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Ph.D. Dissertation in Education

A Mixed Methods Study Investigating Korean Teachers’ Attitudes and Self-Efficacy on Inquiry and Language-based Instructional Strategies for Culturally and Linguistically Diverse Students

혼합 연구방법을 통한 교사의 문화적 언어적 다양성을 지닌 학생에 대한 태도와 탐구 및 언어기반 교수방법에 대한 자기효능감

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Abstract

Korea, once thought of as a homogenous country, is experiencing a shift in the student population as a result of immigration. Both primary and secondary schools are experiencing a rapid increase in culturally and linguistically diverse (CLD) students who may differ from native Korean students with regards to culture and language. Many studies in teacher education have focused on examining how teachers’ attitudes influence their self-efficacy in the enactment of certain teaching practices. This study further expands on these studies by combining an exploration of teachers’ attitudes toward CLD students and increased diversity in how teachers’ self-efficacy for using inquiry and language-based teaching strategies with CLD students impacts teaching and learning in the science classroom.

Building on the work of Angela Calabrese-Barton (Barton, 2001; Barton & Tan, 2008), this research seeks to document and analytically describe what teachers are experiencing and encountering while teaching CLD students and how these experiences inform their teaching practices. Since this issue is relatively new in Korea, this study focuses on trying to identify and understand what Korean teachers face when attempting to use inquiry-based science practices, along with language-based instruction, with CLD students who may have limited Korean language proficiency.

Using the convergent parallel mixed-methods approach, this study used both quantitative data, in the form of a questionnaire, and qualitative data, in the form of semi-structured interviews. This study reports on the development and implementation of a three-scaled questionnaire, called the Korean Teachers’ Attitudes and Self-efficacy for Inquiry and Language based Teaching (K-TASILT), and on interviews conducted with primary
and secondary Korean public school teachers. The analysis of 144 K-TASILT questionnaire responses provided a broad overview of the attitudes teachers have about CLD students and the increasing CLD student population in schools, as well as their knowledge and practices regarding inquiry and language-based teaching. In addition, the analysis of transcripts generated from conducting semi-structured interviews with 16 Korean teachers offered some insights into how attitudes toward CLD students can shape teaching self-efficacy.

The analysis revealed how teachers’ attitudes about diversity can potentially limit or support CLD students’ academic achievement. Several key findings emerged, including that Korean teachers’ have overall positive attitudes about teaching CLD students, but they hold various misconceptions about CLD students and they lack in effective teacher education and professional development focused on how to support CLD learners. However, the most salient discovery from this research was that a gap exists between teachers’ perceptions and attitudes toward CLD students and their understanding about who CLD students are or even what it means for a students to be culturally and linguistically diverse. In addition, despite teachers having positive attitudes toward CLD students and high self-efficacy in inquiry-based instruction, teachers report a limited affect and ability for teaching CLD students with inquiry and language-based teaching strategies.

These findings are used to offer implications for more effective science teacher education programs and the need to design experiential professional development for pre- and in-service teachers to broaden their understandings about diversity, language development, and the value of engaging CLD students in student-centered inquiry learning activities.
Findings from this research argue the need for teacher education developed from principles in multicultural (CLD) education, and explicit instruction about how science teachers can integrate language-based strategies with inquiry teaching to help CLD students learn science while improving students’ Korean language proficiency.

**Keywords:** Culturally and linguistically diverse (CLD), self-efficacy, inquiry-based science, language-based (sheltered) instruction, teacher education program/professional development (TEP/PD)

**Student Number:** 2011-31323
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CHAPTER 1. THE ISSUE

While at one time, Korea was considered to be a fairly homogenous country with regards to culture, language, and even the ethnic origins of the Korean people: today Korea is facing unprecedented growth in its immigrant population. This change has also resulted in changes in Korea’s schools and classrooms as more and more culturally and linguistically diverse (CLD)\(^1\) students have begun enrolling in public schools with each passing year. Although the student population has been growing for the last ten years, teacher education programs have struggled to keep pace. As a result, teachers are not well prepared to meet the needs of students who may face social, cultural, and linguistic challenges in the classroom. Currently, very few teacher education or professional development programs are designed to teach Korean teachers about best practices for instructing CLD students, academically, socially, or linguistically. Consequently, Korean teachers may find themselves struggling to meet the needs of CLD students in the classroom and this may be especially true for content area specialists, such as science or mathematics teachers.

Adding to this challenge are educational policies encouraging primary and secondary school teachers to include more emphasis on using inquiry-based teaching and learning strategies in science classrooms. With the additional push toward more inquiry-based teaching and learning of science

\(^1\) In this study, the term culturally and linguistically diverse (CLD) students is used to be more inclusive of the groups of students who would be identified as being different from native-Korean students. Since the terminology is used to describe people who have important implications for how they are positioned as participants in society, this term was utilized rather than foreigner (외국인), to describe someone who is not ethnically Korean (Cha, 2015). This term is acknowledged to be more inclusive addressing students who speak a variety of languages and come from diverse social, cultural, and economic backgrounds (Gonzalez et al., 2011).
gaining momentum, teachers may find it more difficult to provide both content-rich and learning opportunities for CLD students that can also account for these students’ language needs. Teachers who lack knowledge about how to effectively teach diverse learners and who lack experience working with CLD students may find they are especially limited in their ability to provide the appropriate resources for CLD students to be academically successful in a student-centered, inquiry based classroom.

Inquiry-based teaching that focuses on providing student-centered learning experiences requires that teachers be able to facilitate social interactions between students while simultaneously helping them build from their own personal experiences in developing an understanding of science phenomena. Not only does this process necessitate that students be able to work well with their native Korean peers, but teachers also need to provide pedagogical structures and scaffolding designed to support CLD students to draw from their personal resources (i.e. language, culture, family, experiences with science) to develop their conceptual understanding of science.

To be successful as a teacher of CLD students in inquiry-based classrooms, teachers need to have positive attitudes about diversity, the value of a multicultural society, and about language learners and language development. In addition, they need knowledge about how to teach using inquiry and how to teach students using strategies that support CLD learners. Attitudes and knowledge have been shown to be very important in teacher education research because attitudes influence teaching practices. Attitudes and knowledge, about content or pedagogy, have been shown to influence teachers’ beliefs about their ability to teach specific subjects (e.g. science) and specific students (e.g. girls, disabled students, or racial
minorities). Researchers have shown that attitudes shape people’s sense of self-efficacy for completing a task. This can include teaching self-efficacy, which is a measure of how effectively a person believes they will be in implementing certain teaching practices. Studies show the more knowledge a teacher has and the more positive their experiences and attitudes toward a subject, the more confidence they have about teaching the subject and the greater their self-efficacy for enacting successful teaching practices in that subject area.

1.1 Introduction

This study seeks to explore how Korean teachers’ attitude and knowledge about 1) diversity and CLD students, 2) inquiry teaching, and 3) language teaching, each influence on their self-efficacy for using inquiry or language teaching strategies in science with CLD learners. Currently, there are no studies exploring how Korean teachers’ attitudes about diversity and their knowledge about diversity, inquiry teaching, or language teaching impacts their science teaching self-efficacy when working with CLD learners. Thus far, very few studies have explored the impact of Korean teachers’ beliefs about diversity on their classroom practices with CLD learners, and none have been conducted in science teaching contexts. By combining a focus on diversity, inquiry teaching and language teaching, this research expands on research in international contexts and it is unique in the Korean educational context.

In the sections that follow, a brief introduction to the history of immigration in Korea is offered followed by a discussion on how these demographic changes are presenting new and emergent issues in teacher education, and especially in science teacher education. The goals of this
introduction is to describe why inquiry and language education are an important area for research and to detail the benefits and challenges of engaging CLD learners in student-based inquiry activities, especially in the context of school science. Building from this brief history, a review of current teacher preparation programs in Korea is discussed to emphasize the importance of developing effective science teacher education programs, for both pre- and in-service teachers, in hopes to help position teachers to be able to support the academic, social, and linguistic development of CLD students in their classrooms.

Globalization and Increasing CLD Student Population

Throughout the world, globalization has become an expanding phenomenon. From commodity trades to seeking after better work opportunities, people are immigrating at a rapid rate. According to Frank Laczko and Lars Johan Lonnback (2013), of the nearly 7 billion people living on Earth, an estimated 1 billion are migrants. This number includes about 214 million international migrants, which includes people living temporarily or permanently outside their country of birth, and 740 million internal migrants, which includes people who are migrating within a country (usually from rural to urban areas). In modern times, a handful of countries have served as largely immigrant-receiving countries (e.g., Canada, the United States, Australia, New Zealand, and Argentina) (Massey, 1999). However, by the late-twentieth century and since the beginning of this century, people have begun immigrating to countries that have become newly industrialized, such as Korea (Park, Chu, & Martin, 2016).

Smaller countries, like Korea, have entered into a global race to bring highly qualified experts from abroad, which has become an attractive
destination for workers seeking employment opportunities (Munz, 2013). In addition, rapid industrialization, followed by nationwide advances in education for Korean citizens has resulted in their being a shortage of local labor for low-paying, low-skilled positions. These two forces have driven immigration to Korea, which has resulted in increased mobility rates of migrants seeking after improvements in income, access to education, and improved personal security (Munz, 2013).

**Movement of immigrants to Korea**

Current research suggests that the most common reasons for the change in Korea’s population are employment and marriage opportunities, which studies have shown include many unskilled and uneducated immigrants from economically disadvantaged countries in the region. Other sources of immigration are much smaller and include mostly people with short-term visas, such as students, researchers, and language teachers. In the last ten years, the number of migrant workers, international students coming to study abroad, international marriages, and North Korean refugees (Lee, 2008) have all contributed to Korea becoming a hot immigration spot.

Currently, immigrants in Korea represent less than 4% of the overall population (Park, Chu, & Martin, 2016), but this number is expected to rapidly increase over time (Gyeonggi Province Government Statistics, 2015). In less than one generation, Korea’s immigrant population has already increased by 1,350%. According to immigration statistics, the number of foreigners\(^1\) living in Korea in 1995 was only 123,881 (KOSIS, 2014), but by 2005 the number had increased by about 500% (Park, Chu, &

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\(^1\) In these statistics, the term, “foreigner” is used (identified as 외국인) to define any person living in Korea without Korean citizenship
Martin, 2016). As of August 2015, the total foreigner population had increased to 1,741,919 people – 1,376,162 foreign residents, 158,064 naturalized residents, and 207,693 children with immigrant background (KOSIS, 2015).

