Transforming Language Ideologies through Action Research:

A Case Study of Bilingual Science Learning

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THESIS

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To my parents

To my husband and daughter

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LIST OF ABBREVIATIONS

ACCESS   Assessing Comprehension and Communication in English State-to-State for English Language Learners

AYP   Adequate Yearly Progress

CHAT   Cultural Historical Activity Theory

CPS   Chicago Public School

EL   English Learner

ELL   English Language Learner

FG   Focus Group

ISAT   Illinois State Achievement Test

ISBE   Illinois State Board of Education

LEP   Limited English Proficient

L1   First Language

L2   Second Language

NCELA   National Clearinghouse for English Language Acquisition

NCLB   No Child Left Behind

OELA   Office of English Language Acquisition

SUMMARY

This qualitative case study explored a third grade bilingual teacher's transformative language ideologies through participating in a collaborative action research project. By merging language ideologies theory, Cultural Historical Activity Theory (CHAT), and action research, I was able to identify the analytic focus of this study. I analyzed how one teacher and I, the researcher, collaboratively reflected on classroom language practices during the video analysis meetings and focus groups. Further, I analyzed twelve videos that we coded together to see the changes in the teacher's language practices over time. My unit of analysis was the discourse practice mediated by additive language ideologies. Throughout the collaborative action research process, we both critically reflected on the classroom language use. We also developed a critical consciousness about the participatory shifts and learning of focal English Learner (EL) students. Finally, the teacher made changes to her classroom language practices. The results of this study will contribute to the literacy education research field for theoretical, methodological, and practical insights. The integration of language ideologies, CHAT, and action research can help educational practitioners, researchers, and policy makers understand the importance of transforming teachers' language ideologies in designing additive learning contexts for ELs. From a methodological perspective, the transformative language ideologies through researcher and teacher collaborated video analysis process provide a unique contribution to the language ideologies in education literature, with analytic triangulation. As a practical implication, this study suggests action research can be one of the teacher education tools to help the teachers transform language ideologies for EL education.

Chapter I. Introduction

In 2001, *No Child Left Behind Act* (NCLB) established standard-based expectations for all students to be able to get grade-level achievement in reading and content-area learning by 2014 (U.S. Department of Education, Office of the Educational Secretary, 2006). The achievement is measured by large-scale high stake tests with the required gain of adequate yearly progress (AYP) (U.S. Department of Education, 2001). Failure on tests could result in school closure or reduction of federal funding. The *Race to the Top* reform effort (U.S. Department of Education, 2009)—annual performance-based review with nationwide Common Core Standard—accelerated the restrictive and accountability pressure on teacher. Since all these tests are primarily conducted in English-only, with the exception of minimal local variations, it also lends itself to English-only instruction. As a result, many English Learners (ELs) are not receiving appropriate linguistic support they need for learning from school.

English Learner[1] (EL), or English Language Learner (ELL), refers to the student whose first language is other than English. Students who are beginning to learn English with Limited English Proficiency (LEP) and who still need linguistic support are considered as ELs (LaCelle-Peterson & Rivera, 1994; Francis, Rivera, Lesaux, Kieffer & Rivera, 2006). According to the 2007 National Clearinghouse for English Language Acquisition (NCELA) report, more than five million ELs attend U.S. schools today and the number has increased approximately 57 percent during last decade. These students mostly come from poor and less-educated family backgrounds (Ballantyne, Sanderman, & Levy, 2008). There were diverse EL profiles in the Chicago Public Schools (CPS) including students who had recently arrived in the middle of the school year from

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[1] For the purpose of this study, I use the term English Learner (EL) to refer to the students who qualify for language support services within U.S. education system. Using EL, I attach a more additive languages ideologies perspective toward these students. However, I also acknowledge that other scholars may use different terms such as English Language Learners (ELL) or Limited English Proficient Students (LEP) to refer to these students.

other countries and also students who were born in the U.S. but whose home language was not English. With the changing student demographics, the teacher education and professional development programs need to help the teachers to improve knowledge and skills about EL education.

Since the inception of NCLB, there has been anti-bilingual education mandates, limiting ELs' opportunities to receive instruction through their home language support. Under the NCLB, the ELs are required to gain standard-English skills within a short period of time, while they are also achieving in academic content areas. Since these policy decisions are made with no adequate research input, the debate continues within educational research circles regarding the "best practices" to educate the ELs (Hawkins, 2004, p. 14).

Research indicates that the ELs are often misplaced into remedial program (Harper, de Jong, & Platt, 2008); and, the reductive learning environments do not adequately address the needs of these students (Barone, 2002). Many in-service teachers who are working with the ELs often prefer a quick-fix tool kit such as discrete vocabulary lists or materials rather than on-going reflective professional development to examine their beliefs and attitudes (Clair, 1995). Furthermore, the teachers in at-risk schools tend to focus on basic skills such as copying words or spelling practices rather than having meaningful discussion around books because they do not feel comfortable providing instruction to the ELs and the low-achieving learners (Barone, 2002). With monolingual language ideologies dominating schooling and U.S. society (Judd, 2000), teachers tend to ignore bilingual students' source of knowledge that they have already acquired in their first language. As a result, there is a great need for on-going professional development designed for teachers to critically reflect on their beliefs about ELs' learning so that they can make changes in pedagogical practices.

As I review in chapter II, in the EL literature, the critical role of the teachers' language ideologies for students' learning and identities construction is not well addressed. While many language scholars approach language learning issues with the focus of individual learner's cognitive development, there is relatively little attention paid to the activity and socio-historical-cultural-political context, focusing on the underlying beliefs and assumptions—language ideologies—that mediate the practice (Razfar, 2010). Thus, I would like to contribute to this gap in the EL literature.

Purpose of Study and Research Questions

The purpose of this study was to understand the role of one teacher's reflective and transformative language practices for ELs' learning:

1. How do the researcher and the teacher collaboratively reflect on classroom language use through shared video analysis?

2. How does the teacher make changes to classroom language practices?

3. How do the researcher and the teacher collaboratively reflect on the shifts in focal students' learning?

The first research question focuses on the teacher's critical reflections about classroom language practice through shared video analysis with the researcher. The second research question centers on the teacher's transformative language practices as well as the key components that mediate this transformative process. The last question focuses on the critical moments when the researcher and the teacher analyzed the significant shifts in students' learning in relation with the teacher's transformative language practices.

Overview of the Dissertation

In chapter II, I discuss the conceptual frameworks and bodies of literature that informed my study on the mediating role of teacher's language ideologies for her teaching practice. By merging language ideologies theory, Cultural Historical Activity Theory (CHAT), and action research, I was able to identify the analytic focus of my study.

In chapter III, I present the research design of my study—qualitative case study with ethnographic techniques. I also explain the following components: Context and participants of this study, researcher positioning, data collection, and steps of data analysis. In outlining the data analysis steps, I describe how I managed the data and developed the coding schema.

In chapters IV through VI, I present findings that emerged from coded data. In chapter IV, I situate the teacher's transformative language practices within a collaborative action research project. I analyze the following five main components of action research: video coding tool, collaboration, reflection, action change, and challenges.

In chapter V, I analyze how the teacher and I collaboratively reflected on the classroom language use, focusing on the issues of language choice, language functions, and language constraints. The analysis also focuses on the changes in the teacher's classroom language practices across three units.

In chapter VI, I present the changes in focal students' learning that researcher and teacher analyzed together during the shared video analysis meetings. The analysis focuses on the focal students' shifts in participation, roles, modality, and identity in relation to their classroom language use.

In chapter VII, I discuss the overall findings of this study, along with the theoretical, methodological, practical, and future research implications.

Chapter II. Literature Review and Theoretical Orientation

In this chapter, I integrate language ideologies theory, Cultural Historical Activity Theory (CHAT), and action research to study the role of teacher's transformative language ideologies for ELs' learning. This integration allows me to identify my research problems and provides me with an analytic focus. To learn more about what is known and what is unknown about my topic, I review both theoretical writings and data based research studies.

Language Ideologies and Educational Research

In this part, I define the concept of language ideologies within the broader theoretical context. Then, I explain how language ideologies theory has been and can be used as a valuable concept in studying educational phenomena, especially in an EL context.

Language ideologies as analytic tool. Many contemporary educational researchers study the role that language plays in learning and identity development. However, only some have focused on the contemporary work in linguistic anthropology (Wortham, 2001). I argue that a focus on language ideologies—one concept developed in linguistic anthropology of education over the past two decades—can be a useful analytic tool in conducting educational research. Wortham (2001) defines the research in the field of linguistic anthropology of education with the following characteristics: 1) it studies people using language instead of concerning itself with structural grammar or phonology; 2) it tries to understand its participants' point of view; 3) it tries to address macro-sociological questions by doing detailed analyses of language use in particular contexts; 4) it studies how language use can represent aspects of culture and identity in particular contexts; and 5) it systematically analyzes patterns of semiotic cues across particular segments of language use (pp. 254-255). My study draws on many of these aspects described above.

Language ideologies is defined as "the beliefs and attitudes shared by individuals regarding the use of particular language in both oral and written form in the context of power struggles among different groups" (Martínez-Roldán & Malavé, 2004, p. 161). Woolard (1998) defines language ideologies as "representations, whether explicit or implicit, that construe the intersection of language and human beings in social world" (p. 3). Thus, language ideologies theory allows us to make a link between forms of social life and forms of talk (Woolard, 1998). Focusing on both macro-level beliefs about language and micro-level analysis of utterances, language ideologies studies describe "a general process of positioning and the enactment of social identity" (Wortham, 2001, p. 256).

Language ideologies works as a "mediating link between social structure and forms of talk" (Woolard & Schieffelin, 1994, p. 55). For example, Silverstein (1985) explains the loss of deferential second person plural *thee/thou* during 17th century in relation with Quakers's identity to index their moral objections to social hierarchy at that time. Quakers's purposeful use of thee/thou in any context, as a resistance toward social hierarchy, developed language ideologies: using *thee/thou* sounded like Quaker in favor of their political ideas. Thus, others only used *ye/you* in order to avoid sounding like Quaker. This example illustrates that language ideologies not only explain but also affect linguistic structure. Language ideologies can be a powerful analytic tool because it makes a link between linguistic form and forms of social life, as presented in the aforementioned example.

In the same line of thought, teachers in an educational setting index a particular use of accent, lexical, grammatical, or pragmatic forms in both linguistic and discourse level to recognize the identities of good students; and, this indexing mediates the development of students' social identities (Wortham, 2001). As Hymes (1974) insisted, the ethnographers of

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speaking have given attention to the ideologies of language; and, they have considered the paradigm of power regarding the analysis of communicative practices (Woolard, 1998). With the assumption that the language practice is a key constituent of the epistemology, these studies examine how the school values some linguistic strategies and discourse practices, while ruling out others. One example is the classical ethnographic study *Ways with Words* by Heath (1983) that illustrates how the literacy event—any occasion in which a piece of writing is integral to the nature of participants' interaction and their interpretive processes—is a value-laden cultural practice. By comparing the multiple communities' discourse socialization, Heath (1983) illuminates upon how certain literacy events align better with school-oriented literacy events than the other ones. For another example, Mertz (1998) analyzes the valued epistemologies, worldviews, and language ideologies by the professors and by society embedded in law school discourse practices that position the students to think and talk like lawyers. Through the classroom discourse interchange, the professor seeks reasons and student engagement using various pragmatic strategies such as re-voicing students' answers to questions and pushing students to take positions; and, the students are socialized to approach legal texts and language as open to recontexualization and re-interpretation. These examples illustrate how language learning is a cultural learning and social practice.

While some theories assume that ideational matters are separated from material life, others assume both are inseparable from each other. My language ideologies perspective takes the latter position: language and meaning are inseparable from the everyday social relationships (Gal, 1998). Gal (1998) further explains the language ideologies as being equivalent to worldviews about language since different ideologies construct alternative realities. The cultural worldview is quietly conveyed through classroom language exchange, with deeper messages

"about how the world operates, about what kind of knowledge is socially valued, and about who may speak and in what manner" (Mertz, 1998, p. 150). The multiplicity of ideologies—instead of Ideology—provides a more locally and empirically grounded approach to examine teacher practice (Razfar, 2011a). Thus, in this study, I consistently use the term language ideologies as a plural to emphasize the multiplicity of the phenomena.

The language ideologies conceptual framework helps to critically analyze the conceptions of language and literacy in education. In the field of literacy, Street (1995) first made the distinction between *autonomous* and *ideological* models of literacy. The *autonomous model*—or reductionist language ideologies—defines literacy as neutral set of skills that can be measured by fixed standards. Within this fixed standard literacy model, the school literacy is usually privileged. Furthermore, literacy is considered as isolated variables and input to be processed cognitively. In this universalist view, literacy is considered as context free and value neutral. This traditional view is challenged by New Literacy Studies (Gee, 2008; Scribner & Cole, 1981; Street, 2003). Drawing on the *ideological model* of literacy, these scholars re-define the literacy as a set of *social practices* that are situated in a specific socio-cultural-historical context, and that are not free from power. The meaning is created, negotiated, and contested by particular participants in the specific socio-cultural-historical context.

The distinction between autonomous and ideological models of literacy represents how language ideologies mediate the definitions of language and literacy education. Instead of only privileging schooled literacy, the scholars who draw on socio-cultural-historical and ideological view of literacy try to cross the boundaries across home, community, and school; and, they capitalize students' making meaningful connections across multiple contexts (Gutiérrez, 2002; Moschovich, 2007a; Moschovich, 2007b). The encounters between two literacies—such as home

and school literacies—always result in the *hybrid* versions of both, rather than one version of either (Street, 2003; 2004). The central analysis of literacy education focuses on the interplay between the meanings of local events and a structure of broader socio-cultural-historical institutions through discourse analysis.

The concept of language ideologies can provide both theoretical insights and empirical contribution to the educational processes. For example, a study can illustrate how language ideologies mediate the development of learners' social identities and classroom behavior (Wortham, 2001). Furthermore, language ideologies link the micro-classroom context for learning with more distant socio-cultural-historical contexts that mediate the local pedagogical practices; thus, it plays as a "pivotal relational concept" (Moll, 2004). Language ideologies theoretical framework empirically proves how people in the context of everyday language use—such as educational context—reproduce or sustain hegemonic relations (Gal & Irvine, 1995; Gal, 1998; Razfar, 2005). Thus, language ideologies involve the issues of identity, morality, epistemology, and social and political dimensions of life (Gal, 1998; Woolard, 1998). Our language ideologies are not only about language, but they are always about definitions of human beings in the world (Woolard, 1998).

Language ideologies and bilingual education. Language ideologies becomes a useful lens in studying bilingualism and education of language minority students; and, it deepens a critical understanding of EL issues within the socio-cultural-historical context of the United States. The bilingual education policy—what type of bilingual program is provided—is the constant battlefield with mixed language ideologies. According to Ruiz (1984), transitional bilingual education programs are characterized by a *language-as-problem* orientation. The primary language is viewed as a problem to overcome. Dual-language education programs are

characterized by a *language-as-resource* orientation because students' home languages other than English are viewed as resources to be developed rather than as problems to be overcome.

Research demonstrates that the most effective way of bilingual education is a gradual-exit program or a dual-language program. In the former program, non-English-speaking children receive core subject matter instruction in their first language along with English instruction; also, the advanced first language development is still available once full mainstreaming is completed. In the latter program, both native speakers of a language other than English and native English speakers learn each other's language with the goal of promoting biliteracy. The large-scale study conducted by Ramírez (1992), following 2,000 native Spanish-speaking elementary students for four years, found out that students who received 40% or more of their instruction in Spanish throughout their elementary school years outperformed significantly on the test of English reading and mathematics than students in English-only or early-exit bilingual programs. Furthermore, Ramírez (1998) reports that students in long-term or late-exit bilingual education gained higher grade points with highest attendance rates. Other proponents of bilingual education add weight to this argument. For example, Genesee (1987)'s long-term studies of Canadian dual immersion program explain that children's proficiency in French increased without a detriment of English acquisition or academic content learning.

However, the current language policy in the United States is mostly geared toward transitional model where the primary language is only used in the lower grade with the goal of quick transition into English-language classrooms as soon as students attain certain goal of English proficiency (Freeman, 2006). English-only pedagogies discourage the use of languages other than English in the classroom, even when the teacher and the students share their native fluency in another language. Thus, such policies usually ignore the development of students'

home language and knowledge that students already have acquired in their home language (Gutiérrez et al. 2002). Clearly, the goal of current language policy is to promote English-only, resulting in ELs' *language shift* (Fishman, 1991). This orientation puts very little attention to the development of biliteracy. As Gutiérrez (2001) posits, different language ideologies can make language as an instrument of cultural and linguistic oppression or empowerment. The language-based screening, categorizing students by language, and ignoring linguistic differences by one-size-fits-all approaches all contribute to EL identities construction in a negative way. Indeed, "language choice is not solely an educational choice but is always a political issue" (Gutiérrez, 2001, p. 566).

Language ideologies perspective (or anthropolitical linguistic perspective) provides new insights to examine the interrelationships between linguistic codes and bilinguals' ethnic, racial, and class identities. Zentella (1997)'s long-term ethnographic study of five working-class New York Puerto Rican girls and their families in El Barrio—East Harlem in New York—focuses on the communities' political economy of language choices. While the economic and political context stigmatizes this group's ethnic, racial, and class identities, the study depicts how these people attempt to construct a positive self within such context. For example, a bilingual New York Puerto Rican child in this study said, "Hablamos los dos (= We speak both)" as if speaking two languages is the most natural manner in the world. This makes us to re-think about the language ideologies issues in the context of United States.

As Zentella (1997) depicts, whether code-switching—moving in and out two languages—is conceptualized as linguistic deficit or natural language behavior is a language ideologies issue. The socio-cultural-historical research settled the debate regarding whether code-switching demonstrates linguistic confusion or an inability to recall a word (Valdés-Fallis,

1978). For example, Grosjean (1989) proposes a continuum of monolingual and bilingual modes; Zentella (1981) explains code-switching as an ability that distinguishes fluent bilinguals; and, Cook (2001) describes code-switching as a normal language practice in the bilingual mode, which is simply different from monolingual competence. Thus, some scholars use the term *translanguaging* (Creese & Blackledge, 2010; García, 2007) to suggest more flexible bilingualism (i.e. the boundaries between two languages become less strict). The translanguaging (or code-switching) can function as pedagogic strategy—for example, it creates more inclusive classroom environment for ELs, encouraging students' participation (Arthur & Martin, 2006; Creese & Blackledge, 2010; Lin & Martin, 2005). All these scholars put an emphasis on understanding the language users in social milieu, instead of focusing on the language structure itself.

Teachers' and societal language ideologies. In educational setting, teachers' language ideologies mediate the classroom discourse practices. For example, teachers' language choices show their common sense assumptions about what a language is, how it functions, and what social and political identities they have. Gal (1998) also argues, "the use of a language is assumed to imply about political loyalty and identity" (p. 317). Research reports that many teachers who are working with the ELs tend to draw on the reductionist language ideologies. The teachers in at-risk schools tend to focus on basic linguistic skills such as copying words or spelling practices because they do not feel easy providing instructions to the ELs and the low achieving students. Thus, they limit the ELs' opportunities to have meaningful interactions to become competent members in an academic discourse community (Barone, 2001; Razfar, 2003). Roseberry, Warren, and Conant (1992) further argue that critical content area, such as science, is often absent from bilingual program because the teachers' language ideologies (e.g. beliefs in

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ELs' lacking English) are reflected in instructional foci. The reductive learning environment, divorced from children's experience and culture, discourages the ELs' meaningful learning opportunities. As a result, the students remain quiet listeners and passive learners; and, they are not socialized into academic literacy practices necessary to succeed in higher academic learning communities (Razfar, 2003).

As opposed to the decoding-based reductionist approach, the socio-cultural-historical view of language learning emphasizes the way human beings learn and solve the problem. Genish, Stire, and Yung-Chan (2001), the ethnographic case study of pre-school Cantonese speaking ELs, illustrates such example. In this study, researcher, staff, and the Chinese-English bilingual classroom teacher collaborated to study bilingual children's language learning from a socio-cultural-historical perspective. With the belief that children use multiple symbolic tools from their environment to make meanings, the instruction was based on the problem-solving activities. The children developed vocabularies as a by-product of various hands-on activities such as talking, singing, drawing, and playing; and, they also developed the sense of empowerment as they used written language to present their thoughts and communicate with others. Since the teacher was a bilingual, as the majority of students in her classroom were, she utilized Chinese as a tool for English learning. Thus, the authors criticize the instructional approach that heavily focuses on rote memorization of vocabulary and grammar without meaningful experience of what it means.

Learning a language is more than an individual cognitive process. Our beliefs and practices of language are mediated by contextual factors such as teachers' and societal language ideologies. Not all language practices are equally valued by the teacher. Many times, the teachers are unaware of the language ideologies that mediate their own teaching practice. Some teachers,

if aware, would choose to ignore the potentially harmful effects of their language attitudes on children. In order to change teacher practices, we need to address the language ideologies that mediate teacher practice (Razfar, 2003; 2005). I expect all teachers to reflect on their own stance and practices of language and literacy with the awareness of the inseparable interrelationships between the history brought to the individuals and the history brought to the institution (i.e. school, society, or global). Ideology governs how we see the worlds in which we live; we all need to interrogate our ideology, with *moral obligation*, to change and do better (Gee, 2008).

Scholars who draw upon the language ideologies perspective examine the mediating relationship between the individuals' language practices and the socio-political interests of nation-state (Razfar, 2005). In the current language education policy environment of the U.S., through the NCLB, schools where teachers work with low-income ELs are more likely required to follow the top-down and one-size-fits-all initiatives than those that serve middle and upper class children (Pease-Alvarez, Samway, & Cifka-Herrera, 2010). Allington (1991) summarizes the research about how schools respond to students of diverse background (or ELs). As many of these students are placed in remedial or special education programs, the higher proportion of instructional time is spent on nonacademic activities. Furthermore, the more students are perceived to be struggling as readers, the greater the instruction will be to break down skills in isolation (e.g. phonics drilling, spelling, vocabulary, etc.). Darling-Hammond (1995) argues that once the students are placed in lower-level tracks (e.g. remedial groups), they receive a rote-oriented curriculum with limited attention to the literacy instruction involving higher-level thinking. Also, the most qualified teachers are placed to teach the top-track groups (e.g. Honors and accelerated). Standardized-tests play a role legitimizing the placement of students in each track.

In the classroom, ELs generally receive fewer turns to answer questions due to their non-proficient English skills and low expectations from the teacher (Harklau, 1994; 2000). Thus, teachers' language ideologies can encourage or discourage ELs' participation and learning in the classroom. The teachers and schools need to include important linguistic and cultural resources children bring to school from their familiar world. They need to draw diverse *mediational tools*—multiple signs, symbols, texts, and mediational artifacts from various oral/visual/literate genres—for the purpose of embodied meaning making to create productive learning environment (Razfar & Yang, 2010). All teachers need to reflect on their own language ideologies in everyday pedagogical practice and decision-making process.

As García and Menken (2010) argue, "educators at the local level, including teachers, hold just as much responsibility for policymaking as do government officials" (pp. 3-4). Teachers are not mere "conduits of curricular policies" but key participants in language education policy-making process (Pease-Alvarez, Samway, & Cifka-Herrera, 2010). They are the most central mediators between what educational policy mandates and what students experience in school (Luykx, Lee, & Edward, 2007). With the understanding of a complex micro-macro contextual interrelationship, I do not aim to blame the teachers, but I expect to learn more about the important role of teacher's language ideologies. In other words, I see the teachers as part of the solution rather than the problem.

Language ideologies are about both our ideas and practices (Gal, 1998). Thoughts are considered as actions and actions are thoughts; neither of which can be separated from the relationship through which they develop (Shotter, 1993). Thus, language ideologies perspective makes a connection amongst beliefs, practices, and broader socio-cultural-historical contexts.

Cultural Historical Activity Theory

In this section, I review some of the key conceptions of Cultural Historical Activity Theory (CHAT). I also merge language ideologies perspective with CHAT because the teachers' language ideologies mediate their pedagogical practices. The teacher, as an active participant in the activity system, contributes to the design of learning context.

Over the past decade, there has been a growing recognition of the role of socio-cultural-historical processes in language learning and use (Watson-Gegeo & Nielsen, 2003). From a socio-cultural-historical perspective, knowing a language is not limited to mastering grammatical knowledge; but, it requires understanding the functions and uses of language in a particular discourse community. As the role of context is considered importantly for children's language learning, many scholars examine the questions of: "how activities are organized, how interactional routines are established, and how meanings are negotiated" (Ochs & Schieffelin, 1986, p. 282). The context also includes teachers' and societal language ideologies that can be mediators in the language learning process.

While cultural historical theories include divergent emphases, the core ideas include the following: 1) consideration of developmental issues, 2) emphasis on the mediational role of language and other semiotic tools, 3) the process of appropriation and transformation, 4) the socially constructed and situated nature of language learning, and 5) the concept language learning as dialogical processes (Tarone, 2007).

Vygotsky (1986) argues that "learning can lead development" instead of the opposite. His learning theory focuses on the learner's interaction with more competent members *mediated* by cultural tools—language and other cultural symbolic tools. One can become a competent member of a particular culture through the mastery of cultural mediational tools. His learning

theory also considers language as a tool of tools that enables users to organize the joint activity, to consider past events and plan for the future, and to represent understanding. He described that these tools could regulate both interpersonal and intrapersonal psychological processes and the *internalization* interpersonal activities. According to Vygotsky (1978), internalization is a process in which a child initially can do only with adult guidance, within *Zone of Proximal Development* (ZPD), and later can have more control over his/her agency (p. 86). Thus, ZPD is the gap between the independent performance (i.e. one can do on a given task without help) and the assisted performance (i.e. one can achieve a task with the help of more competent person). Learning in ZPD is what drives development, facilitated by guidance and assistance. ZPD assistance is not limited to adult expert, but includes peers or absent others by means of the artifacts they created.

While Vygotsky's unit of analysis focused more on the individuals (e.g. adult and child or expert and novice), this thought has been elaborated by his successors with the expanded model of Cultural Historical Activity Theory (CHAT)—collective activity system that represents the individual and group actions (Engeström, 2001). Later, the activity theory is further developed to include multiple activity systems. For example, Gutiérrez and her co-authors suggest the concept of *third space* to explain the classroom discourse where two activity systems that minimally involve each other form new meanings beyond the limits of both (Gutiérrez, Rymes, & Larson, 1995; Gutiérrez, Baquedano-Lopez, &Tejeda, 1999; Gutiérrez, Baquedano-Lopez, Alvarez, & Chiu, 1999).

In CHAT perspective, literacy is considered as "integral units of human life, motivated by goals and enacted by everyday activities beyond school setting" (Hull & Schultz, 2001, p. 581). This continuation also moves our attention from an individual person as a unit of analysis

to a socially organized activity as a unit of analysis. Learning, in CHAT perspective, is defined as the expansion of one's action possibilities in the pursuit of meaningful goals in activity (Engeström, 1991). The participation in collective activity not only increases action potentials but also opens up a ZPD for individual learning and transformation (Engeström, 1987). The central issue of activity theory is the transformations of individuals and their community, developed from the fact that individuals have the power to change the conditions that mediate their activities (Roth, 2004). Thus, learning is defined as an active and constructive process that involves multiple transformations: learners' repertoires of action, tools used, and objects of activity (Roth & Lee, 2007). Our cultural development takes place, through joint activity, within a social, cultural, and historical context.

Language ideologies as mediating artifacts within activity system. Activity theory—or CHAT—is explained with the six components of activity triangle: subject, goals (outcomes), tools (or mediating artifacts), rules, community, and division of labor (Engeström, 1987). In this study, I particularly focus on the significant role of teacher's language ideologies as mediational artifacts because the teacher, as a participant in the activity system, contributes to the design of learning context by promoting or limiting the types of mediational tools. This design, in turn, can bring about the changes in the entire activity system (e.g. learning goals, nature of interaction, rules of participation, and division of effort). Figure 1 presents each component of the activity triangle, with the special attention to the role of teacher's language ideologies as mediating artifacts.

Figure 1

Components of Activity Triangle (Adapted from Engeström, 1987)

Mediating artifacts
-e.g. Teacher's language ideologies

Subjects

Goals and outcomes

Community

Rules
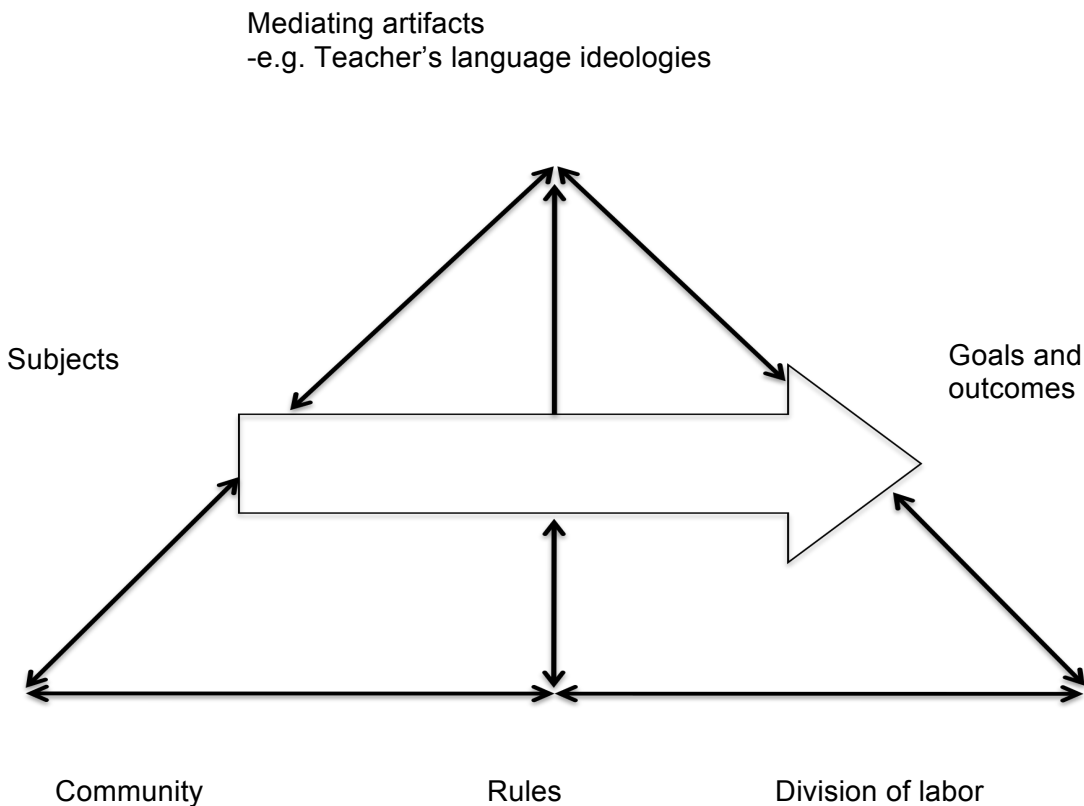
Division of labor

As Engeström (1987) explains, in the activity triangle, *subjects* are defined as the participants in activity (e.g. students and teacher in the classroom). *Community* is the larger context external to immediate activity. *Division of labor* is explained by how the students are grouped, how roles are assigned, and what participants do during the activity. *Rules* can be explicit or implicit, but they govern the nature of participation. *Mediational artifacts* can be both ideational and material (e.g. languages, books, dictionary, computer, peer translation, questioning, and language ideologies); and, they mediate the process of activity. *Outcomes* are defined as projected conceptual understandings. Finally, the outcomes are distributed and consumed; and, they become a departure of a new activity.

Razfar and Rumenapp (2011) expand the notion of context to include language ideologies; and, they consider language ideologies as key mediating artifacts within the activity triangle. The authors explain, "while all of the artifacts presented in any activity system can be considered ideological in that they are laced within inscribed and ascribed meaning, values, and interests, language ideologies specifically refer to those ideological artifacts that are directly and explicitly signified through linguistic form" (p. 250). The activity approach to context is defined not only as a physical environment, but also as a way "situation is experienced and interpreted by the person as a locus for meaningful actions" (van Oers, 1998, p. 479). van Oers (1998) further explains that the tools or symbols do not have meanings themselves; instead, the meaning is constructed by the roles and values the participants get through participating in the activity. Thus, the author used the term *contextualizing* to explain the process of context making or adding new meaning to a given situation. In the classroom, the teacher's language ideologies mediate the choice of mediational tools, the nature of activity, and interactional routines; thus, it creates the learning context.

As Engeström (2001) explains, we need to understand that this representation of activity system is inherently dynamic rather than static. Each component of activity triangle is in dialectic relations; thus, the change in one component brings about the changes in the entire activity system. The multi-directional arrows in Figure 1 explain this dialectic interrelationship between each component. Engeström (2001) explains the relationship between subject(s) and outcome(s) as a dialectic unit that is the essence of an engine of change: the subjects' goal-oriented practical actions bring about the changes in the activity system. In this process, other components of triangle mediate the subject-object relation. Thus, individuals not only produce

outcomes, but they also produce and reproduce themselves as members of community where they are constituents.

In this transformative process, the *inner contradictions* that are internal to activity system become the driving force of change and development in activity system (Roth & Lee, 2007). Engeström (1987) explains four types of inner contradictions: 1) contradiction within each component of activity system, 2) contradiction between components of activity system, 3) contradictions between the object of the dominant form of activity and the object of a culturally more advanced activity, and 4) contradictions between each entity of dominant activity and the entity-producing neighboring activity. The dialectic relation also extends to the link between individual and society. As Roth (2004) explains, individuals—as a constituent part of the society—can contribute to bring about changes in action and activity systems. Thus, each action is understood as transformational, changing the life conditions and learning contexts.

Wells (2000) summarizes six implications of artifact-mediated joint activity. First, the classroom is viewed "not simply as a collection of individuals but as a collaborative community that works toward shared goals." Second, the learning is not conceptualized as an acquisition of isolated skills, but as purposeful activities that involves the whole person. Third, each activity is understood as unique and situated because it involves particular individuals in a particular context, with particular artifacts. Fourth, the instructional focus is to engage the students in productive activities to carry out personal and social meanings, instead of simply covering the curriculum. Fifth, the learning outcomes are not known in advance but emergent in the process of problem solving activities. Sixth, the development is conceptualized as "rising above oneself" both for individuals and communities because problem-solving activities always require diversity and originality of possible solutions (p. 58).

Language ideologies within scientific activity. A growing body of research in science education fields, drawing on the socio-cultural-historical perspective, focuses more on creating positive learning environments that support ELs beyond deficit theories (Ballenger, 1997; Kelly & Breton, 2001; Luykx, Lee, & Edwards, 2007; Pappas, Varelas, Kokkino, Ye, & Ortiz, in press; Rosebery, Warren, & Conant, 1992; Varelas, Kane, Tucker-Raymond, & Pappas, 2011; Warren, Ballenger, Ognowski, Rosebery, and Hudicourt-Barnes, 2001; Warren & Rosebery, 1996). This body of work draws attention to the complexities of teaching and learning when ELs are learning English and scientific Discourse[2] simultaneously. Thus, the instructional focus is shifted to the question of how instruction can best support the ELs (or bilingual learners), allowing their use of multiple mediational tools (e.g. code-switching, gestures, diagram, and mathematics and science knowledge children bring from their everyday lives).

The studies that I present in the following paragraphs (Ballenger, 1997; Kelly & Breton, 2001; Pappas et al., in press; Roseberry et al., 1992; Warren et al., 2001) commonly talk about considering students' L1 as a resource that provides the students more opportunities to use scientific Discourse. They discuss the issues of equity of access for linguistic and ethnic minority students in science learning. Also, the concept of L1 is expanded to include both students' home language and the home discourse practices; and, the integration of students' everyday sense-making (or forms of talk) and scientific Discourse are encouraged.

Drawing on sociocultural perspective on science learning, Rosebery et al. (1992) argue that science for ELs need not focus on teaching English; rather, language—both L1 and L2— needs to be a means for constructing and communicating scientific meaning. Thus, their study shows that, through meaningful scientific inquiry process, students can expand their linguistic

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[2] I use the term scientific Discourse with a capital "D" to mean more than language, following Gee's (2008) definition of "forms of life which integrate words, acts, values, belifs, attitudes, social identities, as well as gestures, glances, body positions, and clothes" (p. 161).

repertoire in both L1 and L2. From a sociocultural view of learning, language is conceptualized as a tool—rather than the goal—within the activity system; and, activities are organized to achieve the goals mediated by language use (Razfar, Licon-Khisty, & Chval, 2011).

Warren et al. (2001) present two case studies of Haitian American and Latino students during scientific activity to understand metamorphosis and experimentation, respectively. In the first case, Jean-Charles, a 6th grade Haitian immigrant child to the United States, looks disadvantaged in two ways. First, he is neither fluent in his first language—Haitian Creole—nor fluent in English. Second, his ways of talking engaged in the home are seen far from academic form of language. His 6th grade classroom is co-taught by one ESL teacher and one Haitian Creole bilingual teacher. These teachers respect their students' first language in both senses. For example, the children provide scientific definitions about the meaning of *metamorphosis* in everyday ways of talking and thinking, including their personal experiences and joking. Furthermore, Jean-Charles freely uses the language he knows best (Haitian Creole) then later on English, as a tool to explain his scientific ideas about metamorphosis. Even though there is no word equivalent to *metamorphosis* in Haitian Creole, Jean-Charles uses two different forms of verb—*vin* (becoming) and *vin tounen* (becoming and turning into)—to explain the stages of metamorphosis in Haitian Creole language. By including ELs' diverse intellectual and linguistic resources, this study challenges the traditional explanation of achievement gap in low-income and linguistic minority students from more privileged monolingual students. Similarly, Ballenger (1997) identifies how the non-traditional scientific discourse style of storytelling or joking offers multiple points of entry to scientific discourses such as interpreting evidence and making claims.

