asked to take a screenshot of their video, and they edited the image with the one sentence structure that they had learned from the song: 我是最 + adjectives <I am the most + adjectives>:

> At 12: 20, they start the sing the 阳光彩虹小白马 < *Sunshine, Rainbow and a White Pony*>song and then Mx. Xie showed the class how 5th graders rap in Chinese and took videos of their performance. She told the class that they can follow the 5th graders' examples but can be creative as much as they can (Field notes, 10/31/2018).

Students later submitted a screenshot of their video with an attached descriptive text. Besides the freedom to choose colors, fonts, and texts, students also made special poses to match the content in the screenshot. Ms. Xie then created a classroom collage that included all students' and the two teachers' contributions. This collage was later hung up in the classroom for the rest of the school year. Student-generated texts included 我是最厉害的 / 最棒的 / 最好的 / 最亮的 / 最可爱的 / 最好看的 / 最酷的 / 最强的 / 最厉害的<I am the best/smartest/most shining/cutest/most pretty/coolest/strongest> (Class Image, 11/15/2018). From this example, I argue that incorporating pop music in Ms. Xie's classroom goes beyond teaching linguistic forms. Ms. Xie provides students with sufficient space to express themselves through their own assemblages of repertoires to recontextualize these resources and meanings with creativity. While learning these cultural forms from the online videos, students are familiarizing themselves with the use of these

cultural forms, but they are by no means passive receivers of these ideas or cultures. Instead, they construct and co-construct representations with peers and teachers through using their repertoires. Ms. Xie also uses materials from ancient Chinese culture, but these materials are not used to construct particular cultural beliefs as Ms. Ma does; rather, they are used as a target text to engage students and engage their critical thinking. For example, once Ms. Xie played a Youtube video about the ancient story of Cangjie inventing the Chinese character in order to keep track of numbers. Instead of focusing on the historical facts, she invited students to think creatively about how to solve the problem of keeping track of numbers, during which process accuracy on linguistic forms rather than history was highlighted.

Rymes (2012) highlights the issue of communicative repertoires and recontextualization in a highly globalized, digital and superdiverse society: "widely circulating, mass-mediated semiotic forms become recontextualized in an individual's communicative repertoire in special performances (like YouTube videos) and in everyday interaction" (p. 258). Thus, there is the need to attend to recontextualized digitally-mediated repertoires in educational settings to further understand diverse individuals' lives. As Ms. Xie emphasized several times, she wants to make sure the materials are relevant to students here and appealing to them. Studies in Chinese immersion programs have demonstrated that learners from a Western learning discourse find it hard to be engaged with reading materials directly created by Chinese institutions such as Hanban (Fortune, 2012). Hancock's (2014) study in a Chinese complementary school in Scotland also reveals that learners become more engaged when the Chinese teachers incorporate pedagogies "borrowed" from Scottish "mainstream" classrooms. It seems to me that Ms. Xie is strategic in choosing and adapting linguistic and semiotic resources from China to be relevant to students in U.S. contexts, most of whom do not have Chinese "heritage".

By doing so, the process of teaching in Ms. Xie's class does not seem to focus on developing associations with Chinese history or culture but more on developing communicative competence that students are able to use and perform in contemporary society. This orientation and these practices are aligned with the overall mission and goals of the school community, appealing to the student population that this school primarily aims to serve. Meanwhile, it seems that it further benefits the "mainstream" students; the goal for enrolling into Chinese dual language is more about communicative skills rather than the heritage knowledge (see Chapter 7).

Participation and Access to Learning Opportunities

So far, I have explained how learning and language practices are organized in the two classrooms, as well as the mediating pedagogical, social, and cultural functions of the assemblages of resources. Another important influence of the classroom organization is on students' participation and learning opportunities, which I have addressed when analyzing whole-class learning events. In this next section, I further focus on some classroom group learning events to investigate how students' learning opportunities are legitimated and/or restricted related to the linguistic, semiotic, spatial, and material organization of the classroom. I claim that students' legitimacy in learning and participation is largely shaped by the discursive construction of classroom rules, expectations, and ideologies around learning. The legitimacy of participation is associated with the perceived ability to produce certain linguistic and semiotic resources as constructed in particular classroom discourses. I also find that students' unbalanced power relationships in participation, although they sometimes appear to differ, exist in both Ms. Ma's and Ms. Xie's classes.

In what follows, I will present some group interactions for one group learning event in Ms. Ma's social studies class, after a short review section as discussed in Excerpt 6.2. The

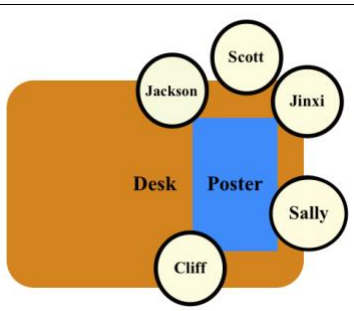
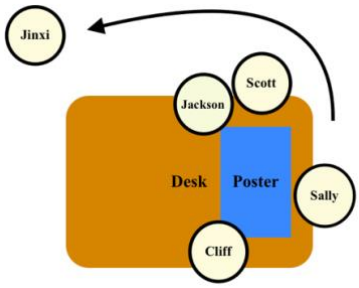
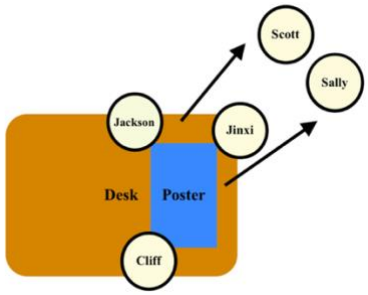
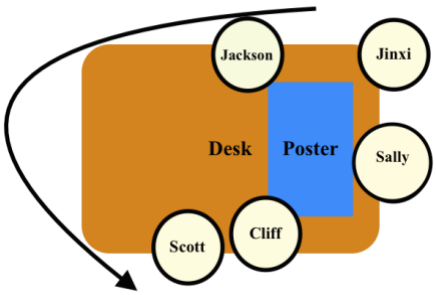
groups were given 10 minutes to work on the City Seal poster that day and it was a continuous project. Before the groups started the work, Ms. Ma reminded the class that they needed to take others' suggestions and that she wanted everything to be perfect (Field notes, 03/19/2019). She elaborated on her expectation and students seemed to make sense of this in their own groups:

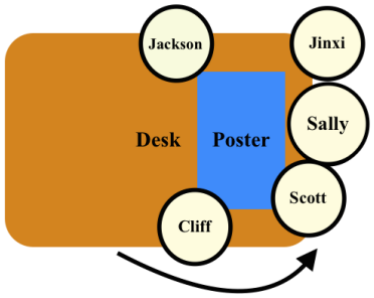
Ms. Ma:	I am asking you to work hard and make it look prettier, so please do so. Then also please understand not everyone has the perfect handwriting. As long as you are working hard, if the handwriting is messy and you know that it cannot be helped, then, maybe you want to try to do it differently, well, just give that person a different job.
	……
S1:	Not everything in our poster is looking perfect.
S2:	We need to make it look better.
	(Transcript for class audio, social studies lesson, Er'yu, 03/19/2019)

Figures 6.5a & b show the spatial organization during one group activity and their final product. Excerpt 6.6 shows one excerpt of interactions during the group work.

Figure 6.5a & b. City seal group work (left) and final poster for the group (right)

Excerpt 6.6. City seal group project

1	Jackson and Cliff: ((Tracing the eagle image located on the right top corner of the poster)) Jinxi: ((Using a pencil to write down a Chinese sentence explaining what the bow represents on the bottom right corner of the poster)) Scott and Sally: ((Watching the other three work silently))	
2	Jinxi: ((Stopped writing and walked toward the window to find the word graphics so that she could produce the Chinese word 打獵<hunting> correctly)) Sally: You can go get the highlighter. Right there ((talking to Scott and pointing to the station where the tools are located))	
3	Scott: ((Walking to the station to look for the highlighter)) Sally: ((Following Scott to the station)) Jinxi: 好了你来<Okay it's your turn> Jackson: Oh, can I trace it? ((Moving his highlighter from the eagle to the sentence that Jinxi just finished. Jinxi: No Jackson: ((Moving his highlighter right away back to the eagle picture again.))	
4	Scott: ((Coming back to the desk)) Let's work together Jinxi: ((To Scott and Sally))你们可以一起来<You two can work together>(.) ((to Sally) 你可以把手拿来一点你们一起((You can move your hand away a little and you can work together))(.) ((To Scott))你不要拿这个这个拿着不好用<don't use this one this one is not good>(.)你可以去拿那个<You can go get that one> Scott: ((Going back to the station to get another highlighter, after that he moved next to Cliff and watched Cliff and Jackson)) Sally: ((Ended up tracing the Chinese sentences by herself))	

5	((Cliff, Jackson, and Sally work on their individual tracking task while Jinxi and Scott watching at each other silently for 30 seconds)) Jinxi: 你可以帮我们想想面粉该怎么写呀?<You can help us think about how to write the Chinese word for flour> ((to Scott)) Scott: Moved next to Sally and was ready to write down some Chinese sentence. Jinxi: 面粉代表着欧洲人交换的商品<Flour represents the product for Europeans to do transactions> Scott: How do you write that? Jinxi: ((No responses and continue watching them work))	

(Transcript for class video, social studies group work, Er'yu, 03/19/2019)

The excerpt above captures the movement and participation of the group members. It is interesting to notice what each student is working on for the project. Given the fact there is limited physical space and limited time to produce a perfect project, it seems students are appropriating their roles in learning and participation, which turns out to be very unbalanced. As is shown, Jinxi is the one who is doing most of the writing and constructing the sentences, while students like Jackson and Cliff are working on tracking the characters and images, which involves very minimal learning for content and language development. Jinxi also takes on the role of assigning tasks to others (see Interactions 3, 4 & 5). During Interaction 3, for example, when Jackson requests to trace the Chinese sentence, she rejects him because it seems that that task is to be reserved for Scott and Sally. Meanwhile, Scott and Sally are not involved in the tasks either, and they are waiting for Jinxi to complete her part of the writing. Later, due to the fact that there is very limited space for both Scott and Sally to trace the same sentence, it seems Scott is not much needed for that task. What he does is to move around and watch Cliff tracing the eagle. Although he is later invited by Jinxi to participate in helping out during Interaction 5, he is not able to fully participate in the task because it seems he needs more support to produce the sentence, which he does not get from the group or the teacher.

As I have elaborated earlier in this chapter, Ms. Ma's classroom highly emphasizes disciplining students' learning, prioritizes learning products, and expects collective products. For this project in particular, as she stated to the students, she wants the project to be perfect; students with good handwriting should do that job, and those who do not have good handwriting should either try hard or do another job. She also wants students to take each other's suggestions. It is interesting, though, to see who is giving the suggestions, whose suggestions are legitimated, and who is considered as the legitimate producer for different components for the poster. Among this group, Jinxi is the only newcomer from China and has the highest Chinese proficiency. She is often asked by Ms. Xie to answer questions that the rest of the class is not able to answer (see Excerpts 6.4 & 6.6). Sally, Cliff, and Scott are second-generation immigrants who are learning Chinese as a "heritage" language. Jackson is the only African American who does not have exposure to Chinese and is often scolded by Ms. Xie for not finishing his Chinese homework as required (Field notes, 03/27/2019). Here, producing linguistic and semiotic products seems to be connected with the associated ability or power in using the language. Jinxi seems to be positioned as the person who is the "legitimate" user who qualifies for the role of producing the characters, while others are positioned as not qualified even to do tracing, based on Jinxi's suggestions (e.g., Jackson is not allowed the trace the characters during Interaction 3). However, I think almost all of the students are likely to be able to produce all of these characters because they have learned these literacy skills. I argue that Ms. Ma's emphasis on perfect writing legitimates students like Jinxi who have more developed writing skills but marginalizes others.

Lee et al.'s study (2011) found that dual language programs offer "a continual shifting of linguistic contexts across subject matter" (p. 306) and afford more positive identities among learners from various linguistic backgrounds. In this case, Jinxi seems to be the student who has

gained more positive access to learning during Chinese time. While Jinxi always remains quiet and asks peers for translation support during English classes, this group work gives Jinxi a space to develop her confidence in learning. However, students like Scott, Cliff, and Jackson are positioned as inferior, although they would be able to learn, practice, and contribute more to this group project if provided with more opportunities. The minimal desk space and the need to finish working on the project within a limited timeframe significantly restricts collaboration and deprives students with lower proficiency in Chinese of learning opportunities. I argue that the physical and social organization fails to fulfill the learning outcomes and goals for this group event. The look of the final product and the accuracy of the content and language become the priority of this group work, while meaningful communication, negotiation, and individual learners' knowledge of the content matter are missing. Individual agency in learning is also harmed when students are told not to do certain tasks, and students seemed to be ranked among themselves based on some leading students' perception of their capabilities.

Group work is very common in Ms. Xie's Forestview classroom. Although the social, physical, and material organization remains different from that in Er'yu, the issue of unequal access and legitimation exists as well. In what follows, I present the interaction within one group that consists of four group members during two interconnected group activities. The group was formed on the day of November 8, 2018 when the class started a new science project after learning vocabulary and content in science for months. The project continued for one month until their final presentation and exhibition on December 7 when parents were invited to participate and vote for their favorite group. Before students started group work, Ms. Xie spent 15 minutes explaining the criteria of this project: artistic (10 points), collaboration (10 points), Chinese or translanguaging (10 points), imagination (10 points), demonstration during the exhibit (extra 10

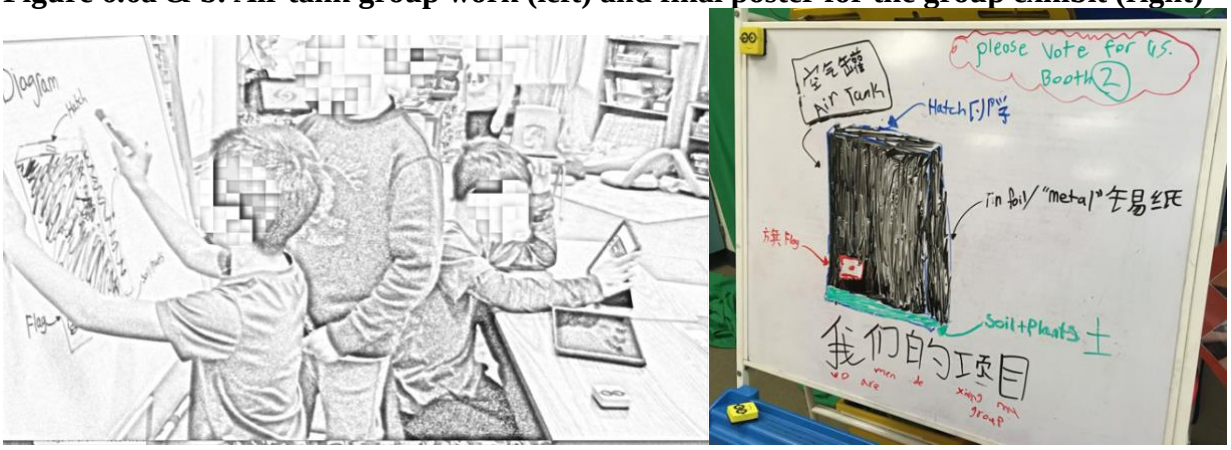
points). She also emphasized that each of them needed to participate and work: “I need you to make sure you all work and collaborate” (Transcript for class video, 11/07/2018). In terms of assessment, Ms. Xie emphasized that each of them would receive two scores, one for the project and one for their individual work. For each group, Ms. Xie made sure that students were of different language levels, and there was a leader in each group (Pc, Ms. Xie, 11/07/2018). Excerpt 6.7 presents the group working on descriptive texts about their project on their individual slides. Excerpt 6.8 presents the activities they were doing before the science exhibit.

Excerpt 6.7. Working on descriptive texts about the project

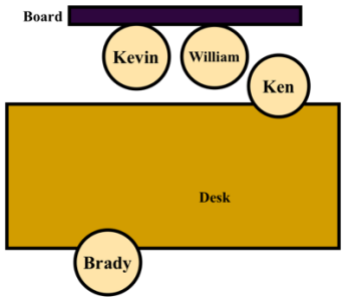
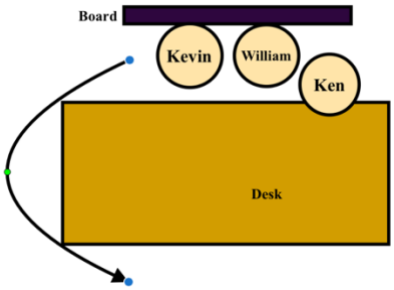
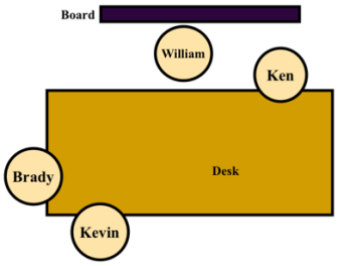
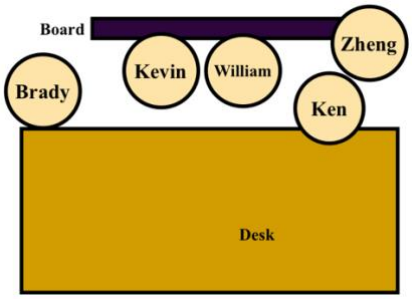
((The four students are sitting at a table with their own iPads. They are working on some sentences describing their group project. Ken is sitting between Brady and Kevin, showing them some vocabulary on his own iPad. William is working by himself)).