**Increasing number of CLD students entering classrooms**

As a socio-historical development toward multiculturalism is occurring worldwide, a shared outcome is emerging in the classrooms: the number of CLD students are increasing rapidly. The number of CLD students attending public schools is still relatively small compared to the larger Korean student population. However, growth in the overall immigrant population means continued diversification in school-age children is inevitable. This has important ramifications for Korean society, especially with regards to the education system. Teachers are inevitably facing CLD students and the need to accommodate to their needs. This brings forth many cultural, linguistic, social, and academic challenges in the classroom. Similar to society’s perception that immigrants, in which they are seen as economic and social burdens (OECD, 2015), teachers are burdened in the form of time and resources, in addition to a lack in appropriating those resources. At the same time, many education systems are placing increased emphasis on utilizing an inclusion education model, which means that CLD students are often “mainstreamed” into general education classrooms where they are instructed by content area teachers (e.g., science, math, and social studies) who may have little or no training to support necessary social, cultural, and/or linguistic needs.
Challenges CLD students face

Korea’s CLD student population faces a variety of challenges, both inside and outside of the classroom. These students have varying Korean proficiency levels. For example, some CLD students are ethnically non-Korean who need to acquire Korean as a second language. For these children, their parents are also usually not proficient in Korean, so they have limited Korean language resources in their home life. Many CLD students, such as ethnic Koreans and Korean citizens who have lived outside of Korea, may appear to be fluent speakers of Korean, but they may be limited in their ability to engage in conversation that goes beyond “every day” language use. This is because the academic language necessary for learning about specialized content topics requires different vocabulary and skill sets than the Korean language used in everyday spoken conversation. Research exploring teachers’ misconceptions about language development found teachers often misjudge the language proficiency level of CLD students because a student may appear to be very competent and fluent in everyday language. However, this perceived fluency may succeed in hiding significant gaps in CLD students’ academic language ability, which could prevent them from doing well in school science.

Other CLD students may be completely fluent in Korean and competent to learn in classrooms where Korean is the language of instruction. However, these students may have some social differences among peers or with that teacher that make it difficult for the CLD student to enact practices that are recognized as “normal” or expected behaviors for students to express during classroom interactions. In either case, social or linguistic differences, research has shown that CLD students are more likely than their native Korean peers to be bullied at school by being teased or
ostracized by their classmates. A 2012 study (Cho & Park) found that 56% of multicultural students (다문화학생) experienced bullying by their peers simply because they were not viewed as being “purely Korean”.

The challenges these students face are compounded when teachers and administrators are not in a position to support them. Studies about teaching and learning in educational contexts where there is considerable more diversity consistently report that teachers need education and training to help them be able to support CLD students, socially, linguistically, and academically. A brief overview of the teacher preparation system in Korea is reported in the next section to provide some insights into the challenges that Korea’s teacher workforce may be facing when tasked to teach CLD learners. This overview seeks to contextualize the need for this research and to highlight some of the problems that currently exist.

**Korean School System Underprepared for Enrolling CLD Students**

Although the population of culturally and linguistically diverse (CLD) students is currently small, recent census reports show more than half of all CLD students in Korea are currently between the ages of 1-3 (Gyeonggi Provincial Government Statistics, 2015). This means that within the next few years the Korean education system and its teachers will experience a large influx of CLD students entering the classroom. Currently, about 85% of CLD students are enrolled in elementary school levels. Consequently, we can anticipate that mostly elementary school teachers are currently, or will be in the near future, in contact with CLD students. However, as these children grow older, we can expect public school teachers in middle and secondary schools will face this special group of learners too. As the CLD student population is expected to continue to grow, it is inevitable that
Korean teachers will encounter more than one CLD student during their teaching career. Of concern to this study, is how well prepared are Korean teachers to serve the needs of these learners.

If results from nationwide studies measuring tolerance for diversity offer any indication of how open Korean teachers may be to accepting CLD students, then there may be some reason for concern. Responses to the World Values Survey, which measures tolerance towards diversity, found Korean citizens are generally reluctant to accept foreigners. Korea ranked 51 out of 59 in terms of racial awareness and 44% of those surveyed indicated they had negative attitudes towards immigrants and foreign workers (Korea Herald, 2016). Using the same survey data, researchers Niclas Berrgren and Therese Nilsson (2013) hypothesized that countries with greater economic freedom and low racial or ethnic diversity would correlate with greater tolerance of diversity in general. Overall, the data supported this assumption, but in Asia, Korea was an outlier. As a relatively rich, well-educated, peaceful and ethnically homogenous country, Berrgren and Nilsson expected Korea to be moderately tolerant. However, more than one in three South Koreans said they do not want a neighbor of a different race (Fisher, 2013).

Since immigration to Korea is relatively new and the immigrant population is still quite small, most Korean people have lived their lives in a relatively homogenous state for centuries (Ahn, 2012; Choi, 2010). This means that many teachers may be lacking direct knowledge and experience interacting with non-Korean people and they would likely have little or no experience instructing students that are not native Korean speakers. As the number of school-aged immigrant children increases, the number of teachers trained to support them should also increase. Yet there is a lack of
training programs available for teachers, particularly secondary school teachers, with a focus on how to teach specialized content (e.g., science, math, history, etc.) to diverse learners. The scarcity of professional development is primarily because the issue is fairly new and there is limited expertise about how to support teachers to accommodate CLD students.

Teachers are underprepared

Consequently, teachers are not prepared for the challenges presented by the demographic changes taking place. Thus, it is unlikely that CLD students who are in schools now are receiving the support they need to be academically successful in science. Traditionally, Korean classrooms have been rather didactic with regards to pedagogy, meaning that teachers favor lecture-based teaching styles, especially in the secondary schools. However, there has been a push toward more inquiry-based teaching practices in Korea for the past 40 years.

The Korea National Science Education Standards (KNSES) (2010) recognized the importance in making a goal of science literacy to highlight hands-on activities (“doing science”) by having teachers provide more opportunities for inquiry-based science investigations. This pedagogical shift has been identified as an important and crucial classroom practice for nearly a decade (Korea Ministry of Education, 2007). Thus, Korean teachers are increasingly expected to implement more inquiry-based teaching practices and to develop more student-centered learning activities.

Teachers who presently struggle with these requirements are likely to face even more challenges if CLD students were introduced to the classroom. This is mostly due to teachers not having received proper training on how to modify their lessons and assessments to meet the
cognitive, linguistic and social needs of different CLD learners. In addition, it is already difficult for teachers to manage classroom behaviors and students’ group learning activities without needing to address more complex social issues. However, for Korean teachers who want to effectively implement inquiry in their classroom, they need to understand about the kinds of social challenges that may prevent CLD students from being able to equitably participate in collaborative learning with native Korean students who may reject or bully them because they are different from the norm. In addition to dealing with complex social issues, teachers also need to know how to support students to acquire and use language while participating in collaborative inquiry activities. Understanding how the language acquisition process can limit CLD students in their ability to effectively communicate their full conceptual understanding with written or spoken language is an important skill for teachers.

While inquiry teaching can be used in any classroom, it is most often implemented in science classrooms. Research in other countries with larger multicultural and multilingual populations have found that CLD students in science classrooms may have difficulty being academically successful because teachers lack the knowledge and teaching strategies necessary to support them in being able to effectively communicate. Understanding what teachers know about implementing inquiry and exploring how their attitudes about diversity and CLD students impact on their self-efficacy for using inquiry with CLD students is an area of focus for this study. While this research does not assert that inquiry teaching is only used in science classrooms, the challenges facing teachers who use inquiry to teach CLD students science is a special concern because research has shown that science classrooms can offer particularly valuable spaces for CLD students
to develop peer relations and language. In the next section, the challenges and benefits of science teaching and learning are discussed with regards to CLD students.

**Inquiry-Based Science Learning**

Inquiry science learning is defined as a dynamic and emergent process that builds on students’ natural curiosity about the world in which they live based on the questions and ideas that they have (Chiarotto, 2011). Inquiry learning promotes students’ construction of meaning through exploration of phenomenon, observations, experiments, and hands-on activities (Stoddart, et al., 2002). As such, inquiry teaching has gained popularity as a positive alternative to more traditional lecture-based teaching styles. More and more education systems around the world are embracing more inquiry-based science instruction in their classrooms, due in part, to research showing that inquiry promoted higher level of critical thinking and problem solving opportunities. In addition, inquiry learning offers students important opportunities to engage in discussions, predictions, explanations, and interactions with peers while synthesizing scientific thoughts.

Some positive benefits of inquiry-based instruction in the science classroom are it provides opportunities for honoring students’ questions/curiosities, which increases their motivation to be engaged (Chiarotto, 2011). This curiosity, can in turn, lead them to seek more information and to reflect on more materials (Hidi, 1990) to help deepen their knowledge. Finally, inquiry stimulates students’ curiosity and can build lifelong learning skills that transcend content mastery. These skills feed into other content areas and across all grade levels. Inquiry has been shown to be particular influential in helping CLD students to develop
meaning making and while articulating their ideas. These kinds of interactions provide authentic contexts for language use and development. For these reasons, inquiry learning is viewed as a beneficial strategy for supporting CLD students’ content learning and language development.

However, science has a linguistic register, meaning there are particular norms and patterns of language use that are essential to the practice of the discipline (Halliday, 1978). This means when students learn science, especially through inquiry, they all face challenges related to language use. By formulating hypotheses, proposing, alternative solutions, describing, classifying, using time, and spatial relations, inferring, interpreting data, predicting, generalizing, and communicating findings (Chamot & O’Malley, 1986; National Science Teachers Association, 1991), students can develop and use language while simultaneously learning content (Casteel & Isom, 1994; Lee & Fradd, 1998; NRC, 1996; Tough, 1985). But for CLD students who do not have a firm grasp on everyday or technical science language, science classrooms can be overwhelming for learners. To support CLD students to be successful, teachers need to have specialized knowledge about how to teach language and content. However, when science becomes context-reduced or decontextualized in language, through teacher-centered lectures, CLD students can find themselves in a world of meaningless words (McKeon, 1994).

**Science and Language Learning**

Science learning is heavily based on context, language, and utterances, which are needed for connecting the learner and the physical world. Traditionally, it has been assumed that proficiency in the language of instruction is a prerequisite for learning subject matter, such as science
(Collier, 1989; Cummins, 1981; Met, 1994, as cited in Stoddart, et al., 2002). This is problematic for CLD students who are not proficient in the language of instruction, in this context. When CLD students learn science in classrooms with little or no support for their language needs, they end up falling behind academically. This is because the student is not capable of extracting science content information while trying to compensate for missing language. In science classrooms, CLD students who have limited Korean language proficiency are not able to comprehend, develop, and synthesize science content material at the same depth as native Korean-speaking students.