In Kelly and Breton (2001), there are considerable discursive works in three bilingual classrooms (one 3rd and two 5th grades) to introduce the scientific constructs of going through

scientific investigation process—including problem identification, documenting observation, and investigating variables. The teachers create the space of instructional conversations and position the students as scientists. Furthermore, the students in this classroom often code-switched into Spanish to express their ideas; and, the bilingual teachers regularly code-switched to restate students' comments, ask questions, or explain the construct (e.g. specifying the meaning of scientific "problem" or "observation" in Spanish). Thus, the academic content is presented in two languages—English and Spanish—allowing more opportunities to talk science for linguistic minority students.

In Pappas et al. (in press), the regular code-switching from the bilingual teacher and students creates more inclusive classroom discourse patterns. In addition to the dialogic nature of classroom discourse with *intertextuality* (Pappas, Varelas, Barry, & Rife, 2003), the use of code-switching further encourages the bilingual students' continuous participation. For example, the bilingual students code-switch into Spanish to present their scientific ideas of changing state of matter (e.g. from ice to water) based on their observation from everyday life. Other times, the teacher code-switched to paraphrase or translate the scientific Discourse into Spanish, especially when she does not get enough of a response or when the text was too dense; and, the use of code-switching functions to encourage bilingual students' participation. Using students' L1 offers them more opportunities to think about the idea and communicate their struggle when making sense of it.

Other studies report some challenges to integrate students' everyday knowledge or L1 with the scientific Discourse because of the English-only instruction with the lack of systematic bilingual program support from the school and district (Moje, Collazo, Carillo, & Marx, 2001) or the teacher's insufficient knowledge of science to effectively teach (Westby, Dezale, Fradd, &

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Lee, 1999). Taken together, Vygotskian-type socio-cultural-historical research emphasizes the

scaffolding support and the use of students' L1 as a mediational tool. Also, children's use of two

languages (or code-switching) in the classroom is not considered as an individual phenomenon

but as a complex social activity tied to the speakers' communities (Gumperz, 1982; Zentella,

1997). Cook (2001) also emphasizes naturalness in learning with code-switching where the

teachers use L1 as a tool so that L2 learners feel more comfortable about the topics and content.

Some of the studies in mathematics education field provide further insights to understand

the important role of utilizing ELs' L1 for content learning. Moschovich (2007a) explains code-

switching as a resource for mathematical communication by focusing on the analysis of

interlocutor, domain, topic, role, and function. One of the important insights that Moschovich

(2007a) provides is the relationship between the history of instructional experiences provided in

students' L1/L2 and their code-switching patterns. In this study, for example, the students' code-

switching the English word "steep" within Spanish conversation—"Entonces, si se acerca más,

pues es menos *steep* (= Then, if it gets closer, then it's less steep)"—is not interpreted as an

indication of missing word. Instead, the author interprets that the bilingual students choose more

familiar word "steep" instead of "empinada (=steep)" because the previous instructions and

worksheets were mostly provided in English. The implication of this study result explains that

the bilingual child's language choice is dependent on the way as they are spoken to or taught

with a specific language. Thus, understanding the history of previous educational experiences is

important in interpreting the students' language choice.

Gutiérrez (2002) provides some useful advice in working with ELs to encourage students

to use L1, work in small groups, build on familiar knowledge, and know the specific linguistic

needs of students. Essentially, this study emphasizes the *spaces for the possible*—for example, a

mathematics classroom where ELs are active participants beyond a deficit view (p. 1056). Three teachers in this study, working with predominantly Latina/o students, present the sharp knowledge of their students' linguistic backgrounds and specific needs, instead of categorizing all Latina/o students as monolithic group or simply relying on their ethnic affiliations to assume language proficiency. In these teachers' classrooms, students assist each other using Spanish, English, as well as hybrid languages, work as groups to solve problems, and use teacher-made materials to learn mathematical concepts. More importantly, although these teachers do not speak Spanish, they successfully create a learning environment where bilingual students flourish by honoring diversity and providing opportunities of mathematical discussions. The teachers' conceptions of bilingual learners and their language use—language ideologies—mediate the social organization of learning.

Many researchers in science and mathematics education fields, drawing on the socio-cultural-historical view of learning, identify the difficulties ELs face in content area learning thereby capitalize using students' L1 as a tool. However, a gap in the literature exists. There is a lack of study that explicitly analyzes the significant role of teachers' language ideologies for their educational practices and ELs' learning. Furthermore, the theme of transformation to improve the education of EL is missing in these reviewed studies. Thus, in the following part, I present the role of action research in educational research.

Action Research

Action research—or participatory action research—is defined as "the process of studying a real school or classroom situation to understand and improve the quality of actions or instruction" (Johnson, 2008, p. 28). Mills (2003) extends this idea with the following definition:

> Action research is any systematic inquiry conducted by teacher researchers to gather information about the ways that their particular school operates, how they teach, and how

well their students learn. The information is gathered with the goals of gaining insight, developing reflective practice, effecting positive changes in the school environment and on educational practices in general, and improving student outcomes. (p. 4)

Carr and Kemmis (1986) also explain action research as "a form of self-reflective inquiry" to improve and understand teacher practices (p. 162).

According to Mills (2003), the reflective practice includes two components of action research: teacher researcher's self-reflection and changes in practices. Reflection is intimately related to action (Dewey, 1993; Hatton & Smith, 1995; Schön, 1983, 1987). Thus, Schön (1983) uses the terms "reflection-on-action" and "reflection-in-action" (p. 68)—teachers reflect on their practice after the action has taken place (reflection-on-action) as well as while they are acting (reflection-in-action). Usually, the development of complex and deeper level reflection takes more extended time period (Hatton & Smith, 1995).

Among variety of approaches to promote reflection, action research project is identified as one strategy (Sparks-Langer & Colton, 1991). In educational action research, teachers are often positioned as researchers who follow the cyclical process of action research. For example, they follow the cyclical inquiry with "look-think-act" routine and repeat this process (Stringer, 2007, p. 8). Similarly, Noffke and Stevenson (1995) also describe action research as a "non-linear pattern of planning, acting, observing, and reflecting on the changes in the social situations" (p. 2). Carson (1990) identifies this cycle as a significant component of action research because this process establishes reflective action change. Thus, action research result is expected to show the participants' changes in both reflection and action. Usually, action research is carried out within the context of teachers' own classroom or school where they work.

Action research provides "alternative epistemological approaches" to teacher development, with the emphasis on the teacher *empowerment* and *transformation* (Razfar,

2011b, p. 40). Action research is a form of professional development supporting teachers to become more reflective educators; thus, they can make careful decisions for their pedagogical practices (Licklider, 1997). The action research helps the teachers gain a reflective space for their pedagogical practices—for example, they take field-notes and/or analyze videos (Bayat, 2010). Professional development can be described as practitioner's professional growth (Way, 2001). It also supports the shifts in teachers' focus to their students so that they can investigate what their students are thinking (Tabachnick & Zeichner, 1999). As Liberman (1995) explains, the effective professional development needs to be grounded within inquiry, reflection, and participant-driven experimentation, as the teachers take new social role as teacher researchers. There are also some empirical studies that show the supportive evidence of collaborative action research as a form of professional development (Catelli, 1995; Friesen, 1994; Levin & Rock, 2003). These studies report how useful action research is as a form of professional teacher development in an internship setting. They further argue that action research is a way to improve both pre-service teacher education and in-service teacher professional development.

Action research theorists distinguish three different levels of reflections: technical reflection, practical reflection, and critical reflection (van Manen, 1977; 1997). The technical reflection is concerned with the value of means, or program, in changing the outcomes of practice. Practical reflection is concerned with the self-education of practitioners. Finally, the critical reflection considers both teachers' action and socio-cultural-historical contexts. It seeks self-reflection of practitioners as well as a critique of their work in the social milieu. The teachers are empowered by conducting action research because they use collected data for decision making for their professional growth and development (Stringer, 2007). Action research

has the potential to create communities of teachers and researchers that actively collaborate to extend their practical and professional knowledge (Hudson, 2003).

Ferrance (2000) distinguishes four types of action research: 1) individual teacher research, 2) collaborative action research, 3) school-wide action research, and 4) district-wide action research. As Ferrance (2000) explains, individual teacher research usually focuses on a single issue in the classroom, seeking for solutions to problem. Collaborative Action Research (CAR) may include few or several teachers and others who are interested in addressing classroom issues; and, the teachers get some support from individuals outside of the school. School-wide research and district-wide research focus on issues that are common to the school or the district. Often, action research in schools is a collaborative activity among participants, searching for solutions to improve education.

The context in action research or professional development lends itself to particular kinds of reflection. For example, my case study teacher participated for the larger school-university CAR project that specifically focused on the professional development effort with in-service teachers who were working with EL populations. The shared goal of larger research project was to help the teachers to become more responsive to ELs' linguistic and cultural needs for content area learning. Mediated by the additive language ideologies of the project, Carmen became more conscious about her language practices in the classroom. In the process, the multiple levels of collaboration among participating teachers and researchers also functioned as a context of developing reflection and action change.

Often times, it is difficult to have the teachers write the accounts of their action research experiences to publish so that the wider audience can share their experiences. Thus, the collaboration between teachers and university researchers can facilitate—not to take over—to

report this process and its findings about the changes in practice without losing the practitioner's perspective. Thus, the action research demands the skills from two types of professionals: teachers who teach everyday and educational researchers who can help teachers critically examine their teaching to improve practices.

Another characteristic of action research is the degree of empowerment given to all participants—teacher, students, and researcher—as they contribute to the negotiation and discovery of meaning from the data. There is no predominance of researchers' interpretations over the participants' meaning. This relationship challenges the traditional relationship between teacher educators and practitioners that "the teachers are usually the objects of researchers' investigations and then ultimately are expected to be the consumers and implementers of their findings" (Cochran-Smith & Lytle, 1990, p. 3). Pappas (2007) explains four main characteristics of collaborative action research (CAR): (1) CAR allows mutual understanding between teachers and university researchers to work together in the whole process of setting a goal, planning research, analyzing data, and reporting results; (2) CAR puts an emphasis on the teacher-as-researcher role; (3) CAR improves teacher's professional development through new knowledge construction for future teacher inquiry; and (4) CAR emphasizes the project structure that requires recurring cycles of planning, acting, observing, and reflection. Given the project structure and the collaboration between practitioners and university researchers, our action research project shared many of these characteristics of CAR described above. However, I also acknowledge that the nature of collaboration also varied across multiple groups of teachers.

The underlying philosophical stance of action research is grounded in a qualitative research paradigm because action researchers study the world as they find them (Johnson, 2008; Stringer, 2007). Different from the traditional research that seeks for the generalizable

knowledge, action research can be understood as "a means or model for enacting local, action-oriented approaches of investigation and applying small-scale theorizing to specific problems in particular situations" (Berg, 2004, p. 196). The value of action research is in its power to make changes for everyday practice, based on the reflective process, for the benefit of individual or other similar circumstances. Both scientifically generalizable knowledge and richly described cases contribute to our knowledge base of teaching (Shulman, 1986).

Merging Language Ideologies, CHAT, and Action Research

In this last section, I merge language ideologies theory, CHAT, and action research to study the teacher's transformative language ideologies through action research:

Figure 2

Merging Language Ideologies, CHAT, and Action Research

Mediating artifacts:
Language ideologies and video coding sheets

Subjects

Action research (scientific activity in the classroom and video analysis activity)

Goals:
Transform language ideologies and educational practices

Community   Rules   Division of labor
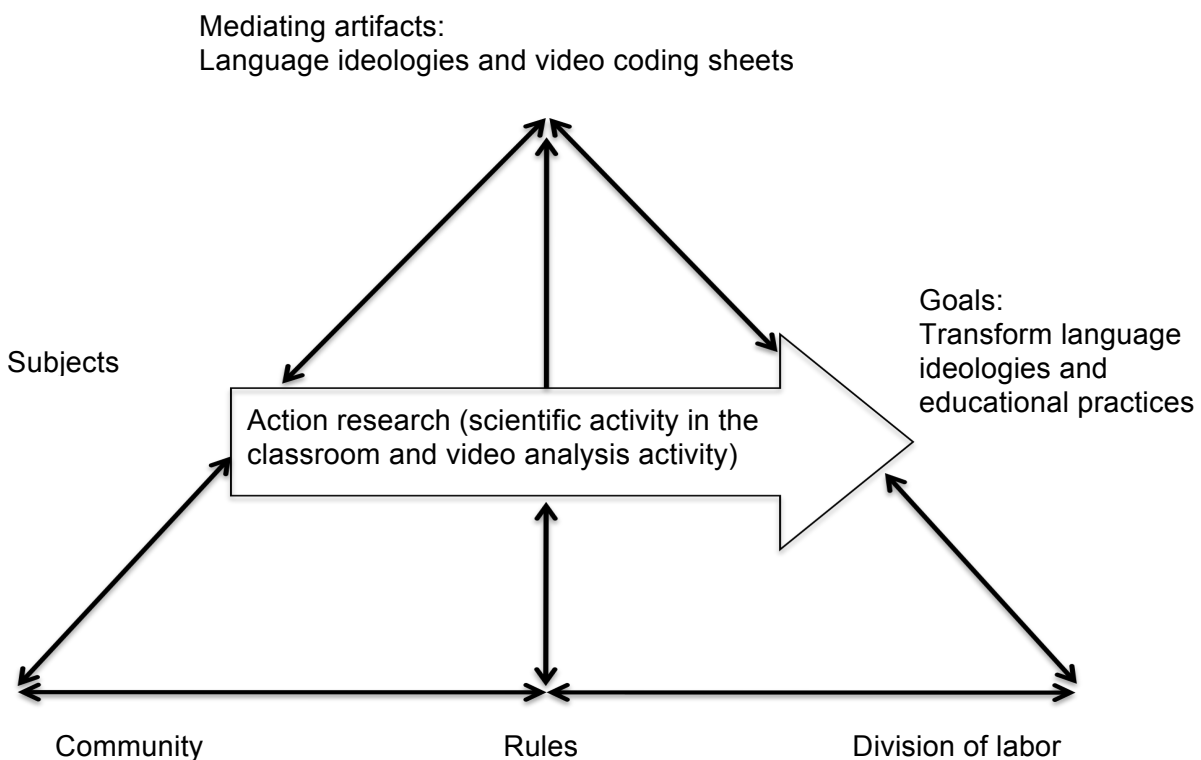
First, I merge language ideologies theory and CHAT. As Engeström (1987) explains, *mediational artifacts* can be both ideational and material. Expanding the notion of context to include language ideologies (Razfar & Rumenapp, 2011, Volk & Angelova, 2007), I particularly focus on the mediating role of language ideologies within activity system. Thus, in Figure 2, I situate language ideologies as mediating artifacts within the activity system.

Second, I bring language ideologies theory into the ELs' science learning classroom. For example, in Figure 2, I show how the scientific activity in the classroom is mediated by the language ideologies. My review of research about EL education in the science classroom identifies the lack of studies that explicitly analyze the significant role of teachers' language ideologies for their instructional practices and students' learning. I would like to contribute to this gap in the literature.

Third, I integrate the theme of transformation. Thus, I situate teacher's transformative language ideologies within action research activity. The participants in the larger action research activity system had shared goals. For example, in Figure 2, the goal of action research activity—including scientific activity in the classroom and video analysis activity—is to transform language ideologies and educational practices through teacher action research. Mediated by the additive language ideologies of the larger action research activity, the participants in this study already started with the assumption that the additive bilingual (multilingual) language practice is more beneficial than English monolingual language practice. Thus, we were all moving to bring about changes in educational practices. Focusing on teacher change through action research, my study is both descriptive and transformational. Action research is explained both as a practical tool for teacher professional development and as an activity system. These two aspects of action research are further discussed in chapter VII, with the mediating role of language ideologies.

Chapter III. Research Methodology

LeCompte and Schensul (1999) explain research design as a road map or blue print to conduct a formal research that requires the chain of the decision-making process. The first factor that influences this decision-making process is the researcher's underlying assumptions, epistemology, or worldviews (Pepper, 1942). The epistemological perspective that the researcher takes can anchor the research process by using theory, generating research question, choosing methods, collecting and analyzing data, and presenting it. In other words, the way the research question is pursued implies the researcher's epistemological stance; and, this stance influences the research design and analysis. As I reviewed the main conceptual frameworks in the previous chapter, the socio-cultural-historical and ideological view of language helped me choose a naturalistic, descriptive, and interpretive case study.

Qualitative Inquiry: Case Study

The definition of case study varies across scholars focusing on: 1) the research process of investigating contemporary phenomenon within real life context (Yin, 1994), 2) the unit of analysis as the case (Stake, 1994, 1995), or 3) the end product of holistic description of a single instance or social unit (Merriam, 1988). However, the key characteristic of case study is defined as a bounded system of a case (Merriam, 1998; Smith, 1978; Stake, 1994). Stake (1995) elaborates, "the case is an integrated system" (p. 2). Merriam (1998) also concludes that the most essential characteristic of case study is the clear boundaries that "fence in" the study (p. 27). The case of my study is bounded within one-year time frame and two activities—classroom activity and video analysis activity. Three action research units were spread out throughout one academic year.

As Yin (1994) describes, case study design is suited when the separation of the phenomenon's variables from the context is impossible. The strength of case study method has been explained with "its ability to examine, in-depth, a case within its real-life context" (Yin, 2006, p. 111). Thus, it helps the readers to rethink about the issues being studied (Stakes, 1994). My goal, with the case, was to understand the role of teacher's language ideologies for her pedagogical practices as well as the changes in her reflection and practice throughout a yearlong action research process. My main interests were more "in process rather than outcomes, in context rather than specific variables, and in discovery rather than conformation" (Merriam, 1998, p. 19). Consequently, the case study method was best suited for my descriptive and explanatory questions. As Abramson (1992) underlines, there is a value of unique or atypical cases that are "essential for understanding the range or variety of human experience and for understanding and appreciating the human condition" (p. 190). The intensive and holistic description and analysis of my case study teacher's counter-hegemonic language practice can be an example of unique case in the current political context of English-only.

According to Merriam (1998), qualitative case studies are particularistic, descriptive, and heuristic, relying on inductive reasoning from multiple data sources. The causal relationship or making generalization to an imagined population is not a primary focus of my case study; and, it is only left to be assumed by analytic generalization so that the readers could apply suggested implications for practice (Yin, 2006). However, this qualitative case study shows the credibility from the careful examination and reflection of logical arguments (Lincoln & Guba, 1985). While the task of interpretive researcher is to show the particularity of specific case, this criterion does not mean that the discovery of universality is impossible. Comparing one case with other cases studied in equally great detail could show "concrete universals" based on analytic generalization

as opposed to "abstract universals*"* arrived by statistical generalization from sample to population (Erickson, 1986, p. 130).

Ethnographic Techniques

Qualitative case study research requires me to draw on several ethnographic techniques—such as participant observation with videotaping, interviewing, and artifact collection—to examine complex real life phenomena. Linguistic anthropologists, sociolinguists, and educational researchers interested in socio-cultural-historical theories of language and literacy recognize the inseparability of language, culture, and context. The ethnographers of communication focus on "discourse-in-use" with the general question of "what is going on here?" and "who is using language and other semiotic tools to do what, with whom, to what consequences, when, and where?" (Bloome & Clark, 2006, p. 227). They seek to explore the functions of language and cultural patterns of language use in social interaction (Gumperz, 1982; Gumperz & Hymes, 1972; Hymes, 1974). Thus, being an ethnographer of communication means one ought to conduct research by observation and participation instead of testing, measuring, and experimenting (Delamont, 1976). While I borrow some of these techniques of ethnography, my end goal is not to present an ethnography—which has specific genre of reporting, such as narrative, with the specific focus on the culture. Instead, I present the case in the form of descriptive and interpretive analysis.

In traditional ethnographies, teachers and students are considered as objects of study. However, the collaborative model (Mills & O'Keefe, 1988) re-defines the roles of researcher and teacher. In this model, the teacher becomes researcher and the researcher becomes teacher through collaborative processes. The collaboration between researcher and teacher was emphasized throughout our research project. The mutual trust, communication, and negotiation

of meanings in defining goals and interpreting data need to be considered as a key for working

relationship between researcher and teacher (Mills & O'Keefe, 1988). Thus, I present the

findings through the teacher's perspective, without only privileging my perspective. For

example, I quote the teacher's own words in systematic ways along with my interpretation.

Researcher Positioning

This ethnographic case study is interpretive research. In interpretive research, the data

does not show the conclusion (Gaffney & Anderson, 2000). My reflexivity—internal dialogue

about and during the research process—also contributes to the construction of meaning in my

research:

> "Reflexivity requires awareness of the researcher's contribution to the construction of
> meanings throughout the research process, and an acknowledgment of the impossibility
> of remaining outside of one's subject matter while conducting research. Reflexivity, then,
> urges us to explore the ways in which a researcher's involvement with a particular study
> influences, acts upon, and informs such research" (Nightingale & Cromby, 1999, p.
> 228).

The researchers' own socio-cultural-historical experiences and conceptions of literacy contribute

to the way they understand and interpret the educational phenomena (Gutiérrez, Morales, &

Martínez, 2009). Being aware of any personal bias, I need to be sensitive to the biases of both

researcher and teacher. However, Peshkin (1988) concludes that this reflexivity can be seen as

"virtuous" that allows the researchers to make a "distinctive contribution that results from the

unique configuration of their personal qualities joined to the data they have collected" (p. 55). It

is necessary to explicitly introduce who the researcher is and to make the researcher's values and

beliefs about research topic transparent. The researchers have a responsibility to acknowledge

the main factors that influence their stance toward the people and the phenomena being studied

(Emerson, Fretz, & Shaw, 1995, p. 43).

First, my own language learning experiences in cross-national and cross-cultural contexts allowed me to have sensitivity to understand EL issues. I grew up in South Korea and came to the United States for my graduate studies. As I have been living in the U.S. for about ten years and raising a bilingual child, I recognize the important role of social context and culture in language learning. I claim that comprehension of language and social interaction requires the cultural understanding.

Second, I have my own position in language and literacy research field, influenced by the main conceptual frameworks presented in the previous chapter. The studies of educational difference between ELs and more privileged monolingual students can focus on the *remediation* to fix the deficit of students or the *re-mediation* to change the learning context (Gutiérrez, Morales, and Martínez, 2009). The different research foci are based on the multiple language ideological assumptions of the researchers. My main research interest centers on *re-mediation*— rather than *remediation*—to design the additive learning environment for ELs, through transforming language ideologies.

Third, mediated by the additive language ideologies of the larger action research project, the participants already started with the assumption that the additive bilingual (multilingual) practice is a better *cultural model* (Gee, 2008) than the subtractive monolingual model. My role, as a university research assistant, was to assist, guide, and lead the whole process of teacher action research. Thus, I mediated the teachers' changing process as well.

In this study, I position the researcher (myself) and the teacher (Carmen) as social-beings. The transformations occurred in the context of collaborative—rather than individual—action research process where researcher and teacher were co-participants. Thus, I present the findings through *intersubjectivity* (Scheff, Phillips, & Kincaid, 2006)—the sharing of subjective states by

more than one individual—between the researcher and the teacher. The meanings were co-constructed through our shared reflections during the video analysis process.

Context of Study

This study is part of a larger three year school-university collaborated action research project—named as Transforming Literacy, Science, and Mathematics through Participatory Action Research (LSciMAct[3])—in which thirty K-8 teachers worked with one university professor and four research assistants. As one of the research assistants in this larger research project, I worked with three participating teachers who were teaching at one school site during the 2010-2011 academic year. LSciMAct, teacher professional development research project, focused on in-service K-8 teachers' action research experiences involving EL issues, integrating knowledge from bilingual/ESL education, math and science education, discourse, and socio-cultural-historical theories (Razfar, 2007). LSciMAct aimed to address the growing need to integrate language, literacy, and culture with critical content areas such as mathematics and science; and, it was mediated by additive language ideologies, valuing ELs' linguistic and cultural resources as pedagogical tools in the classroom. LSciMAct aimed to prepare teachers to critically reflect on these issues and develop transformative action plan, through action research activity. Throughout action research process, teachers were expected to demonstrate an understanding of learning within a cultural historical framework (Engeström, 1987; 2001) as well as an understanding of mathematics and science as Discourse (Gee, 2008).

The re-mediation process included teachers' enrolling in graduate courses, practicing a pilot action research project, and finally participating into a yearlong action research project.

During the first year, teachers took graduate courses. For example, the introductory "Action Research and English Learner" course, where I was also a teaching assistant, was premised on the understanding that many of the difficulties experienced by ELs in the critical content areas—such as mathematics and science—is in part explained by educator's language ideologies that mathematics and science learning is independent of linguistic and cultural factors. At the end of this course, teachers conducted a pilot action research. During the second year, the teachers conducted a yearlong action research project with the cyclical process of plan-implement-analyze-report throughout Unit 1, Unit 2, and Unit 3 processes. During the third year, the teachers wrote their thesis as a final product of action research. My main data collection and analysis focused on the second year of the project when the teachers conducted action research in their own classrooms.

The broader context of this study is the linguistically and culturally diverse U.S. society. This context includes political struggles about language policies, with different ideological discourses (e.g. language as a problem, language as a resource, and language as a right). Since NCLB legislation (2001) was passed by the United States congress, the focus of educational reform has overly emphasized accountability and English-only practice, overlooking bilingual and biliteracy development. The educational practitioners and researchers who draw on socio-cultural-historical and ideological perspectives criticize the current educational context with English-only discourse that assumes literacy education is culturally and politically neutral. These researchers argue that accountability measures, based on high-stakes testing, has detrimental—rather than beneficial—effects on ELs' learning (Crawford, 2005; Lipman, 2004).

Research Site and Participants

      School site. Grimm Elementary School (pseudonym) is located in a large urban context in the Midwest of the United States. The majority of students come from low-income background and about 35% of students are categorized as ELs. At the time when this study was conducted (2010-2011 academic year), the largest demographic at Grimm was Asian (41.9%) and the second greatest demographic was Hispanic (29.8%). With the students' needs for linguistic support, Grimm has Urdu-, Vietnamese-, and Spanish-speaking teachers from kindergarten to eighth grades. For example, the teachers move around grade levels according to language population. However, the bilingual support system is based on transitional model—students get linguistic support kindergarten through third grade and are expected to test out of the bilingual program from fourth grade. Furthermore, there has been a slow ongoing shift at Grimm to push more English-only practice than bilingual strategies with increased accountability pressure with standardized tests and due to the time constraints. According to the literature, the language ideologies of transitional bilingual model is based on language-as-problem orientation because the students' L1 is viewed as a problem to be overcome and is only used until the students has acquired sufficient English to transition to the mainstream (Freeman, 2006).

      Participants. Within Grimm's context, my case teacher, Carmen (pseudonym), was teaching a third-grade Spanish bilingual class, with six years of teaching experience. Carmen's action research journey took place during the 2010-2011 school year. Carmen comes from a Panamanian mother and an Irish-American father. Even though there were some tensions between Carmen's grandmother and parents due to their different positions for language choice at home, Carmen's parents encouraged her to develop both Spanish and English as she grew up. Carmen used to attend a Spanish-English dual-language school during her early school years—

kindergarten through second grade—in the Midwestern region of the United States. Then, Carmen's family moved to Panama; and, she went to school in Panama for third and fourth grades. After that, her family decided to move back to the United States permanently. So, from fifth grade, Carmen had her formal education in the United States; and, this was the time when her education was mostly done in English. Thus, she shared the language (Spanish) with the majority of the students in her classroom.

The majority of students in Carmen's classroom, during the 2010-2011 academic year, were Spanish-English bilingual students (16 out of 26) whose parents spoke mostly Spanish. However, there were some monolingual English speaking students (7 out of 26) and students whose home languages were Vietnamese (3 out of 26). These three Vietnamese-English bilingual students were relatively proficient in English and active participants in this classroom. Carmen explained that the reason that she had other language background students in her Spanish bilingual classroom was because the school needed to divide the number of students evenly among classrooms in each grade.

From the Unit 2 process, Carmen chose four focal students—Julia, Maribel, Luis, and Ernesto—to examine some of the changes in these students over time. The rational of selecting these four students was based on her observations during Unit 1. They were the most quiet and non-participatory students, lacking confidence in their own intellectual abilities. For example, Maribel was referred to the special education from her previous year teacher; and, Carmen understood Maribel's struggle with English in the classroom. Julia lacked confidence and always doubted about herself and her work. Luis and Ernesto were overly quiet and shy. According to Carmen, they were good at camouflaging themselves in the classroom, not wanting to be called on. These students were low or average-to-low ability students in the classroom. All four

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students were Spanish-dominant bilingual students from immigrant families; and, their parents only spoke Spanish. Carmen also wanted to have both girls and boys in the group. The table below describes focal students' profile:

Table 1

Focal Students Profiles

Student Name	Gender	Ability	Characteristic	L1
Julia	Girl	Average-to-low in math and reading	Lacked confidence	Spanish (Fluent) Parents only speak Spanish at home
Maribel	Girl	Low in math and reading	Referred to special education from the previous year teacher	Spanish (Fluent) Parents only speak Spanish at home
Luis	Boy	Average-to-low in math and reading	Overly quiet and shy	Spanish (Fluent) Parents only speak Spanish at home
Ernesto	Boy	Low in math and reading	Quiet and shy	Spanish (Fluent) Parents only speak Spanish at home

During the Unit 1 process, Carmen found out the lack of participation from these students; thus, she was expecting some changes in these focal students by utilizing their L1 as a tool in the classroom.

Curricula and Instructional Context

The action research project consisted of three units. Carmen initially started her action research project with the broad idea of dehumanization issue. Carmen asked her students about the things that made them feel dehumanized—feeling that they are not important. This idea first started from reading a book titled as *Thank You. Mr. Falker,* by Patricia Polacco—was a story

about a child who was diagnosed with dyslexia and was positioned as dumb. The students in

Carmen's classroom discussed that this child was dehumanized—or not treated as human—at

school. With this big idea of dehumanization, Carmen and her students walked around their

school community with a community map in their hands (See Figure 3).

Figure 3

Maps for the Community Walk
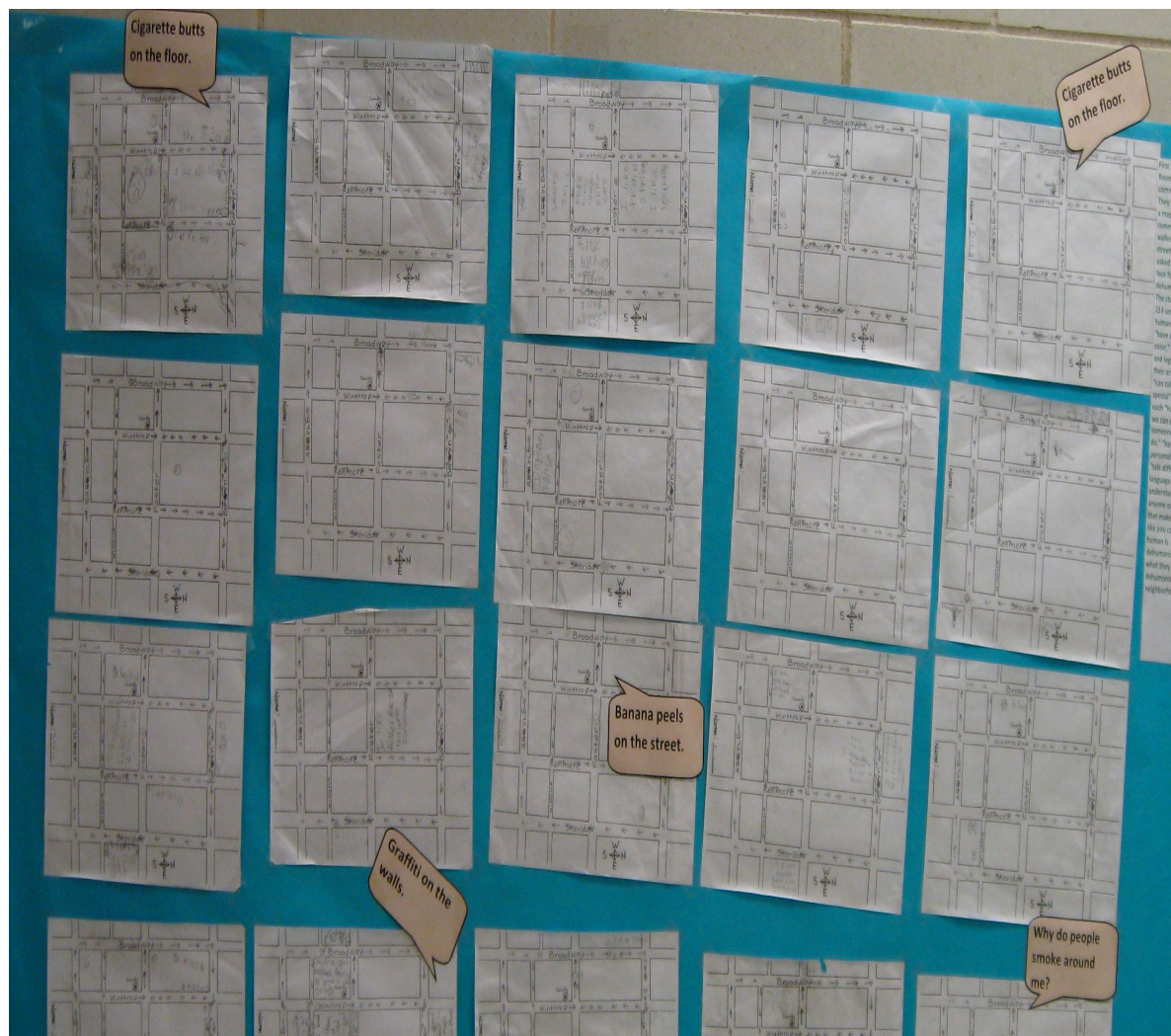
Starting from the initial question of "what dehumanizes you?" the class finally decided to work

on the anti-smoking project. The students thought that smoking was dehumanizing; and, they

developed a big research question of "how can we help people to stop smoking?" The class

discussed the harmful effect of secondhand smoking; and, the teacher asked the students about the actions they could do to help people stop smoking. Excited by this challenge, the students shared their ideas and action plans to solve this problem of cigarette smoking and secondhand smoking for our health. Thus, Carmen's three units for action research project focused on the theme of health issue—particularly, the anti-smoking scientific activity.

Carmen linked their research to the Illinois State Board of Education (ISBE) Science Standards:

Table 2

ISBE Science Standard

State Goal 11	Understanding the processes of scientific inquiry and technological design to investigate questions, conduct experiments, and solve problems
Description	11.A.1a Describe an observed event. 11.A.1b Develop questions on scientific topics. 11.A.1c Collect data for investigations using measuring instruments 11.A.1d Record and store data using available technologies. 11.A.1e Arrange data into logical patterns and describe the patterns. 11.A.1f Compare observations of individual and group results.

The unit lessons focused on going through scientific inquiry process—identifying problem area, collecting data, analyzing data, and reporting conclusion—to study the harmful effect of secondhand smoking.

Table 3 below explains the main scientific activities across three units. Each unit was implemented within four week period:

Table 3

Main Scientific Activities within Anti-Smoking Units

Unit 1: Identifying Problem	Community walk and discussion • Generate research question and sub-questions and categorize them. • Read an article related to cigarette smoking. • Conduct pilot home survey (number of smokers in my family).
Unit 2: Observation and Data Collection	Studying secondhand smoking effect • Read an article. • Watch the video clip "what is in a cigarette?" • Conduct a cigarette observation. Studying people's knowledge about smoking effect • Record secondhand smoking exposure experience in field-notes. • Create a survey to learn people's knowledge about smoking. • Make a tally chart with survey results and interpreting the patterns.
Unit 3: Data Analysis and Reporting	Making Public Service Announcement with survey result • Interpret the survey result graph. • Create Public Service Announcement for the people in students' own community (e.g. "According to our survey, only 15 of 65 people know that cigarettes can cause your heart to slow down, and that tells us a lot of people don't know different ways cigarettes make you sick.").

In Unit 1, the class identified the big research question of "how do we get people to stop smoking?" As the conversation continued throughout the lessons, the students generated more sub-questions that they wanted to study. The following questions are some examples: How do people get addicted? How do people start smoking? What are the differences between the smoke from cooking and smoke from cigarettes? How do babies get addicted to cigarette while they are in the stomach? Why do people buy cigarettes instead of paying their bills? Are cigarettes dangerous? Who invented cigarettes? And, how do people stop smoking? Other activities during Unit 1 included categorizing these questions into groups and looking for

relevant information from reading articles about smoking. The class also conducted a pilot home survey to learn more about the number of smokers in the students' own families.