1.	Ken:	Zhi-dao, Zhi::Zhi:: ((helping Brady click on the keyboard to produce the pinyin))
2.	Kevin:	((Looking at Ken’s iPad and trying to copy down some pinyin on his own screen))
3.	William:	Oh, I am gonna do pinyin to make it look really awesome ((working on his own iPad))
4.	Ken:	Yi-ge:: ((now helping Kevin to click on his keyboard))
5.	Brady:	((Typing in on his own iPad))
6.	William:	我的名字是<My name is> 我们组的名字是<Our group name is> ((still focusing on producing the text on his own iPad without interacting with any other member))
7.	Ken:	((Walking away from Brady and Kevin and moving close to look at William’s screen)). He then took away his iPad from Kevin and joined William. (Transcript for class video, science group work, Forestview, 11/16/2018)

Figure 6.6a & b. Air tank group work (left) and final poster for the group exhibit (right)



Excerpt 6.8. Air tank group before the science exhibit

1	Brady: I think will go grab my iPad so that I can ((walking away)) ((William and Kevin are working on the board)) William: The "foil" and "hatch" is good Kevin: "Soil" and "plant" are good so what is that? ((pointing to the area next to the "soil" and "plants")) William: No, "soil" and "plant" has to be great. Zheng: What is this? ((to Kevin)) Kevin: This is the diagram of our oxygen tank. William: ((Writing down the words "soil + plants" with an arrow connecting to the green part)) Kevin: ((Writing down the word "flag" with an arrow connecting to the little square symbolizing flag)). Ken: ((Working on his own iPad and text))	
2	William: You don't need that ((looking at and erasing the word "flag" and arrow that Kevin just added)). We are actually just gonna do this. Kevin: ((Watching what William is writing and rewriting the word "flag". William: Kevin, let's get rid of it ((erasing what Kevin just produced again)). Kevin: ((Watching William erase his part. Ends up working on making lines and he later walked away from the board)) William: ((Start working on other parts of the diagram)). Zheng: What are you working on Ken? Ken: I am translating them into English so that other people can understand it ((continue working))	
3	((Kevin and Brady were chatting by themselves for a long time)). William: ((Adding on Chinese words and later drawing the image of the oxygen tank on the board independently)) Brady: ((Still working on the translations on his slides) Zheng: Ken, is your group gonna show slides as well for the exhibit? Brady: Yes. Zheng: Is that why you are making it? Brady: No. This is for my own. Because this is for our own website (referred to the online classroom).	
4	William: ((Answering my questions and explaining to me why and how he produces certain Chinese words)) Kevin: ((Coming to the board again and writing down the pinyin underneath the sentence 我们的项目 <Our Project> produced by William)) Zheng: Who just added this? Kevin: I just did. Zheng: Why did you add it? Kevin: Because someone might want pinyin. Zheng: Why Kevin: Because someone [might want to read it. William: [Someone might want to read it. Brady: ((Walking over to look at the board))	

(Transcript for class video, science group work, Forestview, 12/07/2018)

With Jazz music in the background, the learning environment seems relaxing: students often move around, interact, and chat with peers and other class members. They are given one hour for this science session so that students are not rushed. As was mentioned, Ms. Xie will grade both the group project and the individual work. We can see from the learning activity that there is some peer support going on. In the first learning event, for example, Kevin and Brady get some help from Ken in terms of writing their sentence structures on their own iPads, although Brady moves away from them to join William eventually. For the most part, however, I claim that students are on their own, and there is little support or collaboration among peers. William, for example, always seems very engaged in his own learning world using his own tools. In Excerpt 6.7, he is involved in his own iPad with the help of Quizlet on his screen, saying that he will include some pinyin to make it awesome. In Excerpt 6.8, he gradually replaces Kevin's role and takes over the job of creating the diagram. While Ken is interacting with Kevin and William at first in Excerpt 6.7, he later decides not to give further support. In Excerpt 6.8, he is all by himself working on the slides. Interestingly, as Ken describes in Turn 3, this slide is not for the group presentation, but it is his piece. The fact that he spends the whole time working on his project and adds translations "so that other people can understand it" (Excerpt 6.8, Interaction 2) seems to show his agency in making his product better, and he is prioritizing his own work.

While students like William and Ken seem to better "utilize" their own learning time, students like Brady and Kevin seem to have limited learning opportunities during the group work. Brady, for example, does not seem to participate in any learning during the second group work activity: he is away from the group and chatting with others most of the time. However, it is important to point out that Kevin has been trying hard to participate in learning and to work with William. For example, he is writing and learning from William in Turns 1 and 2. During the

last turn, he also joins again to creatively put pinyin underneath one sentence where he effectively includes the needs and context of the audience. However, his work and efforts are discouraged multiple times by William. In Excerpt 6.7, for example, Kevin's writing of "flag" and his image are erased by William twice because they are not "good" enough. Interestingly, this disqualification of producing the work is not associated with how well Kevin can produce Chinese but more about William's expectations. When William gradually takes over the whole job of creating the diagram in the way he wants, Kevin still, in the end, joins and contributes. In that last turn, it seems Kevin's contribution is validated by William. Here, the fact that students can be creative about which form to use gives Kevin a chance to be validated. I argue that the imbalance of power in participating is also co-constructed in this learning context. Individual personalities and actions seem to matter as well. However, agency does not always guarantee more participation, as in Kevin's case who and whose parents appear to be more marginalized in the school community as I observed: learners investment is restricted by the learners' access to the forms of capital and their status in the broader social and institutional structures (Peirce, 1995). As mentioned earlier, Ms. Xie stressed that there must be a leader in the group. While it remains unknown who the leader is, my observation is that William seems to have more power in directing and making decisions about the group work. Different from Er'yu where the learning involves skills in writing and content knowledge, this learning event also requires students' skills in navigating the platform and relies on some built-in software to construct the sentences.

As Hellermann and Pekarek Doehler claim, the learning potentials and skills are locally constructed "through the moment-to-moment co-construction of talk-in-interaction and on the basis of participants' orientation to each other, to each other's' language expertise and to larger interactional routines and interpersonal relations of power and solidarity" (2010, p. 43). As I

have demonstrated in the learning events above, the dynamics within the group work in Er'yu and Forestview seem to be shaped by the ecology of dual language learning and teaching, including the class learning discourse (e.g., rules and assessment criteria), the spatial organization, and the students' social relationships in relevance with their legitimated power. While Er'yu prioritizes the quality of collective products, which restricts students of lower literacy proficiency from participating in learning practices, Forestview favors individual creativity and outcomes, which restricts peer collaboration and support. In both interactions, unbalanced access to learning exists and shapes students' participation: learners are positioned based on what count as legitimate language and language users in the particular classroom; learners are also positioned based on what count as the legitimate social and cultural skills, which are closely related with the norms and students' status in the classroom, the communities and the society. As Hawkins (2018) highlights:

> the social and cultural capital that interactants and their associated resources hold within a given encounter shape what modes are used and hold sway, how modes and meanings are represented and interpreted, and how people (and groups of people) are positioned vis-a`-vis one another. (p. 64).

Conclusion and Implications

This chapter answered the second research question: how do teachers, influenced by multiple ecological factors, organize learning resources and materials spatially, socially, and linguistically, and how does their organization shape the ecology of dual language classroom practices, discourse, and participation? Building on the tradition of classroom discourse analysis, linguistic anthropology, and a lens that offers linguistic, semiotic, spatial, and material resources as repertoires, assemblages, and ecologies, this chapter uses ethnographic data from the

classroom and learning events to explore Ms. Ma's and Ms. Xie's classroom organization and classroom discourses. Throughout the chapter, I emphasized the assemblage and collaboration of various resources in mediating pedagogical outcomes, learning discourses, and learning participation, drawing on the ecological framework for dual language learning and teaching, as elaborated in Chapter Two (e.g., Domain A: the ecology of semiotics, and Domain B: the ecology of language learning). After analyzing the organization of the two classrooms, along with the two teachers' beliefs in teaching practices and pedagogical goals, I then moved to elaborate the three theoretical findings.

First, my findings show that the teachers' assemblages and production of repertoires are crucial in achieving specific pedagogical outcomes, such as conveying meanings, highlighting and practicing accurate content knowledge, eliciting linguistic forms, directing students' attention and developing metalinguistic awareness. Meanwhile, the pedagogical outcomes further influence students' assemblages and production of repertoires in response, such as what resources to draw on, and how they interact and produce in group work. By presenting two learning activities in Ms. Ma's classroom, I claim that subtle changes in the assemblage of the same set of repertoires can significantly change the teaching target and achieve different pedagogical outcomes. Meanwhile, teachers' assemblage and production of repertoires (including social, linguistic, material, and spatial repertoires) greatly influence student-teacher interactions, including the types of answers that students produce, and the extent to which students' voices are validated. Findings have demonstrated that dual language education is by no means a simple addition of two languages and cultures, nor the perfect solution for developing bilingualism/biculturalism; in reality, even the students with Chinese "heritage" are learning the "academic" languages through the dual language education.

Besides the pedagogical functions, the choice, assemblage, and production of teaching repertoires in the two classrooms also serve as social and ideological tools to socialize students into particular sociocultural discourses of learning and behaving. The process and practices of bilingualism/biculturalism is largely shaped by the social, political, and institutional choices of multimodal resources. On one hand, the assemblage itself is agentic and cannot be separated from the social-historical community of the school and the broader economic, political, and institutional discourses around the resources in the society. On the other hand, the teaching and learning repertoires shape the culture of learning in particular ways through the process of learning, discussing, and interacting with the cultural forms and symbols from the linguistic, semiotic, and artifactual tools. I claim that there are different cultures being promoted through the assemblages of resources in Forestview and Er'yu. In Er'yu, although it creates an alternative learning discourse that promotes the minortized community's cultural models which is believed to be a positive outcome of dual language programs by Freeman (1998), it also cultivates learners with diverse backgrounds into an essentialized discourse of "heritage" and "culture". This process of shaping can be either positive or negative for students' learning given their different backgrounds and repertoires. The particular expectations toward learning and essentialized identity can marginalize learners who are not familiar with these discourses. Even for learners of similar racial, ethnic, and social backgrounds, they do not necessarily have homogenous identities and cultures. For example, studies have shown that there are different pathways to being "Chinese" given the familial language policies and trajectories (e.g., Curdt-Christiansen & Hancock, 2014; Zhu & Li, 2016). In Forestview, teacher's assemblages of resources are strategic to develop students' sociocultural knowledge of the modern culture in China and to develop their communicative skills. Although it seems successful in engaging

learners, it further reinforces the "American mainstream" learning culture which is built on the cultural models of middle-class White families and further benefits this group of students.

Lastly, the chapter focuses on peer interactions to examine learners' participation and learning opportunities within the classrooms' social, linguistic, spatial, and material organization. Sociocultural theories in education and applied linguistics have emphasized how learning is co-constructed from social interactions including socialization with peers and mediated through artifacts (Haneda & Wells, 2008; Vygotsky, 1978; Wertsch, 1991). Findings show that there are unequal dynamics and unbalanced participation among students due to the classroom rules, relationships, and assessment criteria. Overall, students with higher Chinese language proficiency and more leadership skills fit in the "mainstream" American schooling seem to be legitimated while others are marginalized in their access to learning practices.

As described earlier, Hawkins (2018) proposes the notion of "transmodalities" and five complexities in understanding transnational and digital communications where languages, cultures, resources, and ideologies flow on a transnational scale. I find these complexities crucial as well in understanding learning and teaching interactions in the context of dual language classrooms, where multiple languages, materials, and ideologies from at least two cultures/nations occur in the same classroom physical space and these resources are also being drawn and (re)contextualized in the localized practices of learning and teaching through transnational (e.g., immigration) and digital (e.g., videos from the U.S., China, and Taiwan) communications. Findings from this chapter are significant to inform dual language pedagogies. To begin with, attending to the classroom discourses and micro-interactions is believed to benefit effective teaching; teachers need to examine learners' discursive practices and participation so as to understand the enacted ideologies and power dynamics both among learners and between

learners and the teacher (Bloome et al., 2005; De Costa, 2011). This chapter provides insights on how to appropriate the assemblages of resources to achieve effective pedagogical outcomes for different teaching purposes across different subjects in dual language settings. It has implications in terms of selecting and adapting materials, forms, formats, and platforms of language teaching, which are embedded in the ecology, the interplay, and the power relations of these resources.

It can also raise teachers' and researchers' awareness of building conducive social relations through the assemblages of resources. Scholars have been calling on teachers to read classroom cues to provide and organize learning and social space (e.g., Schultz, 2003; Rymes, 2016). As Erickson and Shultz (1982) reveal, cultural communication styles, conversational organization, and social identities shape conversation flow between institutional gatekeepers and students. In response to these different cultural ways of communication, teachers are expected to discover and respond to cultural differences of learners in classrooms (Cazden, 2001; Gee, 2012). Through this lens, findings from this chapter can inform teachers' assemblages of resources to take into consideration students' cultural, social, and linguistic backgrounds, helping them to create a comfortable and equitable learning space for diverse dual language learners. The social and ideological function of assemblages of resources cannot be neglected as well in creating an enriching and equitable dual language environment. All of these ideas will raise teachers' and teacher educators' critical awareness of micro-interactions and micro-politics, and their relevance to sociocultural discourses in affecting students' learning practices, procedures, participation, and attitudes.

Chapter Seven: Be(com)ing Bi/multilingual: Scaling Dual Language Learning and Socialization

Introduction

A large body of literature about the outcomes of and experiences with dual language education has focused on parents' perspectives, such as enrollment motivations. Major motivations include parents' beliefs about positive cognitive, academic, and professional benefits from bilingualism, more respect for other cultures, and better maintenance for "heritage" cultures as outcomes of these programs (e.g., Howard et al., 2003; Lao, 2004; Lindholm-Leary, 2001; López, 2013; Shannon & Milian, 2002; Wesley & Baig, 2013; Whiting & Feinauer, 2011). Studies have also demonstrated that these motivations and perceived benefits differ among parents from different social and linguistic backgrounds (e.g., Ee, 2017; Parkes, 2008; Whiting & Feinauer, 2011; Zheng, 2020). While parent beliefs are well researched, a relatively unexplored area is dual language learners' language development and social identifications through their dual language learning experience. A few studies have examined dual language learners' perspectives but often focused on a single learning context such as classroom settings. Bearse and de Jong (2008), for example, studied secondary Spanish-English dual language students' experiences through surveys and interviews. They found that students' attitude toward bilingualism and biculturalism differs between Anglo and Latino students. Kibler et al. (2014) explored high school students' insights on their self-perceptions from dual language learning. They identified the similarities (e.g., cross-cultural appreciation, confidence) and differences (e.g., whether they are "living the language") for English-dominant and Spanish-dominant students.

While these studies seem to present a clear distinction between the English-dominant and Spanish-dominant students, they have not documented the complexities of individual learners' experiences, including students who are neither categorized as "English dominant" or "Spanish dominant". Even if learners come from similar racial, ethnic, and social backgrounds, there are diversities in terms of their lived experiences and community engagements. Scholars have criticized the usage of ambiguous terms such as "long-term English language learners" (Flores et al., 2015), "immigrant learners" (McKay & Wong, 1996), and "heritage language learners" (Blackledge & Creese, 2008; Hornberger & Wang, 2008; Miller & Kubota, 2013). Scholars claim that these labels simplify learners as homogenous groups and reflect societal and institutional ignorance about minoritized learners' experiences and needs.

This chapter centers on the third research question: how do students from diverse social, cultural, and linguistic backgrounds perceive, navigate, and socialize into their English-Chinese dual language learning across spatial and temporal scales? This chapter contributes to the literature by investigating learners' experiences with and perspectives toward their dual language learning (DLL). It aims to include diverse voices of learners with different social, racial, and linguistic backgrounds and needs, and include learners who are not adequately addressed in dual language research. Additionally, it aims to present a detailed contextualization of individual learner agency and social identifications in be(com)ing bi/multilingual across multiple spatial and temporal scales, so as to shed light on more complexities beyond the simplified distinction between language-minoritized student groups and language-majoritized student groups. I reject essentialization and stereotypes of dual language learners and their learning based on their assumed linguistic and ethnic backgrounds, to conceptualize a more responsive and inclusive dual language learning environment.

Sequentially, this first part presents the overall findings of all consented students' perceptions and identifications toward dual language learning and bi/multilingualism by analyzing video-recorded interviews with consented students across the two research sites. The second part uses scalar analysis in documenting two learners' trajectories of dual language learning to investigate learning agency and socialization in relation to the socio-political and ecological structures.

Conceptual Framings

There has been increasing attention to re-examining the complexities and trajectories of learners' language development and social identification across various social contexts (e.g., Wortham, 2006). In literacy studies, for example, Compton-Lilly et al. (2017) found that investigating learners' intersectional identity negotiation in immigrant families shows these children's sophisticated, strategic, and agentive negotiations for learning. Kibler (2019) investigated the intersection of multiple social interactions and worlds in shaping the biliterate and bilingual trajectories of immigrant-origin youth over time. Informed by these studies that investigate bi/multilingualism from trajectories and contexts, this chapter seeks to identify the complexities of language development across dual language learners' communities of socialization. In particular, this chapter draws on language socialization theory (Lee & Buchotz, 2015; Ochs & Schieffelin, 2011) and scalar analysis in educational linguistics (Canagarajah & De Costa, 2016) as two major theoretical and methodological guides to understand learners' trajectories of language development and social identification through dual language learning.

Language Socialization

Language socialization theory was developed by Schieffelin and Ochs' (1986) early work on adult-child interaction in the context of first language acquisition. The premise is that children

socialize into their communities through languages and are socialized into languages through community interaction (see Kulick, 1992). Thus, understanding language development now becomes understanding socialization patterns, apprenticeships, and interpersonal relationships in communities (Duranti, 1997). The central tenet for language socialization theory is exploring how a novice's participation in communicative practices changes, usually longitudinally, through participation, learning, and interactions with other members in the communities (Ochs & Schieffelin, 2011). To make it clearer, it focuses on the process of language socialization where a novice learner gradually becomes a legitimate participant in "communities of practice" (Lave & Wenger, 1991) through dynamic interactions. Pierre Bourdieu's work has also been influential in language socialization theory to investigate how socializing and interacting in a situated context is related to histories between participants and other sociocultural and institutional structures that produce and reproduce power dynamics (Kulick & Shiefflin, 2004).

Language socialization studies have expanded from the initial research context of naturally occurring interactions in community spaces such as playgrounds (e.g., Kyratzis et al., 2010) to various social contexts for language use such as formal classroom settings (e.g., Duff, 2002; Kim & Duff, 2012; Cho, 2016; Willett, 1995), online platforms (e.g., Lam, 2008), and households (e.g., He, 2017; Song, 2019). Several studies conducted in bilingual or dual language contexts have drawn on language socialization theory. Kyratzis (2010), for example, studied the language socialization of linguistically minoritized children in a Spanish-English bilingual preschool in California. The study found that the minoritized children were engaged with bilingual practices, which exhibited linguistic and cultural hybridity. They reflexively portray the tensions of speaking "Spanish" and speaking "English" and respond to the polarizing discourses about the two languages. Chaparro (2019) claims that two-way immersion programs are sites for

children to socialize into particular ideologies around racialized speakers of certain languages. She found, for example, dual language learners are socialized into racialized and classed stereotypes through the practices of particular terms, linguistics, and semiotic resources at school. In this case, dual language students, beyond learning the two languages and cultures, are also socializing into particular ways and cultures of learning, doing, and behaving in the dual language classrooms (see more in Chapter 6), which might be or might not be a similar environment to that where students are socialized into learning in their homes and communities.