Cummins (1979) explains that language students need to be successful in school is known as a “decontextualized and cognitively demanding language”, called cognitive academic language proficiency (CALP). Whereas the contextualized, cognitively undemanding language students gain though familiar interactions, gestures, and tone of voice is referred to as basic interpersonal communicative skill (BICS) (Aukerman, 2007). Although developmentally BICS and CALP are not necessarily separate, the way in which each is acquired is different. CALP includes aspects of language that involve cognitive processes at higher levels of the Bloom’s taxonomy (refer to Appendix 2-B). To meet educational objectives emphasizing the cognitive domains, such as analysis, synthesis, and evaluation, students need to develop CALP (Collier, 1987).

For students, BICS is easier to acquire because students can develop these language skills through mimicked behavior and phrases that are adopted simply through observation and interaction. In addition, BICS is not as cognitively demanding for students and requires less time and stress for development. As a result, studies have shown that it generally takes
students about two years to master BICS in a second language (known as L2). For this reason, some students can appear to develop language very quickly – but they often have holes in their language related to the cognitively demanding language they need for performing well academically.

Young children with little to no formal schooling in their first language (L1) require approximately five to seven years to reach the level of native speakers in regards to CALP (Collier, 1987; Butler, Kauta, & Wiff, 2000, as cited in Wassell, et al., 2010). For older students, it can take much longer, and some students never reach native-like proficiency. This illustrates the need for teachers to have an improved understanding of what BICS and CALP are and how students’ ability to develop language in these domains can impact on their academic abilities and on their social integration into the learning environment. Unfortunately, studies show that teachers have misinformed notions about language learning, which can impact on CLD students’ learning.

Second Language Acquisition and CLD Students

Language acquisition is a very complex, difficult, and a long process that is commonly misunderstood by the public. Language acquisition is the act of obtaining or learning a language. The key word here is “process”, which implies progress over time. Studies have shown that simply “studying hard” to learn a language is not enough as there are many important social and affective factors related to language acquisition. Because language acquisition is a complicated process, learners can develop one domain and be lacking in another. For example, individuals who have more conversational experience may develop their listening and speaking skills
far faster than their reading and writing skills. As a result, students may excel in verbal activities, but struggled when asked to perform nonverbal practices such as reading and writing. In addition, differences in the language used by teachers and among peers in school and other social settings can differ dramatically.

Generally, “school language” requires the development of specialized language (aka CALPs) which is cognitively demanding in function and structure – but is necessary if a student is to understand, conceptualize, symbolize, discuss, read, and write about specific content topics expected in schools (Cummins, 1981; Lacelle-Peterson & Rivera, 1994; McGroaty, 1992; Minicucci & Olsen, 1992; Oakes, 1990; Pease-Alvarez & Hakuta, 1992, as cited in Stoddart, 2002). However, the way that BICS and CALP is established and develop depends on each individual and their sociocultural background – so there can be a great deal of variance among CLD students that appear to have similar circumstances. This can be very confusing for teachers who lack information about language development.

In fact, research has found that when teachers lack of understanding about language development and acquisition, it can lead them to have perceptions about CLD students that are very distorted. For example, teachers may view CLD students as being lazy because their academic work, which requires CALPs and an emphasis on reading and writing domains, does not reflect the “competency level” the teacher believes the CLD student to have. This perception is based on teachers’ observations of the students’ everyday conversational ability, which is grounded in BICS and has an emphasis on speaking and listening domains). Thus, there is a chasm between the CLD students’ perceived versus actual linguistic competency. Jim Cummins and Arthur Miramontes (1989) discovered that
students in their study struggled in class not due to a lack of CALP, but because the classroom tasks typically lacked essential elements of relevance that described the situations where students were able to displayed their greatest competencies.

Research in Second Language Acquisition (SLA) has been critical for helping educators to understand the complex process of language learning that can occur over a long period of time (McLaughlin, 1984, as cited in Collier, 1987). CLD students, enrolled in an academic context, have great pressure to develop proficiency in many different language domains (listening, speaking, reading, and writing) and content areas. According to Collier (1987), students not only need to reach proficiency in the language domains, which require an understanding of structures and semantics of phonetics, phonology, inflectional morphology, syntax, vocabulary, discourse, pragmatics, and paralinguistics, but CLD students also need to develop the language skills, such as listening, speaking, reading, writing. In addition, students need to develop metalinguistic knowledge about language and how it is used in different content areas (math, science, history, etc.).

Thus, when CLD students are learning in science classrooms, they are actually engaged in doing “double the work” of their native language peers (Short & Fitzsimmons, 2007, as cited in Wassell, et al., 2010) because they are tasked with learning both science and language. Fortunately, language and science learning have a synergistic relationship as both science and language practices involve a strong emphasis on reading and writing content information and learning how to express and communicate ideas verbally and in writing (National Research Council, 1996). The engagement in scientific inquiry promotes the learning of the academic
language and the science content through the elaboration of the language (Stoddart, et al., 2002).

While the research suggests that inquiry based classrooms can offer students a valuable and authentic space for integrating BICS and CALPS while engaging in social learning with peers - teachers tend to have limited coursework or training about how to teach science using inquiry or how to promote language learning in the context of science or student-centered inquiry-based classrooms. These issues are also relevant to general education teachers, but CLD students can benefit from specific language teaching strategies designed to help them learn and understand scientific terminology, and to make sense of the ways in which specialized language features that are not commonly utilized in everyday talk can be common in science classrooms, as well.

In order to make recommendations about what types of knowledge and teaching strategies would most benefit Korean teachers when teaching CLD students in science classrooms, research is needed to better understand teachers’ attitudes and experiences with cultural and linguistic diversity and to learn about teachers’ teaching efficacy for using inquiry or language teaching strategies. This study seeks to explore how Korean teachers’ attitudes toward CLD students and their self-efficacy on inquiry and language-based instructional practices. Thus far, there are very few studies exploring the impacts of Korean teachers’ attitudes about diversity and their knowledge about diversity, inquiry teaching, and language teaching influencing their science teaching self-efficacy when working with CLD students. By combining a focus on these factors, this study expands on research in international contexts and it is unique in the Korean educational context.
1.2 Purpose of the Study

The purpose of this mixed methods exploratory study was to describe the conditions and experiences that impact the teaching of CLD students in Korean primary and secondary school classrooms. More specifically, this study seeks to understand: 1) Korean teachers’ attitudes about diversity, as well as their self-efficacy toward teaching inquiry and language to CLD students; 2) how teachers’ self-efficacy can impact their pedagogical strategies and classroom dynamics; and 3) specific ways teachers are challenged when faced with teaching CLD students. Investigating these three very complex and multi-dimensional issues will allow for better, more concrete, and more relevant teacher education and professional development programs that can positively impact CLD students’ science learning.

1.3 Research Questions

There were four overall research questions that guided this study:

1) What are Korean teachers’ attitudes toward CLD students?
2) What are Korean teachers’ self-efficacy about teaching CLD students using inquiry and language-based instructional strategies?
3) What significant correlations exist between teachers’ attitudes toward CLD students and their self-efficacy on teaching CLD students using inquiry and language-based instructional strategies?
4) What factors (i.e. language learning experiences or experiences of interactions with people who are CLD) influence Korean teachers’ attitudes toward CLD students and their self-efficacy on teaching CLD students using inquiry and language-based instructional strategies?
1.4 Research Design

This study employed a convergent parallel mixed-methods approach to gain perspective about teachers’ attitudes, self-efficacy, and experiences on teaching CLD students using inquiry and language teaching strategies. Through the development and implementation of a three-part questionnaire and by conducting teacher interviews, this research sought to understand a complex and multi-dimensional issue.

This study used both quantitative data, in the form of a questionnaire, and qualitative data, in the form of semi-structured interviews. In the first phase, data was collected using a questionnaire called the *Korean Teachers’ Attitude and Self-Efficacy for Inquiry and Language based Teaching* (K-TASILT). This research is grounded in Albert Bandura’s theory of self-efficacy (1977), which was used to consider how teachers’ attitudes impact on classroom teaching practices. The qualitative data was collected by conducting semi-structured interviews with a variety of teachers, in particular science teachers, to ask about their general experiences teaching, using inquiry, and working with CLD students. This data was analyzed using both apriori and emergent coding techniques to capture how teachers’ experiences with diversity, CLD students, and inquiry and language teaching impact on their self-efficacy for teaching CLD students using these teaching practices.

To fully understand the complicated ways that attitudes can impact on teaching self-efficacy, it was necessary to gather both data sets. Through detailed analysis and interpretation of these data sets, this study offers implications for the development of teacher education programs and professional development aimed to improve inquiry and language based instruction for CLD students.
1.5 Context of the Study

This study took place as part of a larger three-year, longitudinal project, which sought to describe the conditions and experiences that impact learning for CLD students in Korean science classrooms. Two data sets were collected largely from primary and secondary school teachers within the Seoul metropolitan area. The first data set was based on a developed and validated questionnaire, called K-TASILT (refer to Chapter 4), which was piloted online using an electronic survey platform known as Survey Monkey¹. Using this program, 144 schoolteachers answered 113-item statements that were divided in three different scales (refer to Chapter 4), which were all analyzed to determine Korean teachers’ attitudes toward CLD students and the diversifying classroom, as well as their teaching self-efficacy on inquiry and language-based teaching practices. The second data set was based on interviews conducted with 16 primary and secondary school teachers concerning their experiences teaching CLD families, challenges they faced, relationships with CLD parents, etc. (refer to Chapter 4). The data was converged using the parallel mixed-methods approach to provide a broad overview of what is happening in the classroom, as well as identifying teachers’ attitudes toward CLD students and their self-efficacy on inquiry and language teaching CLD students in the classroom.

1.6 Significance of this Study

This study provides a unique approach to investigate how Korean teachers’ attitudes and practices have the potential to impact the teaching and learning of CLD students in Korean public schools. The significance of this study is...

¹ Survey monkey is a web-based survey solutions provider allowing users to create their individualized questionnaires and providing tools to analyze the collected data responses.
recognizing the gap teachers have between their attitude and perception of CLD students and families, which is stemming from an unclear understanding of who “they” really are. Thus, this study aims to construct teacher training or professional development programs for both pre- and in-service teachers to promote effective pedagogies utilizing both inquiry and language-based teaching strategies supporting CLD students to be academically successful despite their cultural and linguistic barriers. Implications for this research will support the development of teacher education programs and professional development aimed at improving inquiry teaching and language teaching in the Korean science classrooms. This research contributes to the recognition and understanding of teachers’ attitudes, self-efficacy, and the relationship that it has with one another that can impact the affordance or limitation of CLD students in the science classroom.