The Unit 2 activities focused on the secondhand smoking effect. The class went through the scientific investigation process of the smoking project, focusing on data collection and analysis. The students agreed that they needed to know all about the effects of secondhand smoking in order to educate other people. Thus, the students read article, watched video clip, and conducted cigarette observation. The students also wanted to know what people know or don't know about smoking. Thus, they collected data by recording their own secondhand smoking exposure experience in their field-notes and creating anti-smoking survey. Then, they analyzed the data, making graphs and tally chart with survey result sheet.

In Unit 3, the students worked for the final phases of scientific investigation—making conclusions of smoking research project using evidence from the Unit 2 process. The students focused on analyzing the survey graph; and, each group made one key conclusion sentence from analyzing survey graph. Using the research conclusion statements, each group of students created a Public Service Announcement video clip to educate people in the community about the dangers of smoking and secondhand smoking.

Data Collection

Video-recorded classroom activity. Each unit of Carmen's action research process consisted of three phases of planning, implementing, and analyzing. During the planning phase, the group meeting time was spent to plan unit lessons. During the implementing phase, I visited Carmen's classroom almost daily when she implemented the unit lessons. Each unit implementation lasted about 4 weeks; and, her daily lesson lasted about an hour. One video from

each week was selected. Thus, a total of twelve videos—four videos from each unit—were selected for analysis.

Audio-recorded video analysis activity. During the analyzing phase, Carmen and I had regular meetings to code and analyze the videos together. We used the video coding sheet (See Appendices E and F) and shared our reflections about language use in the classroom and changes in the focal students. The meeting conversations were audio-recorded and transcribed for further analysis.

Focus groups. In all forms of qualitative research, data collection through interview is a common method. The main purpose of conducting interview is to learn about the things that we cannot directly observe. As Patton (1990) explains, "the purpose of interviewing is to allow us to enter into the other person's perspective" (p. 196). Throughout a yearlong action research process, four focus groups were conducted (See Appendix A for the interview timeline). The questions were asked in a semi-structured format, focusing on the changes in teacher's language views and practice through conducting collaborative action research (See Appendix G). All focus groups were audio-recorded and transcribed for further analysis.

Other data sources. Other data sources included teacher's action research artifacts— Carmen's unit summary reports, pictures taken during the units, and material artifacts displayed in the classroom—as well as the video coding sheets that the researcher and the teacher coded together.

Data Analysis

As Merriam (1998) mentions, qualitative research is not a linear process but an iterative process of data collection, analysis, and reporting. My data analysis vacillated between reading the data and related literature, between inductive and deductive coding, and between description

and interpretation. Thus, my data analysis had two phases. The initial data analysis happened during the data collection process. For example, I organized data and developed analytic codes. More in-depth analysis was conducted when the formal data collection was finished. In this phase, I modified and connected codes to develop thematic story lines. My data analysis strategy included the *constant comparative method* (Merriam, 1998); and, it consisted with the recurring process of creating categories—or codes—of incident and comparing them with other instances. This process allowed me to present my findings through chapters within three main themes.

Reid (1992) explains that data analysis has three phases: data preparation, data identification, and data manipulation. During data preparation phase, I transcribed meeting conversations, focus groups, and videos. During data identification phase, I divided texts data into "analytically meaningful segments" (Reid, 1992, p. 126). This included inductively coding the data and making interpretive notes next to it. Finally, manipulating data included data sorting, retrieving, and rearrangement process. In the following part, I describe step-by-step process of my data analysis.

Analysis step 1. Once all the data was transcribed, the first step of my analysis was to read the transcripts of our shared video analysis meeting conversations, focus groups, and Carmen's unit summary reports. To analyze these data, I focused on teacher's evolving reflections about her language practices, based on our collaborative reflection. With my research questions in mind, I highlighted and open-coded these data. The first coding process was done in a word document using the highlight and comment tool; and, I created the concepts or name of codes "relevant to the data rather than to apply a set of pre-established rules" (Dey, 1993, p. 58). Thus, the coding categories emerged inductively—examining the data in the sample, and then developing their coding scheme—in the process of on-going data analysis, instead of pre-

determined (Boyatzis, 1998). Through an iterative coding process, more sub-codes were added; or, the existing codes were clustered together to make higher-level codes. Each code was defined with explanations and key words (See Appendix C). In managing and organizing my data, I discovered that less is actually more. At the same time, I allowed myself to have flexibility to add and modify the codes.

Analysis step 2. Twelve videos (four videos from Unit 1, four videos from Unit 2, and four videos from Unit 3) were analyzed, using the developed codes throughout analysis step 1. By reading our meeting transcripts that was marked by every two-minute increment of video clip, I could identify the portion of video clip to which Carmen and I referred.

Analysis step 3. As a result of the iterative process of data coding, I developed main themes to write three findings chapters. Creating different levels of coding required me to be more sensitive and conceptually congruent so that "the same level of abstraction should characterize all categories at the same level" (Merriam, 1998, p. 184). Once I finished coding in the word document, I coded these data using QSR International's NVivo 9 software (2010). The benefit of using NVivo software, for my case, was to retrieve data by thematic codes. This process helped me select the key evidence from thematically organized data.

Analysis step 4. The final process of data analysis was moving beyond the data toward developing theories. Thus, following the findings chapter, I further discuss the importance of teacher's transformative language ideologies in designing learning environment in relation to my main theoretical frameworks. As Yin (1994) explains, the goal of this qualitative case study is to develop theory-related generalization, through logical linking of the multiple sources of data, instead of statistical generalization.

Unit of analysis and analytic focus. My unit of analysis is a discourse practice mediated by the additive language ideologies within multiple activities. Two main activities in Carmen's action research are identified as: 1) the anti-smoking scientific activity in Carmen's classroom and 2) the video analysis activity that Carmen and I shared. My analytic focus is on the shared reflections about the teacher's classroom language practice as well as the changes in the teacher's language practices. I situate the transformations in the teacher's language practice within the collaborative action research journey. Another analytic focus is on the way the researcher and the teacher collaboratively reflect on the shifts in focal students throughout the year.

Chapter IV. Action Research for Teacher Transformation

Through participating in a yearlong action research process, Carmen experienced multilayered changes. These transformations in Carmen support the idea that the effective professional development needs to be a long-term and reflective process, instead of a one-day workshop. In this chapter, I situate Carmen's transformative language ideologies within the action research process.

By analyzing the transcripts of researcher and teacher shared video analysis meetings and focus groups, I developed a code—*action research*. The iterative process of data analysis allowed me to identify the key components of Carmen's action research as: 1) video coding tool, 2) collaboration, 3) reflection, 4) action change, and 5) challenges.

Figure 4

Components of Carmen's Action Research
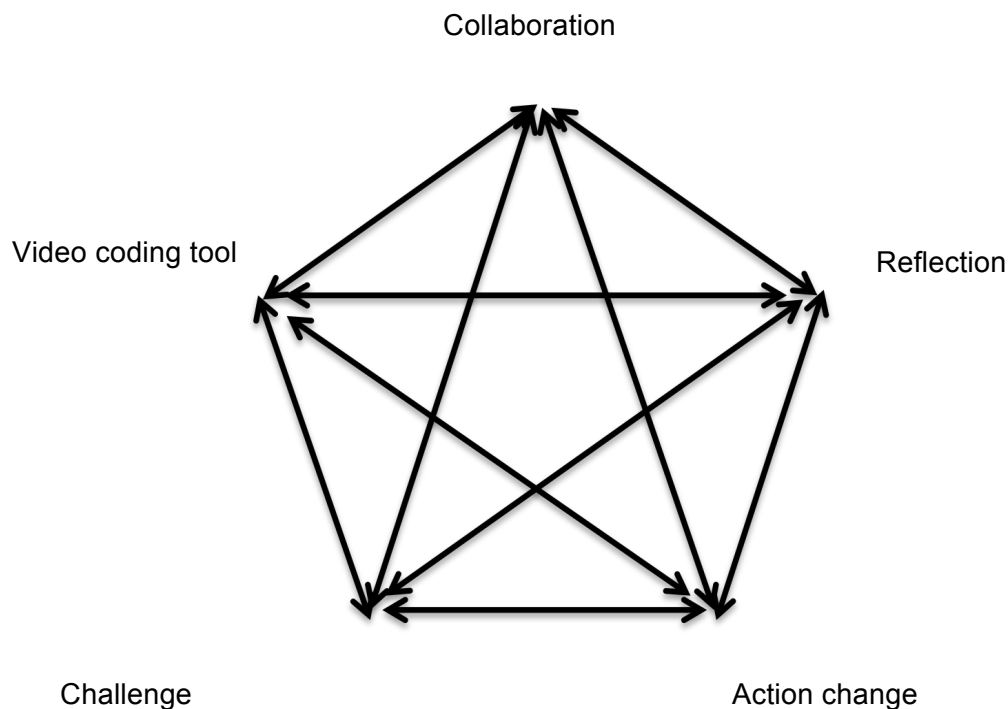
The first component of Carmen's action research is the use of a *video coding tool*. This component is marked when Carmen talks about her use of the video coding sheet as a tool to reflect on her classroom language practices. I also analyzed the use, function, and modification that she and I made to the video coding tool during our shared video analysis processes. The second component is *collaboration*. Carmen's action research process was a collaborative, rather than individual, learning process within the larger activity system of action research. There were multiple levels of collaboration in Carmen's transformative action research process—including teacher and researcher collaboration and teacher group collaboration. The third component, *reflection*, is identified with Carmen's use of reflective verbs such as: realize, understand, look, discover, believe, know, think, and see. The fourth component is *action change* that Carmen made across units. The final component of Carmen's action research is *challenge* to bring about changes in language practices by implementing action research.

The arrows in Figure 4 explain the cyclical process of action research in multiple directions. For example, video coding tool promoted Carmen's reflections as well as action change; and, new reflection and action change also helped the teacher to modify the video coding tool. This tool facilitated the collaboration between researcher and teacher; and, the collaboration mediated Carmen's use of video coding sheet. Using the video-coding sheet was challenging for Carmen; thus, the researcher provided some scaffolding assistance to the teacher's using the coding sheet.

Video Coding Sheet as Analytic Tool

While Carmen was a self-reflective teacher, the use of video coding tool further facilitated her reflection of classroom events in a new perspective. In the Focus Group transcript

below, Carmen reports that utilizing the coding sheet allows her to become more reflective and

analytical:

> [Focus Group 3: Carmen, 05/09/2011]
> 01   When you see coding sheet, it forces you to **look deeper** and to **look for patterns** and to
> 02   **make you think in a way you would have never thought of before.**

In this interview transcript, Carmen talks about the benefits of using video coding sheet as a push

to become more analytical. For example, she explains how the video coding sheet forces her to

"look deeper" (line 01), "look for patterns" (line 01), and think in new ways that she "would

have never thought of before" (line 02). This comment—"[using video coding tool] make[s] you

think in a way you would have never thought of before"—explains how Carmen takes on a new

social role as a teacher researcher.

Furthermore, Carmen reported how the video analysis process with coding sheet allowed

her to see the classroom event differently:

> [Focus Group 2: Carmen, 01/31/2011]
> 01   You are able to **see** things. I think that's the part of it. When you are a teacher, you are
> 02   just in the moment and it passes you by. You don't really have that time to sit and **think**
> 03   like "okay, how do I answer to this?" (…) And so, it (video coding analysis) really does
> 04   give you an opportunity to take a look and sit down and breathe a little bit and **see** just
> 05   how effective you may or may not be teaching them. (…) So, in the moment, I don't
> 06   even know what's wrong. (Transcription skipped) But, when I was able to sit down and
> 07   look at the videos, I **realized** it was not working because I didn't prepare for them.

In this interview transcript, Carmen reports how the action research—particularly, video coding

analysis process—provides her an opportunity to "see" (lines 01 and 04), "think" (line 02), and

"realize" (line 07) her classroom, her students, and her language practice in a new perspective.

Carmen also reports that the action research process allows her to reflect on her practice that

usually "passes by" (line 02) when she is in the moment of instruction. Based on her use of

reflective verbs (e.g. see, think, and realize), I recognize that Carmen was becoming more self-

reflective and analytical through the video coding analysis.

Modifications. There were some modifications that Carmen and I made on the video coding sheets to make the analysis have more meaning for us.

Figure 5

Unit 2: 03/22/2011 Video Coding Sheet (From LSciMAct)

Initially, Carmen was only asked to mark the tallies on the coding sheet whenever she saw the relevant code(s) in the videos. However, as shown in the figure above, I added a comment column and suggested Carmen utilize it to write some memos or analytic comments about what she was noticing in the videos. As seen in the figure above, she frequently made use of this new section.

[Unit 2: 03/28/2011 meeting for 3/22/2011 video analysis]
01   Eunah: I added one column, comment, cause sometimes you want to add some
02   comments like "Oh, I think this is why." "Whose participation shifted."

As shown in Figure 5, Carmen wrote down some notes not only in the comment box, but also in

the coding box. This also illustrates how Carmen, as an active participant within this video

analysis activity, modified the coding sheet for her analytic purposes.

As we analyzed more videos, Carmen's note on the coding sheet became more complex:

Figure 6

Unit 2: 03/29/2011 Video Coding Sheet (From LSciMAct)

The analytic notes in Figure 6 are more complex than those in Figure 5. Carmen wrote down

more notes in the coding box, with the tallies, to explain the meanings and relationships across

codes. This level of analysis helped Carmen become reflective about the language practices in

the classroom. For example, in minute 6 of 3/29/2011 video coding sheet (Figure 6), Carmen

linked two codes—*assistance* and *multiple languages*—and put a note "Julia to Maribel" to

explain Julia's peer assistance in Spanish for Maribel. With this linking, Carmen and I discussed

the function of Spanish use as peer assistance.

Another modification we made to the analysis during the Unit 3 process was the

expansion of the coding sheet to provide the ability to write down more comments. Since

Carmen was writing down more comments in the coding box, I suggested that she expand the

coding sheet. She agreed to this idea. During the focus group conversation with other teachers,

Carmen shared her modification to the coding sheet for analytic purposes. Carmen mentioned

writing down some reflective comments on the video coding sheet, instead of simply marking

the tallies. This annotation was much more helpful for her:

> [Focus Group 4: Carmen, 08/01/2011]
> 01   So it (expanding the sheet) was also really helpful when I was doing the coding sheet
> 02   to kind of write down what was going on or things that I noticed as opposed to just
> 03   putting down a tally. (Transcription skipped a couple of lines)
> 04   So, to be able to write down what's going on is so much better than the tallies. And I
> 05   even/ um **we** even put like a note section. So, if there was anything else that **you** want to
> 06   add but didn't really fit in that specific box, **you** could still add that and it was still
> 07   helpful cause when **you** look back and **you** kind of make those connections between the
> 08   codes to see what was going on (.)/

The transcript above describes the collaborative nature of the analysis process in Carmen's

action research. First, Carmen uses a plural first person pronoun "we" (line 05) to explain the

modification to the coding sheet. With this pronoun, Carmen includes me, the researcher, as part

of her analysis process. Second, she shares this modification with other teachers. Carmen uses

the second person pronoun "you" (lines 05, 06, and 07) to give suggestions to other teachers.

This is evidence that Carmen's transformative language practices happened within the collective

activity system of action research.

Once she expanded the coding sheet in the Unit 2 analysis process, Carmen continued to

use this expanded coding sheet in Unit 3:

[Focus Group 4, Carmen, 08/01/2011]
01   I did that (expanding the video coding sheet) in Unit 3 and Unit 2. But the boxes were
02   still really small [in the original coding sheet]. (Laughing) But **once the boxes got**
03   **larger, we were able to just write down notes**.

Another modification to the coding sheet was linking multiple related codes on the

coding sheet. This happened during the Unit 2 and Unit 3 processes. In the coding sheet below,

note how Carmen makes connections across multiple codes:

Figure 7

Unit 3: 05/20/2011 Video Analysis for Code A-E (From LSciMAct)

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Figure 7 presents an example of Carmen analyzing the function of Spanish. In minute 28 and

minute 44, she wrote down "code-switching because of comfort" on the *multiple languages* code

box and also links this code with the *scientific Discourse* code. Carmen explains that the focal

students are having scientific Discourse in Spanish (code-switching) because they are feeling

more comfortable to express their ideas using two languages. As I present later in chapter V, I

further analyze this function of Spanish use as *affinity*—using Spanish helped the students

develop *affinity* to science.

More examples of linking multiple codes are shown in the coding sheet below:

Figure 8

Unit 3: 5/19/2011 Video Coding Sheet for Code D-J (From LSciMAct)

In the last row of Figure 8, Carmen linked four codes: *assistance*, *multiple languages*, *IRE*, and *role shift*. Since the expanded coding sheet is more spread out, the code *assistance* is not shown in this figure. However, in the last row, Carmen wrote down "peer assistance" in the *multiple languages* column to explain the function of Spanish as *peer assistance*. In the *IRE* column, Carmen wrote down "student to student." In the *role shift* column, she wrote down "Julia into teacher" to explain Julia's taking the teacher's voice. Thus, Carmen analyzes the function of Spanish with these four codes together. For example, Julia assists Maribel in Spanish, speaking in IRE discourse style; thus, Julia's role shifted into that of a teacher. This complex linking process allowed Carmen to make a deeper analysis about the language practices and changes in students.

In the transcript below, Carmen reports her making more complex links across multiple codes in the Unit 3 coding sheet than she did in the Unit 2 coding sheet:

[Focus Group 4, Carmen, 08/01/2011]
01   Um **I did a lot more linking this unit (Unit 3).** Yeah. So how they would go together.
02   And then, sometimes I wouldn't be able to make the links obvious so I would write in the
03   last column where I can put notes for myself.

As Carmen explains above, she made more complex connections across multiple codes in Unit 3 (line 01); and, she wrote down more comments on the coding sheet with her linking so that the coding sheet became a useful tool for her unit analysis (lines 02-03). What is significant about these modifications is the depth of analysis in the Unit 3 process. Throughout our video analysis activity, mediated by video coding sheets, Carmen was developing a new social role as a teacher researcher. Gradually, Carmen saw the value of using the video coding sheets to analyze her practice throughout the Unit 2 and Unit 3 processes.

Collaboration

Previously, I explained Carmen's action research as a collaborative process within a larger activity system. For example, Carmen used the plural first person pronoun "we" to include me as part of her analysis process. She also shared her use of the video coding tools with other teachers during focus group conversations. Carmen's action research process involved researcher and teacher collaboration as well as teacher and group collaboration.

Collaboration between researcher and teacher. Throughout our shared video analysis meetings, Carmen and I were co-participants and learners. Our video analysis activity was based on the mutual trust informed through dialogic conversation. When Carmen shared her reflections while watching the videos together, I was a listener. Other times, I mediated her analysis process. We shared our reflections while watching the videos together. Since Carmen wanted to work with me for her video analysis, I sat down with her to model how to code as we watched the videos. I learned that Carmen needed some scaffolding to critically reflect on her practices. As we continued working on the video analysis, Carmen also provided me with some new insights.

The transcript below illustrates how I provide scaffolding for Carmen:

[Unit 2: 03/28/2011 meeting to analyze 03/22/2011 video, min.12]
01	Carmen:	So Julia, usually, she never participates.
02	Eunah:	***Participation shift?*** ***Participation shift*** **means** when some kids who usually
03		don't participate begin to raise their hands and start to participate more.
04	Carmen:	The other thing is ***modality***. Julia is actually really/ like when she was here
05		with Kristine, she would always be like "Kristine, did I do it right? Did I
06		do it right?" And now, she is the one like saying like "This is how you do it."
07		and walking somebody through something. You know?
08	Eunah:	***Role shift*** **too?**
09	Carmen:	I was wondering that.
10	Eunah:	Toward the leader role?
11	Carmen:	Uhu. But is that modality? No. That's not?
12	Eunah:	[yes] so, ***modality*** **is** speaking in more certainty.

In the meeting transcript above, Carmen talks about her awareness of changes in Julia—e.g. "Julia, usually, she never participates" (line 01). Following Carmen's comment, I point the code *participation shift* on the coding sheet and explain the definition of code (lines 02-03). When Carmen makes a comment about Julia's changes in modality with certainty (lines 04-07), I question if Julia also showed some *role shift* (line 08). I assist Carmen by defining the code *modality shift* (line 12).

Another level of scaffolding interaction happened when I explained how to use and modify the coding sheet. In the transcript below, I explain that Carmen can modify the coding sheet for her analysis (e.g. adding analytic comment or writing down functions of Spanish use):

```
          [Unit 2: 03/28/2011 meeting to analyze 03/22/2011 video, min. 8-10]
01        Eunah:    I see you check multiple languages code a lot.
02        Carmen:   Yeah.
03        Eunah:    So, maybe you can add note like/ I could see you were talking more in
04                  Spanish when they were silent or to clarify what you explained. If you see
05                  you are using Spanish as a tool/ So, there can be different why functions.
06        Carmen:   Okay. As a tool. But, is it also because it is for the assistance?
07        Eunah:    Yeah. I think these (assistance and multiple languages codes) are connected
08                  here. Using Spanish for assistance.
```

In this transcript, Carmen and I modify the video coding sheet, through dialogic conversation, so that the analysis becomes more meaningful to us. For example, I suggest Carmen to "add note" (line 03) and write down the "functions" of Spanish (line 05) on the video coding sheet. Throughout our shared video analysis meetings with the modified coding sheets, Carmen and I become more aware of the functions of Spanish use as a tool for ELs' learning

Other times, I asked some questions to push Carmen think more microscopically for her discourse analysis with coding sheet. The transcript below is one such example:

```
          [Unit 2: 04/18/2011 meeting for 04/13/2011 video analysis, min. 48-50]
01        Eunah:    Is their assistance also related to other codes?
02        Carmen:   Yeah. Assistance is definitely related to multiple languages. It's also related
03                  to modality (.)  Because it's their language of comfort, they are able to be more
```

04		certain what it is that they want to do and what needs to be done without
05		guessing themselves, without the pressure of "oh, I have to say this word. I
06		need to use this word. But I don't know how to say it in English" or "I know
07		the teacher used it but I don't remember and be stuck" and then unable to do
08		the task because there is language barrier.

In the transcript above, I ask a question about the relationship across codes—"Is their *assistance* also related to other codes?" (line 01). This question was also based on my observation during the meetings that Carmen already initiated to make connections across related codes. Following my prompt, Carmen provides explanations about her linking multiple related codes—*multiple languages*, *assistance*, and *modality* (lines 02-03).

Besides prompting with questions, I sometimes initiated sharing my reflection during the video analysis process.

		[Unit 2: 06/30/2011 meeting for 05/20/2011 video analysis]
01	Eunah:	Here, Maribel talked about the blood not going to your feet in Spanish. So, I
02		think they are//
03	Carmen:	They are switching yeah.
04	Eunah:	In Unit 2, we analyzed Maribel's saying "Batería, veneno de rata" in Spanish
05		when they were talking but, the video clip they watched was in English. So,
06		**do you aware of something about their language choice in Unit 3?**
07	Carmen:	Well, I think the code-switching shows comfort because it's obvious that they
08		are getting the same information in both languages. And so, it must just be
09		that they are comfortable being able to code-switch without any problem. The
10		content is there. They know what they are talking about in English and in
11		Spanish.

This transcript is an example of how Carmen and I collaboratively reflected on classroom language choice during the meetings. First, I shared my own reflection about Maribel's code-switching (lines 01). I also referred to another instance of Maribel's using both Spanish and English from Unit 2 (line 04-05). Then, I asked a question to hear about Carmen's reflection on the students' language choice (line 06). This question mediated Carmen's reflection on the students' classroom language practice. For example, she explained the use of code-switching as "comfort" (lines 07 and 09). It also provided a space where I could learn more about Carmen's

language ideologies. For example, I learned how Carmen considered the content learning more important than the students' language choice (lines 09-11).

During the video analysis meetings, I also tried to push Carmen to make connections between what we were doing with the coding sheets and her unit report writing so that she could see the macroscopic view of action research beyond the coding sheet analysis activity:

[Unit 2: 04/18/2011 meeting]
```
01    Eunah:    Oh, what were the questions that guided your action research process?
02    Carmen:   I think it was that (.) One, how can language be used as a tool?  Two, what
03              happens when students are grouped together, when the shy kids are grouped
04              together?
05    Eunah:    And any other point? How about math and science Discourse?
06    Carmen:   Yeah. I wanted to see if I can push myself to incorporate more math and
07              science Discourse. I think that was something that I really wanted to
08              incorporate because I didn't really see it in Unit 1.
09    Eunah:    So what can be your third question?
10    Carmen:   How can I incorporate math and science Discourse in Unit 2?
```

In this transcript, I ask Carmen about her leading action research questions (line 01). Then, Carmen talks about her two main action research questions—language as a tool and shifts in students (lines 02-04). Then, I further ask a question to push Carmen to include the content component—scientific Discourse (line 05). Having the focus questions was helpful for Carmen to be more analytic during the video analysis process. They allowed her to make connections between the video analysis activity and writing action research unit reports.

Potential value of teacher group collaboration. Carmen often shared her reflections with other teachers in her school site. For example, previously, I explained how Carmen shared her modification to the coding sheet with other teachers during a focus group conversation. In the focus group transcript below, Carmen shared her Unit 2 reflections about using Spanish in the classroom with me and other teachers:

```
[Focus Group 3: 05/09/2011]
01    Carmen:   I think for me it was an eye opener. Even though I had like a feeling or gut
```

02	feeling about it, I have never really been brave enough to really implement it
03	or utilize it cause I felt like "oh, maybe I will be alienating other kids who
04	speak other languages." **But**, um having done it, I feel like the kids were fine
05	with it. You know? As long as they had a language that they were
06	comfortable with or that they were familiar with, they were fine. (…) There
07	is a potential for alienation. **But**, at the same time, I have to make sure, I don't
08	do that/ I don't do it in a way where they feel imposed on or inhibit.

In sharing her transformative language practices (e.g. using more Spanish in Unit 2 than in Unit 1), Carmen uses the contrastive conjunction "but" a couple of times (lines 04 and 07). This reveals her inner contradictions, or tensions, in thinking about the Spanish use in the classroom—between the potential alienation and supportive assistance.

Listening to Carmen's reflection on her language practice, Sally shares her thought:

09	Sally:	**But** it's almost like if you don't provide that support for the Spanish kids that
10		you have the ability to, you are alienating them. Like, you know, **you have**
11		**this ability and then, if you don't act on it** (.)//
12	Carmen:	Exactly. Yeah. No. I agree. **But** it was just/ it's (.) and so, that was the
13		realization that I came to that if I don't use it. I mean, I have it.
14	Sally:	Uhu. Uhu.
15	Carmen:	You know? **I have the ability. Why not use it?** And so, if I am not using it,
16		I am alienating the kids that I can reach by using language.
17	Sally:	Uhu Uhu.

In the transcript above, Sally identifies Carmen's bilingual ability as a resource in the classroom (lines 09-10). She also mentions the potential alienation when the teacher does not utilize her bilingual ability when the students need linguistic support (lines 10-11). This comment pushes Carmen to consider her bilingual ability as a resource—e.g. "I have the ability. Why not use it?" (line 15). Through this conversation, two teachers create a space of collaborative reflection to think about the Spanish use in Carmen's classroom.

There was another level of mentor-mentee collaboration between the teachers from the previous cohort, who had already gone through this action research process, and Carmen's group of teachers. For example, the transcript below illustrates the function of one mentor-mentee

meeting as relieving teachers' frustrated feelings and tension. Note how the words such as

"frustrated," "challenging," and "overwhelmed" were used multiple times by the teachers:

> [Unit 1: Meeting a mentor teacher Betsy, 10/28/2011]
> 01   Carmen: Um we were just talking about how like initially we were really **frustrated**
> 02   and kind of **overwhelmed**.
> 03   Betsy: Only initially? That's all?
> 04   All: (Laughing)
> 05   Sally: It's getting easier.
> 06   Carmen: It's getting easier. It's not (.)//
> 07   Sally: We are kind of in the middle of it.
> 08   Carmen: Yeah. So, I guess we were just wondering about your experience like if you
> 09   could let us know so that we are not going crazy.
> 10   Betsy: We were **frustrated** until the third unit.
> 11   All: Oh:::
> 12   Betsy: We were **frustrated** with the whole process. That was a very difficult
> 13   process. It was very challenging. We found it very **challenging**. And we
> 14   found also/ the outcome of it was that we made huge paradigm shifts in our
> 15   classrooms. But um, have you watched yourself teaching yet? Have you
> 16   done that?

In this transcript, Carmen initiates the conversation with the question about "frustrated" (line 01)

and "overwhelmed" (line 02) feelings in going through transformative action research process.

Then, Betsy shares her experiences of "frustrated" (lines 10 and 12) feelings with the teachers.

Through this mentoring meeting time, the teachers shared their uncomfortable feelings in going

through a transformative process. Thus, this meeting time created a community of practitioners

where they could share their reflections. At this meeting, I took on a quiet listener role so that I

could observe the teachers' interactions with one another.

Reflection

We had a specific order to the action research in which Carmen needed to follow the

cycle of Unit 1 (plan, analysis, report), Unit 2 (plan, analysis, report), and Unit 3 (plan, analysis,

report) so that . new reflection from each unit could become an impetus for her to implement

changes in the following unit. Thus, there was an evolution in Carmen's reflective and

transformative processes.

During the video analysis meetings with Carmen, I frequently heard her use reflective

verbs such as: look, see, discover, think, believe, reflect, understand, notice, discover, or realize.

In the transcript below, Carmen reports how the action research allows her to become more self-

reflective:

[Focus Group 2: Carmen, 01/31/2011]
01   It (going through action research process) definitely gave me an opportunity to **look at**
02   **myself** really in an in-depth way **so that um improvement can be made**.

For example, she uses the reflective verb phrases such as "look at myself" (lines 01-02). Her

comment—"so that improvement can be made" (line 02)—further implies that her actions may

change through reflection.

Carmen reported how the action research process helped her to become more self-

reflective about her role as a teacher:

[Focus Group 3: Carmen, 05/09/2011]
01   I think it (video analysis) also makes you to **look** at yourself, you know? It makes you
02   really **look** at how you interact with the kids. It makes you to **look** at how the labor you
03   put behind is really conducive to their learning and to them growing. And so, and it
04   makes you **reflect**.

In the transcript above, Carmen reports how the action research process allows her to reflect on

the teacher's role in designing learning context with the reflective verb "look"—for example, she

talks about how the teacher interacts with the students (line 02) and how the teacher designs the

learning environment so that the students can grow as learners (lines 02-03).

Throughout the collaborative action research process, Carmen reflected on the language

practices in the classroom:

[Focus Group 2: Carmen, 01/31/2011]
01   When I was able to sit down and **look** at the videos, I **realized** it's not working because

02   I didn't prepare any thing for them. (Transcription skipped a couple of lines)
03   I really need to be on the ball about being able to provide them with um mediational tools
04   and help them through conversation that really is a tool.

In this transcript, Carmen reports what she "realized" (line 01) as the lack of mediational tools

provided to the students in Unit 1. Based on her awareness, she also mentions the need for

providing more mediational tools to help students' learning (lines 03-04).

Throughout our shared video analysis, Carmen and I reflected on the functions of

Spanish. In the transcript below, Carmen talks about how she uses Spanish to assist her students'

learning:

[Unit 3: Carmen, 05/17/2011 meeting for 05/12 2011 video analysis]
01   Because in Unit 2, I **noticed** that they do use Spanish as a way to get through a task that's
02   too challenging for them, I decided to make a point to use Spanish to be able to guide
03   guide them through the task because I **noticed** they weren't doing that.

Carmen shares what she "noticed" (lines 01 and 03) about students' Spanish use in Unit 2. For

example, the students used Spanish to get through a difficult task. With this new awareness,

Carmen also mentions how she "decided to" provide more assistance in Spanish to help the

students' learning process (line 02).

Carmen also reflected on her bilingual students' language learning:

[Unit 3: Carmen, 06/30/2011 meeting for 05/20/2011 video analysis]
01   I **think** that after seeing yesterday's and seeing today's and comparing different
02   transcriptions, I **think** that it made me **realize** that um (5 sec) that they are still learning
03   Spanish as well. Right? Now, by utilizing Spanish a lot more, they are being able to
04   understand the concept in two languages. And that in itself is promoting bilingualism.

In this transcript, Carmen uses the reflective verbs "think" and "realize" (lines 01 and 02) to

reflect on the students' language learning. She talks about students' developing two languages

and how the teacher can promote bilingualism (lines 02-04).

Throughout the yearlong action research process, Carmen often shared her awareness of

contextual language constraints:

[Unit 3: Carmen, 06/30/2011 meeting for 05/20/2011 video analysis]
01   I **think**, in looking at all of this information, I **think** that they (students) are very smart
02   and that they understand the society around them. And they know that English is
03   dominant and more socially accepted language over Spanish. And so, I **think** that I am
04   using Spanish as a tool for them to better understand things. But I **think** it's also a
05   gateway for them to understand um that they are just smart regardless of what language
06   they choose because they are able to manipulate the content in two languages.

In the transcript above, Carmen uses the reflective verb "think" four times (lines 01, 03, and 04)

to share her awareness about the students' language ideologies. For example, Carmen mentions

that the students understand "English is dominant and more socially accepted language over

Spanish" (lines 02-03).

Carmen's reflection through action research also included her deeper appreciation for her

students:

[Focus Group 3: Carmen, 08/01/2011]
01   I think we really got to **see our kids in an in-depth view**. Because often times, as a
02   teacher, you just look at your kids as a whole class and you never really get to see them
03   as individuals and how they really do learn or what's beneficial for them. (…) It really
04   makes you focused on what the kids need, how they learn, what's working, and what's
05   not working.

In this transcript, for example, Carmen reports that she comes to understand her students in a

more "in-depth" way than before the action research experience (lines 01).

Action Change

As Carmen became more reflective about her language practices throughout the video

analysis meetings, she often made some comments about her action change, or the

transformation she made to classroom language practices. She noted, "[Action research] makes

you reflect. It makes you change things around" (Carmen, Focus Group 3, 05/09/2011). After

finishing the Unit 1 action research process, Carmen became more aware that she needed to

provide multiple mediational tools, including Spanish. As I present more in the next chapter,

Carmen's action changes included: using more Spanish, grouping students by language, and

providing teacher-made bilingual materials (e.g. handout, field-notes templates, and graphic organizers) from Unit 2. The collaborative video analysis process between Carmen and me also mediated this change. Carmen's action changes are qualitatively different from her routine action "because of the thought that has preceded it" (Rodgers, 2002).

Challenges to Conduct Action Research

There were some challenges to conducting action research to transform classroom language practices. Action research requires time, dedication, and commitment. Carmen talked about the main challenges of going through action research process as: lack of time for reflection, lack of common time for collaboration, and testing pressure.

Lack of time for reflection. Finding time for reflection as part of a weekly routine was not an easy task for the teachers. However, Carmen mentioned that having the boundaries of a timeline—Unit 1 to Unit 3 cycles—was helpful:

[Focus Group 2: Carmen, 01/31/2011]
01   I just need to make it a habit. **I need to make it a habit** to do something about it. **I need**
02   **to make it a habit** to do something about it so that everything is not accumulated toward
03   the end and I am just shutting down like not wanting to do it (laughing).

In the transcript above, Carmen talks about the importance of making reflections as a "habit" (lines 01-02), instead of procrastinating and pushing all of the work to the end (line 03). When I asked her about the constraint to conduct action research during the focus groups, Carmen answered that conducting an action research was having "two jobs at once" (Carmen, Focus Group 2, 01/31/2011). Through my collaborative working experience with Carmen, I also come to understand that time is one of the greatest constraints to conduct an action research for in-service teachers. Carmen frequently reported the lack of time for reflection.

Lack of common time for collaboration. Another difficulty of conducting teacher action research was the lack of common time shared by Carmen's group teachers. While the

teachers appreciated the group meeting time, there were some tensions that inhibited the

productive collaboration among a group of teachers. The teachers' feeling overwhelmed

contributed to the lack of group meeting time from the middle of the Unit 2 process. It also

involved the teachers' personal lives. Thus, in case of Carmen's group, the teachers had more

freedom to have meetings with me, based on their specific needs for conducting action research.

However, the focus groups at the end of each unit became a space for collaboration.

Testing pressure. The increased number of tests added the weight on these constraints to

conduct action research to transform classroom language practices:

[Focus Group 4: Carmen, 08/01/2011]
01   I think that certainly the challenge of continuing something throughout the whole
02   school year is really a tough task in that it's never been done before. There is always
03   some sort of ending of something. Right? Cause we got to get moving cause we need
04   more grades or whatever the case. I think the ISAT also causes a challenge.

According to Carmen, the third grade students in her school were required to take six different

types of test over the year. Besides all these tests, Carmen's bilingual students had to take

additional language proficiency test—ACCESS (Assessing Comprehension and Communication

in English State-to-State for English Language Learners). The testing pressure added to

Carmen's feeling of being overwhelmed by conducting action research.   In this chapter, I

presented five components of action research—the video coding tool, collaboration, reflection,

action change, and challenges. As co-participants within the larger action research activity

system, Carmen and I collaboratively reflected on the classroom language practices throughout

the year. The collaborative action research process became a context where we could develop

critical consciousness about language issues and students' learning. The use of action research

tools—such as video coding sheets and writing unit reports—and the collaboration with co-

participants, who also had shared goals, mediated Carmen's transformative language practices.