Scales and Social Identifications

In investigating dual language students' language development, my understanding has also expanded from dual language classrooms to the intersectionality of various contexts where students develop, choose, and perform their languages across time and space. In alignment, I adopt a scalar approach to connect multiple zones and layers of socialization and learning. Scalar analysis, which was first developed in social sciences to understand globalized discourses and geopolitical relationships, was very recently applied in the field of sociolinguistics and educational linguistics. "Scale", in short, is perceived as "vertical, hierarchical, power-laden ordering of social space-time" (Clonan-Roy et al., 2016, p. 12). Blommaert et al. (2005) first aimed to create social-spatial features in sociolinguistics and in understanding multilingualism and interaction in the globalized society. As he claims, space is not a "passive background" as a physical entity, but an "*agentic* force" that is scalar and indexed with social meanings:

> space is context and therefore a potential for semiotization, we argued that it must be seen as something which generates indexical meanings. Such meanings, we argued, are *scalar*, they involve important differences in order and scope. (2007, p. 213)

Figure 7.1. Lower and higher scales (Blommaert, 2007)

Lower scale	Higher scale
Momentary	Timeless
Local, situated	Translocal, widespread
Personal, individual	Impersonal, collective
Contextualized	Decontextualized
Subjective	Objective
Specific	General, categorial
Token	Type
Individual	Role, stereotype
Diversity, variation	Uniformity, homogeneity

Blommaert (2007) further explained scales as a theoretical construct. To begin with, scales are viewed as semiotized space and time with social, cultural, political, historical, and ideological meanings, which at the same time, consist of different levels and layers. As he claimed (see Figure 7.1), scales involve different levels and categories that are stratified and hierarchically layered, from lower and local (e.g., individual concerns), to higher and translocal (e.g., institutional and community rules). Blommaert believes that people can jump scales (e.g., jumping from lower to higher) but the ability to jump scales is based on the individuals' access to the discursive resources that index the particular scale level, and access is very much affected by the institutional power structure. This access is relevant to the "orders of indexicality" in scales:

> Human social environments needed to be seen as polycentric and stratified, where people continuously need to observe ''norms''—orders of indexicality—that are attached to a multitude of centers of authority, local as well as translocal, momentary as well as lasting: the family, the peer group and the immediate neighborhood networks; religion, the media, transnational networks, the State (both home and host), the labor market, and abstract ideals and role models (e.g., gender and social status roles). (Blommaert, 2007, p. 2-3)

In other words, while scales have social and cultural meanings, norms, and rules from different scale levels, the ability to jump scales is dependent on people's understandings of these

norms of indexicality in scales, which are also restricted by the status and positions individuals have in the scale levels and the power structures where these norms operate. Individuals are constantly interacting with and responding to the norms, ideas, and context of scales through their navigation of resources. Mortimer (2016) understands sociolinguistic resources as operating at different scale levels. As she highlights, sociolinguistic resources that are:

> decontextualized, translocal/widespread, more timeless, more homogenous—like a standard language, for example—tend to index higher scales, while those that are more contextualized, locally situated, and heterogeneous—like a nonstandard or hybrid variety, for example—tend to index lower scales. (p. 60)

Different values are attached to these linguistic and semiotic resources based on the particular scales that are invoked. For example, an individual's bilingual competence might carry different values according to whether it is assessed by daily communication or national standardized tests.

Canagarajah and De Costa (2016) claim that scalar analysis enables researchers in educational linguistics to examine the layered and vertical contexts with both spatial and temporal dimensions to understand interaction, layered resources, and negotiation in language learning. They point out several theoretical and methodological issues in applying scalar analysis in educational linguistics. Two of these issues, in particular, are relevant to my conceptualization in this chapter. To begin with, they point out that scales should be conceptualized as a practice, in which case the scaling practices are of more interest than the scales themselves. Scaling practices, as they claim, are involved with contestation, because social life is filled with inequality and power differences. In this case, questions worth researching are, for example: what resources help people and institutions engage in effective scaling? what strategies are adopted to scale relationships in one's favor? (Canagarajah & De Costa, 2016, p. 3).

Second, in alignment with this lens that frames scale as a verb rather than a noun, individuals' agency in relation to the scales and ecological structures should be recognized and

researched. Individuals' capacity of scaling and their role as "scale-makers" (Çağlar & Glick-Schiller, 2011, p. 12) is important in scalar analysis. When drawing on resources, individuals are by no means passive but rather makers of scales through their strategically appropriated assemblages of materials, resources, and forces (Canagarajah & De Costa, 2016). Gu (2018) explains "scale-makers" as actors for "rescaling practices" (p. 14), where individuals create and negotiate new norms of scales, which are influenced by political, social, economic, and interpersonal factors. While scalar analysis rejects deterministic views toward the indexicalities of resources, and the divide between macro-micro, structure, and agency (Gu, 2018), it is also important to recognize that human agency is influenced by other non-human agents in scaling practices (e.g., the configuration of institutions).

Another issue is related to the relationship between scale levels. As was explained, there are different levels of scales but the relationships between scales are not predetermined but dynamic and fluid; the influence of scales can be nonlinear with tensions, contestations, or collaborations (Canagarajah & De Costa, 2016). In this case, scales that function in one social domain (e.g., classroom learning) might not be applied to other social domains (e.g., community learning). Higher scales, for example, school norms in dual language learning, do not necessarily determine lower scales, such as individual learners' dual learning experiences.

Scalar analysis affords the understanding of the changing, dynamic, and fluid relationships between language use, agency, and contexts. It has been effective in studying agency and empowerment in navigating identifications and resources among immigrant, minoritized, and diasporic communities (e.g., Gu, 2018; Wortham & Rhodes, 2012). The capacity of minoritized groups', such as immigrants', scale-making is easily ignored as they are considered as "guests" in the social environment with institutional and societal forces playing a

dominant role in restricting their agency (Canagarajah & De Costa, 2016). I believe scalar analysis is aligned with my goal to voice minoritized learners and to validate learners as social actors in dual language classrooms. Understanding learning through a scalar analysis often involves "heterogeneous social identifications" which are "ubiquitous, happening at various scales as individuals and groups typify themselves and others" across various time and space scales (Wortham & Rhodes, 2012, p. 75). From a methodological perspective, investigating social identifications calls for examinations into how they are practiced, interpreted, negotiated, and changed through events across time and space. As I have explained in the literature review chapter, Wortham (2006) defines social identifications as practices through particular (change of) events and interactions across time scales: social identifications of individuals are indexed through interactions and behaviors that are positioned by learners themselves and by others in social contexts:

> Individuals behave in certain ways or possess certain characteristics, and those behaviors or characteristics are interpreted by the individual and by others as signs of identity, as indications that the individual belongs to a recognized social type… Any accounts of social identifications must explain how social identification gets accomplished in particular events as people react to or characterize others as having recognizable identities. (2006, p. 30)

Applying this lens to language development and social identifications, Clonan-Roy et al. (2016) claim that, instead of relying on relatively restricted spatial and intermediate temporary scales such as students' development of academic identities through one academic year within one classroom, there is a need to explore more relevant time and space scales to understand students' trajectories of social identifications and learning. They also point out that individuals use resources for heterogeneous and contingent processes, in which case it is essential to account for the heterogeneous resources that are involved in a particular case of interaction and social identification. In this sense, socializing in different contexts with different norms and groups

involves various resources and the ideologically perceived values of these resources (see Chapter 6). These resources, as I claimed earlier, are imbued with different values based on the particular scale levels that are invoked with its social, historical, and ideological indexicalities.

Overall Themes and Findings

From the middle of data generation in each research site, I conducted video-recorded individual interviews with consented students. Each interview lasted from 10 to 25 minutes. Protocol interview questions were designed to understand: 1) students' perceptions of learning and pedagogy across classes in the dual language schools, 2) students' everyday use of languages, and 3) students' social identifications toward bi/multilingualism and dual language learning (see interview protocol, Appendix D). Table 7.1 presents students' linguistic backgrounds as self-identified during the interviews. During the interview, I ask students, for example: what are the languages that you use on the daily basis? and what is/are the language(s) that you are most/least comfortable with speaking? One big contrast between Forestview and Er'yu is that most students in Forestview are from English-monolingual families, while most students in Er'yu are from bi/multilingual households. Home languages are listed in the order in which students identify them as common languages that they use daily to communicate with family members. The sequence of the languages is aligned with students' reported frequency of or comfort in using the languages. As shown in Table 7.1, in Forestview, only Kevin, Elena, and Yuchi speak an additional language other than English at home, but Kevin's and Elena's households are still English-dominant. In Er'yu, almost all of the students interviewed (except for Weijia) describe that they use at least two languages on a daily basis. Most students in Er'yu are of Chinese descent, but they often speak regional dialects such as Fuzhounese and Taishanese with their parents and grandparents, many of whom do not speak English. Analysis

of the twenty-two individual interviews demonstrates two themes of the findings: 1) students' self-identifications and attitudes toward bi/multilingualism, and 2) students' perceived benefits and outcomes of dual language learning.

Table 7.1. Backgrounds of individual student interviewed[26]

Students from Forestview	Gender	Home languages	Students from Er'yu	Gender	Home languages
Wilson Taylor	Male	English	Camila Jansen	Female	English & Spanish
Yuchi Zhang	Female	Mandarin & English with siblings	Caitlin Suzuki-Nilsson	Female	Japanese, Swedish & English
Kevin Martin	Male	English & Spanish	Sarah Liang	Female	Taishanese, Mandarin & English
Emily Roberts	Female	English	Abigail Heng	Female	Cantonese, Mandarin, Malay & English with siblings
Brady Johnson	Male	English	Edison Reed	Male	English & a little Spanish
Elena Miller	Female	English & Thai	Elizabeth Dai	Female	Cantonese, Mandarin & English
Ken Lee	Male	English	Gary Woo	Male	English & Mandarin
Rebecca Moore	Female	English	Jennifer Chen	Female	Mandarin & Fuzhounese
Summer Santos	Female	English	Leo Bryne	Male	Spanish & English
William Anderson	Male	English	Scott Lin	Male	Cantonese & English with siblings
			Weijia Lou	Male	Mandarin
			Luxi Rodriguez	Female	Cantonese, Mandarin, Spanish & English

Students' Orientations toward Bi/multilingualism

Bi/multilingualism as normal and as "embarrassing"

Out of the twelve students interviewed in Er'yu, eleven self-identify as multilingual speakers. As presented in Table 7.2, the part of students' communicative repertoires activated are

[26] Demographic and language backgrounds of participants are represented as they were self-identified during individual interviews. Students' names are all pseudonyms. First and last names were assigned to students by me to resemble their real names. For example, if their first name is a Chinese name, I assigned a Chinese name (e.g., Wejia Lou); if it's an English name, I assigned an English name (e.g., Scott Lin). In this way, I honor their identification through their first name but also represent their demographic background demonstrated in their last name.

depend on factors such as the languages that their family members speak, their family language policy and practices, their prediction of whether their interlocutor can understand the language, and the physical space where the conversations take place. As examples below show, achieving communicative outcomes and realizing some tasks through communication seem to be common reasons to pick one language from their communicative repertoires. Moreover, following the family language policy seems a key reason for their multilingual practices because most of them need to make their family members understand. Some of them describe that it is hard not to speak multiple languages every day and some of them feel confused between languages because it's hard to separate the languages (see Examples #1-4). Canagarajah (2016) highlighted the translocal scale when he studied migrant workers' interactions in their global professions with diverse cultures and languages. He claims that a translocal scale can be treated "as contexts outside of one's own community or nation" (p. 50). In my study, most students in Er'yu interact with multiple linguistic forms and cultures as well. It seems that students perceive their daily communication and multilingualism as a translocal and layered space rather than a predefined scale of interaction. From what the students described, their language use is involved with mobility across multiple places and social domains where the local norms of languages differ. Instead of functioning as a single scale, various scales are enacted to form the translocal scale of their multilingual communication. Rather than viewing one language as one system, it is important to explore "how norms change as interlocutors adopt different scales to frame their interactions" (Canagarajah, 2016, p. 49).

Table 7.2. Examples—bi/multilingualism as normal and as "embarrassing"

#1	"I speak Mandarin better, sometimes I get confused between Spanish and Mandarin, I am like, I'm saying something in Spanish but then I say something in Chinese and then my grandma doesn't know because she only speaks Spanish. I'm like oops sorry… My mom knows English but whenever she's in a rush she has to talk fast, so she talks fast in Cantonese "babababa" and when my dad's in a rush he talks Spanish as fast. So he's like fast "dadadada" (Interview, Luxi, Er'yu, 05/16/2019)
#2:	"I talk English with my brother. My grandpa is Cantonese sometimes and Mandarin, and sometimes I speak Malaysian and Cantonese and Mandarin with my grandma. But if I have trouble with homework I tell her in English, but my grandpa doesn't allow that… Because he can't understand most of the stuff." (Interview, Abigail, Er'yu, 04/15/2019)
#3:	Caitlin: Sometimes when I'm talking to people who only know one of the, those languages, that's hard because then I forget how to say something then had to think for a long time what to say and then they go onto the next subject without, without me saying anything. Zheng: What do you mean? Do you mean like if somebody who just speak Japanese without English so it's hard to communicate? Caitlin: Yeah, like every day I use all the languages, so that's hard (to get used to one language). (Interview, Caitlin, Er'yu, 05/14/2019)
#4	"When I use English sometimes around, like in the library they don't speak Chinese, so I speak to them in English. But then when its different like a family member that has no idea how to speak English...I speak to them in Chinese and then they understand it but when I say English they have no clue what I'm saying. (Interview, Er'yu, Sarah, 05/16/2019)
#5	Jennifer: I feel good and happy. Um, and sometimes I am embarrassed because when I'm calling other people, I think it's embarrassing. Zheng: When you were calling other people, it's embarrassing. You mean like calling people in that language or? Jennifer: It's like I'm calling other people and they just speak English with me. But my parents, like when they try to talk to me, they say it in a different language. Zheng: Oh, are you saying that sometimes you speak English to other people and then you expect other people to respond to you in English? But, your parents, they respond in Chinese, in another language and you feel it's a very embarrassing, Jennifer: Yeah….. Sometimes it's English cause I don't know that many words and Chinese, I don't know that many words either. (Interview, Jennifer, Er'yu, 04/11/2019)
#6.	Zheng: How do you feel about that? Scott: *[Indiscernible]* My parents can't really speak it (English) Zheng: You feel what? Scott: It's kind of, like, my dad can't speak, never mind…I feel like it's really weird. … Scott: I didn't like Mandarin. Zheng: You didn't like Mandarin? Scott: I like English. (Interview, Scott, Er'yu, 05/24/2019)

Students, as the examples show, scale their multilingual communicative repertoires according to the norms of the different levels of discourses (e.g., the family policies, the purposes of the communication, doing homework). Furthermore, the relationship between these norms and scales was not always defined but was constructed and interpreted by students. The

narratives from the individual students seem to contest their scales of their repertoires. For example, although Abigail used English for homework as it was the norm for formal education, she constructed a translocal scale of using their family dialect with her grandpa because of the family norms and of the communicative purpose. As Canagarajah highlights, "treating scales as already laden with norms is too rigid an analytical approach. Scales are semiotic constructs of people, as they are constructed, defined, cued, and negotiated by talk and other sign systems (2016, p. 55).

While most students in Er'yu describe that they feel good about the fact that they speak these languages so that they can communicate with different people, some of them imply a lack of confidence and even a sense of embarrassment about speaking a non-English language. As indicated in Table 7.2, Scott and Jennifer, for instance, seemed to struggle with the fact that their parents do not speak English. When asked how he feels about using three languages, Scott confessed that it is "weird" to speak three languages. He later claimed that his parents can only speak Cantonese and that he dislikes Mandarin but likes English the most (see Example #6). Similarly, Jennifer thinks she feels good and happy about speaking other languages but sometimes embarrassed when she is speaking to her family members who only respond her in another language rather than English. She also seems unconfident about her bilingual skills, and she thinks that she has not learned many words in either of the languages (see Example #5). It should be noted that certain languages (such as English) or features of languages (such as "native" accent) are often considered as a higher scale that "allow mobility across situations and scale-levels" (Blommaert, 2010, p. 12). Scott's and Jennifer's embarrassment at speaking an additional language indicates their scaling of their parents' language backgrounds and their perception of English as a higher scale than other languages or dialects their family use. This is

also relevant to the national or global scale of positioning English as the dominant language, although they are living in a diverse linguistic environment. As Sarah describes during the interview, since speaking English is the norm in society, it can make people feel uncomfortable when they use other languages:

> This place (U.S.) uses a lot of English and then once you get adapted to it you just don't think about other languages… and then once you think about other languages you come feeling a little uneasy about it. (Interview, Sarah, Er'yu, 05/16/2019)

Sarah associates her feeling toward and choice of languages with the English-dominant discourse while Scott and Jennifer perceive their parents' inability to speak English as weird in the "mainstream" society**.** In Kyratzis' (2010) study in a Spanish-English bilingual preschool, she found that language-minoritized children engaged in their bilingual practices and referred to the associated societal discourses around using these languages. As Kyratzis argued, children in the study reflexively demonstrated their views toward bilingualism, which either further reinforced the boundaries between different languages and the English monolingual discourses or blurred the boundaries that show the hybridity of their language practices within their minoritized communities (2010, p. 561). Students' responses in my study also show some similar findings. On one hand, most students in Er'yu demonstrate their flexibility and hybridity of language use in daily practices as part of their family communication at a lower scale level (i.e., individuals' daily communication); on the other hand, students seem reflective of their language practices and respond to their practices by connecting them to bigger discourses around the hierarchies of languages in the U.S. which happens in a higher scale level (i.e., language norms and power structure in the broader society). The students' articulation of language use reflects the hybridity and heteroglossia nature of their multilingual repertoires, although the way they express them seems to separate the languages because I, during the interviews, specifically ask

them to point out when, where, and why to use certain languages. Nevertheless, I believe the individual learner's different languages/dialects is a dynamic and fluid repertoire.