1.7 Limitations of this Study

As this study is relatively novel, there is limited research on which to draw from in Korea that explores social, academic, and linguistic challenges in the science classroom. As such, there was limited literature from which to draw from in the Korean context. However, there has been considerable research in other countries focused on teachers and diversity, teachers’ attitudes, and teachers’ self-efficacy for inquiry and language teaching.

A limitation and benefit to this study is the author’s own position as an international student who is able to draw from personal experiences as an outsider to Korea, which allowed greater understanding and consideration of different perspectives of immigrants who are being discussed in this study. A limitation was the difficulty in being able to fluently understand all of the
nuanced details from interviews with native Korean speakers. However, due to this shared emic perspective of being ethnically Korean, an inside/outside perspective served as an advantage to the interpretation of the data sets, which can be viewed as beneficial.

1.8 Overview of the Dissertation

This study is made up of eight chapters addressing the investigation of teachers’ attitudes toward CLD students and the diversifying classroom, as well as their self-efficacy on teaching CLD students utilizing inquiry and language-based instructional strategies. Chapter one focused on the rising issue of an unprecedented number of CLD families coming to Korea and enrolling their children into school systems with underprepared teachers. In addition to the push toward more inquiry-based pedagogical approaches utilized in science classes, teachers are now facing the implementation of language-based teaching strategies to accommodate for CLD students that are rapidly increasing. The next few chapters describe the context of Korea’s shifting demographics, as well as the development and implementation of this study’s instruments, aiming to provide ways to better equip teachers and the opportunities for CLD students to learn science.

Chapter Two

Chapter two provides an overall literature review discussing Korea’s shift in its demographics, specifically describing the incoming CLD families and students. As the CLD population rises, it has become inevitable for teachers to be in contact with at least one CLD student in their class. Other factors, such as Korea’s low birth rates and high aging society has rapidly accelerated demographic setting. This chapter offers more context in who
are the teachers, what is happening in the classrooms, and highlighting challenges that not only CLD students face, but underprepared teachers in particular face. It also underlines teachers’ attitudes and their self-efficacy pointing towards the potential impact it can have on their pedagogical practices teaching CLD students.

Chapter Three

This study was structured utilizing the theoretical framework based on Albert Bandura’s (1977) theory on self-efficacy, along with the conceptual framework on teachers’ attitudes. Multiple studies have shown that teachers’ attitudes have great influential factors that can improve or deter the academic achievement of students enrolled in their classes. In addition, it may be possible that teachers’ attitudes can also alter their self-efficacy, and vise versa, especially when it comes to instructing student populations that they are unfamiliar with or find difficult to instruct. Both attitude and self-efficacy go hand-in-hand, in that claiming a positive or negative self-efficacy is well connected to the way in which teachers enact their practices in the classroom and toward their students. With the support of other studies, this chapter aims to fully describe and help recognize the importance of understanding the theory of self-efficacy and attitude and the impacts it can have.

Chapter Four

This chapter describes the convergent parallel mixed-methods design that is a relatively new form of approach taking into consideration the multi-dimensional and complex concepts that require more than one type of data collection and analysis. Both quantitative and qualitative data sets are
measured providing both empirical and descriptive understanding of this study’s investigative issue on teachers’ attitudes and self-efficacy. The process of each data set is thoroughly described in its development, implementation, collection, and analyses in this chapter.

Chapter Five

This chapter focuses on the quantitative findings based on the developed questionnaire called the Korean Teachers’ Attitude and Self-Efficacy for Inquiry and Language based Teaching (K-TASILT). These findings were used to gather a broad baseline data that attempts to identify and understand both primary and secondary school teachers’ attitudes toward CLD students and their self-efficacy on inquiry and language-based teaching strategies for CLD students. The questionnaire had three scales addressing a total of eight subscale variables. The three scales addressed teachers’ attitude toward cultural and linguistic diversity (ATCALD), inquiry teaching efficacy for non-Korean students (ITENKS), and language teaching efficacy for non-Korean students (LTENKS). Through statistical analysis, item correlations, and variable correlations the significance of each subscale were investigated.

Chapter Six

This chapter was composed of qualitative data collected from primary and secondary school teacher participants, varying in their teaching demographics, through semi-structured interviews. This data set was collected to address a more in-depth and detailed group of findings that other data collection methods find difficult to retrieve; especially when addressing complex issues such as teachers’ attitudes and self-efficacy.
teacher interview responses were collected, transcribed, translated (from Korean to English), and analyzed addressing their attitudes toward CLD students, their self-efficacy on teaching CLD students through inquiry and language-based strategies, and their enacted teaching practices when instructing CLD students.

Chapter Seven

The impetus for this research is to identify and understand teachers’ attitudes toward CLD students and the impact that it has on their self-efficacy on teaching CLD students based on inquiry and language-based strategies. This chapter highlights the findings that were merged from the quantitative and qualitative data sets, following the convergent parallel mixed methods approach. Attention was focused on discussing teachers’ attitudes and self-efficacy, as well as making sense of relationships that were identified as being influential factors in shaping teachers’ attitudes and self-efficacy in CLD students’ learning. Emergent findings were also discussed and extracted during the analysis and included in this chapter.

Chapter Eight

This study contributes novel research about teachers’ attitudes and self-efficacy that are influential to their classroom practices as the student population is experiencing radical change due to globalization. This chapter addresses the implications for this study’s findings related to policy, teacher preparation, and educational research and classroom practices. This study focuses on the aim toward transforming science teacher education and professional development to address the gaps that were discovered in teachers’ attitudes, perceptions, and enacted practices of CLD students. In
addition, implementing programs that well equip teachers and increase their self-efficacy in knowing how to instruct CLD students so that they will have rich opportunities to learn both science and language in the Korean science classroom.
CHAPTER 2. BACKGROUND AND CONTEXT REVIEW*

The first chapter focused on introducing the problem that can arise when teachers’ negative attitudes about their students result in the implementation of practices that serve to limit the educational opportunities of their students. Research shows that when teachers reflect the mainstream or ethnic majority, the culture and language taught to students who are different from them impacts the students’ learning experiences in negative ways, due to their attitudes influencing their enacted practices. This chapter situates the potential for this problem to exist in a rapidly changing Korean society and education system. In the sections that follow, attention is given to describing the cause for changes in Korea’s population by focusing on the history of immigration in Korea. Specifically, this chapter an overview of how immigration is impacting the population of students in Korea’s public schools to provide some context for the challenges that are facing Korean teachers today.

This chapter builds on the introduction to the issue (discussed in Chapter 1) by drawing attention to the relatively diverse ways in which CLD students can be characterized and highlighting how this diversity requires Korean teachers to be able to meet the needs of different types of learners who come to schools with different resources and abilities. Following this introduction to how Korea’s educational landscape is changing and a discussion about how these changes bring challenges for teachers and learners, the theoretical lens used in this research is introduced.

Specifically, Chapter 3 describes how teachers’ attitudes can impact their teaching self-efficacy, both related to teaching specific content, such as science, and teaching specific group of learners, such as students who are ethnically, culturally, linguistically, or economically different from the mainstream. Thus, Chapters 2 and 3 provide the context and theoretical foundation needed to contextualize the research design described in Chapter 4 and to make sense of the findings in Chapters 5 and 6.

The following sections provides a brief description of the history of immigration in Korea and a discussion about how these changes have impacted Korean society over time. In addition, seven categories of CLD students are introduced to indicate the range of diversity within the CLD student population. By focusing on three groups (immigrant workers, marriage migrants, and transnational families) that account for the fastest growing CLD student population, some attention is given to underscore how students from different categories may face different challenges from their native Korean peers when learning in science classrooms. Finally, Korea’s low birth rate and super-aging society are introduced as additional important factors contributing to challenges related to immigration, diversification, and the Korean education system.

2.1 Korean Society is No Longer Homogenous

As the world is becoming more global and closely interconnected, countries are growing in its diversity. More people, goods, and ideas are crossing international borders and the notion of the nation-state, which consists of people who share the same ethnicity, beliefs, and culture, is expected to become even more illusionary (Hong, 2010). According to the percentage of individuals now living in Korea who are considered to be culturally and
linguistically diverse (CLD), Korea represents one of many countries whose identity as a homogenous nation-state has begun to slowly shift over the last few decades. The next few sections describe the conditions of Korea and the cause of such dramatic growth in diversity. To provide some context for factors contributing to this dramatic growth in cultural and linguistic diversity, a historical overview of immigration patterns responsible for transforming the social and demographic composition of Korean society are discussed.

**Korea’s Demographic History and Cause for Change**

As the Korean people have historically attempted to build a strong nation-state following their 1945 independence from 30-years of Japanese occupation and a 1950-1953 civil war that divided the country (Park, 1989), they endeavored to keep their purity and integrity strong, ridding any traces of Japan’s influences. Nationalism was based on a shared sense of territory, ethnicity, language, and cultural identity (Seekins, 1990, as cited in Lee, 2013), which resulted in the intolerance of other diverse cultural and ethnic identities within Korean society (Lee, 2013); this is still apparent today. In addition, race and ethnicity, in the Korean context, are almost used as synonyms unless referring to situations outside Korea (Lee, 2013). The view that Korea represents “one race of people” was emphasized through education and media, attempting to build a strong nation-state following Korea’s 1945 independence from 30-years of Japanese occupation and a 1950-1953 civil war that divided the country (Park, 1989). Commonly used
terms, such as 단일 민족 (danil minjok)*, meaning “one people” (Watson, Park, & Lee, 2011) and 우리 (uri), meaning “we” or “ours”, reflect this belief and are used to denote membership to a collective or group, including belonging to Korean society. While some scholars have contested this assertion that the Korean people represent a “pure race” (Lee, 2005; Choe, 2012), the same ideology that has served to bond the people of Korea into a more cohesive country has historically created demarcate lines of exclusion for those who do not share their ancestry and language. As a result, Korean society has been slow to integrate people from other cultures, resulting in the marginalization of people identified as foreigners or 외국인 (oegugin) (Kim, 2012; Kang, 2013). Korea’s strong nationalism has marginalized people groups living in Korea as the term “woori (우리)” continues to be used, giving off a sense of exclusivity.

The number and variety of both sending and receiving countries are increasing and the global supply of immigrants is also starting to shift from the Western to Eastern parts of the world (Massey, 2008). This occurrence began in the 1980’s when the international migration had spread into newly industrialized countries such as Korea, Taiwan, Hong Kong, Singapore, Malaysia, and Thailand (Massey, 2008). Specifically, Korea continued to become more industrialized reaching the highest economic growth rates in the world (Park, 2002), yet there was still a lack in being globally competitive. In order to better compete with other developed countries, Korea was pressed to have more laborers working for their labor-intensive factories. Korea eventually experienced a “migration transition” from a

* In this paper, the Revised Romanization was used to transliterate Korean into English. For more information about this system, please visit http://www.korean.go.kr/front_eng/roman/roman_01.do.
labor-sending to a labor-importing country (Pang, 1993; Park, 1994, as cited in Lee, 1997). Although Korea maximizes the utilization of other countries with cheaper labor costs, there are some industries within Korea impossible to invest overseas since they are geographically dependent – construction, mining, agriculture, and fisheries (Park, 2002).