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Chapter V. Transforming Language Ideologies

The findings in this chapter focus on the transformations in Carmen's reflections and practices about classroom language use. My analysis focuses on how Carmen and I collaboratively reflected on the classroom language use through shared video analysis process, focusing on the issues of language choice, language functions, and language constraints.

Language Choice

The language choice in the classroom is not value-neutral but a result of complex negotiations of multiple language ideologies (Pastor, 2008). With the dominant English-only language ideologies, English is often regarded as a language of instruction. However, the additive language ideologies of the larger action research project mediated the teachers' language practices. Encouraging the teachers to utilize students' L1 as a tool for instruction was such an example. Thus, the teachers needed to continuously negotiate between competing languages ideologies.

Throughout the action research process, both Carmen and her students were transformed in their language choices. They began to use more Spanish. As she reflected on the lack of mediational tools in Unit 1, Carmen decided to utilize Spanish as a learning tool to support students' learning. I analyzed a total of twelve videos—four videos from Unit 1, four from Unit 2, and four from Unit 3—to see the changes in the Spanish use across the three units. The frequency of Spanish use was counted by marking every two-minute video segment in which Spanish was used.

Figure 9

Frequency of Spanish Use across Units

	Unit 1	Unit 2	Unit 3
■ Week 4	1	11	10
■ Week 3	3	8	6
■ Week 2	1	9	9
■ Week 1	4	14	8
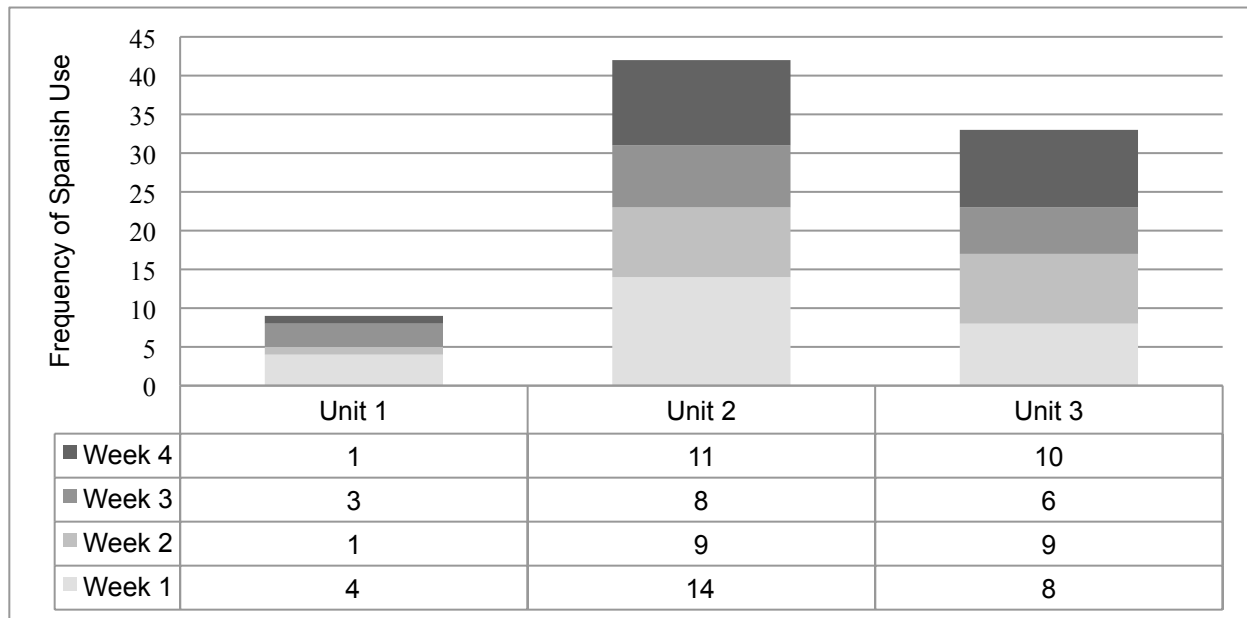
According to the data above, overall, more Spanish was spoken in the classroom during Unit 2

and Unit 3, as compared to Unit 1. This increase in Spanish use was one of the transformations in

Carmen's classroom language practice.

Carmen shared her reflections about language use in the classroom:

[Unit 2: Carmen, action research unit summary report]
01   Unit 1 was a major fail for me as far as utilizing language as a tool. In all honesty, I
02   simply did not even attempt to use Spanish, except in oral form.

She reflected on this lack of Spanish use in the classroom after Unit 1. Based on her reflections,

Carmen further reported how her actions would change:

[Post Unit 1: Carmen, 01/18/2011 meeting]
01   But, I feel this year I really need to use it (Spanish) more because it really is about the
02   kind of classroom that I create. (Transcription skipped a couple of lines)
03   **I want to give my kids more opportunities**, **and I want to foster the environment of**
04   **understanding.**

In the transcript above, Carmen reports her willingness to foster an "environment of

understanding" (lines 03-04) by allowing the students to use their L1 as a tool in the classroom.

New grouping strategy. Another change Carmen made from Unit 2 to Unit 3 was to develop a new grouping strategy. As Carmen noticed that her shy bilingual students lacked confidence, she decided to group four shy, non-participating, Spanish dominant students together:

[Unit 2: Carmen, action research unit summary report]
01   They (focal students) lack confidence in their ability to communicate in English and
02   therefore rarely participate in conversations. Which led me to ask these guiding
03   questions: What would happen if this group of shy bilingual students were placed
04   together to work in a small group? **And how can I use language as a tool?**

As reported above, Carmen wanted to see if these focal students showed some shifts in participation and roles, as they were encouraged to utilize their L1 in a small group setting. Carmen expected to see some changes in these four students throughout the Unit 2 and Unit 3 processes.

This new grouping strategy brought about some changes in the nature of language choice in the classroom.

Figure 10

Frequency of Spanish Assistance across Units

	Unit 1	Unit 2	Unit 3
■ Week 4	0	7	2
■ Week 3	2	3	3
■ Week 2	0	2	4
■ Week 1	2	3	2
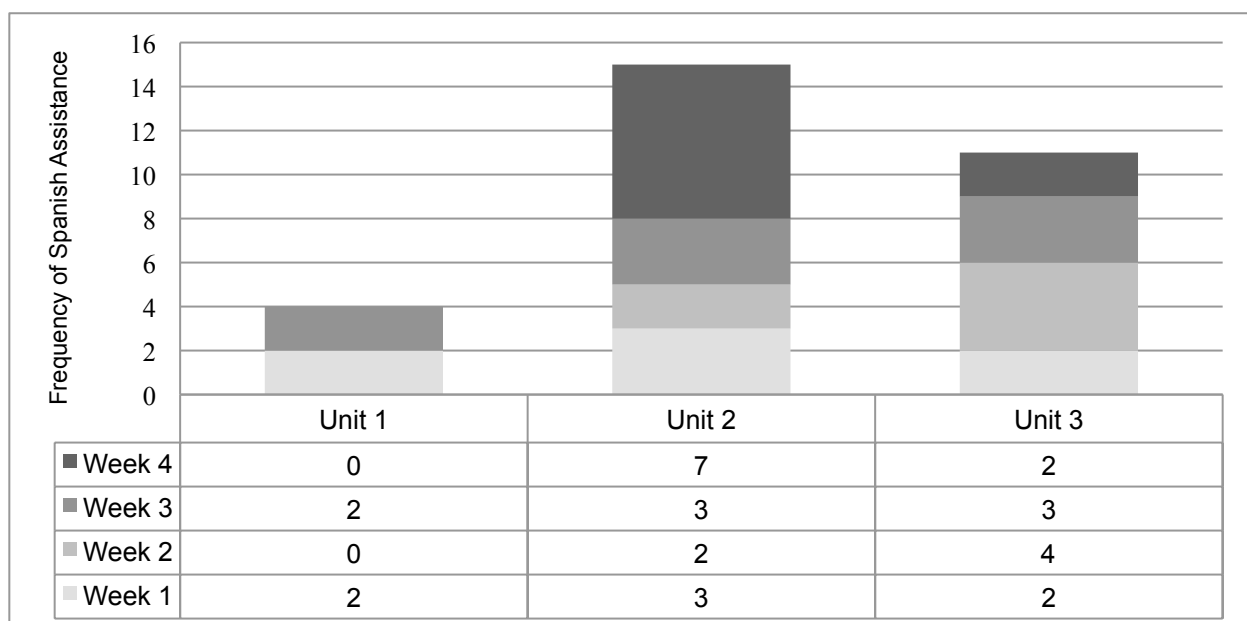
Figure 10 above presents the transformations in the nature of Spanish use in Carmen's classroom. In Unit 2 and Unit 3, assistance in Spanish increased during the scientific work within small group setting. The teacher used more Spanish to assist students' learning. The students used more Spanish to assist one another during scientific work. As the data above presents, Spanish assistance was identified in 4 instances during Unit 1, 15 during Unit 2, and 11 during Unit 3.

The teacher's new grouping strategy—grouping Spanish-dominant bilingual students in the same group—encouraged the students to use Spanish as a learning tool in a small group setting. Also, there was a qualitative difference in the nature of Spanish use between the first unit and the latter two units, from individual-based teacher assistance into more collaborative types of assistance. During Unit 1, there were four instances of the teacher assisting an individual student—two in which Carmen assisted Emilio, and two in which she assisted Nelida. For example, Carmen assisted Emilio by clarifying the meaning of a sentence (Unit 1, Week 1). She also assisted Nelida by explaining the meaning of a word (Unit 1, Week 4). However, in Unit 2 and Unit 3, the Spanish assistance happened within a small group setting—the teacher assisted a group of students or the students assisted one another within small groups to accomplish scientific work.

Teacher-made bilingual materials. Besides new grouping strategy, Carmen also changed her language choice by providing bilingual materials to the students in Unit 2:

```
        [Unit 2: Carmen, action research unit summary report]
01      If I didn't make a conscious attempt to use Spanish in all of the materials I made by
02      providing them with a safe environment where they felt comfortable to use Spanish, then,
03      I will feel like a hypocrite and a horrible excuse for a teacher. Therefore, (in Unit 2),
04      all teacher-made items in the classroom were provided in Spanish and English.
```

As reported above, Carmen wrote about her change in language choice. She provided "all teacher-made items in Spanish and English" (lines 06-07) to create a safe and comfortable learning environment (lines 04-05).

As Carmen understood her own bilingual ability as a resource in the classroom, she provided more teacher-made bilingual materials to students. Figure 11 presents the number of bilingual materials provided to the students:

Figure 11

Number of Bilingual Materials Teacher Provided across Units
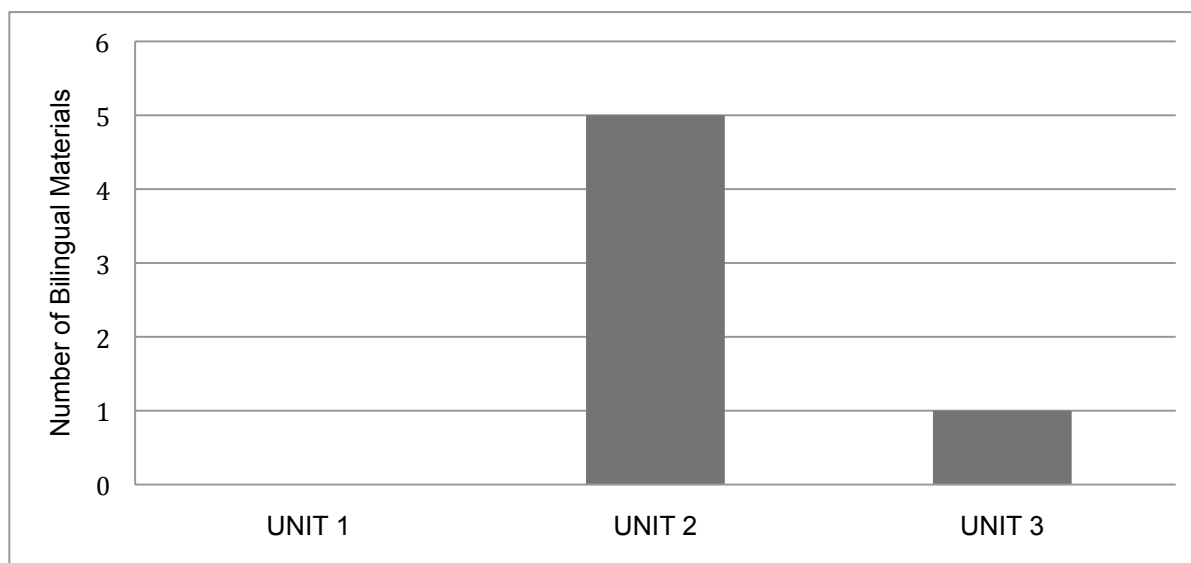
In Unit 1, Carmen did not provide any bilingual material. Thus, providing teacher-made bilingual materials was one observed transformation in Carmen's language practices. For example, in Unit 2, Carmen provided five bilingual materials—handouts and graphic organizers—in both Spanish and English. These bilingual materials included smoking exit slip, field-note template, handout for chemicals in the cigarette, graphic organizer to create survey, and tally chart to analyze survey result. In Unit 3, Carmen provided a bilingual handout to draw scientific conclusions.

Figures 12 and 13 below show the secondhand smoking exposure exit slip and field-notes template provided in English as well as in Spanish during Unit 2:

Figure 12

Secondhand Smoking Exposure Exit Slip (English/Spanish)

Figure 13

Field-notes Template (English/Spanish)

The figures above illustrate how Carmen encouraged the scientific practice of data collection in both languages. She provided the field-notes template in both Spanish and English and encouraged students to choose which language they wanted to use. This evidence shows how Carmen provided bilingual assistance not only in oral form but also in written form.

Figure 14 is a teacher-made handout provided to students. When the students studied the harmful chemicals in cigarettes by watching a video clip, Carmen provided this bilingual handout so that the students could write down what they learned about each chemical:

Figure 14

Handout for Chemicals in the Cigarette (English/Spanish)

In the bilingual handout above, the names of chemicals were presented in both Spanish and

English. The students were encouraged to use either language to write down what they learned

about these chemicals.

Carmen believed that utilizing the ELs' first language—especially for focal students—

was helpful for their learning:

[Unit 2: 03/28/2011 meeting for 03/22/2011 video analysis]
01   Eunah: We were in min. 44, talking about writing in Spanish.
02   Carmen: Well, I am also thinking about um **comprehension**. So, if they understand
03   what's going on and they are not able to communicate it in English, then, that
04   doesn't mean that they are dumb. It's just they can't communicate it any other
05   way. I want to be able to give them the **opportunity to express their ideas**
06   as best as I can. And, **why not take advantage of that, seeing as I am able**
07   **to speak that same language and understand and read it. So why not do**
08   **it that way**.

In the transcript above, Carmen explains how Spanish use in the classroom mediated her

students' understanding of the content better (line 03). It also gave them more "opportunity to be

able to express their ideas" (line 07). In the last lines, Carmen further explains how she views her

own bilingual ability as a resource (lines 08-10).

In the transcript below, Carmen reports the changes in her Unit 2 language practice:

[Unit 2: 03/28/2011 meeting for 03/22/2011 video analysis]
01   Eunah: So, this is one of the changes that I observed/ like you are allowing them to
02   write in Spanish from Unit 2. So, is this change based on your reflection
03   from action research?
04   Carmen: It's just based on that, you know, I knew that their native language could be
05   used as a tool. But, I didn't really take advantage of it in Unit 1. I really
06   didn't give them the chance to do it in Unit 1. And so, um **I have been**
07   **really trying to make it a point to give them everything in both**
08   **languages so that the opportunity is there**. And so, they can see it as a
09   benefit more so that uh (.)/

As Carmen reports above, she tried to provide teacher-made bilingual materials for most of the

activities (lines 06-08).

As there were changes in teacher's language choice, there were also changes in the

students' language choice in the classroom. In the transcript below, Carmen reports the shifts in

Julia's language choice in the Unit 2 process:

[Unit 2: 04/15/2011 meeting for 04/05/2011 video analysis]
01   Carmen: Julia will want to do her work in Spanish. So like today, she said "Is it okay
02   if I do it in Spanish?" and I am like "Yeah, that' fine."
03   Eunah: So, do you think this is a change that you see for the first time?
04   Carmen: I think after the Unit 2 started. Because in Unit 1, I really didn't do a very
05   good job of utilizing Spanish as a tool, **whereas this time around, I really**
06   **did make it a point to use it a lot more**. **Not just during the research but**
07   **in everything that I did**. **And I think Julia has picked up on it**. I think
08   that she doesn't feel this pressure to always have to speak in English and to
09   perform well in English.

As seen in the transcript above, Carmen encouraged her students to use their language of

comfort—either Spanish or English—not only for the unit implementation but also for all the

work they did in the classroom beyond the action research project (lines 05-07). Thus, Carmen

reflected on her own choice to use Spanish in classroom and found that because of this choice,

Julia had also started to use Spanish more frequently. She stated that "Julia has picked up on it"

(line 07).

Understanding language choice within community context. After the Unit 3 action

research journey is finished, Carmen mentioned some missed-opportunities in her action

research:

[Unit 3: Carmen, 06/30/2011 meeting for 05/20/2011 video analysis]
01   **But, what I didn't do was** use it as a means to (2 sec) uh for the lack of better term
02   (.) promote or make it known that their **community**, being Latinos is important too.
03   Their **identity** as a Latino is important. And, it's okay. It's more than okay. It's great
04   if I decide to present some information in either two languages or in one language, the
05   **less socially accepted** one because there is value in that community and they have to
06   know what's going on.

In the transcript above, Carmen reports some of the missed-opportunities in her action research:

"But what I didn't do was use [bilingualism]… to make it known that [the students' own]

79

community… [bilingual identity] is important" (lines 01-03). The students in Carmen's

classroom wanted to make a Public Service Announcement (PSA) to educate people in their own

bilingual (multilingual) community; however, the PSA was created in English-only. With this

awareness, Carmen explains the issues of language choice and status within community context.

Carmen's explanation of students' L1 as the "less socially accepted" language (line 05) reveals

her understanding of societal language ideologies and the broader socio-political context of

language choice.

Carmen and I made a connection between the English-only practices, the PSA, and

dehumanization:

```
        [Unit 3: 06/30/2011 meeting for 05/20/2011 video analysis]
01      Carmen:   How am I going to translate dehumanization into smoking?  And it was right
02                there. The entire time. It didn't even drawn on me.
03      Eunah:    Yeah. If they could have actual outcome (PSA) in multiple languages to
04                show it to their parents, their family, and community//
05      Carmen:   And who knows if that was because things needed to go fast, and I didn't
06                have time to process or I didn't even bother to stop and think. How am I
07                going to connect to the very beginning of "what is dehumanizing to our
08                outcome?"  I didn't even stop to try to make that point.
09      Eunah:    Me too. And now, I am like oh yeah.
10      Carmen:   (......) Because if I have done that, they really would have understood that
11                term, dehumanization. Then, it really would have meant something to them.
```

In the above transcript, both Carmen and I collaboratively reflected on language choice within

the community context. First, Carmen relates the English-only PSA with dehumanization that

they had discussed in the beginning of the school year (lines 01-02). Then, I shared my new

awareness that the PSA could have been produced in multiple languages so that the information

could be distributed to the students' own families and communities (lines 03-04). Carmen

mentions time constraints (lines 05-06) and her lack of reflection (line 08) as reasons for the

missed-opportunity.

In the transcript below, Carmen discussed the English-only language practices in the

PSAs:

[Unit 3: Carmen, 07/13/2011 meeting]
01   In Unit 2, I have really thought about making sure all the teacher materials were
02   bilingual. **If I had just looked at a little bit further**, I would have been able to
03   incorporate bilingualism with technology. Because I was so afraid about the outcome
04   with the Public Service Announcement that I completely forgot about the process (.) and
05   how I really want to promote bilingualism rather than the displacement of one language
06   over the other (…) So, I think that **if I had brought the Public Service Announcement**
07   **in various languages in the classroom, Spanish, Vietnamese, and English**. (……)/

Throughout Units 2 and 3, Carmen was creating an additive learning environment by utilizing

Spanish as a tool for learning, thereby promoting bilingual and biliteracy practices. However, at

the end of her action research journey, she realized that the final PSA videos in Unit 3 were

ultimately produced in only English. Thus, in the transcript above, Carmen reflected on some of

the missed opportunities—"If I had just looked at a little further" (line 02) and "If I had brought

the PSA in various languages in the classroom" (lines 06-07).

Carmen reflected on language choice within broader community context:

[Unit 3: Carmen, 07/13/2011 meeting]
01   But a lot of them see **Vietnamese stations** because their grandparents see them. So they
02   would have recognized something. And then, my Spanish speakers, they obviously
03   watch Spanish too. You know, they will talk about *Novelas* **(Spanish cable channel)**
04   all day. So, if I had incorporated those Public Service Announcement in those languages,
05   I think it really would have promoted them to really want to do something in their own
06   language. And I also wonder (.) had I even thought about that at that time, I think I
07   would have been able to have a really **serious conversation with them that the**
08   **important health information is not evenly distributed within communities [because**
09   **of the English-only practice with PSA].**

In the transcript above, Carmen reports her understanding of ELs' language practices in their

homes—for example, Vietnamese TV stations and Spanish cable channel *Novelas* (lines 01 and

03). Thus, Carmen's "aha!" moment in Unit 3 was when she thought about the community

aspects of bilingualism—she could have included students' multiple languages to make a Public

Service Announcement (PSA). She critically deduced that she could have had "serious conversations with her students that the important health information is not evenly distributed within communities [because of English-only practice in PSA]" (lines 07-09). Carmen's comment about how English-only practices limit access to health information illustrates her emerging critical understanding of language choice, language ideologies, and the broader sociopolitical context.

Language Functions

So far, I presented how Carmen and I collaboratively reflected on the language choice in the classroom and how the teacher used more Spanish in the classroom. During our shared video analysis meetings, we also reflected on the language functions together.

Carmen reported that her Spanish use in Unit 1 was mostly one-on-one based teacher assistance to an individual student:

[Focus Group 1: Carmen, 12/22/2010]
01 Um usually **a lot of it happens in one on one**. So like I walk around the class, and **if I**
02 **see somebody struggling**/ and I know, a lot of times, it's often to test what their comfort
03 is, if it's in Spanish during English, especially during the early school year. I feel like
04 sometimes it depends on the situation too. Which might have to do a lot with their
05 experiences.

As reported above, Carmen usually walked around the classroom and assisted individual student when they would struggle (line 01-02). For example, I observed an instance when she clarified the meaning of an English sentence when Emilio—a Spanish dominant bilingual student—wore a confused face (Unit 1, 10/21/2011). As Carmen mentioned, the nature of teacher assistance in Unit 1 was mostly based on individual level assistance, in oral form only.

Throughout our shared video analysis meetings with the coding sheet, Carmen and I discussed the functions of Spanish in the classroom.. For example, we discussed how one student was helping another student in Spanish, how the teacher was assisting students' learning, and

how some students felt comfortable to speak in Spanish during the scientific work. Other times,

Carmen explained her use of Spanish for disciplinary purposes. Carmen further explained why it

was important to provide a bilingual learning environment so that the students felt more

comfortable to express their ideas without any language barriers. These reflections mediated her

transformative language practices in the classroom.

Figure 15 presents the changes in the nature of Carmen's reflection on the classroom

language use and functions. The frequency of Carmen's comments on the language functions

increased during the Unit 2 and Unit 3 processes.

Figure 15

Frequency of Carmen's Comments about Language Functions

	Unit 1	Unit 2	Unit 3
■ Week 4	0	9	2
■ Week 3	0	3	9
■ Week 2	0	6	7
■ Week 1	0	5	6
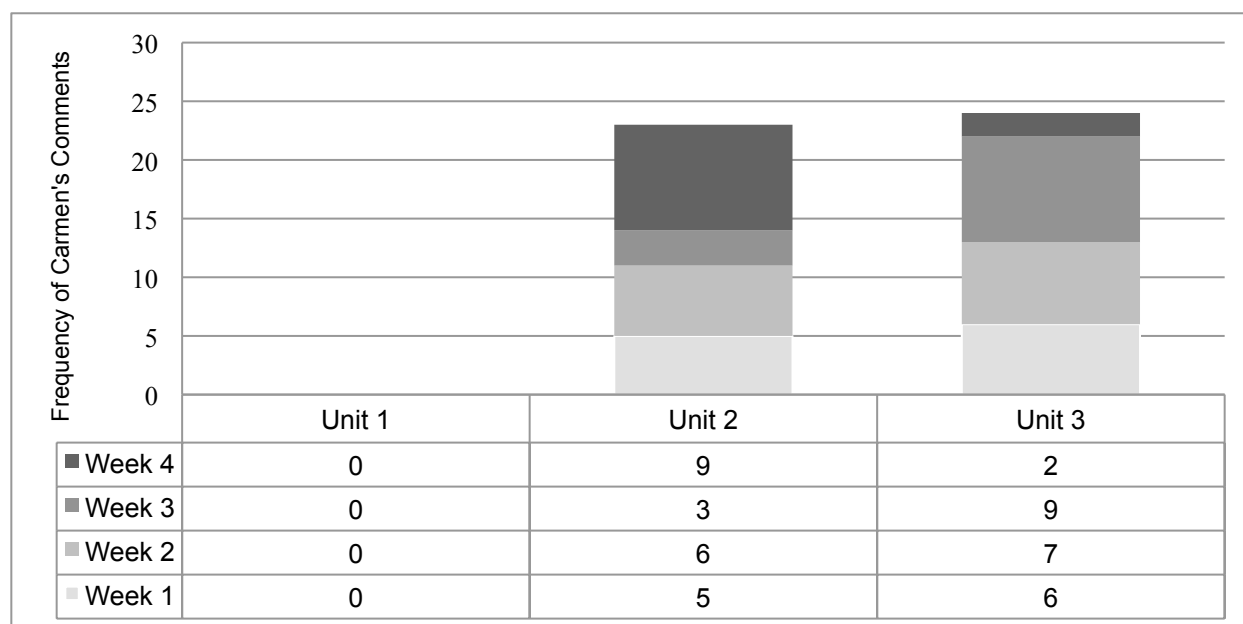
Carmen did not make any explicit comments about the language functions in Unit 1. However,

she made some comments about language functions in Unit 2 and Unit 3—23 comments were

made in Unit 2 and 24 comments were made in Unit 3.

This reflection happened in the context of video coding analysis with me. For example,

Carmen often linked two related codes—*assistance* and *multiple languages*—on the coding sheet

and/or explained the teacher's assisting students or students' assisting each other in Spanish. This evidence explains how using the coding sheet pushed Carmen to analyze the function of Spanish as assistance. As Carmen critically reflected on the assistance function of Spanish and learned about the benefits of using Spanish as a learning tool, she continued bilingual practices in the classroom. There were changes in the nature of Spanish use in the classroom. During the beginning of the school year, Carmen mentioned that her bilingual students did not feel comfortable with science. Furthermore, the language barrier was an added burden for the bilingual students. Thus, some Spanish-dominant bilingual students were non-participants in the classroom. Throughout the video analysis process, Carmen commented on her students' level of comfort to discuss scientific ideas in Spanish.

Through analyzing our meeting conversations, I identified three main functions of Spanish as learning tool—*teacher assistance*, *peer assistance*, and *affinity*. The *teacher assistance* function of Spanish is identified when the teacher assists students in Spanish during the scientific work. The *peer assistance* function of Spanish is identified when the students assist each other in Spanish during scientific work. Based on Carmen's comments on the focal students' feeling comfortable to share scientific ideas in Spanish, I expanded this function of Spanish as *affinity*—using Spanish helped the students to develop an *affinity* to science. Gee (2000, 2003) uses this term, *affinity*, to explain people's group membership—or sense of belonging—while working collaboratively on a common task. The students' *affinity* to science is identified not by "race, gender, nation, ethnicity, or culture" (Gee, 2003, p. 197), but by their active participation to the scientific Discourse practices. This means that the students "actively choose to join [in]" the scientific Discourse practices, instead of being forced to do so (Gee, 2000, p. 106). In the process, the expanded mediational tools, which included Spanish use,

encouraged students to join in the scientific Discourse practices. Thus, the *affinity* function of

Spanish is identified when the students actively choose to join in the scientific Discourses, using

Spanish as a tool.

In Figure 16, I present the overview of Spanish function as a learning tool—*teacher*

assistance, *peer assistance*, and *affinity*—across three units. Twelve videos—four videos from

Unit 1, four from Unit 2, and four from Unit 3—are analyzed. The frequencies of Spanish

functions are counted by every two-minute video clips.

Figure 16

Frequency of Spanish Function across Units

	Teacher Assistance	Peer Assistance	Affinity		Teacher Assistance	Peer Assistance	Affinity		Teacher Assistance	Peer Assistance	Affinity
■ Week 4	0	0	0		2	5	1		1	1	1
■ Week 3	2	0	0		1	2	0		3	0	0
■ Week 2	0	0	0		0	2	0		3	1	0
■ Week 1	2	0	0		2	1	4		2	0	0
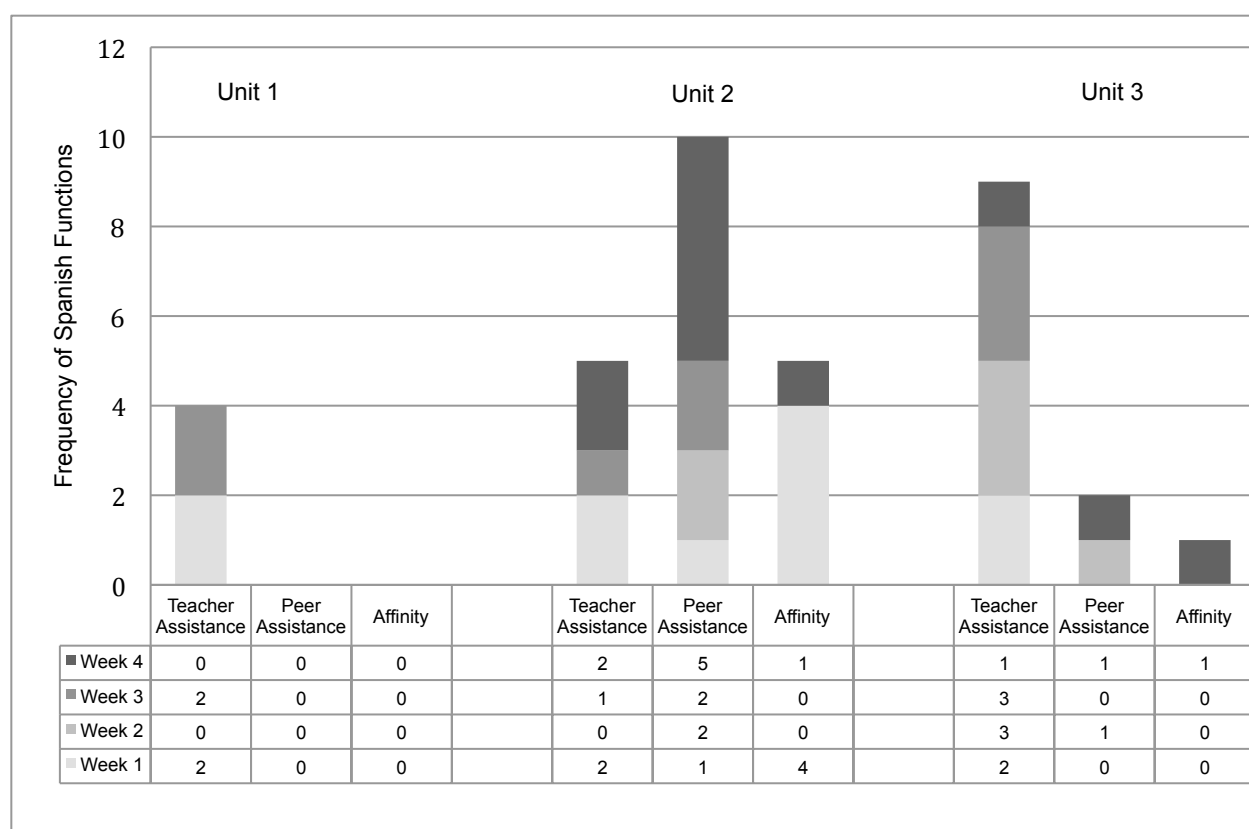
Overall, there is an increased Spanish use as learning tool—*teacher assistance, peer*

assistance, and *affinity*—in Unit 2 and Unit 3, as compared to Unit 1. First, the data above

presents the increased *teacher assistance* during Unit 2 and Unit 3, as compared to Unit 1.

During the Unit 2 and Unit 3 processes, the teacher used more Spanish to assist students'

learning process. 4 instances of *teacher assistance* are identified in Unit 1; 5 instances of *teacher*

assistance are found in Unit 2; and 9 instances of *teacher assistance* are identified in Unit 3.

Second, the students assisted each other in Spanish from the Unit 2 process. This *peer assistance*

function of Spanish was a new language practice that was not observed in Unit 1. There is no

instance of peer assistance in Unit 1; 10 peer assistances are found in Unit 2; and, 2 peer

assistances are identified in Unit 3. Third, the *affinity* function of Spanish was identified in Unit

2 and Unit 3. As they felt more comfortable to use Spanish, the focus group students actively

chose to join in the scientific Discourse practices, speaking in Spanish. This *affinity* function of

Spanish is identified in 5 instances during Unit 2 and 1 instance during Unit 3.

In the following part, I present some of the key video transcripts that Carmen and I

analyzed together to illustrate the main functions of Spanish use as *peer assistance*, *teacher*

assistance, and *affinity* in the context of scientific Discourse practices (See scientific Discourse

code in Appendix C). This collaborative video analysis process explains my positioning to

understand the function of Spanish in Carmen's classroom. Both Carmen and I collectively

reflected on the language functions throughout our shared video analysis meetings and learned

about the main functions of Spanish in the classroom. We were co-participants within the video

analysis activity.

Peer assistance. The peer assistance transcripts I present illustrate how one student

assists another student during the scientific Discourse practices. Table 4 below illustrates how

the focal group students assist one another in Spanish to accomplish the data collection with

survey. The focal students are using a bilingual graphic organizer to create survey questions:

Table 4

Peer Assistance for Data Collection (Survey)

Transcription of video clip	Teacher's analysis of this video clip
[Unit 2: 04/05/2011, min. 22 video clip]	[04/15 meeting for 04/05/2011 video analysis]
01 Ernesto: (Looking at <u>graphic organizer</u>) 02 What are they going to tell you? 03 **Luis:** (Trying to write something) **How** 04 **do you spell/ como (=*how*) that I** 05 **am going to say?** 06 Ernesto: Que voy a decir. (=*What I'm going* 07 *to say*). Que voy a decir. (=*What* 08 *I'm going to say*). 09 Julia: ¿Esta qué es? (=*What is this?*) ¿De 10 que les voy a preguntar? (=*What I* 11 *am going to ask them?*) ¿Ve a 12 donde lo dice? (=*Do you see where* 13 *it says?*) 14 All: (looking at what Luis is writing) 15 Julia: Ve... ¿voy? (=*Look... going to?*) 16 Transcription skipped a couple of lines 17 v...o...y. En español, debes decir lo 18 así. (=*In Spanish, you're supposed* 19 *to say it like that*).	01 Carmen: It seemed like they were trying to 02 figure out how to write something 03 down. So maybe I would say 04 conversational. Um <u>*multiple*</u> 05 <u>*languages*</u>, and at this point it was 06 <u>negotiating the task</u>. That was the 07 reason why they were using// 08 Eunah: Rule negotiation? 09 Carmen: I wouldn't say rule negotiation. 10 But, like just negotiating um the 11 wording. 12 Eunah: Wording like the question itself or 13 the answer? 14 Carmen: The answer yeah. I think it was 15 like they were trying to figure out 16 how to answer it. They are still 17 negotiating wording (in Spanish) 18 Eunah: So, is it <u>*assistance*</u> too? 19 Carmen: Yeah, I would say. I mean they all 20 <u>hurdle together trying to help</u>.

Looking at this video clip (left column), Carmen marks *multiple languages* code (right column, lines 04-05) and explains the function of Spanish as "negotiating the task" (right column, line 06). Carmen and I further interpret this instance as *peer assistance* because all group members help one another to write down the survey question for data collection (right column, lines 18-20). As I mentioned, this *peer assistance* function of Spanish was a new language practice from Unit 2 that was not observed in Unit 1. I understand the importance of the teacher's language ideologies in creating learning context. Carmen created this collaborative learning environment where all group members assist one another to accomplish the scientific task of creating survey. The new grouping strategy—by grouping students who share Spanish as their L1 in the small

group—and provision of bilingual graphic organizer all contributed to create an additive

bilingual learning context.