Bi/multilingualism as "cool"

In Forestview, most students come from monolingual, upper-middle-class, and White families, and Mandarin is often not visible in their households; only Kevin and Elena explicitly report that they navigate various languages for family communication. Out of the ten students interviewed, students used the words "pretty cool" (n=3), "fun" (n=2), and "unique" (n=2) to describe their feeling toward being able to speak more than English. For students who speak exclusively English at home, they perceive that being able to speak another language makes them distinct from others in the community. For example, Ken, Wilson, and Elena all referred to the fact that speaking Chinese gives them some characteristics that most others do not have (see Table 7.3 Examples # 7-9).

Table 7.3. Examples—bi/multilingualism as "cool"

#7	"Well, I like that, because sometimes that I can like, be able to speak Chinese when other people can't. Like, I like, that's kind of unique for being in this state…Because China is too far away from here. And probably not that many people speak Chinese here." (Interview, Ken, Forestview, 12/14/2018)
#8	"I think it's pretty cool. Everybody knows I speak two languages." (Interview, Wilson, Forestview, 11/28/2018)
#9	"Pretty good because now I can speak two languages and I can write stuff in journals and no one else will know what it means. And I think it's really cool to have two languages." (Interview, Elena, Forestview, 12/04/2018)

Kubota (2016) uses the notion of "neoliberal multiculturalism" to claim that support for multilingualism further privileges middle-class groups with more than one language over minoritized working groups who are learning English. Most students in Forestview, who are from majoritized English-monolingual households, seem to be aware of the symbolic capital that

can make them distinct from the rest of their communities. Different from students in Er'yu who seem to perceive Chinese and their home languages as a lower scale that is less powerful, English-dominant students in Forestview tend to view Chinese as a higher scale as they associate Chinese language skills as the "elite "language with values such as social distinction. As I have mentioned before, the relationships between scales are dynamic. Here, due to the different linguistic, racial, and social backgrounds and status of the students in Er'yu and Forestview, the scalar relationships between Chinese and English language are constructed at different levels as well. Blommaert et al. (2005) claim that multilingualism is not about something individuals "have" or "lack", "but what the environment, as structured determination and interactional emergence, enables and disables them to deploy" (p. 213). In this case, multilingualism offers different values to dual language learners who are being positioned at different scale levels due to the inequality existing at the higher scale of the societal structure.

There are a few exceptions in Forestview: Yuchi and Kevin, both of whom speak an additional language at home, point out that speaking more than just English is not anything unique. Navigating the contrast between the scale of bi/multilingual repertoires in their daily community and the dominant, higher scale of English monolingualism in schools and communities, these two students tend to contest the relationship between the scales and push back on the monolingual ideologies. Yuchi, for example, thinks bilingualism is not unique "because a lot of people can speak two languages. Some people can speak more. Once I saw on YouTube that a little girl could speak ten languages" (Interview, Yuchi, Forestview, 01/04/2019). Her classmate, Kevin, who speaks Spanish and English at home and is from a relatively lower socioeconomic background, confesses that his "life was messed up" when he

found out that not every school learns Chinese. For him, it was the default that speaking two languages at home and learning Chinese is what other U.S. schools do:

> Well, I never learned like English only in my life, so I feel like it's normal… Cause I never had like just one language learning… Like since I was two… And then I started learning Spanish at three. Spanish and English…Until I found out that my friends actually, they learn Chinese, I mean English, I keep on thinking the languages. When they, they learned English and I'm like wait, why are you learn English? I thought every school learn Chinese and English. My mom thought: 'well that's normal. When I grew up I didn't learn Chinese either.' I'm like, oh wait, so only school speaks Chinese? But maybe other schools do. I think. Now I do. But when I was kindergarten, and I just figured out. My life was messed up. Like my brain was, uh, I had a brain fart. (Interview, Kevin, Forestview, 11/20/2018)

Findings show there is a dichotomy of views toward bi/multilingualism between students from monolingual families and students from multilingual families. While students from monolingual families in Forestview tend to view learning a foreign language as unique, fun, and distinct, students from multilingual households in Forestview, also in Er'yu, tend to view multilingual repertoires as normalized practices. Most bi/multilingual students have described their flexibility in using languages every day for different purposes, and these multilingual practices are normal practices for them. In fact, they perceive the fact of speaking English only at school as very weird and hard for them to adapt to. In this case, the norm of monolingualism in schools seems to cause confusion and discomfort for students like Kevin. For students who navigate multiple languages on a daily basis, dual language education seems to be a comfortable place for them. In comparison, most Forestview students' perceptions toward bi/multilingualism as cool, fun, and unique cannot be separated from their monolingual households' backgrounds as well as the community, which is located in a well-resourced White-dominant suburban area in the Midwest where there is not much presence of linguistic and cultural diversity. It can also be tied to the ideology of "bilingual advantage" (King & Mackey, 2007), where individual bilingualism is associated with cognitive, economic, and personal benefits, which has been

circulated as a common ideology among the parent, teacher, and staff community in Forestview as what I have documented in the previous study (see Zheng, 2020). This bilingual advantage, again, further reproduces the hegemony of Whiteness in dual language and bilingual programs (Flores, 2016). As studies reveal, White middle-class parents play a bigger role in shaping dual language policies and dual language programs are thus developed to provide "enrichment" bilingual advantages for these students from White English-monolingual middle-class households (Dorner, 2011; Paciotto & Delany-Barmann, 2011).

Students' Perceived Benefits of Dual Language Learning

In terms of attitudes toward learning Chinese and being bi/multilingual, individual students' responses varied according to their sociocultural backgrounds, their own preferences of language use, as well as their adoption of different scales in their perceptions. In general, all students from the two schools across various backgrounds seem to position dual language learning as a resource for them. The perceived outcomes of dual language education and be(com)ing bi/multilingual are usually associated with being "helpful". For most students in Er'yu, this helpfulness often refers to the ability to support family communication and membership in their families and communities. For many students in Forestview, this helpfulness usually refers to potential future opportunities. Additionally, students also report an increasing positive cross-cultural and multicultural awareness, although this tends to be more present among students who are already from bi/multilingual (and most likely from linguistically and socially minoritized backgrounds) rather than monolingual households.

"Helpful" for supporting and being in the family

One predominant theme that emerged from student interviews is their strong appreciation for being able to use different languages that facilitate family communication and develop

membership within their family. First, students claim that they need to act as mediators and translators to help family members navigate social lives in the English-dominant society. Second, being able to speak and learn Mandarin through dual language education enables them to make connections and to fit in more with their families. This finding, however, is only present in student interviews from Er'yu. Out of the twelve students interviewed, four of them (see Examples 10-14 in Table 7.4) point out that they feel great about their ability to speak different languages because they are helping their parents and relatives. As Examples # 10-12, Abigail, Jennifer, and Weijia all mention that some of their family members are from China and are not able to speak or understand English. They report that they feel great and motivated to learn both English and Chinese so that they can be mediators to help translate.

Table 7.4. Examples—DL as "helpful" for families

#10	I feel great because sometimes my mom doesn't know a lot of English so, I can help her translate. (Interview, Weijia, Er'yu, 05/24/2019)
#11	Yeah, so I can talk to other people, like my mom is from China, she doesn't know much English, so I can help her. (Interview, Abigail, Er'yu, 05/16/2019)
#12	Yeah, because my parents don't really know a lot English so I could just, like tell them what I'm trying to tell them in Chinese instead of English. (Interview, Jennifer, Er'yu, 04/15/2019)
#13	I am happy because I, when I grow up then I could speak more Chinese with my parents. (Interview, Gary, Er'yu, 05/09/2019)
#14	So I can understand more because I have a lot of family members that mostly speak it. (Interview, Camila, Er'yu, 04/15/2019)
#15	I came here at Pre-K, my mom said this school is <u>good</u>, it's really, really far from my house, but it's good, it has Chinese, it has English, both languages are part of my family members, so from China… the homework helped me learn more and study. (Interview, Abigail, Er'yu, 05/16/2019)
#16	I am like, how do I know these languages? Why are my parents teaching me these? Why did my parents enroll me in a Mandarin speaking school when I'd rather just speak Cantonese, because I just want to be like my family, I don't want to be one man out. (Interview, Luxi, Er'yu, 05/16/2019)

The phenomenon of language brokering is well documented in the literature (e.g., Guan et al., 2015; Tse, 1996) where immigrant children in minoritized communities act as mediators

and interpreters to help family members achieve communicative, social, and cultural tasks. Students in this study are motivated to learn and appreciate learning Mandarin so that they can better understand their parents to further facilitate language brokering. Just as Cline et al. (2011) found, personal experiences and linguistic backgrounds affect individuals' representations of language brokering; also, bilingual speakers tend to view these activities as normal and are more likely to show appreciation for these experiences. The dominant role of English in standardized testing and in the broader English-monolingual American society shows the "order of indexicality" (Blommaert, 2010). In the U.S. society, English indexes a higher scale and offers more access to capital, which mediates the integration of migrant workers into the new country's labor markets (Williams & Balaz, 2008). Here, students described their motivation to learn Chinese is also to help their parents to navigate the scale of English as the privileged linguistic capital for acculturation.

Almost all of the students interviewed in Er'yu perceive the benefits of being multilingual as closely connected with the issue of family communication. Examples # 13-16 show how some students associate the use, learning process, and projected future learning of multiple languages with the need for family connections and being alike. Abigail, Gary, and Camila, for example, describe their willingness and even happiness about future language learning so that they can speak the family language with their family members. Abigail confesses that attending this English-Chinese bilingual school is worth the long trip every day because she can communicate with family members with both of the languages learn in Er'yu (see Example #15). Luxi, on the other hand, questions why she was enrolled Er'yu in the first place where Mandarin is the language taught in the school rather than Cantonese (the language her mother's family speaks). She does not want to be the "one man out" (see Example #16), and she prefers to

just speak Cantonese so that she feels more like the rest of her family. For these students, multiple norms exist in their translocal scale (e.g., family language policy, parents' expectations); individual students are aware of these norms and are responding to and negotiating these norms at the same time. For example, students seem very aware of the role of languages in acculturating and socializing into their own family communities. Since most students have Chinese "heritage", learning in a Chinese-English dual language school for Mandarin and for Chinese cultures becomes essential for socializing into their cultural communities. The only exception is Edison, who is English-monolingual but speaks a little Spanish with his nanny, who believes that he is able to help more people if he can speak multiple languages: "like if someone needs help with something, I can actually help them and I can translate for them if they need help" (Interview, Edison, Er'yu, 04/11/2019). All other students at Er'yu use another language to effectively communicate with their close family members.

"Helpful" for individual opportunities

Comparatively, students in Forestview tend to associate the "helpfulness" of Chinese immersion learning more with the mastered skillset for their individual future opportunities. For them, being able to speak English and Chinese provides more opportunities, such as career advancement, traveling to different countries, and preparation for the future. Both Wilson and William (see Table 7.5 Examples #17 and 18) feel good that they can speak Chinese because this skill can prepare them for traveling to China, and the language itself will help them out when looking for a job. Elena thinks multilingualism can secure the things she wants when she visits different places and meet with different people (see Example #19). As I claimed previously, English indexes a higher scale in English-dominant society and global labor markets than other languages such as Mandarin Chinese. However, in the translocal scale of these English-dominant

dual language learners in Forestview, Mandarin Chinese is "upscaled" as a resource to achieve practical means and capital such as job opportunities. Similar to what Dong and Blommaert (2016) found—that middle-class Chinese people use English as one learning resource to access globally circulated information and use English as a cultural asset to assert their middle-class identity—dual language learners in Forestview seem to view Chinese in a similar way: to access globalized resources and information.

Table 7.5. Examples—DL as "helpful" for individual opportunities

#17	If you ever go to China or like have a job that when you go off you'll be able to speak Chinese and it'll help you a lot. (Interview, William, Forestview, 12/04/2018)
#18	I can just like if I ever go to a different country, like I'll be prepared…Like if the people there, not a lot of people there know how to speak English, I'll be, I will know how to speak the other language. (Interview, Wilson, Forestview, 11/28/2018)
#19	I like it because you have an advantage and so you can go different places and you can speak with other people because sometimes they don't know how to speak English and then you wouldn't get what you want. (Interview, Elena, Forestview,12/04/2018)

This different angle of "helpfulness" of dual language learning is also aligned with previous studies conducted in dual language contexts (e.g., Bearse et al., 2008; Kibler et al., 2014). These studies reported a contrast between Spanish-dominant students' and English-dominant students' perceived benefits of dual language learning. While Spanish-dominant students focus more on the cultural and heritage part of dual language programs, English-dominant students are driven by language skills and pragmatic reasons. For dual language learners, learning and navigating languages go beyond just mastering the linguistic forms themselves but also include (re)interpreting the embedded social, cultural, and institutional values of these languages across different social contexts in their translocal scales. As the

findings demonstrate, learners in both sites are aware of their motivation in dual language learning, the underlying factors for switching languages, and the perceived benefits.

These perceptions, however, cannot be separated from the multiple scale levels in discourses of learning and teaching, the values and ideologies in the school communities, their own preferences, their family communities, as well as broader social structures. Blommaert (2015) discusses the issue of scales and accessibilities. As he claims, the accessibilities of resources and knowledge vary from people of different backgrounds, and this different accessibility results in the different scope of communicability and whose voices (and words) are being heard. This difference is evident between students and parents in Er'yu and those in Forestview (see more in Chapter 5). In Er'yu, since the majority of students are from linguistically minoritized and socioeconomically disadvantaged backgrounds, academic achievement and "heritage" affiliation seem the priorities for students. The fact that most students' parents cannot speak English raises these immigrant children's awareness to support families to function in English-dominant society in order to have more access to knowledge and resources. In Forestview, the school itself was founded by English-monolingual parents to develop bilingual skills for English-dominant children with a dominant ideology of bilingual advantage. Moreover, Forestview is located in a White-dominant neighborhood where speaking a second language is a unique asset, while multilingualism is prevalent and normal in Er'yu's location where the "bilingual advantage" ideology might not be as salient as that in Forestview. "The access to different scales entails access to scaled learning resources" (Dong & Blommaert, 2016, p, 34). In this study, dual language learning is a scaled learning resource that provides access to different scales: while English-Chinese bilingualism entails access to the scale of

English-dominant American society for dual language learners in Er'yu, it projects future access to the scale of globalized resources and capital for dual language learners in Forestview.

Positive multiculturalism for only some students

Some students, such as Kevin and Camila, both of whom are from a non-Chinese bilingual household, report that they enjoy learning and speaking multiple languages because they feel that they are from different cultures and they are navigating interesting elements among these different cultures. They report that dual language schooling supports them to develop positive multilingualism. As Camila describes, she feels that it's a mixed-up language when she speaks three languages, and she thinks it is fun to learn these languages. The fact that her family does not speak Chinese makes her like learning Chinese even more and feel proud:

> I feel like it's a mixed-up language but it's fun to learn, even though I'm like, different cultures. For some reason I like learning Chinese, that is different because my family doesn't know any Chinese, and they want me to tell them how to speak Chinese. This is a problem; my parents always say my name wrong…my Chinese name, *Kai Mingzhu* ((mimicking how her parents say it)). (Interview, Camila, Er'yu, 04/15/2019)

Kevin also describes the positive experience of immersing himself in a new culture when learning a new language. Kevin started to speak Spanish at the age of 3 when a new member who is Spanish monolingual joined the family, and he has been learning Chinese since Kindergarten (Interview, Kevin's mother, 12/04/2018). As Kevin's mom told me during the individual parent interview, Kevin always enjoys imaginative play with his siblings. He likes playing the role of a Chinese teacher who teaches Chinese vocabulary and cultures. Although Kevin is considered as one of the students with the lowest Chinese proficiency according to my classroom observation and conversations with teachers, he takes pride in learning and speaking Chinese at home. During the interview, Kevin confesses that learning three languages is challenging for him, and he feels that he always forgets something. However, he enjoys learning

Chinese a lot, and he feels that he is from that culture when speaking that language, both for Spanish and for Chinese: “Cause I’m used to speaking in English because that was the first language I knew. So when I speak a different language, I feel as if I was from that culture.” (Interview, Kevin, Forestview, 11/20/2018).

Interestingly, students who report this positive multicultural aspect of dual language learning are from bilingual households where Chinese is not the home language. Kevin and Camila are the only two students who explicitly show their recognition of learning a language and feeling a new culture. For most students in Er’yu, the fact that many of them speak a Chinese language or dialect on an everyday basis and live in Chinese communities might also signify their connection with Chinese cultures. For most students in Forestview who are from English-monolingual households, however, it seems that having fun and finding learning Chinese unique and advantageous are the major motivations for them to stay in the dual language environment. None of these students expressed the feeling of fully living with the language or the culture. This is similar to what Bearse and de Jong (2008) found about secondary dual language learners’ identity development. Their study shows that Latino students value biculturalism as the natural outcome of dual language learning, but few Anglophone students identify themselves as bicultural even after years of dual language learning. Findings from this study, to some extent, seems to show that other linguistically minoritized students who are not from Chinese backgrounds develop positive a new feeling of social identification through Chinese-English dual language learning.

Overall, findings from this study about students’ perspectives toward bi/multilingualism and their perceived outcomes of dual language education validate the findings from previous studies in Spanish-English dual language contexts, such as learners’ overall positivity and

satisfaction (e.g., Lindholm-Leary & Borasto, 2002), as well as the different perceived benefits between different student groups (e.g., Bearse & de Jong, 2008; de Jong & Bearse, 2011). This study, for example, shows that students from English-monolingual families in Forestview tend to focus on instrumental benefits of dual language learning, while most students of Asian background in Er'yu appreciate the bicultural experiences and support for family communication. However, findings from this study also demonstrate a contrast between students from multilingual households and monolingual households beyond racial or ethnic differences per se. For example, all students with bilingual backgrounds in Er'yu and Forestview perceive bi/multilingualism as normalized practices. Also, Spanish-English bilingual students such as Kevin in Forestview and Camila in Er'yu described the issue of cultural socialization through studying another language at school. Although these differences are somewhat consistent across these two different schools, findings have also shown individuals' different scaling of their resources and norms. For example, some students tend to conform to their family language policies while others seem to resist the norms or expectations imposed by their families. Their translocal scale of communication and learning are constructed from layered scales such as family policies and relations, the discourses of school and family communities, and the larger sociocultural and linguistic contexts where the schools are situated. This study also shows some findings of the often-neglected students in dual language programs who are language minoritized learners learning a third language, such as Kevin and Camila.