According to a report from the Migration Policy Institute (1997), some sectors of the Korean economy would not be viable without temporary workers. In addition, the improvement of living standards for native Koreans produced a shift in job preferences that has moved them away from labor-intensive jobs (Park, 2002), known as the “3-D jobs”. These are jobs that are considered to be difficult, dangerous, and demanding. Despite the unemployment rate significantly increasing from 2.1% in October 1997 to 8.6% in 1999, which left two million people jobless, native Koreans were still reluctant to work at such 3-D jobs (MPI, 2004). This has caused many factories to seek after low-skilled migrant workers who are willing to migrate to Korea in search of better pay (Seol, 1999), compared to their home countries. Employers for 3-D jobs are continually facing labor shortages, which have exacerbated the growth of migrant workers coming to Korea looking to fill these positions.

Korea’s Growing CLD Population

The number of students that are culturally and linguistically different from the majority of native Korean students enrolled in public schools is increasing quickly. Just within two years, from 2013 to 2015, the number of CLD students increased in both primary and secondary school grades by 47.9% total, according to the ministry of education (2015) - elementary school (grades 1-6) 39,360 to 60,162; middle school (grades 7-9) 11,280 to
The unexpected growth of the CLD population in Korea has recently exploded the past few years. With the continual increase, it has been estimated that by 2020 one in five families (up to 10% of Korea’s population will be considered CLD) (Fuqua, 2011). Despite the growing number of students in school now, 83% of them are still in primary school or younger while only 17% are enrolled in secondary school (Provincial Government Statistics, 2014). This means within the next couple years the CLD student enrollment rate have an exponentially increase, inevitably filling classrooms.

**Foreign immigrant workers, expats, and their children**

The largest group of immigrants in Korea are foreign workers from China and other countries in Southeast Asia who come as “industrial trainees” to do intensive labor for low wages in low-skilled industry jobs. From 1997-2007, there was a 170% increase (387,000 to 1,046,000) in visas issued for these labor positions (Kang, 2010). Referred to as “migrant workers”, there are many accounts detailing discrimination and human rights violations of these workers by their employers (Kang, 2010). As of 2015, an estimated 209,000 workers are believed to have overstayed their visas, remaining as illegal aliens with even fewer legal rights and protections (Korea Joongang Daily, 2015). Legislation was passed in 2003 to provide an education for the children of undocumented workers (Cho & Yoon, 2011), but as of December 2014 an estimated 20,000 children of undocumented workers were not enrolled in school (Kim, 2014). Many of these CLD children are likely to come from migrant families that have low socioeconomic status,
limited education, limited Korean language proficiency, and limited social power. Although legislation states that CLD children are to be provided with education, they tend to be educated solely in public schools, which pose many challenges, as many of them are limited in their Korean language proficiency.

In addition to “migrant workers”, there are also an increasing number of foreigner workers with higher status visas (researchers, professors, and business owners). Referred to as “expatriates” or “expats”, the children of these workers tend to be enrolled in private schools, where they are typically instructed in their native language (i.e., English, Mandarin, or Russian) and are taught by teachers who tend to be foreign nationals rather than Korean, or enrolled in public schools with an extensive amount of resources aiding them to be academically and linguistically successful. Much of the expat communities are immersed in a non-Korean culture and have the leisure to maintain a lifestyle that does not demand acculturation and provides opportunities to make choices in how much they acculturate to the Korean language and culture.

**Marriage immigrants and their children**

Marriage immigrants are the second largest group, but they make up a much smaller portion of the total immigrant population. In 2010, more than 10% of all marriages registered in Korea were international marriages* (Kim, 2012). Various social factors have been identified as contributing to this trend, including the country’s declining birthrate, expanded rights and education for Korean women who choose to delay marriage in order to

*This term describes marriages between an ethnically/ nationally Korean person and a person who is not.
pursue careers and since women are migrating from rural areas to the cities, male farmers are left with fewer marriage prospects (Jones & Shen, 2008).

Since the mid-1990’s, more than half of all international marriages have occurred between female immigrants and Korean men. Previously, very few Korean men married foreign women. Today, the vast majority of these marriages are to ethnic Korean Chinese women (known as cross-border brides), followed by women from Vietnam, the Philippines, and other Southeast Asian countries (known as mail-order brides) (Lee, 2008; Jones & Shen, 2008). While the overall number of marriages in Korea has been decreasing, the number of international marriages has been rapidly increasing, nearly 10 fold (from 4,710 cases in 1990 to 43,121 in 2005) (Lee, 2010).

In the Korean language, multiracial or multiethnic families are referred to as multicultural families (다문화가족 damunhwa gajeok). Similar to migrant workers, multicultural families face stigma and persecution in Korean society. Since female marriage immigrants tend to have less formal education, limited Korean proficiency (LKP), and are 10 or more years younger than their Korean husbands, they are not well-received by many people in society. A recent study found that nearly 41% of multicultural families surveyed had experienced some type of discrimination (Kang, 2013, as cited in Brannen & MacLellan, 2014). Other studies note that stress on these families is resulting in a growing number of divorces (Jones & Shen, 2008), which further compounds the negative perceptions native Koreans have about international marriages. Children born in these marriages are referred to as multicultural students (다문화학생 damunhwa...
haksaeng) and they are significant because they represent the fastest growing population in the country. In 2014, multi-ethnic children\footnote{Because the majority of international marriages occur between Korean men and women who are racially categorized as being “Asian”, I do not describe the children as being multi-racial or bi-racial, which is more commonly used in the international research literature.} made up more than 1% of all school age children (Jeon, 2014) and more than 85% were enrolled at the elementary level (Provincial Government Statistics, 2013). To provide a more regional example, Gyeonggi-do province, which is the largest urban center in Korea, has the greatest immigrant population. Between 2010 and 2014, there was a 47% increase in the number of non-Koreans (from 337,821 to 492,720) living in the region. From 2008 until 2014, this province experienced a 367% increase in CLD students (11,131 to 51,960) in the school district (Provincial Government Statistics, 2013). This population is predicted to continue, growing by about 14% each year.

Rural areas have also been growing in their CLD student population in more pronounced ways. In 2010, nearly one-third of all marriages were international marriages due to the lack in future spousal prospects. Contributing to this is mainly due to Korean women’s unwillingness to continue living in rural Korea - due to low levels of income, cultural or economic benefit, and potential problems for children’s education - or marrying a rural farming bachelor, for those who stay (Kim & Shin, 2007). According to Miyong Kim and Hye Sook Shin (2007), many Southeast Asian, particularly Vietnamese women, are marrying Korean men from

\footnote{The term multicultural is used differently in the established international research literature, which can cause some confusion when reporting findings in international contexts. In addition, because the term is not inclusive of the diversity that exists in classrooms, I prefer to use CLD, which encompasses all non-traditional Korean students, including children of mixed ethnicity, foreign immigrants who are not Korean, North Korean refugees, etc.}
rural areas mostly due to preferential reasons of having similar agricultural cultures and an easily adaptable socio-cultural community.

A recent survey found that about 30% of CLD children did not attend school at all and that, because they stay home with their LKP mothers, they are not learning to speak Korean proficiently (Strother, 2012). Due to their limited education, women migrating to Korea for marriage have fewer experiences navigating the education systems in their home country. Coupled with limited literacy skills in Korean, immigrant mothers face many barriers that can impede their ability to effectively advocate for their child’s education. In Korea, women are traditionally expected to act as the main liaison between school and home. This poses unique challenges for mothers of CLD children who currently have limited resources available to support positive and successful interactions with the school and its teachers.

**Transnationals**

Transnational CLD students are also one of the biggest and continuously growing groups of students in Korea. According to Jennifer Jang (2010), transnational students are those that live a cross-cultural and highly mobile lifestyle. Due to frequent relocations between countries and cultural environments (Shields, 2009), transnational students are in contact with various cultures and languages. There are two different types of transnational families: Korea-born and foreign-born. Korea-born transnational students are those that were born in Korea and then lived abroad. Foreign-born transnational students are those that were born outside of Korea, but came back to Korea after a short period of time. There are some families who make another move abroad before settling back in Korea. Transnational CLD students can also be identified as Third Culture
Kids (TCK), who are persons that have spent a significant part of their developmental years building cultural and linguistic relationships outside of their parents’ culture, but not holding complete ownership of it (Pollock & Reken, 2001, as cited in Jang, 2010).

Transnational students are known to be the invisible group (Pollock & Reken, 2001) of CLD students because they are not only ethnically Korean, but they are also linguistically proficient in the Korean language; it’s very difficult to decipher who is who when only listening to conversational Korean among transnational students. In addition, many times transnational CLD students are no different than native Korean students, culturally, but there are subtle differences that can impact the way they live and perform, especially in schools. Since transnational students are straddling two or more cultures, their identity and concept of culture may be different than others, which may cause feelings of being distant. Particularly in the classroom, since no two educational experiences are the same from one country to another, even from one district to another, transnational students have difficulty “fitting in”; the cross-cultural experiences they had can be hard to understand, thus their thoughts, behaviors, and academic achievement can also be hard to understand, as well (Jang, 2010).

**North Korean refugees (Saeteomin) and their children**

A much smaller group of CLD students include children who have either escaped from North Korea or who have been born to one or both parents that are North Korean refugees (Saeteomin). In 1993, eight refugees were admitted to Korea and ever since then the number of refugees has been on the rise (Hong, 2012). The numbers have now increased to 26,483 saeteomin living in Korea in 2014 and 40% were between the ages of 10-29
(Sung & Mo, 2014). Research shows that many North Koreans live in poverty with up to 40% receiving government assistance (Park, Yoon, & Cho, 2007). In addition to challenging socio-economic issues, many refugees face physical and psychological health issues, and their children must contend with discrimination against North Koreans that is prevalent in school and society (Sung & Mo, 2014).

North Korean children have relatively low enrollment in schools compared to native Korean students. In 2005, roughly 49% of North Korean students were enrolled in middle school and less than 7% in high school compared to native Koreans 94% and 92%, respectively. In 2014, the dropout rate for North Korean students in middle and high school ranged between 4.2% and 7.5% compared to 1.2-1.3% among South Korean students (Sung & Mo, 2014). While these children are ethnically Korean and speak Korean, differences in their speech patterns and pronunciation make North Koreans easily distinguishable from native Korean peers. Some recent studies have shown North Korean students being inclined to have lower achievement in school and suffer from bullying and social isolation due to poverty, as well as differences in their culture and appearance (Cho & Yoon, 2011).