In Table 5, Julia and Maribel are working as a pair to mark the tallies with their survey

result sheet. In the video transcript below, Julia and Maribel use both Spanish and English. For

example, Julia uses the key words in the data (e.g. causes cancer) in English but provides peer

assistance in Spanish for Maribel (left column, lines 01-06):

Table 5

Peer Assistance for Data Analysis (Tally Chart)

Transcription of video clip	Teacher's analysis of this video clip
[Unit 2: 04/13/2011, min. 36 video clip] 01 Julia: (Turning the page) "Causes cancer" 02 (Crossing out answer and speaking 03 to Maribel) Y que lo tiene es.(=*And* 04 *what you have it as it*.) (Pointing to 05 Maribel's chart) So, borrala 06 (=*Erase it*). 07 Maribel: (Erasing and putting tally) 08 Julia: "Makes your heart slow down" 09 (Marking tally, crossing out answer 10 and checking Maribel) ¿A donde lo 11 Pusistes? (=*Where did you put it?*) 12 Maribel: (Pointing her tally chart) 13 Julia: Okay.	[04/18 meeting for 04/13/2011 video analysis] 01 Carmen: *Peer assistance*. It's Julia helping 02 Maribel bilingually to figure out 03 the tally chart. (Trans. skipped) 04 I just put a link between two codes 05 *multiple languages* and *assistance*. 06 07 08 09 10 11 12 13

One of the critical changes Carmen made during Unit 2 was to link multiple related codes to

explain the function of Spanish (right column, lines 04-05). For example, looking at this video

clip, Carmen linked two related codes—*multiple languages* and *assistance* (right column, lines

01-02 and 04-05). This linking is another layer of transformation in Carmen's thinking about

language issues in the classroom. When Carmen simply marked the *multiple languages* code, her

analysis focused on using or not using Spanish in the classroom. However, by linking two

codes—*multiple language* and *assistance*—presented on the coding sheet, she explained the

functions of Spanish as assistance. With this linking, she further explained how Julia was helping

Maribel thus, specifying who is helping whom in Spanish. As a result, we interpreted the

function of Spanish in this video transcript as *peer assistance*. I added another layer of analysis

by contextualizing this *peer assistance* function in the context of specific scientific Discourse

practices—Maribel and Julia assisted each other to accomplish the scientific task of data analysis

using a tally chart.

Teacher assistance. During our shared video analysis meetings, Carmen and I discussed

the teacher's utilizing of Spanish as an instructional tool:

Table 6

Teacher Assistance for Data Analysis (Claims with Evidence)

Transcription of video clip			Teacher's analysis of this video clip		
[Unit 3: 05/12/2011, min. 28 video clip]			[05/17 meeting for 05/12/2011 video analysis]		
01	Maribel:	They don't care about cigarette.	01	Carmen:	Yeah. I use *multiple languages*
02	Teacher:	¿Cómo sabes tú? (=*How do you*	02		to clarify the task because when
03		*know?*) ¿Adónde está la evidencia?	03		I went up to them and asked what
04		¿Adónde está? (=*Where is the*	04		they cane up, they did not come up
05		*evidence? Where is it?*)	05		with anything (laughing). And, I
06	Maribel:	(Pointing "I don't care" answer)	06		now know why. So, I basically
07		They don't care.	07		was telling them/ And, it was
08	Teacher:	They don' care about what?	08		using a lot of scientific Discourse.
09	Maribel:	They don't care about what	09		So, <u>I was telling them about using</u>
10		chemicals are in the smoking?	10		<u>their evidence and coming up with</u>
11	Teacher:	(Trying to re-focus Maribel's	11		<u>a conclusion based on their data</u>.
12		attention to survey question 1)	12	Eunah:	So, the function is to clarify the
13		Este es que ver con porque es malo	13		task?
14		para tí tus cigarillos. (=*This has to*	14	Carmen:	Yeah.
15		*do with why cigarettes are*	15	Eunah:	<u>But what does it make a difference</u>
16		*bad for you.*) ¿Porqué es malo	16		<u>if you just clarified in English?</u>
17		fumar? (=*Why is it bad to smoke?*)	17	Carmen:	It wasn't exactly easy. I don't
18	Maribel:	Porque te puede pegar una	18		think the task was very easy to
19		enfermedad. (= *Because you can*	19		complete. And, I already knew
20		*catch a disease*).	20		that they are more comfortable
21	Teacher:	¿Adónde está ese evidencia?	21		in Spanish when they don't
22		(=*Where is that evidence?*)	22		understand something.

Table 6 illustrates how the teacher assists the focal students in Spanish to make scientific claims with evidence. In this video transcript (left column), the teacher asks about the source of evidence (left column, lines 02-05). When Maribel talks about the harmful chemicals in cigarettes, Carmen reorients Maribel to her group's main focus question of "different types of illness that the cigarette smoking can causes besides cancer" (left column, lines 13-17). When Maribel still does not provide evidence from the survey graph to support her claim, the teacher keeps asking for the source of the evidence (left column, lines 21-24). With the teacher's assistance, later, the focus group students made a claim with supportive data (e.g. 50 people knew that cigarette smoking can cause cancer but only 15 people knew that it can also cause other diseases).

Looking at this video clip, Carmen analyzes how Spanish functions as a tool to explain the use of evidence to make scientific claims (right column, lines 09-11). I then asked Carmen about why she needed to provide assistance in Spanish, instead of in English (right column, lines15-16). Carmen then rationalized that she used Spanish to assist students because the task was not easy. Carmen thought that the task of making claims with evidence was challenging for the students. I noticed how she tried to reduce the language barrier when the students were already having difficulty with the scientific practices such as making claims with evidence. Since the task was already difficult, Carmen decided to use Spanish to assist students. Through collaborative reflection about classroom language practices, Carmen and I came to understand the function of Spanish, in this video transcript, as *teacher assistance*.

Table 7 illustrates how the teacher assists the students to collaborate with one another:

Table 7

Teacher Assistance for Collaborative Learning (Data Analysis with Survey Result)

Transcription of video clip		Teacher's analysis of this video clip	
[Unit 2: 04/13/2011, min. 38 video clip]		[04/18 meeting for 04/13/2011 video analysis]	
01　Teacher:	(Observing Julia for a while) Pero	01　Carmen:	She (Julia) is like "no, I am helping
02	acuerdate que ella no tiene esta	02	her." I am like "Is it helping?"
03	papel y tú marca y marca y marca.	03	And, she is like "uhu" And, I am
04	(=*But remember she doesn't have*	04	like "I just see you reading it off
05	*this paper and you're marking on*	05	and marking it off. But, I don't see
06	*it and marking on it and marking*	06	her going same paces as you. So,
07	*on it*).	07	the best way to do is if you read it
08　Julia:	I am telling her.	08	off and then, you both do it at the
09　Teacher:	(To Maribel) Is she?	09	same time. That way, your data is
10　Maribel:	(Shrugging)	10	complete. And she knows what
11　Julia:	I am just writing it and copying it.	11	she is doing. I want her to
12　Teacher:	No quiero que ella te dice no que tú	12	understand how to do it."
13	lee lo. (=*I don't want her to tell*	13　Eunah:	What do you put on the coding
14	*you but for you to read it*). Mejor	14	sheet?
15	sería que tú lo leas, ¿verdad? Y que	15　Carmen:	I would say *multiple languages* and
16	juntas lo chequen y despues tu lo	16	then, maybe teacher guidance?
17	quitas. (=*It's better that you read it*			
18	*right? And together you check it*			
19	*and after you take it off*). Okay?			
20	Andale a ver. (=*Go ahead. Let's*			
21	*see*).			
22　Julia:	"It hurts your lungs" (crossing out			
23	the answer on survey sheet, putting			
24	tally mark on their sheet, and			
25	checking Maribel).			
26　Maribel:	(Putting tally mark on her sheet)			
27　Julia:	(Doing the same work) "causes			
28	cancer"			

In the transcript above (left column), Julia and Maribel are working as a pair to make a tally

chart with the survey results sheet. While both are making their own tally charts, only Julia holds

the data sheet in her hands. Julia is reading the data so that both can mark the tally on their own

sheet. In this transcript, Carmen observes the pair work between Julia and Maribel for a while

and finds out that Maribel is not following Julia's pace while reading the data. Then, Carmen

tries to explain how to work together for Julia and Maribel (left column, lines 01-07 and 12-21).

Thus, Julia slows down her reading pace and checks her peer's work more often (left column, line 22-25).

Upon analyzing this video clip, Carmen marks both *multiple languages* and *assistance* codes on her coding sheet and gives explanation of the function of Spanish as teacher's guiding students (right column, lines 15-16). More specifically, I see the function of *teacher assistance* mediating a collaborative learning context. The teacher is trying to teach the importance of collaborative work to accomplish the shared goal. The learning goal of data analysis activity is not limited to the individual student's completing the tally chart. The teacher expects her students to collaboratively identify and discuss the patterns they notice from analyzing the survey data, with the shared goal of solving a cigarette-smoking problem in the community. All the participants within the activity system, who have shared goals, contribute to one another's learning (Engeström, 2001; Roth, 2004; Wells, 2000). For example, in this collaborative data analysis process, the students can discover new meanings from the data that they do not see alone. Thus, the collaborative activity opens up a ZPD for learning and increases possibilities for participation in the scientific activity (Engeström, 1987). Learning is a social process and knowledge is "distributed across the learners" (Gee, 2003, p. 197).

Affinity to scientific Discourse via Spanish as a tool. The *affinity* function of Spanish explains when the students actively choose to join in the scientific Discourse practices through Spanish use. In this section, the analysis of the *affinity* function centers on how using Spanish helps students develop *affinity* to scientific Discourse practices:

Table 8

Affinity to Scientific Discourse via Spanish Use (Data Analysis with Tally Chart)

Transcription of video clip	Teacher's analysis of this video clip
[Unit 2, 04/13/2011, min. 5 video clip]	[Carmen, 04/18 meeting for 04/13/2011 video]
01 Julia: (Making tally chart with survey	01 I also got *multiple languages* connected to
02 result sheet. Counting answers)	02 *scientific Discourse* because Julia asked in
03 "I don't care" "I don't care"	03 Spanish, "all the chemicals in cigarettes?" and
04 "I don't care" (pause for 2 sec.)	04 Maribel started naming all the chemicals.
05 ¿Todos los químicos? (=*All of the*	05 said, batteries, rat poison. I think it's their
06 *chemicals?*)	06 *comfort*. It's what they are *comfortable* with.
07 Maribel: Veneno de rata, esa cosa para los	07 Transcription skipped a couple of lines
08 cigarros, the battery, la batería.	08 So even though their *comfort* is Spanish, the
09 (=*Rat poison, that thing for the*	09 content is still there.
10 *cigarettes, the battery, the battery*)	

In the transcript above (left column), Julia and Maribel are collaboratively analyzing the survey results sheet and a tally chart. Maribel lists the name of chemicals inside of cigarettes in Spanish (left column, lines 07-10), following Julia's question in Spanish. During the Unit 2 process, Carmen provided the teacher-made bilingual materials for students. These materials included the bilingual handouts about the chemicals in the cigarettes. Maribel already had a chance to study these harmful chemicals in the cigarette in both languages during the previous lessons but chose to speak in Spanish in this video transcript (left column, lines 08-10). Looking at this video, Carmen marks *multiple languages* and *scientific Discourse* codes on the video coding sheet (right column, lines 01-02); and, she further analyzes students' Spanish use as their comfort (right column, lines 06 and 12). Carmen, most importantly, considers students' content learning in their comfort level (right column, lines 08-09). This instance demonstrates Carmen's additive language ideologies with bilingual science practices. Instead of strongly dichotomizing English versus Spanish science practices, she focuses on the students' content learning with expanded mediational tools, namely the option to use Spanish in scientific work. The language is considered as a means of learning, rather than a goal of instruction.

With the expanded mediational tools, the students learned to collaborate with each other. In the process of data analysis, Julia notices a pattern—for example, many people answered as "I don't care" for the question about the chemicals in cigarettes (left column, lines 01-04). When Julia expresses her surprise about the people's indifference about the harmful chemicals (left column, lines 05-06), Maribel actively joins in the scientific Discourse and presents her knowledge about the harmful chemicals in cigarettes (left column, lines 07-10). In this data analysis activity, the learning goal is not limited to the individual student's creating tally charts. They have a shared goal of solving the cigarette-smoking problem in their own community. Julia's surprise (left column, lines 05-06) demonstrates her concerns about these harmful chemicals for people's health. Maribel also adds the seriousness of harmful chemicals in the cigarette (left column, lines 07-10). Through shared conversations about the harmful chemicals in the cigarette, Julia and Maribel actively engage in the data analysis practice. This collaborative data analysis, using Spanish, mediates their appropriation of scientific Discourse.

In Unit 3, Carmen mentioned code-switching as students' comfort level. Table 9 illustrates such an instance when Carmen analyzes code-switching as a natural bilingual mode of communication (Cook, 2001) with feeling comfortable. The video transcript in Table 9 (left column) is from the last week of the Unit 3 activities. Thus, the students are already familiar with the content. In this video clip, teacher and focal students discuss the consequences of secondhand smoking. For example, they talk about how the heart pumps the blood to the body (lines 01-11), how the blood does not flow to the body due to smoking effect (lines 11-14), and how one feels numb due to slow blood circulation (lines 15-23).

Table 9

Affinity to Scientific Discourse via Spanish Use (Making Logical Connections)

Transcription of video clip	Teacher's analysis of this video clip
[Unit 3, 05/24/2011, min. 26 video clip]	[Carmen, 06/29 meeting for 05/24/2011 video]
01 Teacher: What does your heart do with your 02 blood? 03 Julia: Aparato la sangre. (=*It pumps the* 04 *blood*). 05 Teacher: Aparato la sangre. (=*It pumps the* 06 *blood*). ¿Y qué hace con la sangre? 07 (=*And what does it do with the* 08 *blood?*) 09 Ernesto: It goes to your body? 10 Teacher: It goes throughout your body. 11 ¿verdad? (=*right?*) ¿Qué es lo que 12 pasa si el sangre no va a tus pies? 13 (=*What happens if the blood does* 14 *not go to your feet?*) 15 Julia: Como tus pies can {inaudible}/ 16 (=*Like your feet can {inaudible}*) 17 Teacher: You can't really feel your feet. 18 Right? What happens if they don't 19 go to your hands?	01 I saw *multiple languages* and *science* 02 *Discourse*. Teacher helping with story board. 03 We do a lot of code-switching. It's all of us. 04 cause whenever we see me weaving in and 05 out English and Spanish, it's because there is 06 certain *comfort* that they understand both 07 languages and I can just switch on them and 08 they will be okay. And, they feel them same 09 way too. (Transcription skipped) 10 I thought about when I do code-switching, it's 11 *feel at ease* because it's so nice when there is 12 someone else that understand both languages 13 that I am able to just weaving in and out 14 *without having the stress or worry* (…) 15 And so, there is certain comfort level.

Most important point is how Carmen interprets the code-switching or *hybrid language practices*—strategic use of the complete linguistic toolkit—(Gutiérrez, Baquedano-Lopez, & Tejeda, 1999) in the classroom. Looking at this video clip, Carmen marks both *multiple languages* and *scientific Discourse* codes on the video coding sheet (right column, lines 01-02). She analyzes the speakers' weaving in and out between two languages with the word "comfort" (right column, line 08), "feel at ease" (line 14), and "without having the stress or worry" (lines 18-19) to express their scientific ideas.

As Carmen reported above, the students were allowed to speak in their language of comfort during any of their linguistic choices—English, Spanish, or code-switching. Carmen does not conceptualize code-switching as a sign of *semilingualism* (Hansegård, 1968)—low

language ability in both languages. She capitalizes students' feeling comfortable to understand

and express the scientific ideas. This evidence points to Carmen's sophisticated understanding

about the functions of Spanish. Instead of dichotomizing English versus Spanish as two separate

practices, Carmen interprets hybrid language practices as natural modes of communication.

Our collaborative reflections about the language functions allowed Carmen to appreciate

using Spanish as a tool in the classroom. Carmen reports her transformative language ideologies

throughout action research:

[Focus Group 4: Carmen, 08/01/2011]
01   I think that **I come to realize that there is no substitution for language as far as using**
02   **it as a tool to help students to learn**. I think you can come up with all kinds of different
03   strategies, you know, like visuals and all kinds of things. But, I think my kids really
04   helped me to learn that **there is no substitution for language**.

Carmen's main awareness included the vital role of utilizing students' L1 as an instructional tool.

Thus, she reports, "there is no substitution for language" (line 01 and 04) and using language as a

tool "help students to learn" (line 02).

Language Constraints

So far, I have presented some changes in the teacher's and focal students' language

choices in the classroom. I also explained how Carmen and I collaboratively reflected on the

language functions of Spanish—namely *peer assistance*, *teacher assistance*, and *affinity*—as

well as how Carmen made changes in her language practice. However, this process of

transformation in language practice should not be taken for granted. Throughout the action

research process, Carmen shared her deep understanding about multiple constraints such as

deficit ideologies, English-only language ideologies, and lack of support for bilingual practices.

Figure 17

Frequency of Carmen's Comments about Language Constraints

	Unit 1	Unit 2	Unit 3
■ Deficit View	1	4	0
■ English-Only	2	7	1
■ Lack of Support	2	2	2
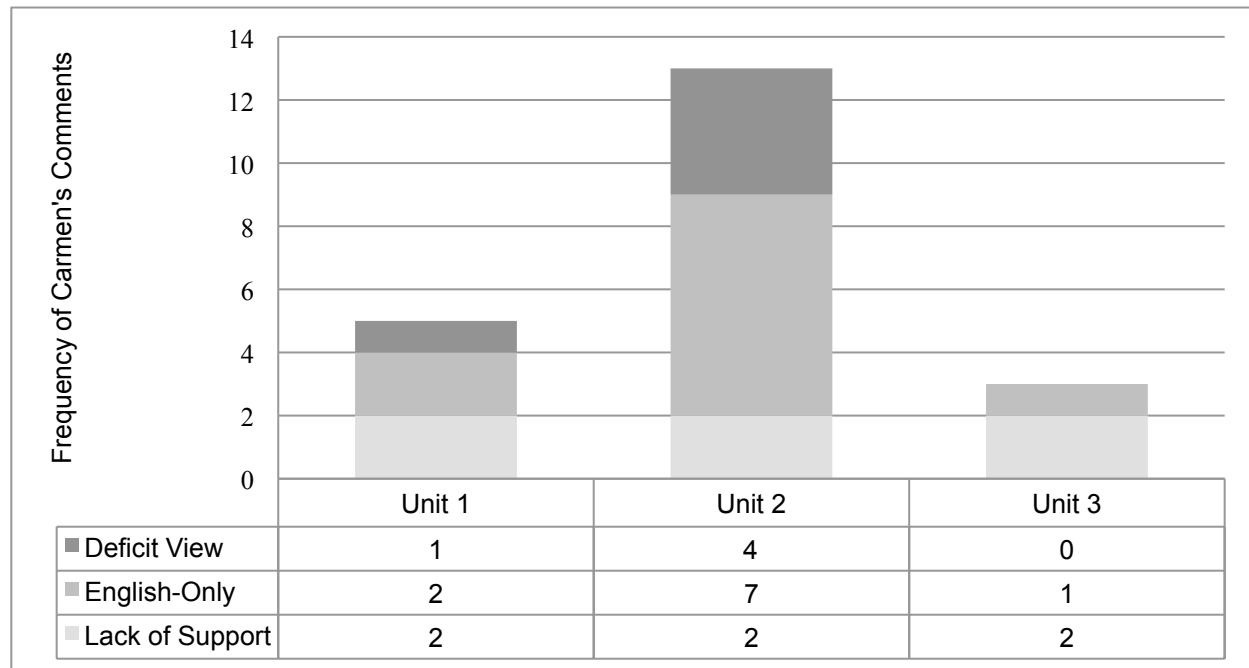
As the data above illustrates, most comments were reported in Unit 2 when she was bringing

about changes in classroom language practices. Carmen's comments about language constraints

further demonstrate that the transformative processes are contested and require constant

negotiations between competing language ideologies.

I analyzed Carmen's main awareness of language ideologies across three units. Table 10

below presents Carmen's critical understanding about the multiple contextual language

ideologies:

Table 10

Carmen's Critical Reflections about the Contextual Language Constraints

	Unit 1	Unit 2	Unit 3
Students' language ideologies		There are variations in focal students' language choice.	
Parents' language ideologies		Parents push their children to learn English; Some parents do not want their children to be in bilingual program.	
Other teachers' language ideologies	One Vietnamese bilingual teacher does not use Vietnamese in the classroom.	Other teachers have English full-immersion approach.	Other teachers decline bilingual resources.
Language ideologies in school context	There are little directions and lack of support for bilingual teachers.	There is a lack of bilingual support system within school.	Test preparation is done in English-only.
Dominant societal language ideologies		There is social deficit view toward bilingualism.	

Carmen's understanding about language constraints explains that she constantly needed to

negotiate between competing language ideologies to make changes in language practices.

Unit 1: Language ideologies within school site. During Unit 1 reflections, Carmen

showed explicit awareness about other bilingual teachers' language ideologies:

[Focus Group 1: Carmen, 12/22/2010]
01   Ms. M is second grade. She is Cambodian. Mr. L is Vietnamese. But, I don't think I've
02   ever heard from them use Vietnamese, except speaking with parents.

As Carmen explained, there were variations in the teachers' use of students' L1 in the classroom. According to Carmen's explanation, some Vietnamese, bilingual teachers in herschool did not utilize Vietnamese as a tool because of the dominant English-only language ideologies.

Carmen also mentioned that the bilingual support system in her school site was based on the transitional model:

[Focus Group 2: Carmen, 1/341/2011]
01   The other thing is that you know third grad was it. That is the end of the road for
02   bilingual. Like once they went into the fourth grade. That was it.

While there are bilingual classrooms up to third grade, the students are expected to transition out by fourth grade.

Unit 2: Multiple and competing language ideologies. Most of the comments about language constraints were reported after Unit 2. In Unit 2, Carmen mentioned the multiple layers of language constraints—students' language ideologies, parents' language ideologies, other teachers' language ideologies, language ideologies in her school site, and dominant societal language ideologies.

Students' language ideologies. Throughout the Unit 2 videos analysis process, Carmen reported the variations across focal students' language choice in the classroom. All four focal students—Julia, Maribel, Luis, and Ernesto—were dominant Spanish-speakers and their parents also only spoke Spanish in their homes.

[Unit 2: 04/18/2011 meeting for 04/13/2011 video analysis]
01   Eunah: Can you explain what's happening in minute 40-42 video clip?
02   Carmen: Um in this video, they get to see um you see how **Luis and Ernesto are**
03   **more comfortable in English** so they speak in English. Whereas **Maribel**
04   **and Julia are more comfortable in Spanish**. And so, they manipulate the
05   content differently. But at the same time, despite whatever language they
06   choose to work, they are very confident for what it is that they are doing and
07   how to help each other.

99

As Carmen reports above, Julia and Maribel easily adapt to the new norm of using two languages in the classroom from the Unit 2 process. However, Luis and Ernesto push themselves toward English more.

Carmen explained that, even though Luis and Ernesto were Spanish dominant, they were challenging themselves to use more English in the classroom:

[Unit 2: Carmen, 04/18/2011 meeting form 04/13/2011 video analysis]
01 So, I think **Luis and Ernesto, they try to challenge themselves to speak more English**.

Understanding that the focal students' home language practices are mostly in Spanish, the self-challenge toward English use in the classroom observed in Luis and Ernesto is evidence of their language ideologies. Luis and Ernesto understand the dominant contextual language ideologies in school context where English is considered to be the primary language of instruction. The variations in focal students' language choice explains how these students negotiated their language choice differently between new language practice of using more Spanish in the classroom and the dominant language practice of English-only practice in school context. Later in Unit 3, Carmen also mentioned her understanding of students' language ideologies: "I think that they are very smart in that they understand the society around them and they know that English is dominant and more socially accepted language over Spanish" (Carmen, 06/30/2011 meeting).

Thus, the variation in the focal students' language choice is not interpreted as the students' lack of ability to write in Spanish. Instead, Carmen and I learned that Luis chose to use more English even though he had the ability to write in Spanish. The conversation in the following transcript supports this understanding:

[Unit 2: 04/15/2011 meeting for 04/05/2011 video analysis]
01 Carmen: **Luis, he has really pushed himself toward English more but I think**
02   **that's him challenging himself.** (A couple of lines skipped)

| 03 | | Now, it's on his own terms. "Well, I think I can do this. I am going to do it |
| 04 | | in English." He has that option. **But he always chooses English.** |

In the transcript above, Carmen explains Luis' language choice as his personal challenge—Luis

is pushing himself toward English on his own terms.

Following Carmen's comment, I add my own observation of Luis' use of Spanish:

05	Eunah:	**But** one day, I saw his smoking field-notes and he wrote the journal in
06		Spanish. I don't know whether he wrote it in Spanish everyday. **But, one**
07		**day when I looked at his note, it was in Spanish.** The written part was in
08		Spanish but when he shared it with the group, he spoke in English.

As reported above, I saw Luis' use of Spanish for his field-notes homework, during my

classroom observation in Unit 2 (lines 06-07). Thus, I question about Carmen's observation that

Luis always chooses English in the classroom.

Then, Carmen explains her understanding of Luis' home language practice:

09	Carmen:	I mean that's really talented to be able to do that. **I think that the reason**
10		**why his work is in Spanish is because his mom doesn't speak any**
11		**English.**
12	Eunah:	I see.
13	Carmen:	So I think that **she looks over his homework** and I think that he understands
14		"my mom doesn't know, so I need to be able to communicate with her
15		because she really cares about my education."

In this transcript, Carmen interprets that the reason Luis has his field-notes homework written in

Spanish is because his mom, who only speaks Spanish, helps homework assignment (lines 13-

15). Through our shared video analysis process, both Carmen and I come to understand that Luis

has the ability to write in Spanish but he is trying to push himself toward English on his own

terms in the classroom.

Parents' language ideologies. Carmen further mentioned her awareness of parents'

language ideologies:

[Unit 2: Carmen, 04/07/2011 meeting for 03/29/2011 video analysis]
| 01 | | "Okay. I am going to learn English." And it didn't just come from society. It didn't just |

02   come from schooling. It also came from the parents who are your roots of everything.
03   **So for your family, they even say, "It's not good enough any more."**

In the transcript above, Carmen reports her understanding of English-only language ideologies of

the parents. For example, in the transcript above, Carmen talks in a parent's voice, "it (our home

language) is not good enough any more" (line 03).

     Carmen also talked about some parents' deficit view toward bilingual program:

     [Unit 2: Carmen, 03/28/2011 meeting for 03/22/2011 video analysis]
01   Last year, I had a student whose mother took her out of my classroom because it was
02   bilingual. And she said, "No, my kid is smart. She needs to be with the smart kids." So,
03   there is a **stigma** because my kids are bilingual and because they speak Spanish. And I
04   was so hurt by that because I see myself in them. I see what a value is. I don't want
05   them feel like it's a **disability**. It's not **disability**. It's not. (Transcription skipped)
06   I want them to know that language is not a disability but more of a benefit and use it as
07   a tool.

In the transcript above, note the key words that describe the deficit view attached to language use

such as "stigma" (line 03) and "disability" (line 05). Carmen shares her personal experience of

being a bilingual classroom teacher. For example, she talks about a mother pulling out her child

from Carmen's class because of the "stigma" in bilingual program (line 03). With this personal

experience, Carmen reports her position toward bilingualism—"I don't want them feel like it's a

disability" (line 05) and "use it as a tool" (lines 06-07).

     Teachers' language ideologies. In the transcript below, Carmen reports her

understanding of the competing language ideologies between the dual-language program

approach and the English-only full immersion approach:

     [Unit 2: Carmen: 04/07/2011 meeting for 03/29/2011 video analysis]
01   Ms. A (other teacher in her school), she grew up bilingual. But, she grew up in very
02   different way and she was successful for it. And, I think she imposes those experiences
03   on the kids. She expects them, "**full-immersion**. That's how it should be because it
04   worked for me so it's going to work for you." But, that's also very unfair. Now, I come
05   with the experience where **I had both language coming up in formal school.** And, I
06   felt it was a huge **advantage** to me. And then, I see these kids how/ I can see how
07   messed up the system is and how broken it is. I can see that not all of them learn the

08   same way. So, it's really hard for me to agree with full-immersion just because I see
09   the **struggles** that they are going through.

The transcript above explains how the teachers' own language-learning experiences provide an

analytic lens through which they can understand their students' language learning. Carmen

contrasts her own language learning experience from dual-language school (lines 05) with that of

Ms. A from English-only full-immersion approach (lines 01-04). Carmen reports her position in

support of additive bilingual development. For example, she uses the word "advantage" (line 06)

to describe her experiences in dual-language school; and, she further questions about the

effectiveness of English-only full-immersion approach because she sees the "struggles" (line 09).

Language ideologies in school context. Another language constraint that Carmen talked

about was the lack of support for bilingual teachers within her school site:

[Unit 2: Carmen, 03/28/2011 meeting for 03/22/2011 video analysis]
01   When I came in (.) I was like "Okay, how does the program work?" "Oh, I don't know."
02   "What do you mean you don't know? How do you not know how this is going to work?
03   If the entire district doesn't have something in place, how haven't you put something in
04   place in your own school?" And so, that was a really **big harsh reality check** for me.
05   **check** for me.

According to the data above, the lack of systematic support for bilingual teachers was a "(big

harsh) reality check" for Carmen (lines 04-05).

06   "All these kids, they don't know English. So, you should not really worry about
07   them because **they don't really matter**.

Carmen's reported dialogue with the administration person (lines 06-07) vividly illustrates the

challenges that new bilingual teacher can encounter. Carmen reports the deep-rooted deficit view

toward bilingual students. Carmen's reported voice of administrative person (lines 06-07)

explains her understanding of the lack of support system, rooted in deficit view, toward bilingual

students.

Dominant societal language ideologies. Carmen further reported her understanding of

the dominant societal language ideologies toward bilingual people:

[Unit 2: Carmen, 04/18/2011 meeting for 04/13/2011 video analysis]
01   I know this for the first-hand and I see it in the culture that if you are Spanish speaker,
02   there is certain level of **hatred** toward Spanish speaking individuals and so/ even any
03   other language that's not English/ and tend to **put you down** to **make you feel less**
04   **smart** because of the language you choose to speak. And so, I feel like this is like a
05   personal victory for me because it's like "Ha, these kids are not dumb."

In the transcript above, Carmen explains that American society does not value bilinguals. The

key words "hatred" (line 02), "put you down" (lines 03), and "make you feel less smart" (lines

03-04) describe her understanding of the societal language ideologies—our shared beliefs about

language and language users. As Woolard (1998) explains, our language ideologies are not only

about language, but they are always about definitions of language users in the world. Carmen's

comment—"[speaking] any other language that's not English tends to put you down to make you

feel less smart because of the language you choose to speak" (lines 02-04)—displays her

understanding of deeper language ideologies issues, linking micro-communicative action into

macro-social issues. Our definitions of language always involve our identities as well as social

and political positioning (Gal, 1998; Woolard, 1998).

       Unit 3: Understanding contextual language constraints. Throughout Unit 3, Carmen

continued bilingual scientific practice in the classroom. As she made some bilingual resources

for her students, she also tried to share these resources with other teachers who had Spanish

bilingual students in their classrooms. In the transcript below, Carmen reports how other teachers

declined her offer:

[Unit 3: Carmen, 04/18/2011 meeting for 04/13/2011 video analysis]
01   Often times, I have said, "I have done things where it's in English and Spanish." And, I
02   ask them "Do you want it in English or in Spanish? I already have it translated. Do you
03   want it? It's available. It's here for you." And **they decline it, every single time.**

As Carmen reported above, many other teachers who also have Spanish bilingual students in their classrooms did not want to use the bilingual resources Carmen offered. This suggests that Carmen's bilingual practices are not supported and/or valued within her school site.

As Carmen finished her Unit 3 action research journey, we had a meeting to reflect on Unit 3 experience to write her unit summary report together. During our meeting, Carmen reported the inconsistent bilingual support system within school:

[Unit 3: Carmen 06/29/2011 meeting for 05/24/2011 video analysis]
01   It's hard because even within our school, **there isn't a set like a structure** for bilingual
02   program. And as it is, next year there isn't going to be a bilingual second grade because
03   there isn't enough Spanish bilingual students to create a classroom. So, I wonder how
04   they are going to be affected by that. So, it's very **inconsistent**. And, this **inconsistency**
05   affects the kids. Right? (A couple of lines skipped) It's like they are constantly having
06   to paddle for themselves because there isn't that support that they really truly need.
07   Right? Because if we are talking about real support that needs to be consistent.
08   Because if it's not consistent, that's not even worth it.

In the meeting transcript above, Carmen explains how the bilingual program works "inconsistently" within her school context (line 04), without "structure" (line 01). As Carmen points out, the support system needs to work consistently to provide enough supports students truly need (lines 07-08).

During our conversation about her bilingual practices in the classroom, Carmen pointed out the English-only practice for testing as one of the language constraints. Carmen mentioned how she was conditioned to push more English because of all the restraints from testing culture:

[Unit 3: Carmen, 06/29/2011 meeting to brainstorm Unit 3 report]
01   I think one of the main obstacles is the test. (…) The kid, **all the [test preparation]**
02   **practices they get are in English**. And, they haven't had that practice having both texts
03   in English and in Spanish and how to utilize them in a way that's beneficial to them.
04   (…) So, when it comes to the test, they have this bilingual test. If they choose, that's
05   fine. But, **they have never had bilingual [test preparation] practice in the classroom**.

According to the data above, Carmen explains that simply providing an option of language choice in taking a test is not enough to really help the students' needs because "all the [test

preparation] practices they get are in English" (lines 01-02) and "they have never had the

bilingual [testing preparation] practice in the classroom" (line 05). As Carmen points out, the

language choice option in testing is meaningless unless there is bilingual practice for the test.

Escamilla (2009) also argues, "native language assessment is only effective if it is couple with

instruction in the native language; and, it would need to be created from additive paradigm of

bilingualism as a way of potential benefit for EL" (p. 448).

Carmen's position. With the understanding of language constraints, Carmen expressed

how she was conditioned and accustomed to teach in English. However, Carmen reported some

possibilities to bring about changes in her own classroom:

[Focus Group 3: Carmen, 05/09/2011]
01   The system is built so that it just breaks you down and it really um doesn't make you do
02   what the kids need in order for them to learn. If it's going to be bilingual, that means two
03   languages right? That means that they need to be strong in both languages. And the way
04   it's set up now it's just not conducive to that. It doesn't enable that happen. **But, I can**
05   **make changes in my own classroom and I can make changes in myself** so that they
06   are still building on it and it's not subtractive kind of learning style.

For example, in the transcript above, Carmen reports an action change plan in self and in her

classroom—e.g. "but I can make changes in my own classroom and I can make changes in

myself" (lines 04-05).

When we discussed that many teachers' language practices were based on English-only

language ideologies, Carmen further expressed her own position:

[Unit 2: Carmen, 04/07/2011 meeting for 03/29/2011 video analysis]
01   It's really easy for people to say, "We live in America, we speak English." **"Well, I live**
02   **in America, that's why I speak two languages."** You know? **And if I could speak**
03   **more than three languages, I would**. I mean, I have contemplated taking a Vietnamese
04   class. I wanted to go back to school and maybe I should learn Vietnamese. Or, I have
05   thought about taking a year off just going to Vietnam.

Carmen's comments in the transcript above explain her additive position toward bilingual

(multilingual) practices—"I live in America, that's why I speak two languages" (lines 01-02) and

"If I could speak more than three languages, I would" (lines 02-03). Carmen's comments reveal her appreciation for her bilingual students' linguistic resources.

In this chapter, I presented the multi-layered transformations in Carmen's language ideologies throughout a yearlong action research process. Carmen developed a deep understanding about the language choice issues in educating ELs, throughout the collaborative video analysis process with the researcher. For example, Carmen's understanding of language choice evolved from individual level (Unit 1) into more sociocultural level (Unit 3). Our collaborative reflections about language choice in the classroom mediated changes in Carmen's language practice. For example, she grouped students by language to encourage their Spanish use from Unit 2; she provided teacher–made bilingual materials from Unit 2; and, she encouraged Spanish use for both oral and written forms; and, she used more Spanish as a tool for learning in Units 2 and 3.

By using the video-coding sheet as a tool, Carmen and I collaboratively reflected on the functions of Spanish in the classroom. Through this shared reflection, Carmen came to understand the value of using Spanish as a learning tool; and, this reflection mediated her changes in her classroom language practices.

However, Carmen also reported some constraints to make changes in her language practice. These reflections on language constraints included the multiple and competing language ideologies from students, parents, teachers, school, and society. Carmen's transformative language practices illustrate how one teacher tries to bring about changes in her own classroom, in the context of dominant English-only language ideologies.

Chapter VI. Understanding the Changes in Focal Students

The findings in this chapter focus on how Carmen and I collaboratively reflected on the participatory shifts and learning of focal EL students. I present the changes we analyzedin relation to the teacher's transformative language practices.