Scaling Dual Language Learning and Socialization—Two Cases

So far, I have presented overall findings on students' orientations and attitudes toward bi/multilingualism and dual language learning. Also, it is important to examine how learners' bi/multilingual trajectories are shaped by their classrooms, home language policies, and

environments. As Wortham and Rhodes (2012) highlight, researchers need to identify the contingent resources, spatial, and temporal scales to make sense of the trajectories of individual learning. To complement and complicate these findings presented above, this next section draws on scalar analysis to closely document two learners' spatiotemporal scales of language development and socialization. In what follows, I analyze how two focal learners employ resources from multiple spatial and temporal scales to scale and legitimate themselves in dual language learning and socializing. Their sociocultural worlds offer diverse resources that contribute to their trajectories of transformation in learning and socializing through various social memberships.

Backgrounds of The Two Focal Learners

Yuchi in Forestview and Camila in Er'yu were selected as learners for focused analysis for two reasons. First, they are the two students who interacted most actively with me, and I have developed a close relationship with their families, which offers me closer insights from a methodological standpoint. Second, Yuchi and Camila represent cases that are not adequately researched in the dual language literature: Yuchi is from a recent immigrant family from China, while Camila does not fit into the "traditional" categories of the two dual language student groups. Both of them are also minoritized learners in their respective dual language classes, in similar and also different ways. Presenting these two cases is aligned with my goal to diversify learners' voices and validate minoritized learners' dual language learning experiences. In the second part of this chapter, I elaborate how Yuchi and Camila 1) scale their resources across spatial scales, 2) scale their trajectories of dual language learning and socialization across temporal scales, and 3) engage in (re)scaling practices to gain legitimacy in their dual language learning communities.

Before I elaborate these three themes, I will first present the sociocultural backgrounds of the two students and the enrollment motivation and perspectives of their parents. Parents' perspectives are important in understanding learners' trajectories and scaling of dual language learning because learners' initial enrollment is often their parents' decision, and because learners are likely to be influenced by their family values in navigating their own learning and socialization. Both Yuchi's and Camila's parents enrolled them into a dual language school after strategically laying out factors and imagining their children's future communities and opportunities. Their parents' (orientations toward their) choices also reflect and embody specific socio-political forces that they believe might afford or limit their opportunities for participation in society and socialization into success.

Yuchi

Yuchi is the only student in the Forestview class whose parents came from the People's Republic of China. Yuchi's father received a Ph.D. in Virginia before his whole family moved to Forestview for a new job. Both Yuchi and her younger sister—who was also enrolled in Forestview—were born in the U.S., but their parents try their best to provide a Mandarin-only home environment. The family maintains a very "Chinese" way of living in terms of cuisine, holiday celebrations, and their friend circles. Besides studying in Forestview, Yuchi goes to a weekend Chinese school to learn some "serious Chinese", as Yuchi's mom Wanzhen puts it. As Wanzhen explains, in the weekend school Yuchi uses Chinese characters and literacy in a very serious, disciplined, and traditional "Chinese" way, which is very different from teaching and learning at Forestview.

Wanzhen elaborated on her reasons for enrolling Yuchi into Forestview. For her, learning Chinese is a secondary motivation; the most significant reason is to find a learning environment

where Yuchi can develop a sense of comfort and confidence and where her culture is valued. Wanzhen believes that Yuchi is more likely to smoothly transition into a school and social environment that is different from her home environment or the social circle she is usually in. Wanzhen confesses that she was worried about the lack of respect for diversity and multiculturalism when they first moved here; she preferred not to send their children to a school where most students were from White English-monolingual households. Wanzhen hopes that Yuchi can have some Asian or Chinese friends at school so that she will have a sense of belonging, confidence, and comfort:

> Maybe Yuchi is the only Asian student in the classroom, no other Asian students. No, I do not want this situation, because children sometimes might not be able to fit in. Not only Asian confidence, just, because children are sensitive sometimes so that being in a new environment can be too much for them to take. So giving her a transitional time, and take it slow. Then in middle school or high school, I am not sure about the student population. But then she is young, I want to provide her with a most comfortable and most free environment. (Interview, Wanzhen, 12/18/2018, original interview in Chinese)

Wanzhen told me that Yuchi was in a "regular" day-care with mostly English-monolingual peers, but she was not too concerned at that time because day-care, from her point of view, is not the critical stage for peer socialization. When it comes to choosing the elementary school, however, she thinks it is critical to pick a school with an enriching sociocultural environment. As described, although Forestview is a Chinese immersion school, Chinese-heritage students are scarce, and most of Yuchi's peers are still from English-monolingual families (see Chapter 3). Nevertheless, Wanzhen believes Forestview has met her expectations, and she is happy about what Yuchi has been able to cultivate socially and emotionally at school:

> Mainly, the social environment is very important. For teachers, there are Chinese teachers and American teachers. Also Yuchi could develop her confidence. But what is more important is that parents and children in this school have different cultural backgrounds. You know, there are Thai, Japanese, and Chinese, also Thai and American mixed races. Also, they tolerate and support this diverse environment overall… Maybe some of them

> are not mixed races, but some of them, they are interested in these (differences) and they have strong desire to learn these (differences). (Interview, Wanzhen, 12/18/2018)

From what Wanzhen has described, helping Yuchi fit into "mainstream" society while developing her sense of confidence about her own linguistic, social, and cultural background is the reason for enrolling her in Forestview. Song (2012) studied the language socialization practices of two Korean immigrant families in the U.S. She found that parents' decisions and family language policy are closely related to their "imagined communities" for their families and potential trajectories of membership with different transnational communities. Here, Wanzhen also made her decisions by evaluating and imagining Yuchi's social memberships during different development stages across multiple temporal scales. What she considered seems to draw on a higher spatial scale of the social norms and expectations in the dominant U.S. society.

Camila

Camila is one of the four students who do not have Chinese "heritage" in the Er'yu class. During the parent interview, Camila's mother Valerie described Camila's father as a Dominican and Dutch man who was born in the Dominican Republic. She described herself as a first-generation American whose mother is Colombian and whose father is Puerto Rican with some Indian descent. Camila's family tries to go to the Dominican Republic every two years to visit Camila's grandmother. Camila was raised English-Spanish bilingual at home, and her first babysitter was a Colombian who only spoke Spanish to her. Camila started to get exposed to the Mandarin-speaking environment when she was nine months old when she was sent to an English-Chinese dual language daycare from her friends' recommendation. Camila is one of the students who often shared stories with me and asked me questions. At the end of my fieldwork, she cried and told me that she was really happy that I was there in the classroom. Camila always appeared to be happy, positive, and engaged. As she told me during the interview:

> I like this school because most of the parts, you get to do like fun things, because we did gingerbread house in Ms. Leung, also your dream house which is pretty fun, and in Ms. Lin's we made posters, and in Ms. Ma, we also made posters in Chinese, but focused on Native Americans, and Henry Hudson and the Dutch European. (Interview, Camila, Er'yu, 04/15/2019)

Camila's enrollment is largely shaped by Valerie's vision of a multilingual society and an imagined future where Camila can gain long-term benefits. As Valerie points out, she read from online sources that Mandarin is the next global language, so Mandarin became her top choice. She hopes that it can offer Camila more career advantages, and Camila seemed to enjoy her day-care experiences. Additionally, Er'yu is the best public school in their district so that she feels that Camila is more likely to be academically successful:

> I thought the idea of Camila learning Chinese will be a benefit to her because not only would she learn how to speak Spanish, she'd have English and Chinese that would help her in the long run… She'd be able to get a good paying job where she'd be able to translate not only in English but in Spanish and Chinese. I guess thinking for the future for her. And how much better would it look on a resume that you speak three languages instead of just one? So that's why I just wanted to give her that leg up… It's one of the best schools in lower part of the city. A lot of her classmates that went to the daycare she went to, a lot of them are enrolled as well. And so I've thought it was important for her to continue learning Mandarin because she loved it. Second, the interaction with her friends and I felt that if she achieved, but it would also give her a better chance in middle school, high school. (Interview, Valerie, 05/09/2019)

Dagenais (2003), and Dagenais and Berron (2010) found that immigrant families whose children were enrolled in French-immersion schools in Canada adopted a dual approach and consideration when enrolling their bilingual children to learn French as a third language: to maintain their family heritage and culture, as well as to become multilingual for their future opportunities. Families imagined the future communities and transnational experiences that their children would be engaged with. As the interview excerpt shows, Valerie also closely associates the decision of enrollment with the imagined future of social development and the economic and social capital of Mandarin as a language; the motivation is also about the potential of upscaling

and of accessing the global scale of information and opportunities. Valerie's and Wanzhen's sociocultural considerations on enrollment validate the previous findings on this issue: English-dominant parents are more driven by pragmatic benefits while language-minoritized parents are more attracted by the cultural and language maintenance aspect of dual language programs. However, Wanzhen seems to emphasize language maintenance less, and positive and confident social-emotional development more. Both cases show that parents make their decisions by connecting to norms and expectations from spatial scales (e.g., societal demands) and temporal scales (e.g., elementary/middle/high school, the globalized future).

Scaling Resources across Spatial Scales

How Yuchi and Camila use languages varies across different spatial scales (see Figure 7.1), from lower scales that indicate individual, local, and personal contexts (e.g., home, playgroup) to higher scales that indicate translocal, transnational, and collective contexts (e.g., dual language school, visits to "heritage" country). As I described earlier, scholars emphasize the agentive role of scaling practices where individuals accommodate, negotiate, and create norms for language use (Canagarajah & De Costa, 2016; Gu, 2018) and where individuals navigate multiple linguistic and semiotic resources for socialization (Clonan-Roy et al, 2016). Clonan-Roy et al. (2016) used scalar analysis to investigate one Latino girl's social identifications in middle school. They describe that multiple factors, including family interactions, learning practices, the characteristics of the local communities, and national discourses collaboratively shape the girl's process of social identifications. They notice that the girl draws on heterogeneous resources from various spatial and temporal scales in the process of social identification. Similarly, I found that Yuchi's and Camila's appropriation of various resources across these scales is not random but an agentic choice, chosen from observing the norms of

various scales and how they can achieve their individualized interests or goals. Yuchi's and Camila's repertoires are guided by stratified and constructed personal, interpersonal, local, translocal, and transnational scales, where particular norms of scales, such as family language policy and socialization norms, shape their appropriation of resources.

Figure 7.2. Yuchi's language interaction network

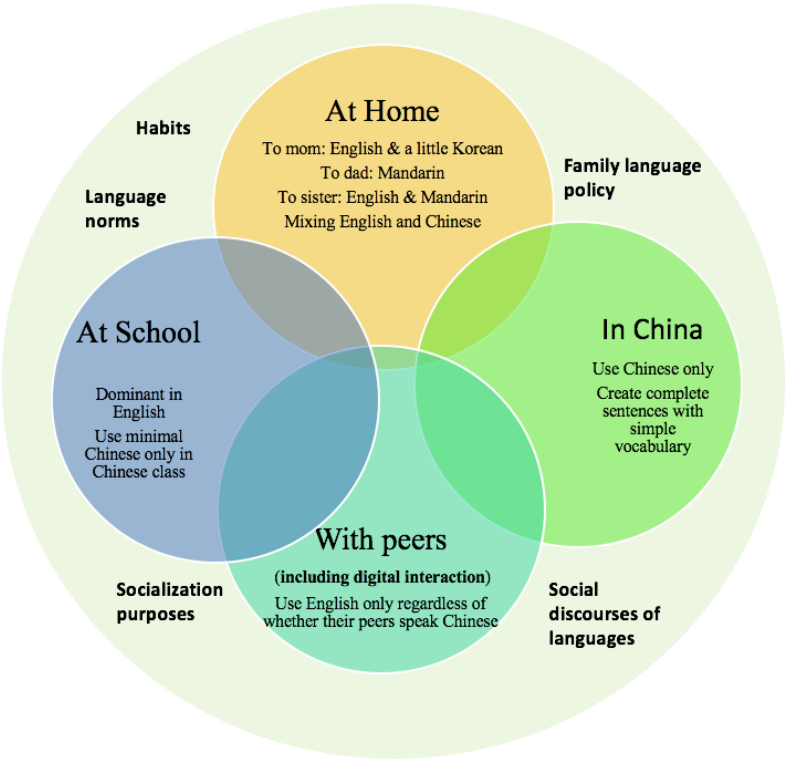


Figure 7.2 shows Yuchi's language use across different social domains. At home, Yuchi's parents use Mandarin only and do not allow Yuchi to translanguage, although Yuchi translanguages with her younger sister all the time. Wanzhen regards "language mix" as detrimental to Yuchi's long-term language development. Wanzhen also taught Yuchi some Korean as she is from the Korean ethnic minority group in China. Wanzhen reports that Yuchi

speaks only English even interacting with other children from Chinese-speaking households when in the U.S., while she and her husband speak Chinese to each other (Interview, Wanzhen, 12/18/2018). As Wanzhen points out, it is how it is: since the bigger social environment is English-dominant, children from Chinese households tend to speak minimal Chinese among themselves. Wanzhen seems to associate Yuchi's repertoire during peer interactions with the English-dominant norms of the higher and more widespread scale of language status in U.S. society. Yuchi has been back in China four times to visit grandparents since she started schooling in Forestview. While she always prefers to translanguage at home, she actually used Chinese only, using lower-level vocabulary, during the last visit to China because she felt like doing so, as Wanzhen reported. It is interesting to see how Yuchi responds to the "orders of indexicality" (Blommaert, 2007) across spatial scales. It seems that she follows her parents' authority by officially using Mandarin at home and conforming to the family language policy. But she tends to translanguage with her sister and use English only from her multilingual repertoire when interacting with other second-generation Chinese immigrant peers, which seems to be a move to achieve communicative goals and to conform to the English-dominant societal norm. However, when visiting China, she made great efforts to use Chinese only from her multilingual repertoire. Although Yuchi herself has not explained her reasons to me, I assume, from her mother's description, that she is aware of the social environment and takes part in the Chinese society where she follows the norm of a higher scale that is more collective than individual.

Yuchi's language use in Forestview is complicated. It seems that Yuchi is acutely aware of purposes, contexts, and audience. During the English instructional times and breaks, I never heard her using Mandarin. During Chinese instructional time, she only used Chinese as the target form rather than her preferred language for interaction and socialization. During one learning

event, the global arts teacher was helping record some group videos about learning in Forestview which students designed by themselves. These videos were to publicize this school: they would be played in 4K classrooms and daycare centers for recruitment purposes. The following excerpt shows Yuchi's communicative repertoires in the video showcasing their learning in Forestview.

Excerpt 7.1. Making publicity Video for Forestview

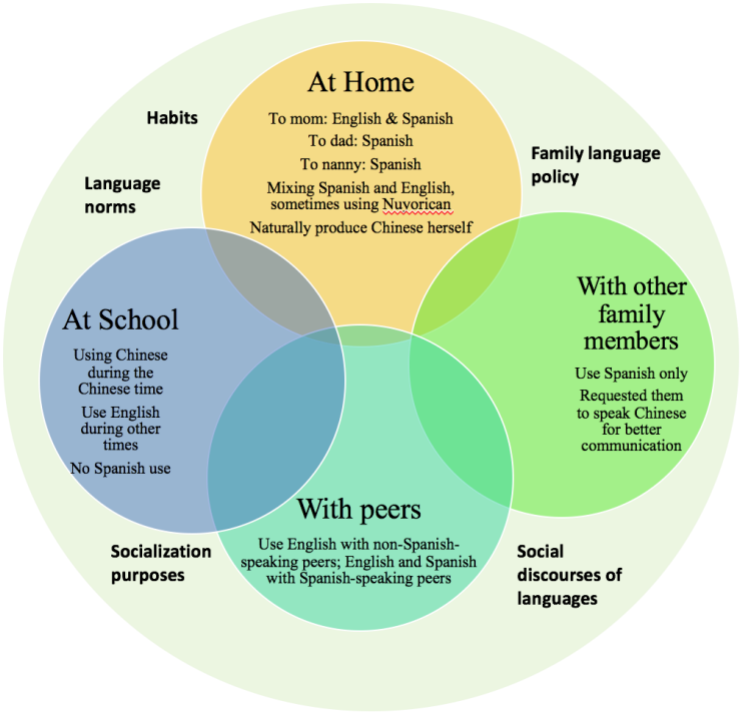
((The group was chatting about how they should sit and start the scene. The global art teacher was taking the video for the group. Yuchi was acting as the Chinese teacher while two other students were acting as four students wearing four puppets)).

Yuchi:	Please take a seat. Okay, let's sing out our number song.
Together:	一二三四五六七八九十<One two three four five six seven eight night ten> and that's Chinese. ((Yuchi was pointing to these characters on the board when she and the "students" were reading them out.))
Yuchi:	Okay, we have two new students. Okay you guys can come in ((looking at the two puppet students. This is Elena and this is Carlos. You guys can say hello.
Puppets:	Hello
Yuchi:	Okay, we are gonna learn some animals ((erasing the numbers)). How do you say "fish" in Chinese?
Puppet 1:	Yu::
Yuchi:	Don't shout out (.) Use your hands (.) And then (.) who wants to write it?
Puppet 2:	I don't know.
Yuchi:	Then, I will write it ((writing down the Chinese character "Yu" and the English word "fish")). Okay (.) now (.) read it.
Puppet 3:	I don't know about it.
Yuchi:	It's yu::
Puppet 2:	Okay yu. It's so weird.
Puppet 3:	Fish, Fish ((students all start to laugh loud))
	(Transcript for class video, Forestview, 10/31/2018)

In this video, Yuchi was nominated by the group to play the role of the teacher. It remains unknown how she was nominated, but I believe her presence itself seems to be representative of Chinese language and culture for publicity purposes, given that there are very few Chinese students in Forestview and that all Chinese teachers are "native speakers" from Mainland China (see more in Chapter 5 about "nativeness" and "authenticity"). Although Yuchi is playing the role of a "teacher", interestingly, she uses very minimal Chinese: she only uses Chinese when it is considered as the target form for foreign language learning, although she

could have used all Chinese in teaching. Her language use in this video is aligned with how she normally socializes with peers during Chinese learning in Forestview–only using target words in Chinese. I also believe that the scenario created in this video embodies students' perspectives of the learning experience and reveals the learning environment in Forestview: Chinese is learned as a target language through playful practices and group engagement.