Students born to North Korean refugees are relatively small in number, but data suggests these students are at the greatest risk for failure and drop out in schools. While Korean teachers may share ethnicity and language with these children and their families, the political, social, cultural and economic differences serve as potential barriers to effective interaction, similar to the other groups of immigrant children and families. While students from this category did not participate in this study, the challenges these students face as learners in classrooms related to both their cultural
and language differences are significant. The sensitive nature of these students’ position in society and in school presented a barrier for their participation in the study. In the future, it would be important to include this special population of students in research to learn how teachers’ attitudes towards students identified as refugees or children of refugees from North Korea (Saeteomin) impacts on their learning opportunities – especially in student-centered inquiry based classrooms where they would be expected to interact social with peers and produce everyday and academic language which they may be lacking.

Korea’s Growing CLD Student Population

The growing immigrant population in Korea comes from many different countries, especially from Southeast Asian countries. According to Korea immigration services, as of March 2016 the largest groups of people immigrating to Korea are ethnic Korean-Chinese people (한국계 중국인/조선족), Southeast Asians (from Vietnam, the Philippines, Cambodia, and Indonesia), and other countries such as Uzbekistan, Nepal, Japan, and the Americas. Most unskilled immigrants come to fill the 3-D jobs, but some immigrants who are considered to be highly skilled also come to Korea for work in education and industry. Drawing from a publication by Youngdal Cho (2002) discussing Multicultural Education issues in Korea, this study sought to identify different categories of CLD students in an attempt to consider how the characteristics of these learners would necessitate different educational support needed for them to be successful. This study developed seven categories (refer to Table 2-1) to represent different types of CLD students, which is useful in considering
how parental ethnicity, citizenship, language, and social class impacts students’ experiences as learners in Korean schools.

Table 2-1
Types of CLD students and families residing in Korea

<table>
<thead>
<tr>
<th>Types of CLD</th>
<th>Example/explanation</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Transnational Korea-born Korean</td>
<td>1. Born in Korea, but lived overseas for one or more years then returned to Korea.</td>
</tr>
<tr>
<td>2. Transnational internationally-born Korean</td>
<td>2. Born outside of Korea, but came back to Korea after a short while. Some families then move overseas again for some time before returning to Korea.</td>
</tr>
<tr>
<td>3. Bi-ethnic (multicultural/다문화)</td>
<td>3. One parent is Korean ethnically while the other parent is a non-Korean</td>
</tr>
<tr>
<td>5. Foreign-born non-Korean</td>
<td></td>
</tr>
<tr>
<td>6. Korea-born non-Korean</td>
<td></td>
</tr>
<tr>
<td>7. North Korean or North Korean refugee</td>
<td></td>
</tr>
<tr>
<td>(세티민)</td>
<td></td>
</tr>
</tbody>
</table>

Table 2-1 describes the seven types of CLD students that are residing in Korea. Transnational CLD students are those that are ethnically Korean, who are born either in Korea or outside of Korea, but moved back and forth between Korea and another country after a prolonged stay in one location. Bi-ethnic (다문화/damunhwa) CLD students are considered as “multicultural” in Korea where one parent is native Korean and the other parent is foreign-born. Ethnic Koreans with different socio-historical
origins/backgrounds are the hyphenated CLD students who were born and raised in a country outside of Korea (e.g. Korean-Chinese, Korean-Russian, Korean-Japanese). Foreign-born or Korea-born non-Korean CLD students, considered as expats*, who are usually in Korea as high-skilled workers. And lastly, CLD students that are North Korean or North Korean refugees (saeteomin), which is growing quickly rapidly, as well. The next section provides a short overview of how immigration is impacting school-age populations is discussed. Following this introduction, three CLD categories that represent the largest groups of CLD students in schools is discussed to provide more context for understanding the challenges students present teachers as culturally and linguistically diverse learners.

**Factors Impacting Korean Society**

While immigration is contributing to demographic changes in Korea, there are other more salient issues impacting Korean society making this shift grow more exponentially. The following few sections will be discussing factors that are impacting the Korean society, bringing about change in its level of diversity especially in the classroom. This includes Korea’s low birthrate, one of the lowest in the world, Korea becoming a super-aging society, and the number of CLD students increasingly enrolling in Korean schools.

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* Also known as expatriates, who are high-skilled migrants who are motivated to live in a different country motivated more by professional reasons or because they seek an experience abroad (Gatti, 2009).
Korea’s low birth rate

As of January 2016, the birth rate in Korea was 1.24, a slight increase from 1.21 in 2014 (KOSIS, 2016). According to the OECD, maintaining a fertility rate of 2.1 children per woman ensures a broadly stable population; however, the past few decades the postponement of family formation and childbearing, along with a decrease in desired family sizes and an increase in concerns regarding future educational opportunities triggered this dramatic decline (2016). In 2014, the number of Koreans aged 9 to 24 dropped below 10 million for the first time since data began being collected in 1970 (Jun, 2014). The impact on schools is already noticeable as schools around the country are reducing the number of classes for each grade level and are combining multiple schools to save money and resources. As a result, many schools are closing and in some rural areas, children are being educated in “one-room” schoolhouses with less than 30 students. Currently, the total number of students enrolled at the 6th grade level is approximately one-half of the students enrolled at the 12th grade level, meaning in six years the student population will drop by about 50%. Viewed as a crisis in education, this decline in Korea’s school age population is only expected to accelerate in the decades to come (Jun, 2014).

Korea’s super-aging society

In addition to the low birthrate, Korea is also an “aging society”. In 2015, people aged 65 or older made up more than 13% of the population. Korea will become a “super-aged society” in the next decade as more than 20% of the population will be over the age of 65. As a result, by the year 2030, the working age population will drop to only about 60% of the total population.
(to ~ 33 million people) (KOSTAT, 2015). For these reasons, the need for foreign workers is only expected to grow in the coming decades and the federal government is struggling to develop immigrant reform efforts and family support policies designed to encourage family growth and continue to build a workforce to support the aging society.

### 2.2 Teachers Experiencing Unanticipated Demographic Change in the Classroom

Only a few years ago, Korean teachers were unlikely to ever encounter CLD students in the classroom, but soon this will no longer be the case. As the CLD student population continues to grow, the demand for the readiness of teachers who are expected to successfully instruct CLD students in classrooms will also grow. The obstacles teachers face will escalate, leading to greater ramifications if teachers do not receive the proper education and/or professional development to meet the needs of these students. This means the teachers who are responsible for the learning of these students are being tasked with teaching content, such as science, while also helping these students to develop Korean language and an understanding of cultural and social norms expected in the classroom. Because the inclusion of these students in K-12 classrooms is a relatively recent phenomenon, teachers and schools are not well equipped to support the social and linguistic needs of CLD students (Cho & Yoon, 2011), especially with regards to effective pedagogical practices and interventions for CLD students in science.

In the sections that follow, we describe how some of the research arguing teachers’ attitudes about cultural and linguistic diversity can impact learning experiences for CLD students and we discuss how teachers’
attitudes about cultural differences and language learning can impact their inquiry teaching efficacy and outcome expectancy.

**Korean Teachers and Teacher Education/Professional Development Programs**

The teacher education program (TEP) and teacher certification process in Korea has been known to be very rigorous and content heavy. According to the Korean educational policy, prospective teachers are required to complete their bachelors degree at a 4-year university, specifically at a College of Education – 교대 (Kyo-dae) for primary school and 사범대 (Sa-bum-dae) for Secondary Teacher Education. In addition to completing their TEP, candidates must also successfully complete a teacher certification exam that is only offered once a year. The exam is dense with content and has a reputation of being very competitive. Thus, public school teachers in Korea are generally well prepared content-wise to teach in their field of expertise.

This is especially true for secondary school teachers who have more content preparation in one specialized area, such as biology or chemistry, than a primary school teacher who would have less in-depth content knowledge about a particular science discipline. Instead, primary school teachers generally have more broad topic preparation to teach generalized subject matter to young children. As a result, the level of content competence for secondary school education teachers far exceeds primary school education teachers. This is true in many countries.

However, similar to other countries, elementary certified teachers generally have greater pedagogical competence about how to teach and about who the students are as learners than secondary teachers who tend to
have very narrow pedagogical focus about how to teach content, not learners. This has been seen as a critical area for research and developed in countries where there are many language learner students as secondary teachers express they feel they are responsible only for content, not for language development. For example, a chemistry teacher may feel that her job is simply to teach chemistry concepts and she should have no responsibility to support a student to develop the literacy skills needed to read and understand the chemistry textbook. Traditionally, researchers have found that science and math teachers feel that reading and literacy should be taught in language specific courses. The belief is slowly changing in places where the teacher education programs offer courses focused on helping teachers understand and develop their students’ science or math literacy skills. Today textbooks focused on teaching reading comprehension skills in science are becoming more popular in countries where secondary science teachers may be expected to support science learners with varying intellectual ability and language proficiency levels.

Korean teachers’ limited training and experience working with CLD students

In Korea, studies have shown that teachers lack pedagogical competence toward learners in general and towards language learners specifically. As the teacher certification process in Korea requires very limited practicum teaching experience, teacher candidates have limited opportunities to develop pedagogical content knowledge about students as learners. Since the CLD student population increase is fairly recent, most teacher candidates will not have encountered a CLD student in their teacher-training period. In addition, there are no required courses in Korea’s teacher
preparation programs about teaching diverse learners or about multicultural or multilingual education practices. So the majority of Korean teachers will have had little or no introduction to theory and research about effective teaching practices for CLD students and would have limited practical experiences teaching this type of learner.

The lack of programs in place for teachers to obtain knowledge and understanding on how to implement differentiated learning for CLD students has shed light on the challenges that teachers face in the classroom. Studies have found that teachers are struggling to properly accommodate CLD students in the classroom, which raises the question about the quality of instruction being provided at schools - the knowledge, skills, and dispositions of teachers and the effectiveness in teaching CLD students.

Due to the nature of Korea having a short history of CLD students enrolled in public schools as limited language learners, research has been drawn from other countries, such as the United States, having rich history of CLD students entering classrooms and teachers being underprepared to instruct them. Not requiring a certification in language acquisition or engaging in preparatory coursework, causes an inadequacy of teachers’ knowledge and understanding of how to work with and teach CLD students, meeting the needs and issues of students from different backgrounds, and knowing how to adjust curriculum for CLD students (Khong & Saito, 2014).