The relevant codes in this analysis were the following: *participation shift*, *modality shift,* and *role shift* (See Appendix D). Later during the Unit 2 reflection, we added a new code: *identity shift.*

Table 11

Shifts in Focal Students: Code, Definition, and Example

Code	Sub-code	Definition	Example
Participation shift		Students' shift in participation—from non-participant to active participant	"Focal students began to participate more from Unit 2" (Carmen, Unit 2 report)
Modality shift		Students' shift in modality—toward more certain modality	"Julia is very certain about what she is talking and doing and this made Maribel gravitates towards Julia" (Carmen, 04/18/2011 meeting)
Role shift		Students' shift in role as they take the expert and/or leader role	"Julia takes a teacher role and a leader role" (Carmen, 04/18/2011 meeting)
Identity shift	Scientist identity	Students' being scientists	"James called himself as scientist" (Carmen, 04/07/2011 meeting)
	Growth as learner	Growth in students as learners	"Maribel is demanding her part of work. I think she has grown a lot" (Carmen, 06/29/2011 meeting)

These participatory shifts codes are derived from Cultural Historical Activity Theory (CHAT). As I explained in chapter II, the core learning principles of CHAT include the

consideration of developmental issues and role of language as a mediational tool in learning (Tarone, 2007). The shift codes presented in the table above—*participation shift*, *modality shift*, *role shift*, and *identity shift*—focus on the students' development over time. *Participation shift* is defined as when a student who is usually a non-participant begins to participate more during the activity. *Modality shift* is defined as a shift in posture of certainty. For example, Julia who was usually uncertain about her opinion began to speak in more certainty (e.g. "This is what I think."). *Role shift* is defined as when a student becomes an expert or/and leads the group like a teacher. *Identity shift* is explained as students' assuming the new social identity of scientists or their growth as learners. For example, Carmen and I marked *identity shift* when a child called himself as scientist, holding magnifying glass in his hands. We also marked *identity shift* when Maribel demanded her part of work in Unit 3 because this explained her growth as a learner.

From a CHAT perspective, "learning involves transformation of participation in collaborative endeavor" (Rogoff, Matusov, & White, 1996, p. 388). Learning is defined as "the transformations that continuously take place in an individual's identity and ways of participating through his or her engagement in particular instance of social activities with others" (Wells, 2000, p. 4). This emphasis on students' transformation is distinguished from the transmission model of learning in which the teacher—the only expert in the classroom—transmits knowledge to learners.

Shifts in Focal Students with Spanish Use

While multiple factors can contribute to the students' learning, Carmen's action research particularly focused on the role of utilizing students' L1 as a resource. This focus was based on Carmen's understanding of many of her ELs' day-to-day struggles with English in the classroom. For example, during the early part of the school year (Unit 1), Carmen realized the lack of

participation from her Spanish-dominant bilingual students. She mentioned that a small number of same students always dominated the floor, while other quiet bilingual students were always non-participants. I also noticed that some of the students dominated the conversational floor during Unit 1; and, I recognized these students' names during my early school visits. Carmen and I also discussed our awareness of the lack of participation from other students.

Carmen reported these students' lack of participation in relation with the language choice in the classroom: "I never gave them the opportunity to host their very own conversation amongst themselves" (Carmen, Unit 2 action research summary report). Carmen believed that some of her quiet, shy, and non-participating bilingual students lacked confidence in their ability to communicate in English thereby they rarely participated in conversations. This awareness led her to set the Unit 2 action research goal to promote students' participation, with the following action research questions:

[Unit 2: Carmen, action research summary report]
01   "What would happen if this group of shy bilingual students—Maribel, Julia, Luis, and
02   Ernesto—were placed together to work in a small group? And how can I use language as
03   a tool?

Carmen's action research question explains her expectations for the shifts in focal students— Maribel, Julia, Luis, and Ernesto—as they were put together in small group setting and encouraged to use more Spanish as a tool.

Throughout our shared video analysis meetings, Carmen and I coded the shifts in students together, utilizing the codes on the coding sheet—*participation shift*, *modality shift*, *role shift*, and *identity shift*. This means that we had a theorically grounded language to talk about specific aspects of learning—for example, students' social and affective dimensions of learning. As we watched the videos together, we paused and coded every two-minutes of video. During the video coding process, we also shared our reflections and discussed what we saw in the videos.

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In Figures 18 and 19, I present my analysis of our coding sheets. I counted the shift codes—*participation shift*, *modality shift*, *role shift*, and *identity shift*—on the coding sheets that Carmen and I coded together. For example, when we marked a student's *participation shift* within a two-minute video clip, I counted it as one. When we marked *participation shift* and *role shift* together within another two-minute segment, I also counted it as one.

Figure 18

Frequency of Shift in Focal Students

	Unit 1	Unit 2	Unit 3
■ Week 4	0	3	8
■ Week 3	0	4	6
■ Week 2	0	8	5
■ Week 1	0	6	4
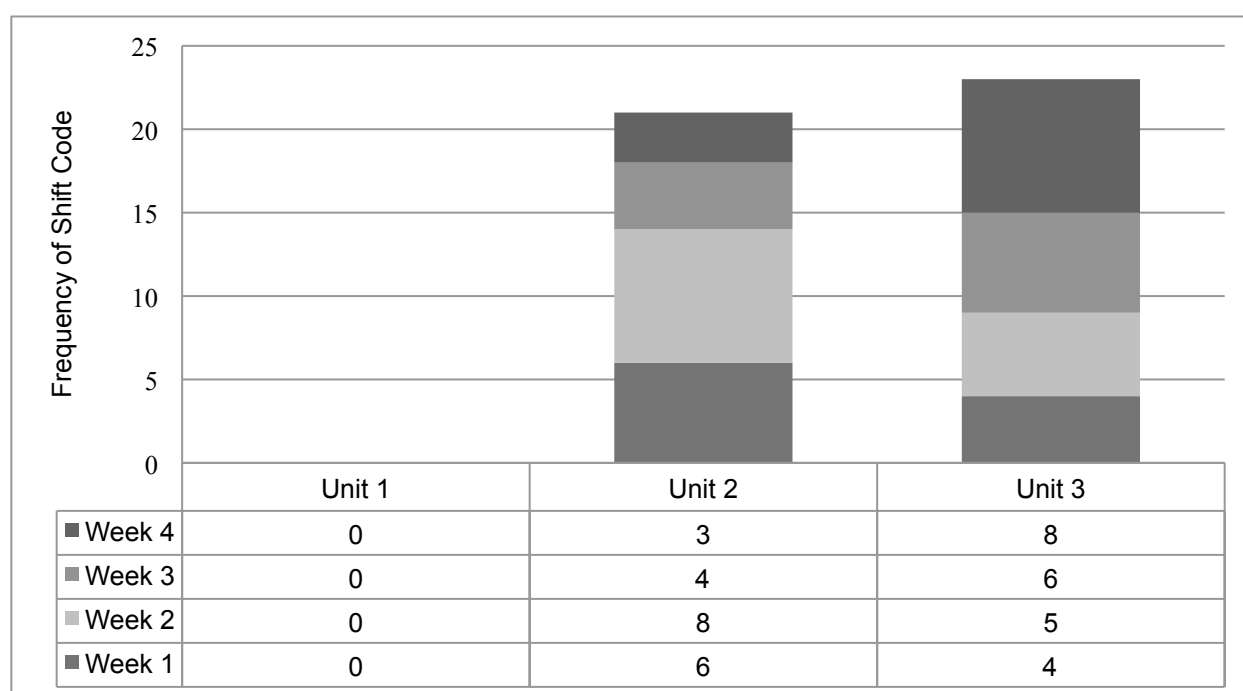
According to the data above, more shifts in focal students were found in Unit 2 and Unit 3 than in Unit 1. There was no shift in focal students in Unit 1. A total of 21 instances of *shifts* were identified from focal students in Unit 2; and, 16 out of 21 instances happened when they were speaking in Spanish. In Unit 3, there were 23 instances of *shifts* in focal students; and, 13 out of 23 instances happened when the focal students were speaking in Spanish.

In Figure 19, I further present how much shifts happened with Spanish use. The percentage of shifts with Spanish was counted.

Figure 19

Percentage of Shifts in Focal Students
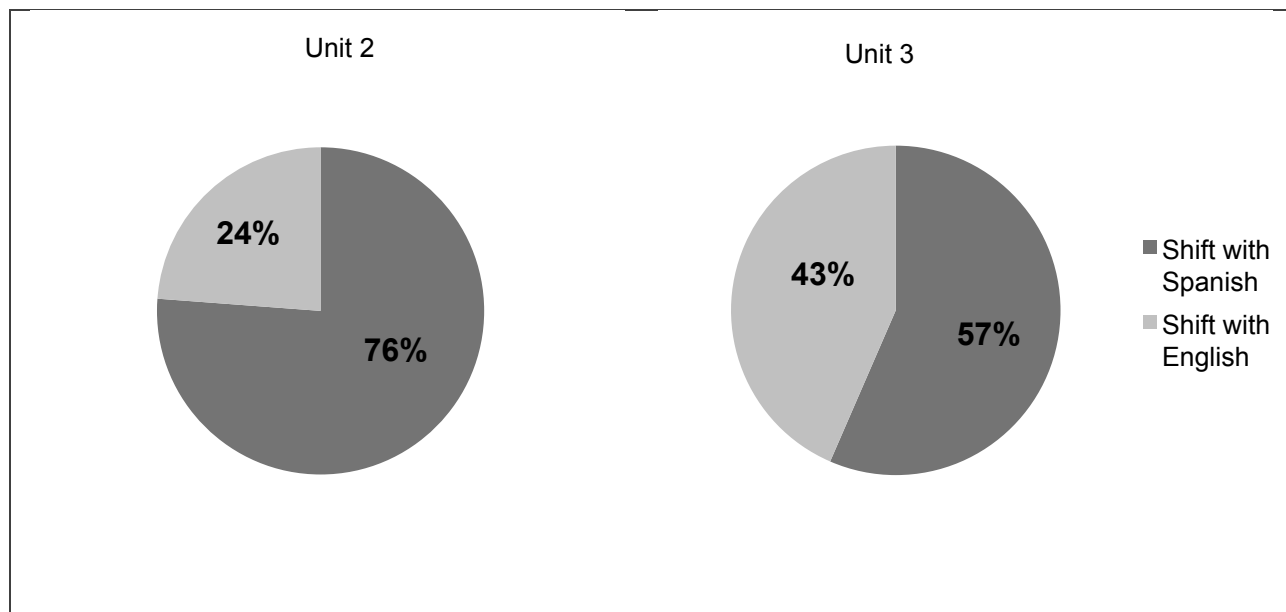
According to the data above, in Unit 2, about 76% of *shifts* (16/21 *shifts*) in focal students happened with Spanish use. This data also shows that in Unit 3, about 57% of *shifts* (13/23 *shifts*) in focal students were identified when they were using Spanish. This evidence points to transformative language practices and the significant mediating role of using students' L1 for learning.

In the following section, I present some of the key video clips that Carmen and I analyzed together throughout our meetings. The analysis focuses on the focal students' *shifts* in participation, roles, modality, and identities, observed in the videos. Four focal students—Maribel, Julia, Luis, and Ernesto—were all quiet and non-participating students during the early school year. They were all Spanish-dominant students. All of them came from the immigrant families and their parents mostly spoke in Spanish.

Maribel: Shifts in the Nature of Participation

Maribel was referred to special education from her previous year teacher. Carmen understood how Maribel was frustrated and how she struggled with English all of the time at school. Thus, sitting quietly in her desk, chatting about other things, or letting others do her work was how she usually functioned within the classroom. Carmen thought what Maribel was feeling as: "I am just going to give up because nobody believes in me anyways" (Carmen, 07/14/2011). While somebody from the outside would see Maribel an under-achiever, Carmen understood Maribel's frustration with the language barrier. Carmen believed that Maribel was really a concrete, tactile, and visual learner who just needed more help.

In our Unit 2 video coding analysis meetings, Carmen and I discussed that utilizing Spanish was helpful for Maribel to become more active participant during the small group work:

> [Unit 2: Carmen, 04/15/2011 meeting for 04/05/2011 video analysis]
> 01   Maribel, I think she is very **frustrated**. (Transcription skipped a couple of lines)
> 02   I know she does have trouble with English. I think that's another **frustration** for her.
> 03   And so, I think she **struggles** with that on a daily basis. So, I think that she is so used to
> 04   **checking out**. (Transcription skipped)   And, I think that **utilizing Spanish in small**
> 05   **group has also become something much more helpful for her because she is**
> 06   **engaged. Even though she checks out, she still manages to come back.** Whereas
> 07   before, she would let everybody else do the work, and she would just sit there.

In the transcript above, Carmen reports her awareness of Maribel's "frustration" and "struggle" with English on a daily basis (lines 01, 02, and 03). According to Carmen, using Spanish within a small group helped Maribel to continuously participate for the scientific activity (lines 04-06). For example, as Carmen also reported, Maribel often checked out as a way to cope with her frustration with difficult tasks but still managed to come back and participated during the group work (line 06).

In Table 12, I present some changes in Maribel within a small group where all group members share Spanish as their L1. The video transcript (left column) below is from the Unit 2

action research process when the students were conducting the scientific observation of the

cigarette. In this video transcript (left column), note how Maribel is an active participant, sharing

her scientific observation with her group members in Spanish:

Table 12

Maribel's Participation Shift with Spanish Use

Transcription of video clip	Carmen's analysis of this video clip
[Unit 2: 03/22/2011, min. 50 video clip] Focal students are conducting cigarette observation	[03/28 meeting for 03/22/2011 video analysis]
01 Julia: (Looking at the cigarette with 02 magnifying glass) It smells bad. 03 **Maribel**: Smells bad like **poison**. Let's 04 touch it. Es como se fuera hojas 05 de arboles. (=*It is as if it were* 06 *leaves of trees*). 07 Julia: Oh it smells bad. 08 **Maribel**: Y este es que fuma mi papá. 09 (=*And, this is what my father* 10 *smokes*). 11 Julia: Huele como marihuana. (=*It* 12 *smells like marijuana*). 13 **Maribel**: Es marihuana. (=*It is marijuana.*) 14 (To Julia) No te lo comes. 15 (=*Don't eat it*). ¿Te lo comistes 16 un tantito? (=*Did you eat a little* 17 *bit of it?*) 18 Julia: Que huele (=*That it smells*) 19 **Maribel**: **Y tú, no te estas poniendo tanto**, 20 **te vas a drogar. (=*And you*,** 21 ***don't put so much, you are going*** 22 ***to drug yourself*).**	01 Carmen: And *participation shift*. I have 02 never seen Julia and Maribel really 03 take ownership over what's going 04 on? So, she says, "This is" 05 Eunah: <u>She is the leader</u>. 06 Carmen: Yeah. Wouldn't that be a um... 07 Eunah: *Modality*? 08 Carmen: *Modality*! Yeah! Yeah! Maribel! 09 Eunah: She was so:: certain. "I know!" 10 Carmen: She was like "No this is how it is" 11 Eunah: Uhu. 12 Carmen: Yeah! I am so excited. (Laughing) 13 (We coded *multiple languages*, *participation* 14 *shift*, *role shift*, *modality*, and *funds of* 15 *knowledge*)

Upon analyzing this video clip, Carmen marks the *participation shift* code (right column, line

01). I also indicated the frequency of Maribel's taking turns in this conversational exchange (left

column, lines 03, 08, 13, and 19). Maribel shares her scientific observation with cigarettes, as

part of data collection, speaking in Spanish. I make a comment about Maribel's becoming a

leader in this conversation (right column, line 05) and mark *role shift*. I also point out Maribel's

modality shift and Carmen agrees with this point (right column, lines 07-08). Maribel is very

certain about what she is doing and saying in this transcript (right column, line 09)—for example, she explains with certainty that cigarettes are harmful and poisonous (left column, lines 03 and 19-22). Marking *multiple languages* code on the coding sheet (right column, line 13), we interpret Maribel's *shifts* in participation and modality in relation to her Spanish use. With the teacher's transformative language practices, there were also changes in the students' language use. In the transcript above (left column), Maribel understands that her group members speak Spanish as L1; and, she shares her scientific observation in Spanish. With the expanded mediational tools in the classroom, the nature of Maribel's participation, roles, and modality shifted.

Table 13 below illustrates how Maribel actively seeks for peer assistance because she is in the group where four group members share Spanish as their L1. In the video transcript below (left column), Maribel asks how to say "tocar (=*touch*)" in English to her group members (left column, lines 09-11 and 13-14). When Ernesto says, "touch" (left column, line 16), Maribel continues her conversation, saying "it feels like" and "it looks like leaves on there" (left column, lines 17 and 22).

Table 13

Maribel's Asking for Peer Assistance in Spanish

Transcription of video clip	Teacher's analysis of this video clip
[Unit2: 03/22/2011, min. 62 video clip]	[03/28 meeting for 03/22/2011 video analysis]
01 Maribel: Ese es { } o algo así (=*That is{ }*	01 Carmen: I'd also say *participation shift*.
02 *or something like that*).	02 Eunah: So she asked "How do you say
03 Luis: This looks like a leave.	03 touch?" in <u>Spanish</u> and then
04 Ernesto: It looks like a leave.	04 switched into English.
05 **Maribel:** (taking microphone) And it's um	05 Cramen: Yeah. And it's funny because they
06 and it's/ (thinking for 10 sec.). Um	06 said "touch" right? And so she
07 It's (.) (speaking to Julia in	07 went to English rather than saying
08 Spanish) {inaudible} It tastes like	08 "it touched like"/ because that's
09 filtro (=*filter*) (laughing) **¿Cómo**	09 what they said. So, she kept
10 **se dice tocar en ingles? (=*How do***	10 asking "how do you say touch in
11 ***you say touch in English?***)	11 English?" And finally, Ernesto
12 Ernesto: (Leaning toward Maribel)	12 says "touch" and so she picks
13 **Maribel:** **¿Cómo se dice tocar en ingles?**	13 it up and <u>she said "it feels like."</u> If
14 (=***How do you say touch in***	14 she had literally/ all she needed
15 ***English?***)	15 <u>was a cue to remember how to say</u>
16 Ernesto: Touch	16 <u>something</u> rather than picking it up
17 **Maribel**: **It feels like** um (thinking)	17 saying it touched like, she said it
18 {inaudible}	18 feels like. (Trans. Skipped)
19 Ernesto: Ya vamos a lavar nuestros hands.	19 I also see it as *participation shift*.
20 (=*We are going to wash our hands*	20 <u>I don't think she would have done</u>
21 *now*).	21 <u>that if she was in another group.</u>
22 **Maribel:** **It looks like leaves on there.**	

Looking at the video clip, Carmen mentions Maribel's *participation shift* (right column, line 01). Then, I point out Maribel's *participation shift* in relation to her Spanish use (right column, line 03). As I made a connection between Maribel's *participation shifts* and Spanish use, Carmen explained that all Maribel needed was "a cue to remember how to say something" (right column, lines 15-16). Based on this shared analysis process, both Carmen and I come to understand how using Spanish helps Maribel participate within the conversation. When she cannot think of some English words (left column, lines 05-06), Maribel actively asks for peer assistance in Spanish (left column, lines 09-11 and 13-15). Once she feels comfortable, Maribel continues the conversation and further takes a risk to speak in English (left column, lines 17 and

22). This illustrates how classroom language choice mediates students' learning. The changes in the mediational tools expand the students' learning opportunities and action possibilities (Roth & Lee, 2007). Maribel's *shift* in learning, with Spanish use, explains the importance of teacher's language ideologies in organizing learning

Toward the end of the Unit 3 process, Carmen reported Maribel's growth as a learner. In Table 14 below, the focal students are creating the Public Service Announcement script on the storyboard.

Table 14

Maribel's Growth as a Learner

Transcription of video clip	Teacher's analysis of this video clip
[Unit 3: 05/24/2011, min. 32 video clip]	[06/29 meeting for 05/24/2011 video analysis]
01 **Maribel:** **I wanna do this one** (pointing)	01 Carmen: Maribel, I mean here she is
02 (To Luis) You do the last one.	02 demanding to be a part of
03 Why Julia {inaudible} The teacher	03 something, right? Whereas before,
04 said we have to work in group.	04 she would have been just fine
05 Luis: You two are not working.	05 allowing everyone else to do it.
06 **Maribel:** **You do not let us do**. Just tell us	06 And, it would have been fine.
07 that's what you do.	07 But, she is mad now. She is mad.
08 (Julia and Luis work while excluding Maribel)	08 I think she has grown a lot as a
09 Transcription skipped a couple of lines	09 learner like "I am not as dumb as
10 **Maribel:** **I am gonna do this one. I will do**	10 I thought I was. There is
11 **the last one.**	11 something that I can contribute.
12 Ernesto: (Flipping the page) hey look.	12 And, I am mad. You are not
13 **Maribel:** **I wanna do the last one.**	13 allowing me to contribute what
14 Julia: (Drawing)	14 I can do." It's actually nice to be
15 Transcription skipped a couple of lines	15 able to look at the positives.
16 Julia: (Giving storyboard to Maribel)	
17 Maribel: (Giving it back) No. You do it.	
18 Julia: (Giving it back to Maribel)	
19 **Maribel:** **I feel bad cause you didn't let**	
20 **me.**	

When Julia and Luis are dominating the work, Maribel makes a demand regarding which task she can complete (left column, lines 01, 06, 10, and 13). However, Julia and Luis still continue working on the script writing while excluding Maribel (left column, line 08). Later, when Julia

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finishes the script writing, except the very last part, she allows Maribel to make an attempt (left column, line 20). However, Maribel feels bad (left column, lines 19-20) about not having been a part of the process. Carmen chose this portion of the video clip and interpreted it as an example of significant growth as a learner because Maribel was telling others, "I am not dumb as I thought I was. There is something that I can contribute" (right column, lines 09-11). This shift was drastic in Maribel in relation to her usual attitude earlier in the school year—for example, Maribel usually let others do her work (right column, lines 03-06).

Listening to the teacher's interpretation of growth in Maribel this day, I also came to understand that utilizing Spanish as a learning tool was beneficial for Maribel. Maribel was not an active participant during Unit 1; and, Carmen and I discussed Maribel's frustration with English (04/15/2011). However, In Unit 2 and Unit 3, there were observable *shifts* in her participation. Maribel became an active participant; she spoke with more certainty; and, she actively asked for *peer assistance* in Spanish during the scientific work. In Unit 3, Maribel further exhibited growth as a learner, taking the responsibility to contribute to group work. The expanded mediational tools and new rules of collaborative group work contributed to the *shifts* in Maribel's learning. Maribel's case illustrates the importance of transforming teacher's language ideologies for designing additive learning contexts.

Julia: Taking the Leadership Role

Julia, a Spanish-dominant bilingual, was a quiet student in Carmen's classroom. According to Carmen, Julia is the first-born child in her family, taking the leadership role for her younger brother. Carmen mentioned Julia's helping her younger brother solve mathematics problems at home. However, Julia exhibited totally different roles at school. When she was sitting with other monolingual students during the beginning of the school year, she was always

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uncertain about herself and the work she was doing. Thus, she would usually ask her peer, "Kristine, did I do it right? Did I do it right?" Carmen thought that Julia lacked confidence and had internalized this view that "if you speak Spanish, you are not smart" (Unit 2, Carmen, 04/18/2011 meeting for 04/13/2011 video analysis).

Throughout the Unit 2 and Unit 3 video analysis processes, Carmen talked about the changes in Julia's confidence level significantly:

[Unit 2: 04/15/2011 meeting for 04/05/2011 video analysis]
01   Carmen: I really think that Julia felt like she was not as smart as the other kids that are
02   monolingual cause she always doubted herself. You know? Whereas here, she
03   feels like there is value in what she speaks. And I think that she felt some sort
04   of a lot more **confident** in herself that she didn't have before.
05   Eunah: So, could that be one of the changes in students?
06   Carmen: Yes. And I think it's also like she um yeah she gained a lot of **confidence.**
07   She feels a lot more **comfortable** in her own skin and in her ability to do the
08   work. And so, I am really proud of her for that cause I think she has come a
09   long way.

In this transcript, Carmen interprets the changes in Julia's confidence level (lines 04 and 06) in relation to the language choice issue. In the new group in which four most quiet, non-participating, and Spanish-dominant bilingual students were all together, Julia exhibits the leadership role. This was a shift in Julia because she "always doubted herself" when she was sitting with other monolingual students during the Unit 1 process (lines 01-02). In later meetings, Carmen explained that her students were "smart enough to understand the society around them and know that English is dominant and socially accepted language over Spanish" (Unit 3, Carmen, 06/30/2011 meeting). As Carmen interpreted, using Spanish in a small group setting was helpful for Julia's learning process because she became more "confident" in expressing her ideas (line 04).

In the following part, I present some of the key video clips that Carmen and I analyzed together to explain the *shifts* in Julia. As she gained more confidence in herself, Julia showed a

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leadership role in Unit 2 and Unit 3 videos. In the video transcript below, the focal group

students are sharing their secondhand smoking exposure field-notes. In the process, Julia is

assisting Luis by translating his field-notes written in Spanish into English (left column, lines 07-

09 and 13-14).

Table 15

Shifts in Julia's Participation, Modality, and Role

Transcription of video clip	Teacher's analysis of this video clip
[Unit 2: 03/22/2011, min. 12 video clip] (Focal students are sharing their fiend notes) 01 Luis (Looking at his field-notes written 02 In Spanish silently) 03 Julia: (Talking to Luis in Spanish) 04 {inaudible} 05 Luis: The black man started at 6 o'clock 06 and (.) 07 **Julia:** (***Assisting Luis to translate the*** 08 ***note written in Spanish into*** 09 ***English***) He finish (.) 10 Luis: He finish at 6:08. 11 Maribel: ¿Quién? (=*Who*?) 12 Luis: A black man. 13 **Julia:** (***Translating Luis' field-notes*** 14 ***written in Spanish into English***) 15 So they were smoking outside.	[3/28/2011 meeting for 3/22/2011 video analysis] 01 Carmen: I saw *assistance*? I mean I saw 02 *multiple languages* but I saw 03 *assistance* like Julia helping Luis? 04 I saw some *modality shift*? Or (.) 05 They felt more confident with one 06 another. So, <u>Julia usually never</u> 07 <u>participates</u>. 08 Eunah: *Participation shift*? 09 Carmen: Yeah. The other thing is *modality*. 10 (Trans. skipped) She is the one 11 saying like "This is how you do it" 12 and walking somebody through 13 something. 14 Eunah: <u>*Role shift*</u> too? 15 Carmen: I was wondering that.

Looking at this video clip, Carmen and I make important analytic points to explain the shifts in

Julia. First, Carmen makes a link between *multiple languages* and *assistance* codes to explain

Julia's helping Luis in Spanish (right column, lines 02-03). She also points out Julia's *modality*

shift because Julia shows confidence in what she is saying (right column, lines 04-05). When

Carmen says, "Julia usually never participates" (right column, lines 06-07), I point out the

relevant code—*participation shift* (right column, line 08). When Carmen describes what she sees

in the video—"She (Juila) is the one saying like this is how you do it and walking somebody

through something" (right column, lines 09-13)—I interpret this analysis as Julia's *role shift* (right column, line 14).

I understand that these shifts in Julia's modality, participation, and roles are related to her using Spanish in small group. For example, in this vignette, Julia recognizes her bilingual ability as a resource; she initiates a conversational turn to encourage Luis' participation; and, in the process of peer assistance, she exhibits a leadership role. As explained previously, this leadership role from Julia is quite contrasted with her attitude from earlier in the school year—Julia was always uncertain about what she was doing in Unit 1. With the expanded mediational tools, there was a *shift* in Julia's learning. This change in Julia's role further transformed the nature of Luis' participation in activities.

In Table 16 below, Julia and Maribel are making a tally chart for the survey results.. In the process, Julia grew as a leader by assiting Maribel. During the small group work, Maribel was frequently checking her work with Julia. For example, in the video transcript above, Maribel is constantly checking her tally chart with Julia (left column, lines 01-04). This makes Julia finally to say, "Tú no me tienes que copiar. (=*You don't have to copy me*)" in the last parts of the transcript (left column, lines 17-19).

Table 16

Julia's Leadership Role

Transcription of video clip		Teacher's analysis of this video clip	
[Unit 2: 04/13/2011, min. 42 video clip]		[4/18/2011 meeting for 4/13/2011 video analysis]	
Focal students are making survey result tally chart			
01	Maribel:	Yo lo hizo muy grande. (=*I did it*	01	Carmen:	Julia is very certain about the task
02		*really big*). (To Julia) ¿Lo borro?	02		and so that's why Maribel really
03		(=*Do I erase it?*) ¿Lo borro? (=*Do*	03		gravitates toward her. I think it's
04		*I erase it?*)	04		also <u>role shift</u> for her um.
05	**Julia:**	No. (reading the answer, crossing	05	Eunah:	<u>from Unit 2</u>. Right?
06		out, putting tally, and checking	06	Carmen:	She has really made this jump from
07		Maribel) "causes cancer" (doing	07		somebody who is not really secure
08		the same process) "causes cancer"	08		in herself and not really knowing
09	Maribel:	(To Julia) ¿Y a donde lo hago?	09		what she is capable of to someone
10		(=*And where do I put it?*)	10		that really feels certain about what
11	**Julia:**	(To Maribel) Aquí arriba pero	11		somebody that really feels certain
12		chiquito. (=*Right here at the top*	12		about what it is that she is doing
13		*but small*). (Pointing Maribel's	13		and what her goal is.
14		tally chart, reading survey result	14	Eunah:	And <u>do you think it's because of</u>
15		sheet, and marking tallies)	15		<u>the new grouping?</u>
16		"causes cancer." (checking	16	Carmen:	I definitely think it's because of the
17		Maribel) Tú no me tienes que	17		new grouping. <u>I think that because</u>
18		copiar(=*You don't have to copy me*)	18		<u>all of them share same language</u>/
19		Tienes que poner (=*You have to*	19		(Transcription skipped)
20		put) causes cancer.	20		And now, <u>because she is in a group</u>
			21		<u>where students speak both</u>
			22		<u>languages</u>, she feels like "I am
			23		smart. I can do this……"

The right column illustrates how Carmen and I collaboratively reflected on the *shifts* in Julia while watching the video together. First, Carmen points out Julia's *role shift* (line 04). I also confirm this *role shift* in Julia as what we newly observed from the Unit 2 process (right column, line 05). Throughout our shared video analysis process, Carmen and I discussed the *shifts* in Julia from Unit 1 to Unit 2. For example, Julia shows confidence and certainty in what she is doing and saying. Carmen and I discussed that the reason Maribel is gravitating toward Julia is due to Julia's *modality shift*—Julia is "very certain about the task and so that's why Maribel is gravitating toward her" (right column, lines 01-04). I question to Carmen—"Do you think it's

because of the new grouping?" (right column, lines 14-15). This question provides a

collaborative reflective space to analyze the *shifts* in Julia's learning in relation to classroom

language choice. Following my question, Carmen explains that Julia's role shifted because she is

in a group where the group members share her L1 (right column, lines 17-18 and 23-25).

Through this way of shared analysis, both Carmen and I collaboratively reflected on the positive

shifts in Julia's confidence level.

In Unit 3, Julia exhibited another aspect of leadership role:

Table 17

Julia's Leadership Role with Four Group Members

Transcription of video clip		Teacher's analysis of this video clip	
[Unit 3: 05/24/2011, min. 14 video clip]		[06/29 meeting for 05/24/2011 video analysis]	
01	**Julia:**	**What are we gonna do?** (Looks at	01	Carmen:	It's so funny that Julia said "what
02		Luis)	02		are we gonna do?" and looks
03	Luis:	{inaudible}	03		at Luis as a way like "okay help me
04	Julia:	Music. Okay.	04		out so that the other two get
05	Luis:	Why is there music?	05		involved." (Trans skipped)
06	**Julia:**	(To Maribel) **Y tu** {inaudible}	06		I mean she really pushes Luis'
07		(=*And you {inaudible}*)	07		*role shift*. So, if I were to say
08		Es de la número cuatro. (=*It's the*	08		who are the <u>leaders</u>, Julia is
09		*one for number four*)	09		definitely the one.
10		(Transcription skipped)	10	Eunah:	So, that's *role shift* in small group.
11	**Julia:**	**Okay what are we gonna write?**	11	(Transcription skipped a couple of lines)	
12	Luis:	We are gonna draw a (.) draw a like	12	Eunah:	I think you should mark *role shift*
13		a person smoking? Like a person	13		in Julia because she is the one who
14		smoking? Like dying?	14		is asking "Okay what are we going
			15		to use? What are we going to do?"
			16		Trying to get the group involved.

In the Unit 3 videos, Julia shows a shift in her role by leading four group members. Leading four

group members requires her to have a new leadership role that would differ from her work with

Maribel. For example, in the video transcript above, Julia is trying to engage all of the group

members to the task by asking questions (left column, lines 01, 06-07, and 11). Looking at this

video clip, Carmen comments on Julia's being a leader (right column, line 08). Then, I point out

the relevant code *role shift* on the coding sheet (right column, lines 10 and 12). In the continuing conversation, we further discussed Julia's leadership role as a growing phase.

By looking at the nature of Julia's interaction within the small group where students shared Spanish as their L1, Carmen and I agreed that Julia made a vast improvement from "someone who is uncertain about herself" to "somebody who is really certain about what she is doing" (04/18/2011 meeting). Consequently, this study shows the critical roles of utilizing students' L1 as a learning tool. Particularly, I identify the significant changes in the focal students' social and affective aspects of learning, through analyzing their *shifts* in participation, roles, modality, and identities. Learning is defined as an active and constructive process that involves transformations in learners' repertoires of action, tools used, and goals of activity (Roth & Lee, 2007). The learning goals in Carmen's classroom focused on the collective problem solving activity for the cigarette-smoking problem in the community. In the process, the teacher encouraged Spanish use; thus, there was an expansion of mediational tools. This expansion further mediated and transformed the students' learning.

Luis and Ernesto: Shifts in Participation and Role

Luis was a Spanish dominant bilingual student. He had very neat handwriting and usually completed the task on time, quietly working in his desk. However, his voice was never heard during the whole classroom discussion time in Unit 1. Even when the teacher called on him to speak up, he was not willing to participate. His chubby cheeks usually turned red, looking shy. One day, Luis spoke up when the teacher called on him to share his idea. After the lesson, Carmen and I clapped our hands for Luis' participation. As this episode illustrates, it was very rare case to see Luis' voluntary participation during the Unit 1 lessons. Ernesto was also a quiet student in the classroom; thus, his presence was not quite noticeable during my early classroom

visits. From Unit 2, Carmen decided to choose Luis and Ernesto as her focal students, expecting their participation to shift in a new group.

While Maribel and Julia showed more obvious evidence of shifts in relation with Spanish use in the small group, Carmen and I agreed that the shifts in Luis and Ernesto were also related to their feeling comfortable to speak up within the new group where all students shared their L1. In the meeting transcript below, Carmen reports the shifts in Luis' participation in relation to the language choice in the classroom:

[Unit 3: Carmen, 6/29/2011 meeting for 05/24/2011 video analysis]
01   Um I think that I have seen a change in them. I have seen a change in how they
02   interact with each other. And, I definitely see (2 sec) how **using language as a tool**
03   **has really helped them** (.)/ I mean not in a full-fledged. But, [they are] certain in what
04   it is that they know. **They are not holding back any more.** And, I notice the changes
05   in their leadership roles. Cause Luis was **rough** to get him talk. It was **torture.** Now
06   he is (.)/ I mean it takes a little bit for him to get going. But once he is going, he is all
07   over it.

As Carmen mentioned above, encouraging Luis to talk in the classroom was a very challenging task during the Unit 1 process. For example, Carmen uses the word "rough" and "torture" to explain her difficulty to get his active participation (line 05). However, Luis, like other focal students, showed some shifts in participation and role (lines 04 and 06-07) within this new group where he felt comfortable to speak up. Thus, to interpret the shifts in students, understanding the history of interaction throughout the units, beyond the small segments of video clips presented, is necessary. The focal students used both their L1 and L2 as they needed—for example, Julia assisted Luis utilizing her bilingual ability during data collection with field-notes; the teacher mediated the focal students' learning process utilizing her bilingual ability, within a small group setting; and, Luis wrote his field-notes homework in Spanish and asked for peer assistance in Spanish to create the survey questions. All these changes in the activity system contributed to the *shifts* in Luis' participation and learner role(s).

Table 18 presents an instance of *shift* in Luis' role as being a group leader:

Table 18

Luis' Leadership Role

Transcription of video clip	Teacher's analysis of this video clip
[Unit 3: 05/20/2011, min. 38 video clip]	[Unit 3: Carmen, action research unit report]
01 **Luis:** **You. What did you put?**	01 With the changes in the nature of group work
02 Julia: I put that I am going to pretend that I	02 between Unit 2 and Unit 3, <u>Luis' leader role</u>
03 have a heart attack.	03 <u>has changed</u>. While he was actively taking
04 **Luis:** **With what?**	04 the leader role in Unit 2 (when he was
05 Julia: With cigarettes.	05 working with Ernesto as a pair), he did not
06 **Luis:** **What would you use?**	06 show the same leader role initially in Unit 3.
07 Julia: I would use a microphone. I could	07 But once things seemed bleak, he stepped in.
08 talk about smoking.	08 Transcription skipped a couple of lines
09 **Luis:** **Why? Then, they would say why?**	09 Here, (referring to this video clip) <u>I was able</u>
10 Julia: Because (2 sec) because if a little boy	10 <u>to notice how Luis took on Julia's skill of</u>
11 smokes, he could have heart attack	11 <u>questioning to elicit more conversation</u>.
12 faster.	