Figure 7.3. Camila's language interaction network



Like Yuchi, Camila also appropriates her linguistic and semiotic resources constantly drawing on different spatial scales (see Figure 7.3). Camila's dad is more comfortable speaking in Spanish, and her mom Valerie is more comfortable speaking in English. Valerie often uses English at home with Camila but usually speaks Spanish to Camila when she wants to set up a serious and disciplined tone. Similar to Wanzhen, Valerie is not delighted about Camila's translanguaging and prefers her to speak "standard" versions:

> I feel that sometimes, um, she uses what Spanish people call Nuyorican, which is a combination of English words and you add an [o] or an [a] at the end. So for an example, the top of a building is roof, but in Spanish it's techo. But if you ask someone who's Puerto Rican who was born and raised in New York, they'll say rufo because they'll just add an [o] to the end…. It gets me upset because I would really like for her to speak Spanish correct. Correctly rather than slang, so. But I think historically. Um, my mother-in-law and my mom do not speak English. Spanish is their main language. My mom understands English. My mother-in-law does not. And Camila, my mother-in-law said you need to learn Spanish. And Camila told her you need to learn Chinese. (Interview, Valerie, Er'yu, 05/09/2019)

Although Camila was influenced by her Spanish-English bilingual family policy, she is not a passive receiver of this norm, as Valerie reported. Camila also produces Mandarin at home and sometimes talks to Valerie in Mandarin unconsciously. She demands that her parents and grandparents should learn Mandarin to communicate with her. Valerie thinks Camila uses Chinese because she carries the culture and what they have learned from school into home:

> At home she'll tell me, she'll speak to me in Chinese and I'm like, I don't know what you're saying. And she says something to me and I was like, what is it? So I hit Google translate and it was that she didn't like how I did her hair, and she was saying it to me in Chinese… She naturally, she will come home and sing songs that are Chinese pop songs and she'll come home and sing them. And I'm like, what are you singing, she was like, oh, it's a Chinese pop song. We've heard it in class or we've heard it in afterschool… And, I am like, so but now we're introducing her more to Spanish pop songs and traditional music stuff. (Interview, Valerie, 05/09/2019)

It seems that the scales of school learning are also relevant to Camila's home language practices where the practices and socialization at school influence her repertoire at home. She seems to be an actor in shaping her language development by drawing on both the lower, local, and interpersonal scale of family language policy and communication, and a higher, more interpersonal, and translocal scale from school language policy and culture. Camila thinks she is still learning Mandarin, so her Spanish and English might be better at this moment. As Valerie described during the interview, Camila mostly speaks Spanish to other relatives and uses Mandarin at home for homework; outside of school circle when interacting with friends, she

speaks English or Spanish depending on whether the peers are able to speak Spanish. Camila feels that it is not that challenging to use three languages: “It’s a little bit more fun than I expected because I could try teaching my cousins (who speak Spanish)” (Interview, Camila, Er’yu, 04/15/2019, parentheses mine). As shown below, she draws on words in Mandarin and Spanish for my questions. It seems a proud move to me:

Zheng: Do you speak a little bit of Spanish as well?
Camila: Si. (In Spanish).
Zheng: A little?
Camila: Yi dian (“A little” In Chinese)
……
Zheng: How do you feel, you’re happy that you can speak Chinese?
Camila: Because I’m the only one who can.
Zheng: Because you’re the only one who can, are you the only one who can, among your friends as well?
Camila: My friends can, but I’m the only one in my family that knows Chinese. (Interview, Camila, 04/15/2019)

When interacting with peers in school space, Camila usually translanguages, depending on the people, context, and norms of language use. Due to the language norm of maximizing Chinese use in Ms. Ma’s class (see Chapters 5 and 6), Camila uses Chinese exclusively, but she uses English during breaks and in other classes. Sometimes, Camila produces Chinese songs or sentences spontaneously during her individual work. Her Spanish, however, is not visible throughout my observations across the different classrooms. As I have described in other chapters, Er’yu enforces language separation in classrooms and unofficial languages (other than English and Chinese) are not promoted. Blommaert (2015) points out that different spaces are agentive forces in assessing linguistic competence. As he elaborates, multilingual individuals can become “language-less” when moving from one space to another space because their resources that are recognized in one space are not necessarily valued or recognized in other spaces, in which circumstance multilingual immigrant children are likely to gain or lose “competence” by

moving across space. In Camila's case, it seems that she has shifted her language repertoire across spatial scales but her home language, Spanish, does not seem to be recognized as "linguistic competence" in Er'yu. She chooses not to use Spanish, at least during my presence, while making great efforts to use Chinese. Meanwhile, the Chinese language seems also internalized into her communicative repertoire, to the extent that she uses at home and during her individual work time.

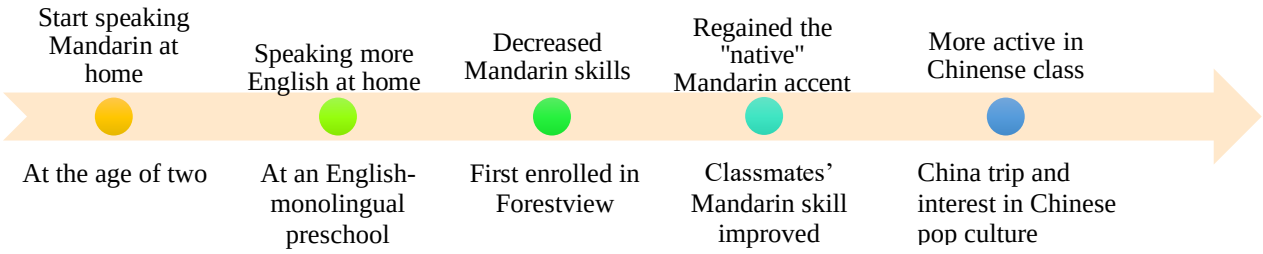
The process of enabling and disabling is also connected to the various spatial scales where individuals need to be involved with the interpretation of norms, rules, and potential relationships between one scale and another scale, such as home language policy or classroom norms. Yuchi's and Camila's cases reveal the multi-layered, interrelational, fluid, and ecological nature of repertoire appropriation: both of their repertoires are appropriated in the particular space, context, and relationships in which communication is occurring. These choices are affected by the particular spatial scale(s) that they are drawing on, such as their habits or preferences of language use (e.g., Camila uses Chinese at home), the intention and nature of the interaction (e.g., Yuchi's language use in the publicity video), the understanding of social and institutional discourses (e.g., Yuchi uses Chinese only in China but uses English only with peers in the U.S.), and the situated language norms and policies (e.g., Camila never uses Spanish in Er'yu; Yuchi uses and learns Chinese differently in weekend schools and in Forestview).

Scaling Dual Language Learning across Temporal Scales

Wortham (2006) describes how social identification becomes more thickened (Holland & Lave, 2001) and stabilized across a series of events over time where transformations occur. He studied individual students' acts of social identifications, responses, and contingent events in relation to the academic learning contexts and relevant temporal scales. Yuchi's and Camila's

academic dual language learning and social identifications are also trajectories of acting and acculturalization that are being negotiated and contested across events and temporal scales. Both Yuchi and Camila, who are from minoritized backgrounds, have experienced episodes of isolation and marginalization in the "mainstream" learning community. Their language development and attitudes toward dual language learning have also gone through transformations across critical events.

Figure 7.4. Yuchi's language development over time



Yuchi's language development and attitudes toward learning have been closely related to peer influence and the learning environment. As Wanzhen recollected, Yuchi started speaking Chinese at the age of two, but Yuchi's Chinese skills, especially pronunciation and oral language, dramatically decreased after she started this immersion school:

> Especially when she was in the first and second grade. Although she was starting in a Chinese school, her Chinese became worse and worse, she also lost her native tone. Her pronunciation of the Mandarin words started to have heavy American accents. Because there were many American children in her class, gradually her accents were influenced and started to follow the American peers. (Interview, Wanzhen, 12/18/2018, original interview in Chinese)

Wanzhen thinks that Yuchi's Mandarin skills improved later and that she got her "good accent" back after the second grade because most of her classmates' Chinese skills improved at that stage. The summer after the third grade was crucial for Yuchi's language development when she

started to visit China more regularly. Both Wanzhen and the assistant teacher Ms. Song told me that Yuchi's Chinese improved dramatically, and she was more talkative in the Chinese class. Besides visiting family, sightseeing, and touring different cities, Yuchi also started to be interested in pop culture and TV shows during her stay in China. As Wanzhen observed, although Yuchi was not able to understand everything, she was learning fast from pop cultures.

In general, Yuchi's changes in language development have been shaped by peer socialization and interaction; they have also been affected by the socialization into her family and transnational communities back in China. Although Yuchi is studying in a Chinese immersion school where her cultural background is valued, navigating socialization is more complicated than just developing confidence by learning the Chinese language and culture. I learned that Yuchi had some awkward moments in the first year, which she complained about many times at home because she found it hard to deal with the "bullying behaviors" of some peers. Wanzhen thinks that it is common for children to have some negative relationships with peers, but Yuchi is very sensitive about these behaviors and dislikes being marginalized. Yuchi also told me that, "pretty much everyone is my friend except for some of the bullies" (Interview, Yuchi, Forestview, 10/04/2019).

Camila's language development has had some significant changes as well. Day-care years seem to have been crucial for Camila in socializing into Chinese learning. Camila told me during the interview that she met many friends in that day-care who speak Chinese. Valerie remembers that Camila would walk to the classrooms, stand, and listen to the teachers; she was also very interested when people spoke Chinese on the bus. That's also why Camila's parents enrolled her in Er'yu: to maintain the continuity of the Chinese learning as well as to maintain a relationship with her peers. Enrolling in Er'yu, however, was a big cultural shock to Camila. One

big shock was that she needs to work on her homework until 10 pm sometimes. Another big issue is that Camila found herself to be different from her classmates who predominantly come from Asian backgrounds:

> I think one of the hardest things, um, when she first started attending, like it's a primarily Chinese school, um, it's 85% Chinese. And, one of the teachers had a lesson plan about Martin Luther King. And um, in the lesson the teacher taught that the Asian children were peach color and the non-Asian kids who were, it was Camila and another little girl named Madison, that they were coconuts… I don't think, she (the teacher) didn't prepare a good curriculum for that. So she talks about how, segregation, and how Blacks were not allowed to drink from the same fountain as White people. And then the classmates turned around and told Camila: we can't play with you because you are not our color. So that all that was a big problem. Like, um, and I know like when there are um, plays and stuff, the teachers want the kids to have their hair the same way. But Camila has very curly hair, like very curly. And so the teacher was like, oh, I want to um, all the kids to wear their hair loose. And I was like, no, because Camila has so much hair, she will be miserable. And so I think like that it's like, yeah, like cultural things like that [are challenging]. (Interview, Valerie, 05/09/2019)

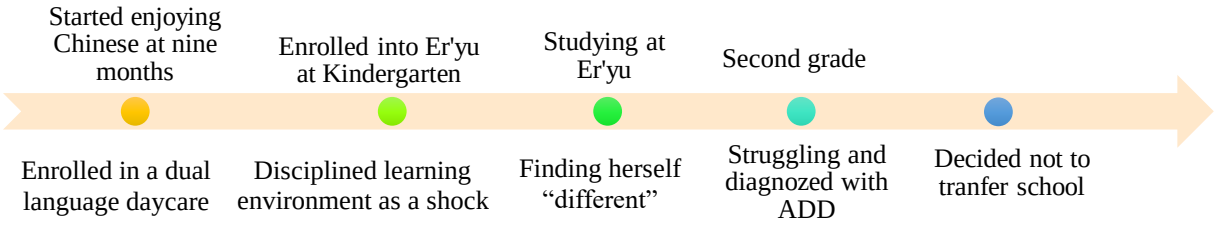
Chaparro (2019) found in her study that some minoritized students are socialized into the understanding that they are racially different from their White peers, and that they have experienced marginalization. Here, Camila also found herself physically different from most peers in this school community. Additionally, the unique school culture of learning requires her to socialize into certain ways of behaving (see more in Chapter 6) which are very different from her home environment. Learners bring their own repertoires, social languages, and home literacies into classroom learning with their own cultural-historical repertoires and learning styles (Gutiérrez & Rogoff, 2003). However, the fact that the registers of languages (i.e., academic language) and norms expected by schools are built on White middle-class worlds (Gee, 2012; Schleppegrell, 2004) makes learning very difficult for many language-minoritized learners. In Camila's case, it seems she is navigating the registers of both the Chinese language and culture as well as the English language and culture, which might make dual language learning even more

challenging. Valerie made efforts to resolve this issue. She offered the teacher additional books for a more appropriate lesson; she also tried to ease Camila's confusion:

> Because Camila was like "all my friends have straight hair and all my friends are light-skinned. And all my friends are Asian". And um, I was like, "yeah, but that's okay". I go, "there's difference in the world. So there are Spanish kids who are black. There are Spanish kids who are light-skinned. There are Spanish kids who have different complexions, different hair colors, different hair textures. That's part of life". (Interview, Valerie, 05/09/2019)

Camila was diagnosed with attention deficit disorder in the second grade. The school suggested she get tested because she was struggling and took longer in understanding. Valerie asked Camila whether the school was too much for her and whether she wanted to be transferred to another school. But Camila loves learning in Er'yu, so they finally decided to continue.

Figure 7.5. Camila's language development over time



By showing the trajectories of Yuchi and Camila's language development and challenges, I argue that their language skills as well as learning attitudes are largely influenced by social relationships such as peer interaction, school culture, and family communities. Meanwhile, students' learning, when they are young in particular, is also related to their parents' guidance and support. In presenting their learning trajectories and pinpointing some critical events, I aim to provide the contexts of the following discussions on how learners navigate the challenges and draw on multiple scales to rescale and legitimate their dual language learning and socialization.

Re(scaling) Dual Language Learning and Gaining Legitimacy

As I have explained before, individuals are agentive when activating their communicative repertoires and appropriating their resources to make new scales or rescale (Canagarajah & De Costa, 2016; Gu, 2018). Individuals are able to create and negotiate new norms at the different scales, although these (norms at the) scales are restricted by interactional and socio-political forces. The rescaling practices involve constant negotiations, navigating apprenticeships, and interpersonal relationships in communities. From the language socialization perspective, the process also involves gaining a more legitimated participation in the contexts that are related to histories between participants and other sociocultural and institutional structures that produce and reproduce power dynamics. In this part, I will describe how Yuchi and Camila engage in (re)scaling practices to gain legitimacy in the locally majoritized learning community as minoritized learners. As I have demonstrated above, both Yuchi and Camila have encountered some incidents of isolation or marginalization. But both of them have developed tactics (De Certeau, 1984) in scaling and/or making new scales, in different ways, to gain some legitimacy in learning.

Yuchi: Fitting in and forming alliances

Studying in a Chinese immersion school does not necessarily guarantee that Yuchi can gain fuller participation across classes. Compared to many other parents who frequently meet for school events, Wanzhen, who is one of the very few Chinese parents, is more marginalized. During one class exhibition where all parents were invited, Wanzhen seemed lost among the parents: she was one of only a few parents who did not talk to others and was not invited into any parent group, while many of the others were chatting and seemed very close to each other (Field notes, Forestview, 12/07/2018). As Wanzhen confesses, she tries to be present for school events

as much as possible because Yuchi wants her to do more things like other parents do. Wanzhen thinks that getting to know other parents makes Yuchi feel that her mom also fits in the school community. Wanzhen describes her great efforts to secure play dates for Yuchi because Yuchi is not invited to many; she thinks these events are more important than any other extracurricular opportunities:

> Sometimes Yuchi really wanted me to go. For example, if other parents are very active, she also wants me. Other parents are very motivated and involved themselves. So for example, field trips, I was also there, and parks, zoos when they needed parent helpers…I cannot see their parents at all. But by doing this, I can get to know other parents more and know what their children are doing. Maybe if I have better relationship with other parents, maybe Yuchi will feel more comfortable. I do not know what she will think, if I am not present in the school… I will let her to go to all the invited birthday party, playdate. For example, sometimes she needs to take the dance class but then if she is invited to a play date, I will for sure cancel all these other classes and let her to have play dates, or birthday party. This is a great opportunity for children to communicate so that I think it is very important, so it is more important than any other class. I will try my best to arrange it so that she could attend. In this case, she feels happy too. (Interview, Wanzhen, Forestview, 12/18/2018)

In addition to wanting Wanzhen to fit into the "mainstream" parent community, Yuchi is also cautious about fitting in with peers. As the only student from China, her background as Chinese both gives her affordances in this learning space (e.g., expertise in Chinese culture and society) and simultaneously restricts her legitimacy. For example, if she shows too much of her Chinese skill, her peers who do not have Chinese backgrounds will perceive it as unfair for them. In the following example, Elena perceives that Yuchi's Chinese background secured her a better academic score. In this case, Yuchi needs to carefully navigate repertoires in building good relationships with peers to make friends, which might explain why Yuchi uses very minimal Chinese at school.

Elena:	I want to have a good grade ((referring to a quiz))
Yuchi:	I have a better grade.
Elena:	Because you are Chinese.
Yuchi:	((Silence))

(Field notes, 10/02/2018)

Blommaert et al. (2005) emphasize that context defines sociolinguistic regimes where rules, norms, and expectations—order of indexicality—in the particular space: entering these spaces, thus, requires accessibility to these orders of indexicalities and meaningful relations between one scale and another. They claim that this is crucial because it affects: 1) where individuals' or groups' behaviors are legitimated or disqualified; 2) the functions and validity of individuals' or groups' sociolinguistic repertoires; as well as 3) individual and group identities as both projected and ascribed by others. We can see multiple scales of norms perform interactively in Yuchi's learning and her family's socialization. From the scale of the institutional order in Forestview, knowledge of the Chinese language and culture is legitimated as official and as a learning target. While connecting to the scale of parent connections within the school community, which are largely affected by the socio-political and racial discourses in the U.S. (see more in Chapter 3), Yuchi and her family are within the marginalized communities, requiring their strategic investment to move from peripheral to more legitimate participation. As Canagarajah (2016) points out, migrants may jump scales by adopting norms set by powerful communities or by developing tactics themselves. Here, it seems Yuchi hopes that having her migrant family enact the "regularities" of parental engagement is a tactic for scaling, thus giving her opportunities to jump to the new scales that are normally inaccessible to them. Meanwhile, at the interpersonal and peer interaction level, actions such as building positive relationships and balancing her knowledge and sociolinguistic repertoires seem effective in becoming a legitimate participant among peers.