**Challenges Korean teachers face in the diversifying classroom**

Today, nearly all CLD students attending Korean public schools are mainstreamed into content area and grade level classrooms. This means the teachers, who are responsible for the learning of CLD students, are being
tasked with teaching content, such as science, while also helping CLD students to develop Korean language and an understanding of cultural and social norms expected in the classroom. Since the inclusion of CLD students in K-12 classrooms is a relatively recent phenomenon, teachers and schools are not well equipped to support their social and linguistic needs (Cho & Yoon, 2011), especially with regards to effective pedagogical practices and interventions for CLD students in science. 

Coupled with a lack of understanding CLD students, teachers’ attitudes and their self-efficacy plays a large part in their pedagogical approach. Teachers’ sense of efficacy is a judgment of their abilities to produce certain outcomes related to student engagement, learning, or achievement among students who may be difficult to teach (Tschannen-Moran & Hoy, 2001), in this case CLD students. Research about teachers’ self-efficacy has been built upon Albert Bandura’s (1977) research in which he posed that belief in one’s abilities was a powerful drive influencing the motivation to enact practices necessary to meet one’s goals. 

Bandura (1993; 2001) reasoned that self-efficacy beliefs influence teachers’ emotions and motivations that enable them to enact certain practices in the classroom, such as expending substantial effort to meet a goal or being persistent and resilient when faced with obstacles. Science teaching self-efficacy describes a teachers’ belief about their ability to teach science effectively and to affect student achievement as a result of certain classroom teaching practices (Riggs, 1988; Ramey-Gassert, Shroyer, & Staver, 1996). Teacher efficacy studies are one way that researchers have attempted to make sense of teachers’ practices and decision-making in the science classroom, especially with regards to overcoming barriers of teaching science at different levels and with different groups of students.

While many researchers agree that higher self-efficacy results in more positive outcomes (Bandura & Locke, 2003; Tschannen-Moran, Woolfolk, Hoy, & Hoy, 1998; Tschannen-Moran & Hoy, 2007), if a teacher has limited expectations for a student’s learning, it could affect the effort the teacher will expend to teach the child. Perceptions about CLD students and their families may affect teachers’ evaluation of students’ academic ability and expectations for student performances.

In addition to meeting the needs of CLD students, Korean teachers are increasingly expected to communicate with CLD parents who are less likely to be fluent in Korean, who have limited experiences with education in their sending country or with the Korean education system, and who are likely to be disadvantaged economically and socially. There is a large chasm between teachers and parents, more so for those that cannot communicate with one another, but even for those that are able to speak Korean. Many parents in Korea respect and look up to school teachers and entrust their children’s education. Especially primary school teachers, they are required to hold parent-teacher conferences, as well as open class where parents are able to participate in the lesson that the teacher would normally hold except parents are welcome to stay and observe. However, as students get older entering into middle and high school, the contact between teachers and parents reduces significantly to the point where parents are not involved with their child’s education, unless they are providing extra support via after school programs called hakwon. This can lead to learning disadvantages for CLD students as studies show CLD students’ families tend to be living in greater poverty relative to their peers. If CLD families
are forced to rely on private education facilities to help their children navigate the high school application process and the college entrance preparation, it’s anticipated that few CLD students will be able to receive adequate counseling. For this reason, teachers in public schools are in a position to play a critical role in helping CLD students plan for their futures. It is important for teachers to be strong advocates for equitable education opportunities for CLD students. However, research suggests that teachers with negative attitudes and low self-efficacy would be unable or reluctant to take on these roles, which could be devastating for CLD students and their families.

2.3 Value of this Research to International Communities

While researchers in countries that have been conducting studies about the impact of diversity on classroom teaching and learning for decades (e.g., United States), diversity is only now emerging in Korea and carrying with it unanticipated issues initially impacting the classrooms. Research from other countries and their various ways in which CLD accommodations have been made over the years was used to aid in structuring possible implications to develop and implement in Korea. As a result of globalization, emigration and immigration, all countries are experiencing huge demographic shifts (OECD, 2011). In Europe, countries such as Switzerland and Luxembourg have reported large growth in immigrant populations (28% and nearly 40%, respectively) (OECD, 2013; Eurostat, 2015), and in 2015, Australia’s foreign-born population was reported to be 28% of the total population (ABS, 2015).

While the foreign-born immigrant population in the United States is only 13% (NCES, 2010), about half indicated they were proficient in
speaking English (Pew Research Center, 2015), meaning there is a significantly large population of limited language individuals living in the country. In accordance to teacher educators in many Western countries struggling to address educational needs of immigrants and CLD students for decades, these issues are just beginning to emerge in many Asian countries. For example, in the last decade, countries like Taiwan and Singapore have seen considerable growth in their immigrant populations. Similar to Korea, Taiwan has seen a considerable increase in the arrival of contracted migrant workers and international marriages (Lin, 2012), both of which have resulted in an increasingly diverse student population at the elementary school level where teachers are not trained to support needs CLD students have as learners (Hsin, 2011). Singapore has seen a nearly 26% increase in the immigrant population in the last decade, which is a considerable number for a city-state with a population of only about 5.5 million (Yeoh & Lin, 2012).

Thus, there are other countries in the Asia-Pacific region and in Europe that are already, or soon, facing similar challenges with regards to needing to prepare their teacher workforce to be able to effectively educate students who may differ from the teachers and the current student population. The findings from this research have the potential to inform research in other contexts that have been largely homogenous with regards to ethnicity, culture and language. The lessons learned from this research may be valuable for teacher educators and classroom practitioners in research contexts outside of Korea.
2.4 Looking Forward: The Need for Attitude and Self-Efficacy Research

Research on teachers’ attitudes about diversity and their self-efficacy for teaching CLD students using inquiry or language teaching strategies can help teacher education and professional development programs in many other countries to identify factors that shape their teachers’ attitudes and practices. While the individual contexts may be different, the design of the study and the tools utilized in data collection may be especially helpful for other researchers. In the next chapter, the theoretical framework for this study – focusing on attitudes and self-efficacy research – are shared to provide an overview of what is currently known about how attitudes can inform teaching self-efficacy and how this, can in turn, shape teachers’ practices in the classroom.
CHAPTER 3. THEORETICAL FRAMEWORK

For decades, studies have shown that teachers’ attitudes can impact how they view their students, how they approach the content they will teach, and even what pedagogical strategies they will use to engage learners (Hall, 2005; Nourie & Lenski, 1998; McCoss-Yergian, 2010; Squires & Bliss, 2004; Walker, Shafer, & Liams, 2004). Some studies have found that when teachers have negative attitudes about their students, it can have a great determinant on the learning and academic achievement of these students (Tse, 2001; Valdes, 2001; Walker, Shafer, & Liams, 2004; Youngs & Youngs, 2001). Teacher attitudes have also been shown to impact teachers’ self-efficacy for teaching particular content or specific student populations.

For this reason, self-efficacy places a central role as the theoretical framework for this study. The research questions in this study seek to identify teachers’ general attitudes toward the CLD student population, as well as factors impacting their instructional practices, in both the utilization of inquiry and language-based by employing Albert Bandura’s (1977) theory of self-efficacy. Since teachers’ attitudes and can influence how they teach and relate to students in their classroom, self-efficacy was selected as the unifying theoretical lens for this study. A critical concern for this research is trying to understand how attitude may or may not impact teachers’ self-efficacy in inquiry and language-based teaching when working with CLD students. Thus, this study focuses on exploring Korean teachers’ attitudes about diversity and toward CLD students and its impact on their self-efficacy.

Although the methodology chapter describes this in greater detail (refer to Chapter 4), this chapter briefly describes how attitudes and self-efficacy serves as the analytical framework for analyzing both the
quantitative and qualitative data in this study. In the sections that follow, a theoretical overview of this research on teachers’ attitudes and the impact it can have on teaching, in general and in science teaching specifically is discussed. In addition, how teachers’ attitudes can influence teaching efficacies, especially instruction based on inquiry and language teaching and learning for CLD students is reviewed.

3.1 Teachers' Attitudes

Teachers’ attitudes are powerful factors influencing how they structure their classrooms, how they plan their lessons, how they interact with their students, and which pedagogical practice they select when teaching (Karabenick & Clemens Noda, 2004). As these thoughts are sometimes viewed interchangeably, it is important to differentiate the way it’s perceived. Attitude is generally constructed as a predisposition to act in a particular way towards an object or situation. Attitudes suggest a prevailing tendency to respond favorably or unfavorably to an object (e.g. person, group of people, institutions, or events). These responses can be positive (values) or negative (prejudices) (de Souza Barros & Elia, 1998). Teachers’ attitudes about science, for example, can affect their planning, their thoughts about how to connect concepts, and their decision-making on how to teach the content to students (Mansour, 2009). According to M. Frank Pajares (1992), it has been found that attitude is the main component to individuals formulating theories over the course of their life, and its static nature makes it non-flexible since it represents an internal truth that has gained power and establishment. Thus, attitudes remain unchanged in the individual’s mind, regardless of the situation (Mansour, 2009), making it
difficult to bring about awareness that is persuasive enough for change to occur.

Although little is known about how the possibility for Korean teachers’ attitudes toward diversity and CLD learners are shaping their practices in Korean science classrooms, there is considerable research about the impact teachers’ attitudes can have in their instruction, especially toward CLD learners, in other countries with diverse student populations. Such impacts are addressed in the following sections.

**Teachers' Attitudes Toward CLD Students**

Attempting to determine and understand teachers’ attitude towards CLD students is crucial since it highly influences the way classrooms are structured and content is taught. Studies conducted in countries with diverse student populations have found teachers’ negative attitudes about CLD students is linked to lowered student achievement (Pettit, 2011; Stoddart, Pinal, Latzke & Canaday, 2002), revealing an important link between teacher attitude and classroom practices. Other researchers have gathered that teachers who hold negative attitudes about CLD students and/or believe in numerous fallacies or deficit perspectives surrounding the education of CLD students often fail to meet the academic and social needs required to be successful (Tse, 2001; Valdes, 2001; Young & Youngs, 2001, as cited in Walker, Shafer, & Liams, 2004).

In addition, teachers’ lack of awareness and knowledge about students who are linguistically, ethnically and culturally different may misunderstand students’ communication patterns (Heath, 1983; Delpit, 1995), undervalue students’ life experiences and prior knowledge (Nieto,
1993), and may hold negative expectations regarding their parents’ involvement, or lack of, with the school (Colombo, 2005).

With the unprecedented increase in the number of CLD students entering the classrooms, feelings of teachers being overwhelmed often times negatively impacts their attitudes (Walker, Shafer, & Liams, 2004), exacerbating their instructional practices that do not meet the needs of CLD students. Deborah Byrnes and Gary Kiger (1994) suggests that the importance of studies examining teachers’ attitudes toward CLD students is necessary in order for constructive change to occur, initially within the teacher since it has the power to facilitate or be a barrier to CLD students learning (as cited in Walker, Shafer, & Liams, 2004).