In this video transcript (left column), Luis takes the leadership role by asking questions to his group members (lines 01, 04, 06, and 09). Analyzing this video clip, Carmen reports Luis' leadership role in Unit 3 as his taking on "Julia's skill of questioning to elicit more conversation" (right column, lines 08-10). I further interpret Luis' *role shift* in relation with new rules, communities, and division of labor in the classroom activity throughout the Unit 2 and Unit 3 processes. Using Spanish as a tool throughout the year encouraged focal students' participation to shift. Even though Carmen and I saw how Luis was challenging himself to use more English in the classroom, we also discussed the changes in his comfort level in this new group where all group members shared Spanish as their L1. There were increased *peer assistances* in Spanish within small group, creating the collaborative learning communities. All the group members contributed to the group work; thus, there was a change in division of labor. I understand that all these changes within classroom activity system contributed to Luis' feeling comfortable to speak up and participate more. Once he felt comfortable, his participation and role shifted.

Within this new group, Ernesto's participation shifted. The table below illustrates a critical moment when Carmen and I pointed out Ernesto's *participation shift*:

Table 19

Ernesto's Participation Shift

Transcription of video clip	Teacher's analysis of this video clip
[Unit 2: 04/05/2011, min. 38 video clip]	[Unit 2: 04/15/2011 meeting]
01 Julia: (To Ernesto) So, do you think that 02 this is a good question? 03 Ernesto: **(Standing up and leaning** 04 **toward the group)** Because (.) 05 (taking microphone) if they don't 06 know what are in the chemicals, 07 we can do nothing about it.	01 Carmen: Ernesto like his whole body 02 language changed as soon as he 03 went to small group. 04 Eunah: <u>He moved forward</u>. 05 Carmen: He moved forward. And he was 06 taking the microphone and giving 07 it back. (…) *participation shift*? 08 Eunah: Yeah. Reading the body language 09 was interesting.

In the transcript above, Ernesto's body language—standing up and leaning toward the group (left column, lines 03-04)—illustrates his *participation shift* (right column, line 07) within small group. Carmen interpreted this *shift* in Ernesto significantly because he would have never shown this type of interests before (Carmen, Unit 3, 06/29/2011 meeting). During the video analysis meeting time, Carmen and I discussed that Ernesto, like other focal students, felt more comfortable by utilizing funds of knowledge and Spanish within small group. This comfort contributed to his *participation shift*.

While Julia and Luis showed more evident leadership roles throughout the Unit 2 and Unit 3 processes to assist Maribel and Ernesto, Carmen interpreted the focus group students' relationship as mutual respect. There was one occasion, in Unit 3, when Ernesto was taking on a leadership role by asking questions:

Table 20

Ernesto's Leadership Role

Transcription of video clip	Teacher's analysis of this video clip
[Unit 3: 05/19/2011, min. 5 video clip]	[Carmen: 05/27 meeting for 05/19/2011 video]
01 Julia: My idea is to draw a sign and write 02 a (clearing throat) and write why 03 smoking is bad for you (.) because 04 if you don't tell them and if they 05 smoke, then, they are going to get 06 sick. 07 Maribel: (nodding) 08 **Ernesto**: **But, how can you tell them?** 09 Julia: Huh? 10 **Ernesto**: **But, how can you tell them?**	01 Um I think also (.) this question also, I feel 02 like a *role shift* for Ernesto? Cause now he is 03 taking kind of underline leadership role. (writing it 04 down)

As we watched this video clip together, Carmen pointed out Ernesto's questioning at this moment significantly; and, she marked Ernesto's *role shift* in relation to his asking questions (right column, lines 01-02). Carmen believed that "even though Maribel and Ernesto did not demonstrate consistent leadership roles, they were not passive participants in the group" (Unit 3, Carmen, action research unit summary report). The data above presented here is an example of how Ernesto became a leader.

Each member's active participation and mutual respect, within small group work, contributed to creating a collaborative learning context. The expanded mediaitonal tools with Spanish use transformed the students' learning opportunities

Advocating for Bilingual Students and Their Families

So far, I presented some critical moments when Carmen and I discussed the changes in focal students' participation, roles, modality, and identities. The evidence that I presented in this chapter described the observed changes in all focal students—Maribel, Julia, Luis, and Ernesto— toward the end of school year. In particular, the cases of Maribel and Julia showed more obvious

changes in the nature of participation, roles, modalities, and identities, as they utilized Spanish as

a tool during the scientific activity.

Looking at the positive changes in students, Carmen dissucses the need for teachers to be

advocates for bilingual learning and learners:

[Unit 2: Carmen, 04/18/2011 meeting for 04/13/2011 video analysis]
01   In seeing *multiple languages* and the *role shift* and even the *participation shift*, it has
02   really **proven** to me that **language is used as a tool** and it also gives me this personal
03   satisfaction to prove to other people that language is not a scale for intelligence. Um

In this transcript, Carmen makes a claim that her focal students' participation and role shifted by

utilizing Spanish as a tool in the classroom (lines 01-02).

Based on her reflection, Carmen further reported her new action plans:

[Unit 3: Carmen, 07/14/2011 meeting conversation]
01   You know what else I want to do? **I want to be able to share this with the parents**
02   because I think that it would help them to have a better understanding of their child and
03   to better **advocate** for them when they see that something isn't right. So now, they have
04   this evidence that shows their kids are not stupid. Their kids are still learning. They are
05   still processing. Language is an issue but it's not helpless or hopeless. Um, that they are
06   able to learn in very relevant way and that teachers need to dig a little deeper.

In the transcript above, Carmen reports her action change plan as to share her learning from

action research with the parents (line 01). The word "advocate" (line 03) reveals Carmen's

additive position for her bilingual students. She further mentions that the language issue is "not

helpless or hopeless" (line 05) and the teachers need to make learning more "relevant" and

meaningful to the students (line 06). Thus, Carmen is trying to make a claim that the parents

have the right to be better informed about their children's learning and to advocate for their

children when things are not right.

Throughout the collaborative action research process, Carmen became more critical about

how her bilingual students are positioned within the school. Carmen understands the frustration

of her bilingual students and their immigrant families because of the language barrier. Instead of

interpreting the bilingualism as a family deficit, Carmen believes that the parents need to know

that they have the right to be informed about their children's learning at the school:

[Unit 3: Carmen, 07/14/2011 meeting conversation]
01   But now really [the parents need] to sit down and communicate with the teacher and say,
02   "No, this (evidence from Carmen's video clips) is what's going on. This is how my child
03   is. I understand your frustration. But, at the same time, **I would like you to get to know**
04   **my child little bit more**. And this is how they are able to learn." Right? So, I think I
05   really want to go to their parents and say, "I just want you to know this is what I was
06   doing in the classroom. This is all those consent forms were about. And **I just want to**
07   **show how your child is just capable of and what they can do**."

Speaking in the parents' voice—"I would like you to know my child little bit more" (lines 03-

04)—Carmen suggests that the teachers need to make some changes in their practices to learn

more about their ELs. Carmen further expresses her advocacy toward her students—"I just want

to show how your child is just capable of and what they can do" (lines 06-07). This evidence

shows, throughout a collaborative action research process, how Carmen comes to advocate her

ELs who are usually marginalized within the school because of the language issue.

VII. Discussion and Implications

In chapter IV, I situated Carmen's transformative language practices within the collaborative action research journey and identified the main components that mediated her transformative language practices. In chapter V, I presented the transformations in Carmen's language ideologies across three units by analyzing the issues of language choice, functions, and constraints. In chapter VI, I analyzed how the researcher (Eunah) and the teacher (Carmen) came to understand the learning of the focal students by reflecting on their changes in participation. More specifically, these changes included the analysis of role shift, modality shift, and discursive identity shift. In this final chapter, I discuss my findings in relation to theoretical, methodological, and practical implications.

Transformative Language Ideologies

Carmen's case illustrates one teacher's transformative language ideologies through conducting a collaborative action research that was purposfully organized around additive language ideologies. The changes in Carmen's classroom language practices suggest that language ideologies are not static but dynamic and transformative. There was an evolution in Carmen's language choice from occasional individual-based teacher assistance in Unit 1 toward more collaborative types of language assistance in Unit 2. For example, the focal students assisted each other using Spanish to accomplish the scientific work. There was another level of transformation in Carmen's language ideologies when she linked language choice to broader health issues in Unit 3. For example, Carmen demonstrated explicit awareness about missed-opportunities to discuss how English-only language choices limited access to health information in the students' own community. In order to understand how we can change teachers' language ideologies through professional development activities such as LSciMAct, we need to understand

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the layers of activities through which these shifts occur. In addition, teachers' language

ideologies do not change spontaneously but rather through specific types of mediation.

In Figure 20, I contextualize Carmen's collaborative action research within larger

LsciMAct action research activity system:

Figure 20

Carmen's Classroom Activity and Video Analysis Activity within LSciMAct Activity

Mediational tools: Additive language ideologies
-Articles read in "EL and Teacher Action Research" course
-Activity triangle template
-Teacher field-notes template and video coding sheet

Subjects:
-One Professor
-Four Research
 assistants
 (**Eunah**)
-30 in-service
 teachers
 (**Carmen**)

Goals:
Transform
educational
practices toward
linguistically and
culturally responsive
pedagogy for ELs

Action Research Activity

Rules:
-Utilize LSciMAct tools
-Communicate

Community:
University research team and
K-8 teachers collaborated
educational research
community

Division of labor:
-Teachers working in the same
 school collaborate
-One research assistant works
 with a group of teachers

Classroom
Activity

Video Analysis
Activity

In chapter II, I merged language ideologies, CHAT (activity theory), and action research to study the teacher's transformative language ideologies. Figure 20 above explains how I situate language ideologies as mediating artifacts within activity system. All other artifacts—including articles, coding sheets, activity triangle template, field-notes template, and video coding sheet—are embedded in the additive language ideologies of the larger action research activity system. The goals of activity imply the transformative nature of language ideologies. Both Carmen (teacher) and I (researcher) are co-participants within a larger action research activity system. We have shared goals to transform educational practice toward linguistically and culturally responsive pedagogy for ELs. The collaboration with the researcher—who has knowledge of language ideologies—facilitates and mediates the teacher's changing process. In Figure 20, two main activities of Carmen's action research—classroom activity and video analysis activity—are mediated by the additive language ideologies of the larger action research activity.

Classroom activity mediated by additive language ideologies. The scientific activity in Carmen's classroom focused on going through scientific inquiry process to solve the cigarette-smoking problem. The students wanted to educate people in their neighborhood community about the harmful effect of smoking for our health. This scientific activity in the classroom was mediated by the additive language ideologies. In chapter V, I presented how Carmen's reflective language practices transformed the entire classroom activity system—for example, both the teacher and students utilized more Spanish from Unit 2. Figure 21 below explains the mediating role of Carmen's transformative language ideologies for her teaching practices, within the classroom activity system:

Figure 21

Classroom Activity Mediated by Additive Language Ideologies

Mediational tool: Additive language ideologies
(e.g. Utilizing students' L1 as a tool in the classroom)

Participants:
-16 Spanish-English
 bilingual students
-Three Vietnamese-English
 bilingual students
-Seven English monolingual
 students
-One Spanish-English
 bilingual teacher

Scientific Activity in the Classroom

Goals:
-Solve cigarette-smoking
 problem in community
-Promote additive
 bilingual learning
 environment

Rules, community, and division of labor:
-Students can speak their language of comfort
-Students help each other to create collaborative learning environment
-Focal students are grouped by language

Mediated by the additive language ideologies of the larger action research project,

Carmen decided to utilize students' L1 as a tool with the *goals* of promoting additive bilingual

learning environment and developing positive identities through nurturing learning experience.

Throughout action research process, Carmen's reflections and action change interacted bi-

directionally (i.e. reflection led action changes and vice versa). Based on her transformative

language practice, there was a change in the *division of labor*. For example, the students were

grouped by language. This new grouping also transformed the *rules* of language use in the

classroom. For example, the students were encouraged to use both English and Spanish during

the scientific work. Carmen made this bilingual practice visible in the classroom by explicitly

and implicitly acknowledging new *rules* of languages use in the classroom. For example, she

provided more teacher-made bilingual materials and assistance in Spanish from Unit 2. Using

students' L1 further increased peer assistance during the small group work. These rules, in turn,

created the collaborative learning *community*.

Video analysis activity mediated by additive language ideologies. The researcher

(Eunah) and the teacher (Carmen) were co-participants within the video analysis activity. The

shared video analysis activity was mediated by the additive language ideologies as well as video

coding sheet (See Appendices E and F):

Figure 22

Video Analysis Activity Mediated by Additive Language Ideologies and Coding Sheets

Mediating Artifacts and Tools:
  -Additive language ideologies as *ideational artifacts*
  -Video coding sheets as *material artifacts* (original and modified coding sheet)

Participants:
Carmen (teacher)
Eunah (Researcher)

Goals and outcomes:
-Reflect on the language use
-Reflect on the participatory
 shifts and learning of focal EL
 students.

Video Analysis Activity

Rules:
Utilize language on
the coding sheet

Community:
Researcher and teacher and
collaborated educational
research community

Division of labor:
-Dialogic conversation
-Mutual learning

Throughout our video analysis meetings, Carmen and I had shared *goals*. For example, we focused on the use of Spanish in the classroom and the changes in the focal students across units. *Mediated* by the additive language ideologies, we expected to see some changes in the focal students' participation, roles, modality, and identities, with the use of their L1 as a tool during the scientific activity. The *rules* of video analysis activity included utilizing the languages on the video coding sheet. The *division of labor* was based on our mutual trust and was enhanced by dialogic conversation. Thus, the video analysis meetings created a researcher and teacher collaborated educational research *community*. The nature of video analysis meeting conversation included both a retrospective reflection and a prospective action change. Carmen and I collaboratively reflected on the language use in the classroom during the video analysis meetings. The collaborative reflection further mediated Carmen's transformative language practices. This praxis-oriented view makes CHAT useful for studying teacher development (Roth & Lee, 2007). Through this researcher and teacher collaborated video analysis activity, both Carmen and I developed deep understandings about the language ideologies issue in American education. I was a learner and subject of change, as Carmen was.

The video coding sheets also mediated this transformative process as *material artifacts*. More specifically, each code on the video coding sheet (See Appendices E and F) mediated our reflective and analytic process; and, this process helped Carmen transform her language practices. Thus, in Figure 22, I explain the video coding sheets as *mediational artifacts*. In chapter IV, I explained how Carmen and I used and modified the video coding sheets throughout the Unit 2 and Unit 3 action research processes. When the video coding sheet was first introduced to the teachers, they were asked to simply mark the codes for every two-minute video clip. However, Carmen and I, as active participants in this video analysis activity, were not

receptive to the tool. Instead, we modified the coding sheet so that the analysis process became more meaningful for us. For example, we wrote down analytical comments, expanded the coding sheet, created new codes, and linked multiple related codes. This act of modification to the video coding sheet explains that individuals have the power to change the conditions that mediate their activities (Roth, 2004). The same tool can be used in many different ways since each participant contributes to change the *goals*, the *tools*, and the *rules* of the activity system. Consequently, our modification to the coding sheet expanded the *goals* of video analysis activity to think about the issues of language choice, functions, constraints, and role of L1 for ELs' learning. This modification allowed Carmen to reflect on her teacher role in creating additive learning environments for her ELs' science leaning.

In the teacher education literature, the critical role of systematic, productive, or analytic reflection is considered as a key for conducting educational action research (Bayat, 2010; Davis, 2006; Smith, 2010). As I reported in chapter IV, Carmen's reflection became more systematic with the use of video coding sheets. For example, Carmen mentioned how using the video coding sheet helped her to become more analytic. Having the specific action research focus questions also helped her to develop analytic reflection. Throughout the video analysis activity with me, Carmen identified key evidence for her action research questions, by utilizing the video coding sheets as analytic tools; and, she used the identified evidence in writing her action research unit summary reports. Thus, our shared video analysis process had specific analytic focus, involving productive and analytic reflection, instead of random and unproductive reflections.

Carmen's transformative language practices required the constant negotiations between competing language ideologies. As I presented in chapter V, Carmen's awareness of the

language constraints to promote bilingual (multilingual) practices explains that the learning

context is inherently "hybrid, polycontextual, multivoiced, and multiscripted" (Gutiérrez,

Baquedano-López, & Tejeda, 1999). With the deep understanding about the contextual language

constraints, Carmen experienced the multiple levels of tensions in the process of transformations.

The first level of tension was found between Carmen's reflection and action change. For

example, Carmen mentioned that the bilingual scientific Discourse practice in the classroom was

an eye opener for her because she was never brave enough to use Spanish in the classroom as

much as she could have done, even though she believed in the value of bilingualism. The second

level of tension was found between Carmen's additive language ideologies and the contextual

English-only language ideologies. This awareness included students' language ideologies,

parents' language ideologies, other teachers' language ideologies, language ideologies in school

site, and dominant societal language ideologies. Thus, Carmen's transformative language

practices required her to constantly negotiate between multiple and contesting language

ideologies.

From a CHAT perspective, the tensions—or inner contradictions—inherent to the activity

system are a driving force of change; and, it can be both a source of conflict and improvement

(Il'enkov, 1977; Roth, 2004). Carmen's understanding of the lack of systematic support for

bilingual program in her school site conflicted with her expectation to develop bilingual

scientific practices. Given the contextual language constraints, the improvement was made in

Carmen's classroom by expanding the types of mediational tools for students' science learning.

For example, with her awareness of lack of bilingual materials, Carmen provided teacher-made

bilingual handouts and graphic organizers from Unit 2. Carmen's case supports the

transformative possibilities of language ideologies through action research. With a deep

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understanding of multiple and competing language ideologies from students, parents, school, and society, Carmen's critical understanding of language issues has become more sophisticated. This evolution in Carmen's language ideologies further transformed the nature of our video analysis activity. For example, we continuously focused on the areas of Spanish use and its relation to the shifts in students, making more complex links across related codes to explain the role of L1 for students' learning.

Action Research for Teacher Transformation

Previously, I explained action research as an activity system. In this section, I further explain action research as a tool to transform teachers' language ideologies. The transformations in Carmen's language practices happened in the context of a yearlong collaborative action research process. Figure 23 explains the cyclical process of Carmen's action research. Carmen repeated plan-implement-reflect-transform processes throughout Unit 1, Unit 2, and Unit 3.

Figure 23

Cyclical Process of Carmen's Action Research

Plan	→	Implement	Plan	→	Implement	Plan	→	Implement
Transform	←	Reflect	Transform	←	Reflect	Transform	←	Reflect

| Unit 1 | Unit 2 | Unit 3 |
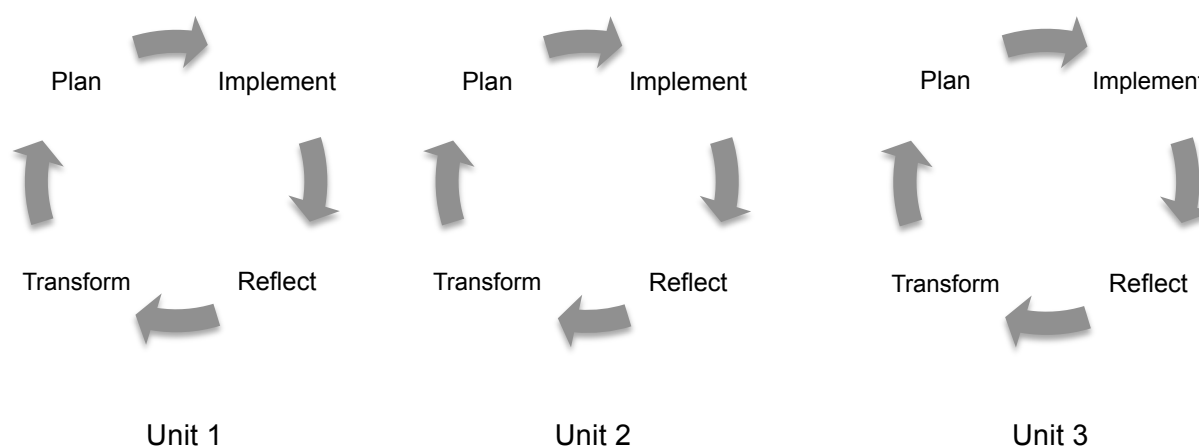
By repeating this cyclical action research process across three units, focusing on the critical language issues, Carmen's language ideologies became more sophisticated and nuanced. Having action research questions, using the video coding tool, selecting focal students to see

their learning over time, and collaborating with a researcher and other teachers all contributed to Carmen's transformative process.

In chapter IV, I described how the collaborative action research process allowed Carmen to become more reflective about her language practices and how she made changes in classroom language practices to create additive learning context. These two components of action research—reflection and action change—interact with each other in bi-directional way. These changes confirm with the existing literature's view that emphasizes the important role of teacher reflection to improve pedagogical practices (Bayat, 2012; Cruickshank, 1985; Davis, 2006; Fazio, 2009; Gore & Zeichner, 1984; 1991; Korthagen, 2001; McNiff, 2002; Mills, 2003). Through conducting action research, teacher researchers can achieve a better understanding of themselves, about what they do and who they are (McNiff, 2002).

Carmen's most critical reflections about her language practice were reported in the Unit 3 process. She related the language choice with a broader health issue, cigarette smoking. For example, she reported, people have limited access to the health information because of the English-only practice. Carmen shared this reflection during our post-Unit 3 meeting to write a unit summary report together; and, this time was a month after her Unit 3 implementation was finished. Carmen also mentioned at the meeting that the delayed time for Unit 3 report until the end of semester allowed her to really, honestly, and whole-heartedly reflect on her practices. This reflection also confirmed with the literature's view on the time frame required of it. Teachers need time to reflect on their practices, sometimes with more extended time frame—"An emphasis upon reflection too soon in their preparation may be alienating to neophytes" (Hatton & Smith, 1995, p. 36).

In chapter IV, Carmen reported the lack of time for reflection as one of the constraints to transform language practices through action research. Collinson and Cook (2001) also report: "finding time to support teacher learning and sharing remains a challenge. However, additional time itself is no guarantor of educational change" (p. 276). Thus, they explain, the concept of time is more complex than expected. With the increased accountability and testing pressure in the current educational atmosphere, teachers' finding times to reflect on their language practices sounds challenging to achieve. These challenges require the teachers to take more ownership of the problem in education in order to create authenticity within their practice.

One lesson that I learned from Carmen's transformative language ideologies journey is the potential to transform language practices. With her awareness of the lack of participation and struggles from her focal students, Carmen expanded the mediational tools and provided more assistance in Spanish. As Carmen reported, the contextual language ideologies in school site did not support Carmen's bilingual science practice. However, as McNiff (2002) argues, "all open-ended systems have the potential to transform themselves into richer versions of themselves" (p. 12). Understanding the activity system as dynamic and open for transformation provides powerful analytic lens to study critical language issues in education. This understanding implies the potential to transform the larger activity system, starting from one teacher's transformative language practices.

Transforming Teacher's Language Ideologies for ELs' Learning

In chapter VI, I presented how the researcher (Eunah) and the teacher (Carmen) developed a deeper understanding about the focal students' learning, in relation to the teacher's transformative language practices. Focusing on the developmental nature of learning (Rogoff, Matusov, & White, 1996; Wells, 2000), I analyzed the learning of the focal students by reflecting

on the shifts in their participation, roles, modality, and discursive identity. For example, the focal students—who were initially quiet and reserved—participated more, became leaders, spoke with strong certainty in their opinion, and showed the desire to contribute to the scientific work in Unit 2 and Unit 3. The expanded mediational tools, with Spanish use, mediated an additive learning environment for bilingual students. Having dual challenges with language barrier in learning difficult tasks often creates unproductive tensions in the learning process. Maribel is a good example of this case where reducing language barrier brought about changes in the nature of her participation during scientific work. Maribel's case also explains her growth as a learner. While Maribel was frustrated with English and a non-participant in Unit 1, she exhibited her desire to contribute scientific work later in Unit 3. This affective aspect of learning is also important when the ultimate goal of education is to help the students become life-long learners (Smith & Ragan, 1999). When the educational goal heavily emphasizes the accountability with English-only testing practices, these important social and affective aspects of learning are often not recognized.

Conclusion and Implications

This study contributes to our understanding of the role of context for ELs' language and literacy learning. Expanding the notion of context to include language ideologies (Razfar & Rumenapp, 2011; Volk & Angelova, 2007), this study examined the critical role of transforming teachers' language ideologies to design an additive learning context for ELs. Often times, teachers are unaware of their language ideologies. However, I argue that the teachers need to reflect on their classroom language practices because it can mediate the nature of students' participation and roles as well as identities construction.

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When these transformations in teacher's language ideologies are made incrementally, these changes can create a space for collaborative reflection among educational practitioners and researchers. Action research has the "discursive power" in generating knowledge base as well as improving social action (Somekh & Zeichner, 2009, p. 5). While top-down reform efforts to transform teachers' language practices may appear to be more effective ways of change, it is often difficult to achieve. Given the contextual language constraints with English-only language ideologies, teachers need to be the sources of change from their own classrooms to transform language practices from the bottom. Action research can be a tool for teacher professional development (Elliot, 2007; Fazio, 2009) and a driver of educational reform (Somekh & Zeichner, 2009; Stenhouse, 1985). With the increased ownership of their own language practices, the teachers can empower themselves as highly professional and reflective teachers.

The results of this study will contribute to the literacy research field for theoretical, methodological, and practical insights into teaching and classroom practice. First, the integration of language ideologies theory, CHAT, and action research helps educational practitioners, researchers, and policy makers understand the importance of transforming teachers' language ideologies in designing additive learning context for ELs. Understanding language ideologies as transformative provides a new insight to the language ideologies in education literature. Understanding the role of teachers' language ideologies is vital since it mediates the ELs' learning process and identities construction. It encourages and/or limits the choice of mediational tools available to students for their academic content area learning. Second language research also shows that the social context will affect language use, choices, and identities (Tarone, 2007). The social context includes the teacher's language ideologies.

Second, from a methodological perspective, the transformative language ideologies through researcher and teacher collaborated video analysis process provide a unique contribution to the language ideologies literature. In many cases of the language ideologies studies in educational context, the researchers analyze the interview or/and classroom discourse data. The shared video analysis activity between researcher and teacher provides the triangulation of analytic perspectives. Throughout the collaborative action research process with Carmen, I was a subject to the same process of change, as Carmen was. I was a learner and my understanding of language ideologies issues in American education became deeper. This understanding challenges the traditional role of researchers who are often invisible in the scene.

Third, for practical implications, this study suggests the action research as one of the teacher education tools to help the teachers transform language ideologies for the EL education. My emphasis on the practitioner voices, through careful analysis of teacher's transformative language ideologies, illustrates the value of such a professional development effort. Particularly, this study emphasizes the needs for the teachers to critically reflect on their own language views and practices in the classroom. The educational practitioners, researchers, and policy makers need to consider the emotional and affective factors in educational practice.

Future Research Direction

In post-NCLB era, most bilingual education programs in the United States have the overall goal to develop English-only education, while neglecting the students' home languages as resources. Consequently, the students' home languages, other than English, are considered as minority languages. The *Race to the Top* reform effort (U.S. Department of Education, 2009) accelerated the accountability pressure on teachers and students. Such educational practice ignores the emotional issues that are critical to students' learning and stifles the construction of

students' identities in the school. Rather than focusing on the accountability in teaching, an understanding how students learn is needed. Within an additive learning environment where students can draw on linguistic and cultural resources, they can do better, taking ownership in their own learning. More research is needed to examine the teachers' critical reflections on their language use in the classroom, especially in the EL context.

In studying the teacher's transformative language ideologies, I mentioned the potential value of teacher group collaboration. For example, in chapter IV, I presented some instances of teacher group collaboration in Carmen's action research. The future research can provide more in-depth analysis about the role of multiple levels of collaborations in the community of educational professionals to create a space for collaborative reflection and to transform teachers' language ideologies. Levin and Rock (2003) explain the advantage of collaboration in conducting action research because it provides "additional perspectives, support, and feedback" (p. 142). Rogers (2002) also mentions the benefits of collaborative reflection because the teachers can present alternative meanings and support one another to engage in the reflective inquiry process (p. 857). The collaborative reflection among a group of educational professionals can also create the contested space—or third space—where multiple activity systems interact and mediate learning process for one another (Gutiérrez, 2008). Future research can focus on the mediating role of teacher group collaboration to transform their language ideologies. The teacher development focus can include teachers' explicit awareness of language ideologies through "talking about language views" (Razfar & Rumenapp, 2011) as well as teachers' analyses of their own classroom discourse practices through action research.

The future research could also focus on the students' perceptions of a teacher's bilingual practice. The examination of multiple perspectives from the teachers, students, parents, and

researchers will provide a deeper understanding of critical language issues in educational research. The circle of activities could be expanded to wider communities including multiple teachers' classrooms as well as students' multiple languages practices in their homes.

REFERENCES

Abramson, P.R. (1992). *A case for case studies: An immigrant's journal*. Newbury Park, CA:

    Sage.

Allington, R. L. (1991). Children who find learning to read difficult: School responses to

    diversity. In E. H. Hiebert (Ed.). *Literacy for a diverse society: Perspectives,*

    practices, and policies (pp. 237-252). New York, NY: Teachers College Press.

Arthur, J., & Martin, P. (2006). Accomplishing lessons in postcolonial classrooms:

    Comparative perspective from Botswana and Brunei Darussalam. *Comparative*

    Education, *42*(2), 177-202. doi:10.1080/03050060600628009.

Ballantyne, K. G. Sanderman, A. R., & Levy, J. (2008). *Educating English language*

    learners: Building teacher capacity. Washington, DC: National Clearinghouse for

    English Language Acquisition. Retrieved from: http://www.ncela.gwu.edu/files/uploads/

    3/EducatingELLsBuildingTeacherCapacityVol1.pdf

Ballenger, C. (1997). Social identities, moral narratives, scientific argumentation: Science talk

    in a bilingual classroom. *Language and Education, 11*(1), 1-13.

    doi**:**10.1080/09500789708666715

Barone, D. (2002). Literacy teaching and learning in two kindergarten classrooms in

    a school labeled at-risk. *The Elementary School Journal*, *102*(5), 415-441.

Bayat, M. (2010). Use of dialogue journal and video-recording in early childhood teacher

    education. *Journal of Early Childhood Teacher Education, 31*(2), 159-172.

    doi:10.1080/10901021003781247

Berg, B. L. (2004). *Qualitative research methods: For the social sciences* (5th ed.). Boston,

    MA: Pearson.

Bloome, D. & Clark, C. (2006). Discourse-in-Use. In J. L. Green, G. Camille, & P. B.

>   Elmore (Eds.), *Handbook of complementary methods in education research* (pp.

>   227-241). Washington, DC: American Education Research Association.

Boyatzis, R. (1998). *Transforming qualitative information: Thematic analysis and code

>   development*. Thousand Oaks, CA: Sage.

Carr, W., & Kemmis, S. (1986). *Becoming critical: Education, knowledge and action research*.

>   London, England: Falmer Press.

Carson, T. (1990). What kind of knowing is critical to action research? *Theory Into Practice,

>   29*(3), 167-173. doi**:**10.1080/00405849009543450

Catelli, L. A. (1995). Action research and collaborative inquiry in a school-university

>   partnership. *Action in Teacher Education, 26*(4), 25-38.

>   doi:10.1080/01626620.1995.10463216

Cazden, C.B. (1988). *Classroom discourse: The language of teaching and learning*. Portsmouth,

>   NH: Heinemann.

Clair, N. (1995). Mainstream classroom teachers and ESL students. *TESOL Quarterly, 29*(1),

>   189-196. doi:10.2307/3587817

Cochran-Smith, M., & Lytle, S. L. (1990). Research on teaching and teacher research: The issues

>   that divide. *Educational Researcher, 19*(2), 2-10.

Collinson, V., & Cook, T. F. (2001). "I don't have enough time": Teachers' interpretations of

>   time as a key to learning and school change. *Journal of Educational Administration,

>   39*(3), 266-281

Cook, V. (2001). Using the first language in the classroom. *Canadian Modern Language

>   Review*, *57*(3), 402-423. http://dx.doi.org/10.3138/cmlr.57.3.402

Crawford, T. (2005). What counts as knowing: Constructing a communicative repertoire for

    student demonstration of knowledge in science. *Journal of Research in Science Teaching*,

    42(2), 139-165. doi:10.1002/tea.20047

Creese, A., & Blackledge, A. (2010). Translanguaging in the bilingual classroom: A pedagogy

    for learning and teaching? *The Modern Language Journal, 94*(1), 103-115.

    doi:10.1111/j.1540-4781.2009.00986.x

Cruickshank, D. (1985). Uses and benefits of reflective teaching. *Phi Delta Kappan, 66*(10),

    704-706.

Darling-Hammond, L. (1995). Inequality and access to knowledge. In J. A. Banks & C. A. Banks

    (Eds.), *Handbook of research on multicultural education* (pp. 465-483). New York, NY:

    Macmillan.

Davis, E. A. (2006). Characterizing productive reflection among preservice elementary teachers:

    Seeing what matters. *Teaching and Teacher Education, 22*(3), 281-301.

    doi:10.1016/j.tate.2005.11.005

Delamont, S. (1976). *Interaction in the classroom: Contemporary sociology of the*

    school. London: Richard Clay (The Chaucer Press).

Dewey, J. (1993). *How we think: A restatement of the relation of reflective thinking to the*

    educative process. Boston, MA: D. C. Heath.

Dey, I. (1993). *Qualitative data analysis: A user-friendly guide for social scientists*. London,

    England: Routledge.

Elliot, J. (2007). *Reflecting where the action is: The selected works of John Elliott*. London,

    England: Routledge.

Emerson, R. M., Fretz, R. I., & Shaw, L. L. (1995). *Writing ethnographic fieldnotes*. Chicago, IL: The University of Chicago Press.

Engeström, Y. (1987). *Learning by expanding: An activity-theoretical approach to developmental research*. Helsinki, Finland: Orienta-Konsultit.

Engeström, Y. (1991). Non scolae sed vitae discimus: Toward overcoming the encapsulation of school learning. *Learning and Instruction*, *1*(3), 243–259. doi:10.1016/0959-4752(91)90006-T

Engeström, Y (2001). Expansive Learning at Work: Toward an activity theoretical reconceptualization. *Journal of Education and Work, 14*(1), 133-156. doi:10.1080/13639080020028747

Erickson, F. (1986). Qualitative methods in research on teaching. In MC Wittrock (Ed.), *Handbook of research on teaching* (3rd ed., pp.119-161). New York, NY: Macmillan.

Fazio, X. (2009). Teacher development using group discussion and reflection within a collaborative action research project. *Reflective Practice, 10*(4), 529-541. http://dx/doi.org/10.1080/146239403138407

Ferrance, E. (2000). *Action research*. Providence, RI: Brown University.

Fishman, J. A. (1991). *Reversing language shift: Theory and practice of assistance to threatened languages*. Clevedon: Multilingual Matters.

Francis, D.J., Rivera, M., Lesaux, N., Kieffer, M., & Rivera, H. (2006). *Practical guidelines for the education of English language learners*. Center on Instruction.

Freeman, R. D. (2006). Reviewing the research on language education programs. In O. García & C. Baker (Eds.), *Bilingual education: An introductory reader*. Clevedon: Multilingual Matters.

Friesen, D. W. (1994). The action research game: Recreating pedagogical relationships in the

    teaching internship. *Educational Action Research, 2*(2), 243-258.

    doi:10.1080/0965079940020208

Gaffney, J. S., & Anderson, R. C. (2000). Trends in reading research in the United States:

    Changing intellectual currents over three decades. In M. L. Kamil, P. B. Mosenthal, P. D.

    Pearson, & R. Barr (Eds.), *Handbook of reading research* (pp. 53-74). Mahwah, NJ:

    Lawrence Erlbaum Associates.

Gal, S., & Irvine, J. (1995). The boundaries of languages and disciplines: How ideologies

    construct difference. *Social Research*, *62*(4), 967–1001.

Gal, S. (1998). Multiplicity and contention among language ideologies. In B. B.

    Schieffelin, K. A. Woolard, and P. V. Kroskrity (Eds.), *Language ideologies: Practice*

    and theory (pp. 317-331). New York, NY: Oxford University Press.

García, O. (2007). Forward. In S. Makoni & A, Pennycook (Eds.), *Disinventing and*

    reconstituting languages (pp. xi-xv). Clevedon, UK: Multilingual Matters.

García, O., & Menken, K. (2010). Moving forward: Ten guiding principles for teachers. In K.

    Menken & O. García (Eds.), *Negotiating language policies in schools: Educators as*

    policymakers (pp. 262–267). New York, NY: Routledge.

Gee, J. P. (2000). Identity as an analytic lens for research in education. *Review of Research in*

    Education, *25* (1), 99-125. doi:10.3102/0091732X025001099

Gee, J. P. (2003). *What video games have to teach us about literacy and learning*. New York,

    NY: Palgrave.

Gee, J. P. (2008). *Social linguistics and literacies: Ideology in discourses* (3rd ed.). New

    York, NY: Routledge.

Genesee, F. (1987*). Learning through two languages: Studies of immersion and bilingual education.* New York, NY: Newbury House Publishers.