Apart from jumping scales, Yuchi is agentic in negotiating norms for her own social needs and in creating new scales of norms, rules, and connections in different scales of learning

in Forestview. Although Chinese is an official language in Ms. Xie's Chinese classroom, it is invisible in Ms. Jones's English classroom just like most U.S. classrooms. Yuchi, however, seems to bring the Chinese element into the English classroom. For example, she often chose Chinese-related topics for the literacy assignments (Field notes, 10/16/2018). Yuchi also made great efforts to form alliances and to secure herself as a legitimate participant in the majoritized English-dominant learning space to defend her cultural and social needs. It is frequent to see that Yuchi often groups with Elena, Summer, and Carlos, who also have Asian "heritage". Next, I will present some classroom interactions to examine how Yuchi navigated classroom tensions and formed her alliances to defend her interests.

Excerpt 7.2. "It's unfair. I will build my own Great Wall of China"

((After the big group finished one of the blocks of the building, they were planning to do the next one. Carlos, all of a sudden, said: "this looks like a temple. In China, there are many tiny temples". Yuchi brought the idea that they could build a Great Wall of China using the blocks but some others wanted to build a bridge or a village. When they could not reach an agreement, Ms. Jones suggested that they could vote and make a decision. So the group started to vote on three options: village, bridge and the Great Wall of China.

1.	Ken:	Who votes for village? =
2.	Yuchi	=And you only get <u>one vote</u> ((using her finger to emphasize on one vote))
3.	Kevin:	Those who want to vote for village (.) raise your hand.
4.	William:	<u>Village</u> ((raising his hand)) ((Rebecca, Brady, Kevin, Wilson, Ken and William raised their hand))
5.	Wilson:	((To Yuchi)) You are outvoted.
6.	Yuchi:	Well. ((Leaning her body at the table and lowering her head))
7.	Emily:	No we actually haven't voted.
8.	Wilson:	We did.
9.	Emily:	No I didn't vote
10.	Yuchi:	Yeah I didn't vote!
11.	Ken:	All these people ((using his hand to point to them)) voted for village and only three vote left. ((Rebecca, Brady, Wilson and Emily were all talking together and trying to negotiate))
12.	Yuchi:	((Walking away from the group, pulling some blocks out of the buckets and sitting down on the floor next to the round table that they were gathering)) Emily Emily do you want to make our own Great Wall of China? ((Emily walking toward her)) Carlos, you wanna help us make a Great Wall of China? ((These three started to work on the great wall of China while the rest of them were building the bridge)).
13.	Brady:	We just cannot build two Great Wall of China
14.	Emily:	((To Rebecca, if you want to build a bridge, this is like a bridge)) ((The two groups were talking among their group and working on their own projects in their own groups)) …After 2 minutes and 50 seconds
15.	Brady:	((To his own group)) Guys I say after we build the village (.) ((To Yuchi's group)) Guys

		are you okay if you move the Great Wall of China up here after we are done with the village?
16.	Yuchi:	No because this cannot be moved. I am sorry.
17.	Carlos:	This can be very long it can be even on your table.
		((The Village group members were taking blocks from the budgets to work on the village
18.	Emily:	Hey you guys are taking all the blocks!
		((Keeping working on the bridge and chatting with each other))
19.	Yuchi:	We need more blocks because the Great Wall of China is actually very long.
20.	Carlos:	After we are done maybe we can=
21.	Brady:	=Yeah I say we all do Great Wall of China after we are done with the village.
		(No responses from his peers in his group))

((The tension became more intense when Yuchi's group ran out of the blocks. She claimed that it was unfair that the other group got way more than half of the blocks. Ms. Jones intervened and brought one more box of blocks. She told them they can use these ones, but these cannot be used with the previous box of blocks. So Yuchi's group moved to a new floor area and re-started the Great Wall of China project. She ended up recruiting Summer and then later Elena to work on the project)).

(Transcript for class video, Free Time during ELA lesson, Forestview, 12/14/2018)

As this excerpt shows, students split into two groups and got into conflict because they could not agree to build the same project with the limited resources available. From Turns 1-4, we can see that those who wanted to build a village initiated the voting, and it is Emily who pointed out that the voting was not complete yet (See Turn 6). But her questioning of the voting procedure was not validated by other members. Yuchi, who was not engaged in arguing initially, took action right away and started to form her own group. Rather than conforming to the majoritized decision and sacrificing her own interest, she stuck to the idea of building the Great Wall of China. It was interesting that she was quick in terms of spotting potential peers and forming her alliances. When the other group started their project, Brady seemed to be the peacemaker who tried to ease the tension by negotiating with Yuchi's group (see Turn 13, 15, 21). Yuchi's actions are quick and decisive: she was able to gather her alliance (e.g., Carlos) to form the Great Wall of China group and to recruit two more peers. Interestingly, for the final groups, Elena, Summer, and Carlos all have Asian "heritage", and Emily is the only exception. For the other group, all six of them are Caucasians. I believe that through these actions, Yuchi appeared to be a "tough" minoritized student who disagrees with the norms set by the

majoritized students in this English-learning spatial scale. She took actions to renegotiate the norms and regularities where English language and non-Chinese elements are the normalized practices; she also created a new scale where her group, most of whom are racially minoritized students, could work on some activities that reflect Chinese culture and their choice.

Many empirical studies in ESL classrooms have reported issues such as marginalization during learners' socialization. For example, both Toohey's (1998) and Willett's (1995) ethnographic studies of multilingual learners in elementary schools reveal that being positioned as a legitimate participant requires learners' recognition of micropolitics in local classroom settings and their skills in appropriating knowledge/language/communication to meet these expectations. Their studies also confirm that locally constructed learning communities and positioning are largely influenced by institutional ideologies toward race, ethnicity, languages, and gender. As was reflected in the example above, Chinese-English dual language school does not always guarantee Yuchi's legitimate status in the learning community; multiple co-existing scales are embedded in Yuchi's social identification and learning, including the scale of learning in different instructional times and spaces, the scale of peer interactions and cultures across time and space, as well as the higher and larger scales of language ideologies, status, and power dynamics that shape the status of the learners' families in the society.

Camila: Work hard and conform to the "mainstream" norm

As I have presented in Camila's trajectory of learning, she has encountered great difficulties (e.g., marginalization, intense homework) in Er'yu. Nevertheless, Camila is agentive in dealing with these problems and determined to continue Mandarin learning. Different from Yuchi's approach to assert her sociocultural needs in the school space, Camila tends to work hard and conform to the school culture. Meanwhile, she tends to change the norm in her family

and urges her family to help her achieve these goals. Surprisingly, Camila's mom Valerie speaks highly of the disciplined culture and the rigorous curriculum, claiming that Er'yu is preparing Camila to become an academically successful and highly responsible individual. She believes that Camila is being molded into a promising student prepared for college and her future career.

As I described in Chapter 5 and 6, the school curriculum in Er'yu has high expectations, which requires students to be highly engaged; otherwise, students get punished or scolded. Throughout my observation, Camila always followed teachers' rules carefully and finished her homework on time. Although Camila is not an advanced student in terms of her language skills, she is a very hard-working and avid learner. She seldom receives punishment in the class; in fact, she is considered by the teacher to be a very good student who always listens and follows directions. As Valerie describes in the interview, Camila tries very hard to fit into the new school culture. At home, Camila always stays up late to finish up her homework. If she cannot finish homework that day, she always gets up early in the morning to finish it. As Valerie informs me, Camila never has problems finishing up Chinese homework and seems to enjoy Chinese classes more than the English instructional times. Camila confesses that it is easier for her to understand things during the Chinese instructional time. At home, she often spends additional time to keep up with Chinese learning and asks her mom to help her with Chinese homework:

Camila:	It's easy for me to understand mostly in Chinese, but it's hard to get it done in Ms. Lin's (the ELA teacher) because sometimes I get yelled at for the wrong extended response.
Zheng:	You think the Chinese part is easier?
Camila:	Yes, and this is sometimes. Some lessons are a little bit difficult for me to understand.
Zheng:	Do you know if it's because of the requirements, or?
Camila:	Yes, but then like when my mom helps me I can kind of, understand. I pick up on it fast once I get home. I feel more comfortable doing it at home for some reason. (Interview, Camila, Er'yu, 04/15/2019)

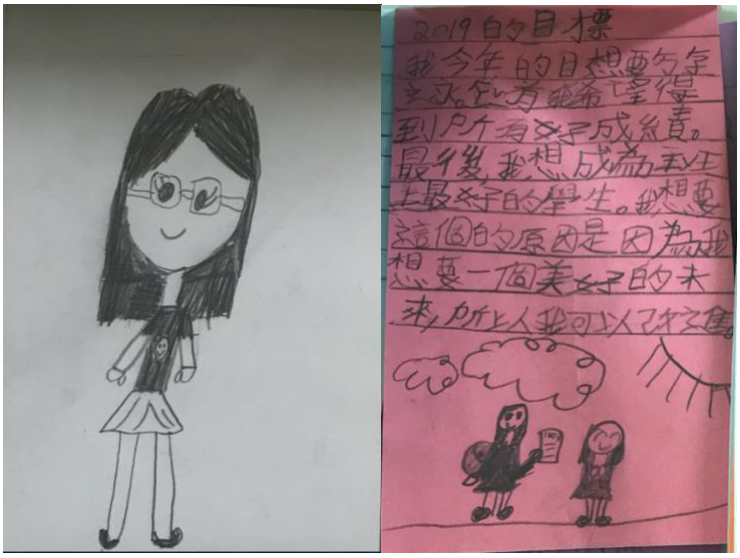
Sometimes, Camila seems absent-minded, but she often follows the directions and finishes the work as told. This made more sense to me when I later learned that Camila was diagnosed with attention deficit disorder and that she sometimes needs more time to process. It also seemed to me that she has good relationships with peers. As I documented in a group science experiment where the students were preparing for the state test:

> In the Sarah, Edison, and Camila group, Sarah is definitely the leader and gives orders for the others to stay on track. For example, she told Edison: "stop fooling around and we really need to get this question done". Camila seems absent-minded sometimes and she likes to play with other stuff. She is on the tasks, but she does things on her own pace. Sarah is harder to Edison than to Camila though (Field notes, 05/09/2019).

Camila's acts of conforming to the school culture are also reflected in her social identifications and her learning in this Chinese-English dual language school. Camila is one of the four students who do not have Asian heritage in the class. However, she very much regards herself as one of the Mandarin-speaking community. Valerie thinks Camila already regards Chinese as "second nature" after learning Mandarin for nine years. As described earlier, Camila often engages herself with Chinese songs at home and speaks Chinese with her mother although her mother cannot understand it. It seems to me that Camila is a legitimate participant in this classroom and fits in well with the dual language learning environment. Various artifacts collected from Ms. Ma's class show that Camila seldom uses English words during the Chinese instructional time and always tries to produce as much as content in Chinese as possible. Camila's work is exhibited outside of the classroom to showcase her plans and goals together with her self-portraits. As Figure 7.6a shows, her self-portrait features a happy girl with a smiley face on her t-shirt. Although she has curly hair, she portrays her hair as straight, like most of her classmates. Below the portrait, she also includes her Chinese name and her 2019 resolution (see Figure 7.6b):

我今年的目标要学习。我希望得到所有好成績。最後我想成為班上最好的學生。我想要這個的原因是因為我想要一个美好的未来，所以我可以改進. <This year my goal is to study. I hope I can achieve all the high grades. At last, I want to become the top student in the class. I want this because I want to have a bright future, so I can make improvements> (02/06/2019)

Figure 7.6a & b. Camila's self-portrait and resolution for the Year 2019



This writing and artifact strictly follow the teacher's requirement that they need to highlight their learning goals. We can see from these artifacts that Camila positions herself as a happy, progressive, and competitive learner who sets high standards for herself. At the bottom of this report is a picture of herself holding and showing a report card with a grade of 100 to someone. In Camila's case, while learning Chinese is something that she has enjoyed since day-care, navigating the culture in the dual language school is a complex and agentive process of socializing, learning, and adapting. She chose to conform to the school rules, took up her agency to be a competitive and hard-working student, and adjusted her repertoire to fit in.

These two focal learners' language trajectories are elaborated "as a complex dynamic system where the usual axes of space and time are reordered along the lines of various histories

and subjectivities among the participants" (Kramsch & Steffensen, 2008). Both Yuchi and Camila are socialized into different "communities of practice" (Lave & Wenger, 1991) through their dual language learning experiences across temporal and spatial scales where both of them are agentive actors and scale makers of their own learning and socialization. Faced with marginalization, both of them went through a process of gaining skills in shifting repertoires, accommodating ideological interpretations, and building relationships in cross-cultural contexts (Ochs & Schieffelin, 2011; Lee & Buchotz, 2015).

Conclusion and Implications

This chapter: 1) analyzes the whole dataset for student interviews from both of the research sites that demonstrate some overall emerging themes; and 2) draws on scalar analysis to focus on two focal learners' complex and dynamic trajectories of socializing and dual language learning across spatial and temporal scales. By presenting findings in this way, the goal is to show a big picture but also to document the complicated, dynamic, and contested nature of dual language learning by emplacing learning within stratified and layered scales. It also aims to diversify students' voices and experiences in dual language learning and to validate marginalized students' voices by documenting their experiences, which have been overlooked in dual language research.

Findings show that most students from multilingual households perceive bi/multilingualism as normal: using multilingual repertoires daily is essential for their lives, so that navigating languages in a dual language school seems routine and comfortable for them. For some of the minoritized students, the inability to use English with family members and reliance on a minoritized language makes them unsure about their multilingual repertoires. For multilingual students and those from Chinese descent, learning in a Chinese-English dual

language school is very helpful for them to support their family members and to fit in with their family culture. In comparison, for students from the one-way foreign language immersion research site, most of whom are from upper-middle-class English monolingual families, being bi/multilingual is usually perceived as cool and unique. The ability to speak multiple languages and the experiences of learning in an immersion program is considered as fun and beneficial for their future opportunities. This finding provides extra information about perceived outcomes of dual language education beyond the differences of students with different racial or ethnic backgrounds, as indicated in previous studies in Spanish-English dual language contexts.

Findings from the scalar analysis of Yuchi's and Camila's socialization in dual language learning demonstrate that they both appropriate their multilingual repertoires to achieve communicative goals and to socialize with the "mainstream" speech communities. For Yuchi, "mainstream" is the majoritized English-monolingual community, and for Camila, "mainstream" is Chinese-dominant school culture and peer community. Dual language education is not a simple and effective solution to battle against the discourses of English monolingualism and to develop bi/multilingualism and bi/multiculturalism in schools; micro-politics and power relations exist in the dual language classrooms where the minoritized learners need to navigate with complex trajectories of learning, adapting, socializing, and contesting. As this chapter shows, Yuchi's and Camila's language development and attitudes toward learning are largely shaped by the peer groups and school culture with which they have interacted, their family language policies, their histories and experiences, as well as the self-realization of their needs, all of which are in relation to the broader societal discourses of race, ethnicity, and learning. Both of them have experienced isolation and confusion due to their minoritized backgrounds in the school

community, but they both assert their agency to make their choices by connecting scales and (re)scaling their resources.

Findings from this chapter shed insights for more equitable and inclusive dual language policy planning and pedagogy. First, findings highlight dual language learning in the classroom and school learning space by connecting to students' learning trajectories, socialization, communities, and backgrounds across spatial and temporal scales. They offer recognition of how learners draw on multiple resources to participate in dual language learning and respond to the norms indexed in the scales of learning and interaction. There are different pathways of be(com)ing bi/multilingual and these pathways are full of struggles, tactics, contestations, and negotiations (Curdt-Christiansen & Hancock, 2014; Ganassin, 2020). These scaling practices should be recognized and validated in the dual language learning space. Findings demonstrate how multiple scales afford or restrict learners' realization of learning and socialization goals. Learners are by no means passive receivers of the norms but actors in negotiating their learning scales. This ecological and scalar lens offers teachers and policymakers the opportunity to be aware of the multiple struggles diverse learners encounter, to reduce stereotypical assumptions of dual language learning and learners, and to recognize the need for social, emotional, and instructional resources to support dual language learning. Second, findings demonstrate students' attitudes and perceptions toward dual language learning and bi/multilingualism. They show the role that racial, socioeconomic, and cultural factors, as well as broader ideologies and structures, play in this perception. Recognizing these differences can further help accommodate dual language learning and pedagogy to be socioculturally relevant to diverse learners and families (Reyes & Vallone, 2007). Additionally, findings show that the dual language classroom is beyond a place for learning; it is also a place where learners socialize with others and into

specific linguistic, social, and cultural ways of being. This social and cultural world can be difficult for learners, particularly those speaking a third language at home. This further calls for criticality in examining the classroom and school discourses to further validate minoritized learners' linguistic and sociocultural resources.

Chapter Eight: Conclusion

In this research, I have presented two cases of Chinese dual language schools and classrooms located in two disparate communities and locations. I set out to discover and investigate the discourses in under-researched Chinese dual language educational environments, which diversifies the current scholarship and voices in dual language education. This study has documented how learning happens in Chinese dual language classrooms and proves that there are multiple ways of learning Chinese and being bi/multilingual. Instead of evaluating and comparing which models of dual language learning, policy planning, and pedagogy are more or less effective, this study attempts to document "what is happening" at multiple levels of interactions in Chinese dual language education, which remains relatively unknown in the literature. The discourses in the two focal schools have shown the interplay between culture, ethnicity, and languages, including participants' negotiation, isolation, and resistance toward these elements in the process of learning, teaching, and policymaking. In this chapter I discuss the theoretical and methodological contributions that this study makes to the field of applied linguistic, second language acquisition, and dual language education research. I then summarize the implications for dual language learning, teaching, and policymaking, as well as identify potential topics for further inquiries.