Genishi, C., Stires, S. E., & Yung-Chan, D. (2001). Writing in an integrated curriculum: Prekindergarten English language learners as symbol makers. *The Elementary School Journal, 101*(4), 399-416.

Gore, C., & Zeichner, K. (1984). On becoming a reflective teacher. In C. Grant (Ed.), *Preparing for reflective teaching*. Boston, MA: Allyn & Bacon.

Gore, J., & Zeichner, K. (1991). Action research and reflective teaching in preservice teacher education: A case study from the United States. *Teaching and Teacher Education*, *7*(2), 119-136. doi:10.1016/0742-051X(91)90022-H

Grosjean, F. (1989). Neurolinguists, beware! The bilingual is not two monolinguals in one person. *Brain and Language, 36*(1), 3-15. doi:10.1016/0093-934X(89)90048-5

Gumperz, J. J. (1982). *Discourse Strategies.* Cambridge, MA: Cambridge University Press.

Gumperz, J., & Hymes, D. (Eds.). (1972). *Directions in sociolinguistics: The ethnography of communication*. New York, NY: Holt, Rinehart, and Winston.

Gutiérrz, K., Rymes, B., & Larson, J. (1995). Script, counterscript, and underlife in the classroom: James Brown versus Brown v. Board of Education. *Harvard Educational Review, 65*(3), 445-472.

Gutiérrez, K., Baquedano-Lopez, P., Alvarez, H. H., & Chiu, M. M. (1999). Building a culture of collaboration through hybrid language practices. *Theory into Practice, 38*(2), 87- 93. doi:10.1080/00405849909543837

Gutiérrez, K., Baquedano-Lopez, & Tejeda (1999). Rethinking diversity: Hybridity and hybrid

language practices in the third space. *Mind, Culture, and Activity, 6*(4), 286-303. doi:10.1080/10749039909524733

Gutiérrez, K. D. (2001) What's new in the English language arts: Challenging policies and Practices. *Language Arts, 78*(6), 564–569.

Gutiérrez, K., Asato, J., Pacheco, M, Moll, L., Olson, K., Horng, E., Ruiz, R., García., E., & Mccarty, M. (2002). "Sounding American": The consequences of new reforms on English language learners. *Reading Research Quarterly*, *37*(3), 328- 343. doi:101.598/R RQ.37.3.4

Gutiérrez, K. D. (2008) Developing a sociocritical literacy in the third space. *Reading Research Quarterly*, *43*(2), 148-164. doi:10.1598?RRQ.43.2.3

Gutiérrez, K. Morales, P. Z., & Martínez, D. C. (2009). Re-mediating literacy: Culture, difference, and learning for students from non-dominant communities. *Review of Research in Education*, *33*(1), 213-245. doi:10.3102/0091732X08328267

Gutiérrez, R. (2002). Beyond essentialism: The complexity of language in teaching mathematics to Latina/o students. *American Educational Research Journal, 39* (4), 1047-1088. doi:10.3102/000283120390041047

Hansegård, N.E. (1968). *Tvåspråkighet eller halvspråkighet*? [Bilingualism or semilingualism?] Stockholm: Aldus series 253.

Harklau, L. (1994). Tracking and linguistic minority students: Consequences of ability grouping for second language learners. *Linguistics and Education*, *6*(3), 217–244. doi:10.1016/0898-5898(94)90012-4

Harklau, L. (2000). From the 'good kids' to the 'worst': Representations of English language

    learners across educational settings. *TESOL Quarterly, 34*(1), 35–67.

    doi:10.2307/3588096

Harper, C.A., de Jong, E.J., & Platt, E. (2008). Marginalizing English as a second language

    teacher expertise: The exclusionary consequence of No Child Left Behind. *Language*

    Policy, 7(3), 267-284. doi:10.1007/s10993-008-9102-y

Hatton, N., & Smith, D. (1995). Reflection in teacher education: Toward definition and

    implementation. *Teaching and Teacher Education, 11*(1), 33-49.

    doi:10.1016/0742-051X(94) 00012-U

Hawkins, M. (2004). Researching English language and literacy development in schools.

    Educational Researcher, 33(3), 14-25. doi:10.3102/0013189X033003014

Heath, S. B. (1983). *Ways with words: Language, life, and work in communities and classrooms.*

    Cambridge, MA: Cambridge University Press.

Hudson, P. (2003) Mentoring first-year preservice teachers. *Action in Teacher Education: the*

    Journal of the Association of Teacher Educators, 15(3), 91–99.

Hull, G., & Schultz, K. (2001). Literacy and learning out of school: A review of theory and

    research. *Review of Educational Research, 71*(4), 575-611.

    doi:10.3102/00346543071004575

Hymes, D. (1974) *Foundations in sociolinguistics: An ethnographic approach.* Philadelphia, PA:

    University of Pennsylvania Press.

Il'enkov, E. (1977). *Dialectical logic: Essays in its history and theory* (H. Campbell Creighton.

    Trans.) Moscow, Russia: Progress.

Johnson, A. (2008). *A short guide to action research* (3rd ed.). Pearson Education.

Judd, E. L. (2000). English only and ESL instruction: Will it make a difference? In R. D.

> González & I. Melis (Eds.), *Language ideologies: Critical perspectives on the official*
>
> *English movement* (pp. 163-176). Urbana, IL: National Council of Teachers of English.

Kelly, G. J., & Breton, T. (2001). Framing science as disciplinary inquiry in bilingual

> classrooms. *Electronic Journal of Literacy Through Science*, *1*(1).

Korthagen, F. (2001). *Linking practice and theory: The pedagogy of realistic teacher education*.

> London, England: Lawrence Drlbaum Associates.

LaCelle-Peterson, M. & Rivera, C. (1994). Is it real for all kids? A framework for equitable

> assessment policies for English language learners. *Harvard Educational Review, 64*(1),
>
> 55-75.

LeCompte, M. D., & Schensul, J. J. (1999). *Designing and conducting ethnographic*

> *research* (Vol. 1), p. 61-95, Walnut Creek, CA: Altamira Press.

Levin, B. B., & Rock, T. C. (2003). The effects of collaborative action research on preservice

> and experienced teacher partners in professional development schools. *Journal of*
>
> *Teacher Education*, *54*(2), 135-149. doi:10.1177/0022487102250287.

Liberman, A. (1995). Practices that support teacher development: Transforming conceptions of

> professional learning. *Phi Delta Kappan, 76*(8), 591-596.

Licklider, B. L. (1997). Breaking ranks: Changing the in-service institution. *NASSP Bulletin*,

> *81*(585), 9-22. doi:10.1177/019263659708158504

Lin, A. M. Y., & Martin, P. (2005). (Eds.) *Decolonisation, globalization: Language-in-education*

> *policy and practice*. Clevedon, UK: Multilingual Matters.

Lincoln, Y. S., & Guba, E. G. (1985). *Naturalistic inquiry*. Beverly Hills, CA: Sage

Lipman, P. (2004). *High-stakes education: Inequality, globalization, and urban school reform*. New York, NY: Routledge.

Luykx, A., Lee, O., & Edwards, U. (2008). Lost in translation: Negotiating meaning in a beginning ESOL science classroom. *Educational Policy, 22*(5), 640-674. doi:10.1177/0895904807307062

Martínez-Roldán, C., M. & Malavé, G. (2004). Language ideologies mediating literacy and identity in Bilingual contexts. *Journal of Early Childhood Literacy, 4*(2), 155-180. doi:10.1177/1468798404044514

McNiff, J. (2002). *Action research for professional development: Concise advice for new action researchers* (3rd ed.). Retrieved from: http://www.jeanmcniff.com/booklet1.html

Merriam, S. (1998). *Qualitative research and case study applications in education*. San Francisco, CA: Jossey-Bass.

Mertz, E. (1998). Linguistic ideology and praxis in U.S. lay school classroom. In B. B. Schieffelin, K. A. Woolard, & P. V. Kroskrity (Eds.), *Language ideologies: Practice and theory*. Oxford, England: Oxford University Press.

Mills, G. E. (2003). *Action research: A guide for the teacher researcher*. Upper Saddle River, NJ: Merrill/Prentice Hall.

Mills, H., & O'Keefe, T. (1988). Empowering teachers as researchers through a collaborative model of inquiry." *Carolina English Teacher*. (South Carolina Council of Teachers of English), 37-46.

Moje, E., Collazo, T., Carillo, R., Markx, R. W. (2001). "Maestro, what is quality?: Examining competing discourses in project-based science. *Journal of Research in Science Teaching, 38*(4), 469-495. doi:10.1002/tea.1014

Moll, L. (2004). *Exploring biliteracy and beyond: A longitudinal study of literacies and ideologies*. Paper presented at the annual meeting of the American Educational Research Association, San Diego, CA.

Moschovich, J. (2007a). Using two languages when learning mathematics. *Educational Studies in Mathematics, 64*(2), 121-144. doi:10.1007/s10649-005-9005-1

Moschovich, J. (2007b). Examining mathematical Discourse practices. *For the Learning of Mathematics, 27*(1), 24-30. doi:10.1007/s10649-005-9005-1

National Clearinghouse for English Language Acquisition. (2007). *The growing numbers of limited English proficient students*. Washington, DC: Author. Retrieved from: http://www.ncela.gwu.edu/policy/states/reports/statedata/2005LEP/GrowingLEP_0506.pdf.

Nightingale, D.J., & Cromby, J. (1999). *Social constructionist psychology: A critical analysis of theory and practice*. Buckingham: Open University Press.

No Child Left Behind Act (NCLB) (2001). Public Law 107-110 (2001). Retrieved from: http://www2.ed.gov/policy/elsec/leg/esea02/107-110.pdf

Noffke, S. E., & Stevenson, R. B. (Eds.). (1995). *Educational action research: Becoming practically critical.* New York: Teachers College Press.

NVivo qualitative data analysis software. (2010). QSR International Pty Ltd. (Version 9). [computer software].

Ochs, E., & Schieffelin, B. (1986). Language socialization. *Annual Review of Anthropology. 15*, 163-191. doi:10.1146/annurev.anthro.31.040402.085352

Pappas, C. C. (2007). Making "collaboration" problematic in collaborative school-university action research: Studying with urban teacher researchers to transform literacy practices. In J. Fllod, S. B. Heath, & D. Lapp (Eds.). (2007). *Handbook of research on teaching literacy through the visual and communicative arts* (2nd ed.). Mawah, NJ:

Nawrence Erlbaum.

Pappas, C. C., Varelas, M., Barry, A., & Rife, A. (2003). Dialogic inquiry around information texts: The role of intertextuality in constructing scientific understandings in urban primary classrooms. *Linguistics and Education, 13*(4), 435-482. doi:10.1016/S0898-5898(03)00004-4

Pappas, C. C., Varelas, M., Kokkino, S., Ye, L., & Ortiz, I. (in press). Dialogic strategies in read-alouds of English-language information books in a second-grade bilingual classroom. *Theory Into Practice.*

Pastor, A. M. R. (2008). Competing language ideologies in a bilingual/bicultural after-school program in Southern California. *Journal of Latinos and Education, 7*(1), 4-24. doi:10.1080/15348430701693XXX

Patton, M. Q. (1990). *Qualitative evaluation and research methods* (2nd ed.). Thousand oaks, CA: Sage.

Pease-Alvarez, L., Samway, K. D., & Cifka-Herrera, C. (2010). Working within the system: Teachers of English learners negotiating a literacy instruction mandate. *Language Policy, 9,* 313-334. doi:10.1007/s10993-010-9180-5

Pepper, S. C. (1942). *World hypotheses: A study in evidence*. Berkeley, CA: University of California Press.

Peshkin, A. (1988). In search of subjectivity—One's own. *Educational Researcher, 17*(7), 17-22. doi:10.3102/0013189X017007017

Ramírez, J. D. (1992). Executive summary. *Bilingual Research Journal,* 16(1/2), 1-62.

Ramírez, J. D. (1998). SFUSD *Language Academy: 1998 annual evaluation* (Long Beach, CA, California State University Long Beach, Center for Language Minority Education

and Research).

Razfar, A. (2003). Language ideologies in English language learner contexts: Implications for Latinos and higher education. *Journal of Hispanic Higher Education, 2*, 241-268. doi:10.1177/1538192703002003003

Razfar, A. (2005). Language ideologies in practice: Repair and classroom discourse. *Linguistics and Education, 16*, 404-424. doi:10.1016/j.linged.2006.04.00

Razfar, A. (Principal Investigator) (2007). *LSciMAct: Transforming Literacy, Science, and Math through Action Research* (p. 121). Office of English Language Acquisition, U.S. Department of Education. Retrieved from: http://www.ncela.gwu.edu/files/uploads/3/PD_in_Action.pdf

Razfar, A. (2010). Repair with *confianza*: Rethinking the context of corrective feedback for English learners (ELs). *English Teaching Practice and Critique, 9*(2), 11-31.

Razfar, A. (2011a). The linguistic re-turn: the moral and practical imperative of "language" in curriculum studies. *Journal of the American Association of the Advancement of Curriculum Studies*, *7*, 1-4. Retrieved from: http://www.uwstout.edu/soe/jaaacs/razfar_v7.cfm

Razfar, A. (2011b). Action research in urban schools: Empowerment, transformation, and challenges. *Teacher Education Quarterly*, *38*(4), 25-44.

Razfar, A. & Yang, E. (2010). Digital, hybrid, and multilingual literacies in early childhood. *Language Arts, 88*(2), 114-124.

Razfar, A., Licon-Khisty, Chval, K. (2011). Re-mediating second language acquisition. A sociocultural perspective for language development. *Mind, Culture, and Activity, 18*(3), 195-215. doi:10.1080/10749030903494427

Razfar, A., & Rumenapp, J. C., (2011). Developmental context(s): Mediating learning through language ideologies. *Human Development, 54*(4), 241-269. doi:10.1159/000330296

Reid, A., O. (1992). Computer management strategies for text data. In B. Crabtree & W. Miller (Eds.), *Doing qualitative research* (pp. 125-145). London: Sage.

Rogers, C. (2002). Defining reflection: Another look at John Dewey and reflective thinking. *Teachers College Record*, *104*(4), 842-866.

Rogoff, B., Matusov, E., & White, C. (1996). Models of teaching and learning: Participation in a community of learners. In D. R. Olson & N. Torrance (Eds.), *Handbook of education and human development* (pp. 388-414). Oxford, UK: Blackwell.

Roseberry, A. S., Warren, B., & Conant, F. R. (1992). Appropriating scientific discourse: Findings from language minority classrooms. *Journal of the Learning Science, 21*(1), 61-94. doi:10.1207/s15327809jls0201_2

Roth, W. M. (2004). Activity theory and education: An introduction. *Mind, Culture, and Activity, 11*(1), 1-8. doi:10.1207/s15327884mca1101_1

Roth, W. M., & Lee, Y. J. (2007). "Vygotsky's neglected legacy": Cultural-historical activity theory. *Review of Educational Research, 77*(2), 186-232. doi:10.3102/0034654306298273

Ruiz, R. (1984). Orientations in language planning. *NABE: The Journal of National Association for Bilingual Education, 8*(2), 15-32.

Schön, D. (1983). *The reflective practitioner: How professionals think in action*. New York, NY: Basic Books.

Schön, D. (1987). *Educating the reflective practitioner: Toward a new design for teaching and learning in the professionals*. San Francisco, CA: Jossey Bass.

Scribner, S., & Cole, M. (1981). *The psychology of literacy*. Cambridge, MA: Harvard

University Press.

Scheff, T. J., Phillips, & Kincaid, H. (2006). *Goffman Unbound!: A New Paradigm for Social*

Science. Boulder: Paradigm.

Shotter, J. (1993). Vygotsky: The social negotiation of semiotic mediation. *New Ideas in*

Psychology, 11(1), 61-75. doi:10.1016/0732-118X(93)90020-E

Shulman, L. S. (1986). Those who understand: Knowledge growth in teaching. *Educational*

Researcher, 15(2), 4-14. doi:10.3102/0013189X015002004

Silverstein, M. (1985). On the pragmatic ''poetry'' of prose. In D. Schiffrin (Ed.), *Meaning,*

form and use in context (pp. 181–199). Washington, DC: Georgetown University.

Smith, L. M. (1978) An evolving logic of participant observation, educational ethnography

and other case studies. *Review of Research in Education*, *6*, 316-377.

Smith, L. T. (2010). The inviting professional educator: A reflective practitioner and action

research. *Journal of Invitational Theory and Practice*, *16*, 5-10.

Smith, P. & Ragan, T.J. (1999). *Instructional design*. New York: John Wiley & Sons.

Somekh, B., & Zeichner, K. (2009). Action research for educational reform: remodeling   action

research theories and practices in local contexts. *Educational Action Research, 17*(1), 5-

21. doi:10.1080/09650790802667402

Sparks-Langer, G., & Colton, A. (1991). Synthesis of research on teachers' reflective thinking.

Educational Leadership, 48(6), 37-44.

Stake, R. E. (1994). Case studies. In N. K. Denzin and Y. S. Lincoln (Eds.), *Handbook of*

qualitative research (pp. 234-247). Thousand Oaks, CA: Sage.

Stake, R. E. (1995). *The art of case study research*. Thousand Oaks, CA: Sage Publications.

Stenhouse, L. (1978). Case study and case records: Towards a contemporary history of

    education. *British Educational Research Journal*, *4*(2), 21-39.

Street, B. V. (1995) *Social Literacies*. London, England: Longman.

Street, B. V. (2003). What's "new" in New Literacy Studies? Critical approaches to literacy in

    theory and practice. *Current Issues in Comparative Education, 5*(2), 77-91.

Street, B. V. (2004). Academic literacies and the 'new orders' and the 'new orders':

    implications for research and practice in student writing in higher education. *LATISS:*

    Learning and Teaching in the Social Studies, *1*(1), 9-20.

Stringer, E. T. (2007). *Action Research* (3rd ed.). London, England: Sage Publications.

Tabachnick, R., & Zeichner, K. (1999). Idea and action: Action research and the development

    of conceptual change teaching of science. *Science Education, 83*(3), 310-322.

    doi:10.1002/(SICI)1098-237X(199905)83:3<309::AID-SCE3>3.0.CO;2-1

Tarone, E. (2007). Sociolinguistic approaches to second language acquisition research-1997-

    2007. *The Modern Language Journal, 91*(5), 837-848.

    doi: 10.1111/j.1540-4781.2007.00672.x

U.S. Department of Education, National Center for Education Statistics. (2001). Teacher

    Preparation and Professional Development: 2000 (NCES 2001–088). 59I: Teacher

    Education and Professional Development References. Washington, DC: Parsad, B.,

    Lewis, L. & Farris, E. Retrieved from: http://nces.ed.gov/pubs2001/2001088.pdf

U.S. Department of Education, Office of the Education Secretary (2006). Secretary Spellings

    announces partnership with states to improve accountability for limited English

    proficient students. Press Release, July 27, 2006. Retrieved from:

    http://www2.ed.gov/news/pressreleases/2006/07/07272006.html

U.S. Department of Education (2009). President Obama, U.S. Secretary of Education Duncan announce national competition to advanced school reform. Press release, July 24, 2009. Retrieved from:http://www2.ed.gov/news/pressreleases/2009/07/07242009.html

Valdés-Fallis, G. (1978). Code switching and the classroom teacher. *Language in Education: Theory and Practice* (Vol. 4), Wellington, VA: Center for Applied Linguistics.

Van Manen, M. (1977). Linking ways of knowing with ways of being practical. *Curriculum Inquiry*, *6*(3), 205-228.

Van Manen, M. (1997). *Researching lived experience: Human science for an action sensitive pedagogy* (2nd Ed.)*.* London, Canada: The Althouse Press.

Van Oers, B. (1998). From context to contextualizing. *Learning and Instruction, 8*(6), 473-488. doi:10.1016/S0959-4752(98)00031-0

Varelas, M., Kane, J. M., Tucker-Raymond, E., & Pappas, C. C. (2012). Science learning in urban elementary school classrooms: Liberatory education and issues of access, participation, and achievement. In B. J. Fraser, K. Tobin, & C. McRobbie (Eds.), *Second international handbook of science education* (pp. 91-103). Dordrecht, The Netherlands: Springer-Kluwer.

Volk, D., & Angelova, M. (2007). Language ideology and the mediation of language choice in peer interactions in a dual-language first grade. *Journal of Language, Identity, and Education, 6*(3), 177-199. doi:10.1080/15348450701454205

Vygotsky, L. V. (1978). *Mind in society: The development of higher psychological processes*. (M. Cole, V. John-Steiner, S. Scribner, & E. Souberman, Eds.). Cambridge, MA: Harvard University Press.

Vygotsky, L. V. (1986). *Thought and language*. Cambridge, MA: MIT Press.

Watson-Gegeo, K. A. & Nielsen, S. (2003). Language socialization in SLA. In C. J. Doughty
    & M. H. Long (Eds.). *The handbook of second language acquisition* (pp. 155-177).
    Oxford, England: Blackwell.

Way, C. (2001). Teacher development: A strategy for school improvement. *LAB Education*
    Notes, 3(2), 1-12.

Warren, B., & Roseberry, A. S. (1996). "This question is just too easy!" Students'

perspectives on accountability in science. In L. Schauble & R. Glaser (Eds.),

Innovations in learning new environments for education (pp. 97-125). Mahwah, NJ:

Lawrence Erlbaum.

Warren, B., Ballenger, C., Ognowski, M., Rosebery, A. S. & Hudicourt-Barnes, J. (2001).

Rethinking diversity in learning science: The logic of everyday sense making. *Journal*

of Research in Science Teaching, 38(5), 529-552. doi:10.1002/tea.1017

Wells, G. (2000). Dialogic inquiry in education: Building on the legacy of Vygotsky. In C.D.

Lee & P. Smagorinsky (Eds.) *Vygotskian perspectives on literacy research* (pp. 51-85).

New York, NY: Cambridge University Press.

Westby, C., Dezale, J., Fradd, S. H., & Lee, O. (1999). Learning to do science: Influences of

language and culture. *Communication Disorders Quarterly, 21*(1), 50-64.

doi:10.1177/152574019902100107

Woolard, K. A. (1998). Introduction: Language ideology as a field of inquiry, In B. B.

Schieffelin, K. A. Woolard, and P. V. Kroskrity (Eds.), *Language ideologies: Practice*

and theory (pp. 3-47). New York, NY: Oxford University Press.

Woolard, K. A., & Schieffelin, B. B. (1994). Language Ideology. *Annual Review of*

Anthropology, 23, 55-82.

Wortham, S. (2001). Language ideology and educational research. *Linguistics and Education, 12*(3), 253-259.

Yin, R. K. (1994). *Case study research: Design and methods* (2nd ed.). Thousand Oaks, CA: Sage.

Yin, R. K. (2006). Case study methods. In J. L. Green, G. Camilli, & P. B. Elmore (Eds.), *Handbook of complementary methods in education research* (pp. 111-122). Washington, DC: American Educational Research Association.

Zentella, A. C. (1981). "Tá bien, you could answer me en cualquier idioma: Puerto Rican code switching in bilingual classrooms." In R. P. Durán (Ed.), *Latino language and communicative behavior* (pp. 109-31). Norwood, NJ: Ablex.

Zentella, A. C. (1997). *Growing up bilingual: Puerto Rican children in New York*. Oxford, England: Blackwell.

Appendix A

Carmen's Action Research Timeline

Appendix A

Carmen's Action Research Timeline

2010   2011

| 9 | 10 | 11 | 12 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |

Plan U1 (September/2010)   Plan U2/3 (February-March)

Implement U1   Implement U2   Implement U3
(10/20/2012-11/4/2010)   (3/21/2011-4/15/2011)   (5/17/2011-6/2/2011)

Focus Group   FG1   FG2   FG3   FG4
(12/22/2010)   (1/31/2010)   (5/9/2011)   (8/1/2011)
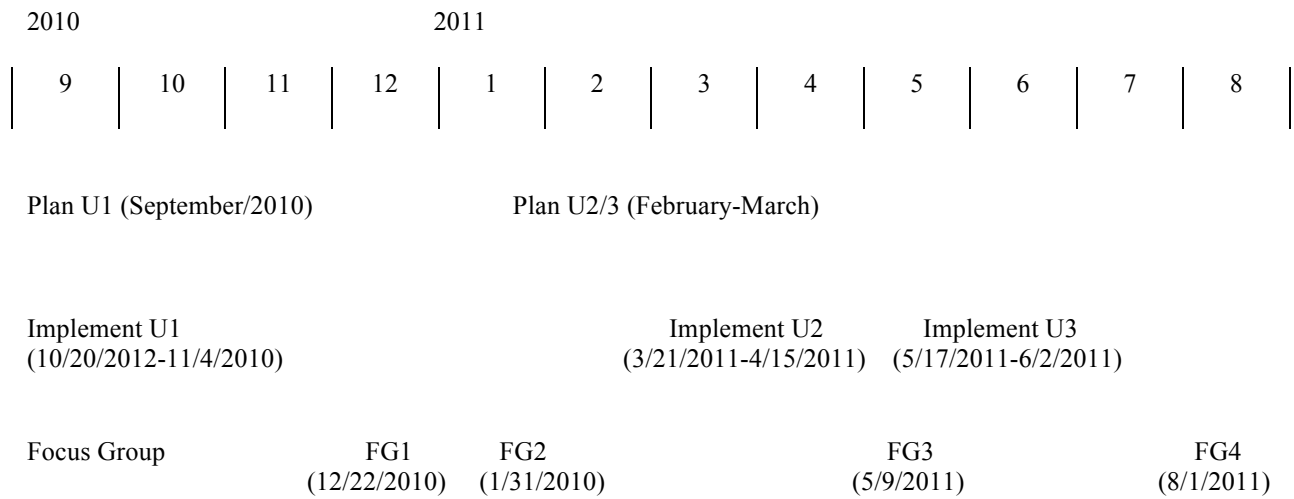
U: Unit
FG: Focus Group

Appendix B

Details of Main Data Sources

Source of Data		Unit1	Unit2	Unit3
Observed Classroom Practice	Transcription of Videos	10/21/2010	3/22/2011	5/12/2011
		10/28/2010	3/29/2011	5/19/2011
		11/03/2010	4/5/2011	5/20/2011
		11/18/2010	4/13/2011	5/24/2011
Collaborative Reflections	Transcription of Video Analysis Meetings	01/18/2010 (Post-Unit 1 meeting)	3/28/2011 (3/22 video analysis)	5/17/2011 (5/12 video analysis)
			4/7/2011 (3/29 video analysis)	5/27/2011 (5/19 video analysis)
			4/15/2011 (4/5 video analysis)	6/29/2011 (5/24 video analysis)
			4/18/2011 (4/13 video analysis)	6/30/2011 (5/20 video analysis)
				7/6/2011 (Unit 3 analysis)
				7/13/2011 (Unit 3 analysis)
				7/14/2011 (Unit 3 analysis)
	Transcriptions of Focus Groups (FG)	12/22/2010 (FG 1) 1/31/2011 (FG 2)	5/9/2011 (FG 3)	8/1/2011 (FG 4)
	Carmen's Unit Summary Reports	Unit 1 report	Unit 2 report	Unit 3 report
	Other Meeting	10/28/2010 (mentor meeting)		
Other Data	Artifacts	Pictures taken during the units Material artifacts displayed in the classroom		

Appendix C

Codes

Code	Definition/key words
1. Language Choice	Teacher/researcher makes general comments about language choice.
1-1. Language Choice—Teacher	Teacher/researcher reports awareness of her own language choice.
1-2. Language Choice—Student	Teacher/researcher reports awareness of her focal students' language choice.
1-2-1. Variation	Teacher/researcher reports variations of focal students' language choice within unit.
1-2-2. Shift	Teacher/researcher reports shifts in her focal students' language choice across units.
2. Code-Switching	Teacher/researcher makes comments about code-switching.
2-1. Code-Switching—Teacher	Teacher/researcher makes comments about teacher's code-switching.
2-2. Code-Switching—Student	Teacher/researcher makes comments about students' code-switching.
3. Language Constraint	Teacher reports awareness of constraints to promote bilingual and biliteracy practices.
3-1. Deficit View	Teacher reports deficit view toward bilingual people with the following key words: Stigma, disability, put down, hatred, less smart.
3-2. English-Only	Teacher talks about English-only perspective of other teachers, parents, and society with the following key words: Mainstream, dominant, socially-accepted, promotion of English, full-immersion, push English, and 3rd grade transitional, English-only practice in test preparation.
3-3. Lack of Support	Teacher reports lack of support for bilingual practices with the following key words: No structure for bilingual program, inconsistent, lack of systematic support.
3-4. Carmen's position	Teacher makes a position toward bilingual and biliteracy practices.
4. Scientific Discourse (SD)	Teacher/researcher makes comments about scientific Discourse code.
4-1. Scientific Discourse—Idea connection	Researcher named 4-1-1, 4-1-2, and 4-1-3 as idea connection.
4-1-1. Text Connection	Teacher considers students' referring to the text from previous lessons to explain scientific phenomena as Scientific Discourse (SD). Researcher named this SD as text connection.

(*continued*)

Codes (Continued)

Code	Definition/Key words
4-1-2. Event Connection	Teacher considers students' bring personal experiences (or everyday observation) to explain scientific phenomena as SD. Researcher named this SD as event connection.
4-1-3. Logic Connection	Teacher considers students' talking about consequences of smoking as an instance of SD. Researcher named this SD as logic connection (e.g. A causes B, then B causes C).
4-2. Scientific Discourse—Data	Teacher/researcher considers discourse about going through scientific investigation as SD.
4-2-1. Data Collection	Teacher/researcher considers discourse about data collection (e.g. field-notes, survey) as SD.
4-2-2. Data Analysis	Teacher/researcher considers data analysis (e.g. tally chart or graph) and reporting (e.g. conclusion with evidence) as SD.
5. Functions of Spanish	
5-1. Affinity	Teacher reports students' feeling comfortable to have scientific Discourse because they are allowed to use their language of comfort (Spanish). Thus, this code is defined as how one person feels comfortable to talk science with their language choice and initiates/continues conversation in Spanish during the scientific work. Researcher named this function as affinity.
5-2. Assistance	Teacher/researcher talks about the function of Spanish as one person assisting another person in the context of scientific Discourse practices.
5-2-1. Peer Assistance	Teacher/researcher talks about students' assisting each other in Spanish during the scientific Discourse practice.
5-2-2. Teacher Assistance	Teacher/researcher talks about her assisting students in Spanish during the scientific Discourse practice.
5-3. Discipline	Teacher/researcher reports the function of Spanish for discipline.
5-4. Mental Space	Teacher/researcher reports the function of Spanish as off-topic, chatting about something else other than their task at hand
5-5. Logistics	Teacher/researcher reports the function of Spanish as talking about logistics (e.g. Put microphone like this).
6. Shifts in Students	Teacher/researcher reports the shifts in students.
6-1. Participation Shift	Teacher/researcher reports students' shift into active participant.
6-2. Modality Shift	Teacher/researcher reports students' shift in modality to certainty, speaking in confidence.

(*continued*)

Codes (Continued)

Code	Definition/Key words
6-3. Role Shift	Teacher/researcher reports students' becoming expert or/and leader.
6-4. Identity Shift	
6-4-1. Scientist Identity	Teacher reports students' being scientists (e.g. James called himself as scientist).
6-4-2. Growth as Learner	Teacher/researcher reports growth in students as learners.
7. Action Research	Researcher codes key components of action research through analyzing video analysis meeting conversations and focus group.
7-1. Video Coding Tool	Teacher makes comments about video coding sheet (e.g. how she used video coding sheet, how she made links across codes, how she modified coding sheet). Researcher analyzes the use, function, and modification of video coding sheet during teacher and researcher shared analysis process.
7-2. Collaboration	Researcher identifies the multiple levels of collaboration within Carmen's action research (e.g. teacher and researcher collaboration, teacher group collaboration) to transform language practices.
7-2-1. Researcher	Researcher identifies and analyzes the collaboration between teacher and researcher throughout the video analysis process (e.g. scaffold how to use defined the code, use the coding sheet, ask questions to make deeper analysis with coding sheet).
7-2-2. Cohort Teachers	Researcher analyzes teacher's collaboration with other teachers to reflect on her language practices.
7-2-3. Mentor	Researcher identifies and analyzes the mentor-mentee collaboration.
7-3. Reflection	Teacher talks about her being reflective about her language practice throughout action research process. Researcher analyzes teacher's reflective comments such as: look, see, think, notice, believe, know, realize, understand, and discover.
7-4. Action Change	Researcher reports the observed changes in the teacher's language practice across units.
7-5. Challenge	Teacher reports the main challenges in conducting action research.
7-5-1. Lack of Time for Reflection	Teacher reports the lack of time for reflection.
7-5-2. Lack of Time for Collaboration	Teacher reports the lack of common time among a group of teachers.
7-5-3. Testing Pressure	Teacher reports the increased number of tests in her school setting.

Appendix D

Transcription Conventions

Numbered Lines	Each line is numbered beginning with 01.
Speakers	Name of speaker:
{ }	Inaudible words
:	Vowel elongation (stress comes after vowel)
↑↓	Raising/Falling Intonation
?	Questioning intonation
(=*Italics*)	English translation for Spanish transcription
(.)	Micropause less than 0.2 seconds
(2 sec)	Longer pause - Write the number of seconds in parenthesis
Uhm/ uhuh	Backchanneling – Use colon to show length
Describe in ( )	Non-verbal cues (gestures)
/	Self-repair
//	Other repair
" "	Speaker assumes voice of another speaker.

Appendix E

Original Teacher Video Coding Sheet

	A	B	C	D1	D2	E1	E2	E3	F	G	H	I	J	K
Time (Min)	Mediational tool	Assistance	FoK	ML	SD	IRE	IC	Modality	Question	Tension	TS	PASH	ROSH	Rule Negotiation
00														
02														
04														
06														
08														
10														
12														
14														
16														
18														
20														
22														
24														
26														
28														
30														

FoK: Funds of Knowledge
ML: Multiple Languages
SD: Scientific Discourse
IRE: Initiation-Response-Evaluation discourse
IC: Instructional Conversation
TS: Third Space
PASH: Participation Shift
ROSH: Role Shift

Appendix F

Carmen's Modified Coding Sheet

	A	B	C	D1	D2	E1	E2	E3	F	G	H	**H2**	I	J	**J2**	K
Time (Min)	Mediational tool	Assistance	FoK	ML	SD	IRE	IC	Modality	Question	Tension	TS	**Mental Space**	PASH	ROSH	**IDSH**	Rule Negotiation
00																
02																
04																
06																
08																
10																
12																
14																
16																
18																
20																
22																
24																
26																
28																
30																

FoK: Funds of Knowledge
ML: Multiple Languages
SD: Scientific Discourse
IRE: Initiation-Response-Evaluation discourse
IC: Instructional Conversation
TS: Third Space
PASH: Participation Shift
ROSH: Role Shift
IDSH: Identity Shift

Example Focus Group (FG 4)

1. Language questions	As you finished Unit 3 action research process: i. How is your thinking of language changing, especially involving English Learner issues? Do you think this lead you to make some changes in your action too? ii. How have your activities promoted multiple languages use? (Prompt: So tell me about…the activities you have done to promote students' multiple languages use.)
2. Teaching questions	i. How did you draw on the students' *funds of knowledge* while teaching Unit 3? ii. How is your understanding of scientific Discourse changing? (Prompt: Could you give me some examples of critical moments when you thought about scientific Discourse during Unit 3 implementation?)
3. Planning questions	Since you have done Unit 3, what do you think about developing curriculum for ELs?
4. Analysis questions	Now, let's talk about how you used and what you learned by using the action research analytic tools such as video coding sheet and transcription during Unit 3 analysis process: i. What did you learn by using the video coding sheet? ii. How did you use the transcripts in your Unit 3 analysis? iii. How does discourse analysis impact how you see yourself?
5. Action research questions	i. Could you give me some examples of major changes in yourself from Unit 3 experience (both changes in your awareness and your action)? ii. Do you feel Unit 3 experiences brought about some changes in students? If so, could you give me some examples of changes in students that you noticed during Unit 2? iii. What have been some of the challenges of trying to bring about these changed? iv. What do you see as key issues or challenges in conducting action research? (Action research means about your analysis process)

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EDUCATION

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2003   M.S.Ed. Language in Education (TESOL), The University of Pennsylvania

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PROFESSIONAL EXPERIENCE

Research

2008-2012   University of Illinois at Chicago
            Transforming Literacy, Science, and Mathematics through Participatory Action
            Research (LSciMAct): K-8 teachers and university research team collaborated
            teacher professional development project

            Collected, organized, and analyzed data from elementary grade classrooms;
            facilitated regular teacher meetings throughout action research process; and
            guided teachers' writing master's degree thesis process.

2004-2005   University of Illinois at Chicago
            Integrated Science-Literacy Enactment (ISLE).

            Collected and organized data in one 1st grade classroom and this contributed to
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Teaching

2004   Lecturer, Hankook University of Foreign Studies, Seoul, Korea
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Teaching (Continued)

2003   Substitute Teacher, Mapo Elementary School, Seoul, Korea
Taught English to 3rd and 4th grade students; utilized CD-Rom resource to
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2002-2003   ELS and Civics (Citizenship class) Instructor, South East Asian Mutual
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