Contributions to Dual Language Education Literature

This multi-sited ethnographic study conducted in a one-way dual language school and a two-way dual language school has contributed to the understanding of dual language education in several ways. First, findings show the criticality of historically, socioculturally, and institutionally rooted environments in teaching and policymaking. Findings have demonstrated multiple ways that the 50/50 dual language model is appropriated, realized, and practiced in local

contexts, and how these processes are framed by social actors and groups who have more institutional power to legitimate certain stakeholders, ideologies, and practices. Findings from this study further validate that institutional power and the process of legitimation are closely connected to current neoliberal discourses of education and multilingualism, and dual language programs (one-way immersion programs in particular) further legitimates English-monolingual middle-class White families. Students and parents from the two schools, who are from very disparate socioeconomic backgrounds, are driven by the different motivations of dual language learning; meanwhile, they also navigate the dual language learning and bi/multilingualism in different ways at school and home. Yet, findings also uncover how a historically minoritized and economically disadvantaged school community —Er'yu Bilingual School—strategically appropriates dual language education in response to societal forces of competition and racial discrimination and creates an environment that promotes bilingual/bicultural curriculum so that minoritized learners can be academically successful in U.S. society. This shows the potential for positive outcomes from dual language education for increasing cultural equity and revitalizing minoritized languages in the English-dominant discourses in the U.S. Nevertheless, dual language education is not a simple, natural, and easy solution for promoting bi/multilingualism and bi/multiculturalism: the micro-politics and power dynamics around race, language, and ethnicity are embedded in the classroom discourses of dual language learning and teaching.

Findings from this study also show how negotiations, agency, and bottom-up actions play a role in shaping local dual language policy, teaching, and learning from multiple social actors. From micro-decisions such as selecting teaching resources to bigger decisions such as administrative-level decisions on policy planning, from micro-level interactions in classroom learning to cross-context learning socialization, findings demonstrate the process and power of

negotiations, resistances, and agentive actions from multiple participants in dual language contexts. Both socioculturally bounded groups and individuals tend to defend their interests in responses to the social, economic, and political social structures, which are shaped by their ideological orientations toward bi/multilingualism and outcomes of dual language education. It should be noted that a diversity of voices, interests, and ideologies interact and co-exist during this process of appropriating and negotiating, which offers a lens of criticality and complexity to re-examine the ecology, effectiveness, and outcomes of dual language education.

Theoretical and Methodological Innovations

In crafting my research questions, I proposed an ecological framework for dual language learning and teaching. This framework builds on but also expands the tradition of linguistic anthropology in language studies. It connects current understandings of ecology in different domains of language studies, which ties ecology (defined as micro-interaction between signs) to the process of language development, classroom learning, and the broader domain of language planning. In this case, this ecological framework not only affords investigation of the repertoires of resources in the process of learning and teaching, and the sociocultural embodiment and historical flows of the repertoires, but also takes into consideration the social relationships of its users across temporal and spatial scales, and the broader social, institutional, and political structures within which the relationships and repertoires are located. This framework also features ideology and agency as key elements, which rejects a determinist view toward learning, highlighting instead the human agency and ideological framing of learning, teaching, and policy planning. Drawing on a linguistic anthropological and discourse analytical approach, this study also contributes to contemporary scholarship in understanding languages,

resources, and cultures by examining sociolinguistic, multisemiotic, and ideological scales and the accessibilities of layers of norms.

In terms of methodology, this study involves ethnographic work in two types of dual language schools. It is the first empirical study that examines and compares the discourses of bilingual learning in a one-way and a two-way dual language classroom. Rather than focusing solely on classroom interaction in two different classes, the ethnographic work includes voices from multiple participants from vastly different backgrounds and examines the discourses in and outside of the schools and classrooms in order to develop a holistic understanding. The contrast of the two schools is also reflected in their geographic locations, student demographics, sociocultural histories, and school types, enriching the analysis by addressing layers of ecological factors.

Pedagogical and Practical Implications

Findings from my research have implications in three areas for supporting bi/multilingualism and dual language development in educational settings: 1) developing effective and equitable curriculum that enhances academic, language, and cultural goals; 2) improving dual language education to address diverse students and families' bi/multilingual learning needs in society; and 3) informing inclusive and equitable classroom and school policies that encourage bi/multilingualism and bi/multiculturalism.

Implications for Dual Language Pedagogy

By reporting findings from two contrasting dual language classrooms that represent the two major types of Mandarin Chinese dual language programs in the U.S., my research informs pedagogies and practices that foster an enriching and equitable bilingual learning environment, and that address diverse students' learning needs.

Language separation and dual language pedagogy

1. Dual language schools tend to separate the languages as the official norm for the purposes of organizing curriculum and protecting minoritized resources. Language separation does tend to protect the learning space for the minoritized language and for achieving content area standards.
2. Classroom practices, however, often, and should incorporate two languages to validate learners' positive participation, facilitate equitable social learning, and understanding of content knowledge in the dual language learning environment.
3. Translanguaging should be adopted as a continuum. The "extent" of translanguaging should be chosen based on the assessment tools, students' language proficiency (whether the instruction is comprehensible to students), the situated pedagogical tools (whether it's literacy, linguistic forms, or content knowledge), and the content areas.

Strategic assemblages of teaching resources for pedagogical outcomes

1. Teachers' assemblages of resources are crucial in fulfilling pedagogical and functions (e.g., highlighting content knowledge, eliciting particular language forms, (re)directing learners' attention, and reinforcing metalinguistic awareness).
2. It's important to adjust the repertoires in order to influence students' responses. Subtle changes in the assemblage of the same set of repertoires can significantly change the teaching outcomes and student-teacher interactions (e.g., learners' responses, the validation of students' voices). The assemblages can potentially shape the classroom dynamics. Teachers should think about what resources students can draw on, and how they can interact and produce in group work to promote more balanced participation.

Strategic assemblages of resources for positive classroom socialization

1. The choice, assemblage, and production of pedagogical resources and repertoires serve social and ideological functions; the literacy and language practices, with cultural forms and symbols from the linguistic, semiotic, and artifactual tools, socialize students into particular sociocultural discourses and ideologies of learning and behaving.
2. This process of learning socialization can be either positive or negative for students' learning given their different backgrounds and repertoires. Teachers need to develop a critical eye on the "hidden curriculum" through the use of materials and reflect on how to assemble resources to validate diverse students' cultural backgrounds and needs.
3. The assemblage itself is agentic and cannot be separated from the social-historical community of the school and the social discourses. Rearranging resources can potentially change the micropolitics and power dynamics existing in the classrooms.

Learner trajectories and repertoires

1. Learners draw on multiple resources to participate in dual language learning and respond to the norms indexed in the scales of learning and interaction. Dual language practices do give some minoritized students more opportunities to develop confidence and more scaffolds for content learning; however, the power differences associated with race, language, ethnicity, social class are also indexed, produced and reproduced among the students' classroom interactions.
2. There are different pathways of be(com)ing bi/multilingual through dual language education. Learners can make changes and new scales in their own learning, with constant struggles, tactics, and contestations, but their trajectories/negotiations/diversities should also be recognized and attended to by teachers in the classroom space.

3. Dual language education is not necessarily easy for learners who speak the minoritized language at home (Mandarin Chinese in this study). First, many learners with Chinese "heritage" speak dialects at home and they are learning Mandarin as an additional language just like English. Second, many Mandarin-dominant learners are not familiar with "academic" genre of the language taught at school. It should not be assumed that dual language education will automatically provide them tools to be successful bilingual users as required by the school curriculum.

Implications for Dual Language Policy Planning

By including perspectives from school administrators, parents, teachers, and students from various social, linguistic, racial, and ethnic backgrounds, my research sheds light on the learning needs, expectations, and challenges different groups have regarding English-Chinese bilingual education. Findings will also inform policymakers to more effectively develop classroom and school spaces and bi/multilingual assessment tools that address students' and families' learning and social needs.

Local implementation of dual language policy

1. The local development of language policies is agentic and is strongly connected to ideologies and beliefs around language use and language development. Students, teachers, parents and administrators are all policymakers.
2. The official policy is interpreted by individuals and key stakeholders, which involves conflicts and negotiations. These should be identified to further understand the underlying motivations and potential biases in implementing the policy.

3. Decisions of policymaking cannot be separate from an ecological look at school communities, and mission, and the sociocultural communities (and student groups) that the school serves, as well as who have the power in decision-making.

Interests and dynamics among stakeholders

1. It must be recognized that there are power dynamics among stakeholders in shaping local language policies. Parents from majoritized groups and higher social class tend to dominate policy decisions, which further reproduces inequalities in schools, in particularly in the school which rely on parents for funding, support, and resources.
2. Policymakers, particularly administrators, should be aware of these dynamics and look for alternative ways to engage stakeholders from diverse backgrounds so that more voices from underrepresented backgrounds can be validated in the process of dual language planning.

Future Inquiries

This study points to the need for more research and suggests inquiries that can be addressed and further explored in future studies. One inquiry that this study has not been able to address is diverse students' language development, socialization, and orientation in a longer timeframe. Although this study has generated understandings from interviews with students, parents, and teachers, longitudinal studies that follow students from elementary to secondary schools, covering observations and recordings across social domains (e.g., community events, home language practices, extracurricular learning) in addition to schools is necessary to understand the long-term outcomes of dual language learning. Another follow-up inquiry is to analyze learning interactions across the different classrooms, as well as conduct content analysis of resources used in the different classrooms and schools. Are the language and content

knowledge connected between the Chinese and English side of learning? How are “culture”, “social relations”, and “ideologies” represented and reflected in the assemblage of linguistic and semiotics resources in the textbooks and learning materials in the classrooms and two schools? How do students perceive learning across different classrooms? Answers from these questions can further inform effective learning and teaching practices in dual language schools.

Appendix

Appendix A: Observational Protocol

1. Participants

Who are the learners in the group?
Which learner is doing what in the group?
How are the learners grouped?
How do learners and the teacher move around, for which purposes?
What special physical features do I notice about the learners (e.g., clothing)?

2. Learning

What are the tasks that learners are working on?
What are the learning and teaching goals for the tasks?
What are the themes of content that learners are working on?
What, if there are any, are the criteria for assessing the tasks?
What are the implicit and explicit language rules for completing the tasks?

3. Interaction

What are learners talking about, officially and unofficially (small talk)?
What languages are learners using?
What body languages of learners do I notice?
What, if there are any, are the negotiations or tensions between students?
What, if there are any, are the negotiations or tensions between students and the teacher?
What are other semiotic resources and artifacts that learners and the teacher are using?

4. Space

What is the layout of the space?
How do the students' seats change in this space?
What are the signs put out in the space?
What purposes, messages or norms do these signs convey?

5. Special events

Are there some unique events or dialogues that happen during my observation?

Appendix B1: Formal Teacher Interview Protocol—The First One

- **Professional background**

Questions 1: Can you tell me about your professional background in teaching?

- Follow-up: Would you describe your experiences in studying and teaching in other countries or places?
- Follow-up for teachers not born in the U.S.: How many years have you lived and taught in the U.S.?

Questions 2: Can you tell me your experiences in this immersion school? When did you start and what classes you have taught?

- Follow-up: What types of professional training did you have to prepare for your teaching in this immersion school?

Questions 3: What challenges have you had for teaching in this immersion school? How does teaching here differ from your previous teaching experience?

- **Teaching philosophy and pedagogy**

Questions 4: What resources, such as other languages, audio/video resources and artifacts do you use for teaching?

- Follow-up: What are the affordances and constraints of using these resources to support students' learning?
- Follow-up: What are the strategies that you use in class to engage learners?

Questions 5: Are there any explicit or implicit rules in terms of language use in your class?

- Follow-up: Why do you think it is important to have these language rules?

Question 6: How do you feel about the allocation of different subjects and times for English and Chinese in terms of students' learning and language development?

- Follow-up: What, in your opinion, are the major challenges for learners by studying in a Chinese dual language school?

- **Student background**

Question 7: What are the major goals that you want your students to achieve from your class?

- Follow-up: how do you plan to support your students to achieve these goals?

Questions 8: What other languages do your students speak?

- Follow-up: Have you heard them spoken these languages at school?
- Follow-up: How do you feel speaking other languages impacts their learning in this school?
- Follow-up: Do you think they should use these languages for learning in school? Why or why not?

Question 9: Are there other questions, comments and thoughts that you have not shared with me?

Appendix B2: Formal Teacher Interview Protocol—The Second One

❖ **Teaching philosophy and pedagogy**

1. How have your pedagogy or classroom rules change throughout the semester? Why do you make changes?
   - Follow-up: What about the language policies in particular?
2. What are the things you think went successfully in the past semester as a teacher?
3. What are the major challenges you have encountered in the past semester as a teacher?
4. What did your students enjoy in the past semester? Why did you think they enjoyed it?
5. What did your students struggle with in the past semester? Why do they think they struggle?

❖ **Classroom teaching practices**

6. What kind of linguistic, visual, and digital resources or materials do you think were successful in teaching or engagement, and in what ways?
   - Follow-up: How do you think of affordances of using these resources in teaching?
   - Follow-up: How do you think of the constraints and challenges of using these resources/materials in teaching?
7. What kinds of activities or practices do you think were successful in either engaging your learners or enhancing their understanding, and in what ways?
8. When making decisions about your pedagogy, what types of information about students do you draw on?
   - Follow-up: Do you pay attention to students' language use and interaction to inform your teaching practices? Can you give me some examples?
9. What kinds of events/activities in your class occurred to engage parents, families, and communities in the past semester? What are your thoughts on these activities?

❖ **Thoughts on immersion**

10. What are your thoughts or recommendations to develop Chinese dual language programs to enhance learning and language development?
11. What kinds of resources and support (administrative, school, professional development, etc.) do you think is necessary to teach in a Chinese dual language school?
12. Are there other questions, comments and thoughts that you'd like to share with me?

Appendix C: Principal Interview Protocol

1. Can you tell me about your professional teaching and administrative positions?
   Follow-up: Would you please describe your experience in working in this school in particular?
   Follow-up: what kinds of training or experiences did you have that have prepared you to work in this particular school?
2. Could you tell me a little about this school (i.e., its history, curriculum focus, and student background?
3. What is unique about this school, compared to your experiences with other schools you worked in before?
   - Follow-up: What do you think are the major factors for why your school attracts these students and parents?
   - Follow-up: What are the benefits and challenges for students to learn in this Chinese immersion school?
4. What are the major goals that you want your students to achieve by attending your school?
   - Follow-up: Would you please describe activities, events and resources in your school that help students achieve these goals?
5. Can you describe how the immersion model works in your school?
   - Follow-up: How do you feel about the allocation of different subjects, classrooms and times for English and Chinese in terms of students' learning outcomes and language development? What are the advantages and challenges?
   - Follow-up: What do you think are the major challenges in sustaining this model and supporting your students and parents?
6. What are the language rules and policies in your school and classrooms?
   - Follow-up: Why do you think it is important to have these language rules?
7. What are the linguistic, cultural, and ethnic backgrounds of the students in your school?
   - Follow-up: Would you please describe activities and events in your school that engage parents and students with Chinese language and cultures, or other languages?
   - Follow-up: To what degree do you think learners from different linguistic backgrounds benefit from your school?
   - Follow-up: What are the challenges for learners who do not speak English or Chinese at home?
   - Follow-up: what types of resources might be helpful for these learners?
8. What are your thoughts or recommendations to develop Chinese dual language programs to enhance learning and language development?
9. Are there other questions, comments and thoughts that you have not shared with me?

Appendix D: Student Interview Protocol

Students' school experience:

1. Could you tell me why you started coming to this school?
2. What have you learned in this school in particular?
3. Tell me about the things that you like about this school and the things you wish to change about this school. (Follow-up: Can you tell me two of your favourite things and two of your least favourite things about this school?)
4. Can you describe the most difficult part of learning and the easiest part of learning in this school, either in Chinese or in English class?

Students' perceptions toward learning in Chinese and English:

5. What does it mean to you to speak both English and Chinese? How do you feel about speaking two languages? Can you describe your feelings?
6. Do you think learning in the Chinese and learning in the English class is different, or is it similar? How is it different or similar?
7. Do you think you act or feel differently or similarly in the Chinese and the English class? In what way do you feel or act differently or similarly?

Home language practices:

8. Do you speak, read or write in other languages outside of school? If so, when do you use and why do you use that language (s)? Can you rank the languages based on first, how comfortably you use them, and then, how well you think you can use them?
9. Do you think learning Chinese or English is different for you because you speak a third language? Why does it make the difference?

Peer relationship:

10. Who is your friend in the class? What do you like to do with them?

    Prompts:
    Can you describe it for me?
    Can you give me an example?
    Like what?
    What specific memories do you have?
    Tell me more

Appendix E: Parent Interview Protocol

Language and background

1. Tell me about your child's history of language learning. (What languages has he/she learn and how did he/she learn the language?)
2. Tell me how your child uses language(s)?
    - What language/s does your child know, and how and when does he/she use them?
    - What languages does your child speak at home?
3. What are your hopes and dreams for your child?
   Follow-up: What are your hopes in terms of languages, cultures and academic development?

Chinese immersion

4. Can you describe the process when your child enrolled to this Chinese dual language school?
    - How did you hear about this program?
    - Why did you choose Chinese dual language in particular?
    - When did she/he start this program?
    - How did he/she feel about studying in this program at that time?
5. What do you hope your child gains by studying in this school? (Follow-up: what are the factors that motivated you to enroll your child in this program?)
6. How does your child see himself/herself in learning in this school?
    - How does your child feel about learning Chinese language and culture, and speaking Chinese?
    - What are the things s/he likes in the school and what are the challenges s/he has?
7. Are there any changes in terms of your child's attitude toward learning in this school or learning Chinese in particular in this school across his/her elementary school years? Are there any critical events/factors that are related to the change of attitude?

Home practices and supporting children's language development

8. What out-of-school activities does your child participate in where he/she uses or practices Chinese?
9. What are the ways you support your child in learning Chinese language and culture?
10. What are your child's interests outside of school during the weekend or breaks? (What kind of activities does he/she do?)

Effectiveness of programs

11. You've mentioned your hopes for your child at the beginning; how well do you think this school supports your child to achieve these goals?
12. What types of school activities have you participated in?

- What have your learned from these activities?
- How do you feel about these activities in terms of supporting your child to achieve the goals you have mentioned?

13. Tell me your thoughts about the school in terms of your child's language development and learning in general. Follow-up: What works well in the school and what are the things that you think can be improved? Any suggestions?
14. What are the plans for your child after graduating from this school? What about Chinese learning?
15. Do you have any questions or anything else you'd like to share with me?

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