**Teachers’ Attitudes Toward CLD Students in the Classroom**

Numerous studies have shown teachers’ attitudes on CLD students, and students’ use of languages other than the language of instruction, influencing their teaching practices (Ashton, 1990; Avery & Walker, 1993; Brousseau, Book & Byers, 1988; Shavelson & Stern, 1981). For example, teachers have been found frustrated over not understanding CLD students’ culture and language, which ultimately turned to negative feelings affecting their academic expectations and eventually their instructional practices (Byrnes & Cortez, 1996). With a plethora of factors contributing to teachers’ attitude towards CLD students, one factor was seemingly expected yet still lacks weight in its importance: teacher education and professional development programs in training teachers to teach CLD students. In an ethnographic study, Clair (1995) found that teachers’ beliefs about CLD students were based on “hearsay and misinformation” from discussions with other teachers that were based on naïve notions of language
proficiency and language acquisition. Due to a lack in proper teacher training that addresses consistent and accurate information regarding the needs of CLD students and beneficial pedagogical practices that support them, many teachers exacerbate the deficit perspectives they have by talking amongst themselves and reproducing naïve notions about CLD students.

Other studies have found that teachers often hold deficit views of CLD students’ cognitive abilities (Sacks & Watnick, 2006) and many mainstream teachers, including science teachers, erroneously believe that CLD students need only two years to develop academic language proficiency (Pettit, 2011). Instead, language acquisition theorists estimate it may take 4 to 7 years for advanced students (Hakuta, Butler & Witt, 2000) and up to 10 years for students with weak native language literacy levels (Collier, 1987) to develop everyday and academic language necessary to be considered fluent in a second language (Short & Fitzsimmons, 2007). As a result, teachers often hold inadequate expectations for CLD students’ abilities to comprehend content and utilize language effectively (Walker, Shafer, & Liam, 2004).

Overall, as stated above, since the attitudes of individuals are static and very difficult to change, the impact that it has in the classroom is great. This is a detriment to the learning of CLD students, thus it’s imperative that through TEP/PD programs teachers become more aware of their attitude towards CLD students, not only those enrolled in their classes, but all CLD students.
Teachers’ Attitudes about Teaching Science

Teachers’ attitude about teaching science has been overall negative due to teachers’ feeling intimidated and limited in their science knowledge. In contrast to secondary teachers, who are usually certified in specified science content and are designated to teach in their field, primary school teachers are expected to teach general science across the curriculum. The limited knowledge and confidence primary teachers have hinder their level of enthusiasm, teaching strategies, and use of resources to help students learn science. Studies have shown that teachers’ negative attitudes are not established during their teaching careers; rather it is detected early in the teacher education programs and even in their undergraduate studies (Atwater, Gardner, & Kight, 1991). In addition, teachers’ attitude, desire, and interest in teaching science continue to plummet (Norland & Delito, 1974) as science-based courses reinforce its complexity and knowledge-heavy content. Studies have also discovered teachers’ negative attitudes have negative impacts in the classroom - teachers are less enthusiastic about teaching the content, less tolerant with diverse questions and answers that arise from students, and practice less inquiry or experiment-based lessons (Appleton, 1977; Prestt, 1978; Riley, 1979).

Teachers’ attitudes about science and toward teaching science is crucial in the academic achievement of students, thus it’s necessary to address how teachers can gain more positive attitudes regarding science. Harty, Samuel, and Anderson (1991), mentions that having a better understanding of science and science content greatly influences teachers’ attitudes. This does not mean teachers should re-take science courses to gain more knowledge about various science content covered in their primary school science curriculum, but it does indicate how teacher
education and professional development (TEP/PD) programs should be structured. In order to improve teachers’ attitudes about science and science teaching, TEP/PD programs should aim to reduce their anxiety about the science content (Cox & Carpenter, 1989) and provide an activity-based approach to science and science teaching and learning methods; this lessens the angst teachers may have about science being more knowledge-heavy rather than gaining science knowledge through experiential activities (Stravitz, 1976).

One benefit Korean teacher education programs, and teachers in general, have compared to other countries is its highly competitive nature and expectation in science content knowledge. Based on teachers’ rigorous course requirements and teacher certification process, Korean teachers’ attitude toward inquiry-based teaching is relatively positive. However, their positive attitude may not equate to them implementing inquiry-based teaching practices. This may be due to education programs emphasizing traditional lecture-based pedagogies in secondary and tertiary education, resulting in teachers having less confidence in their ability to implement inquiry teaching. As a result, teachers may have less confidence in inquiry teaching (refer to section 3.2), which can negatively impact how science is being taught and learning in the classroom.

**Teachers’ Attitudes about Teaching Science to CLD Students**

In connection to many primary school teachers’ negative attitudes about science and science teaching, adding on the need to provide differentiated teaching methods to address the growing CLD student population brings upon burdens to teachers; this includes secondary school teachers (especially in Korea) who are expected to prepare students well for the
College Scholastic Ability Test (CSAT). Although Ohkee Lee and colleagues found that (2006) inquiry-based science instruction can reduce the linguistic burdens that prevent CLD students from learning science, other studies have found that content area teachers tend to hold negative, unwelcoming attitudes toward CLD students in mainstream classrooms.

Jenelle Reeves’ (2006) review of the literature on teachers’ attitude towards language learners found that mainstream teachers’ negative attitude tends to be related to negative perceptions about the added burdens CLD students would place on them (i.e., the need to develop lessons to accommodate the learners), about the impact CLD students would have on their peers (i.e., taking time and resources from other students), and generalized negative perceptions about the race and ethnicity of students.

In particular, several studies (Barton, 1998; Lee & Fradd, 1998; Lee & Buxton, 2011) focusing on issues that negatively impact science learning for CLD students discovered science teachers’ commonly held belief that teaching science content is unrelated to the larger socio-historical-cultural contexts. In other words, often times teachers have asked CLD students to make sense of abstract science concepts, while using technical academic language that is more cognitively demanding than the language needed for everyday conversation (Garcia, Kleifgen, & Falachi, 2008).

This teaching approach becomes an important factor that limits the learning of science opportunities for CLD students, who would be much more successful if experiential learning environments were created to better support CLD students. One main cause of these negative attitudes is influences by teachers’ level of confidence, or self-efficacy in instructing particular student groups and content. Albert Bandura’s concept of self-efficacy is further described in the next section.
3.2 Teachers' Self-Efficacy

Albert Bandura’s (1977) theory on teachers’ confidence and their efforts in teaching, setting goals, being persistent when things are challenging, and being resilient when faced with setbacks (Tschannen-Moran, Woolfolk, Hoy, & Hoy, 1998; Tschannen-Moran & Hoy, 2006) is known as self-efficacy. Self-efficacy is a powerful drive influencing the motivation for teachers to enact practices necessary to meet their goals, which is related to how they behave in the classroom and how students respond based on their behavior (teaching practices) - such as students’ self-efficacy in their content knowledge, their motivation, and their level of achievement (Anderson, Greene, & Loewen, 1998; Ashton & Webb, 1986; Midgley, Feldlaufer, & Eccles, 1989; Ross, 1992).

To be more specific to this study, self-efficacy is identified as teachers’ capacity to promote learning, which is considered a critical determinant of teacher motivation (Karabenick & Clemens Noda, 2004; Guskey & Passaro, 1994; Tschannen-Moran & Hoy, 2001), as well as a judgment of their abilities to produce certain outcomes related to student engagement, learning, or achievement – especially among students who may be difficult to teach (Tschannen-Moran & Hoy, 2001). Science-teaching self-efficacy describes teachers’ confidence about their ability to teach science effectively and to influence student achievement as a result of certain classroom teaching practices (Riggs, 1988; Ramey-Gassert, Shroyer, & Staver, 1996).

Teacher efficacy studies are one way that researchers have attempted to make sense of teachers’ practices and decision-making in the science classroom, especially with regards to overcoming barriers of teaching.
science at different levels and with different groups of students (Enochs & Riggs, 1990; Riggs & Enochs, 1990; Ramey-Gassert, Shroyer, & Staver, 1996; Mansour, 2009; Cakiroglu, Capa-Aydin, & Hoy, 2012). Efficacy is malleable based on teachers’ perceptions on their teaching performances, being marked as successful or unsuccessful; such contributions can be based on verbal interactions teachers receive from important personnel (e.g. administration, colleagues, family, parents, etc.), what Bandura (1997) calls verbal persuasion. Therefore, there are factors that impact teachers’ self-efficacy, both positively and negatively, which in turn can reciprocate a positive or negative effect in students’ level of achievement in class. This is further examined in the following section examining factors that impact teachers’ efficacy.

Factors that Impact Self-Efficacy

Teacher efficacy is a construction based on teachers’ belief in that the consequences of teaching (e.g. students’ motivation and learning levels, administrative recognitions, etc.) are in their own control (Tschannen-Morn & Hoy, 2001). However, there are two factors that influence teachers’ teaching efficacy: teachers belief in external factors that lie outside of their control, which overwhelms their abilities to have an impact on students, and internal factors that lie within their control and teachers are confident that they will have an impact on students (Tschannen-Moran & Hoy, 2001).

According to Megan Tschannen-Morn and Anita Hoy (2001), higher efficacy enables teachers to be less critical of students when they make mistakes (Ashton & Webb, 1986), to have more patience to work longer with struggling students (Gibson & Dembo, 1984), is more enthusiastic
about teaching (Allinder, 1994; Guskey, 1984; Hall et al., 1992), and is more committed (Coladarci, 1992; Evans & Tribble, 1986; Trentham, Silvern, & Brogdon, 1985) with a higher likelihood of staying in the profession (Burley et al., 1982). Although these cases do exist where teachers’ high self-efficacy has supported students to gain confidence in class by helping them excel academically among their peers. Thomas Guskey (1987) mentions that those types of performances represent a different dimension of teachers’ efficacy outcomes.

**Teachers’ Self-Efficacy in Teaching Science**

Teachers’ self-efficacy for teaching science tends to be reported as either low or high, rather than in the middle range, meaning teachers either feel well prepared to teach science content or they do not. This is especially true when considering science teaching self-efficacy for primary and secondary school teachers. As secondary school teachers are responsible for teaching students in-depth and more technical content-based materials, many have specialized in a content area and have experience teaching that content in classrooms (e.g. physics teacher, biology teacher, chemistry teacher, etc.) (Mizzi, 2013) and they generally report high levels of science teaching self-efficacy.

However, research in the United States (Ingersoll, 2001; 2003; 2006) has found that many secondary school science teachers are called upon to teach out of their field of expertise. Teaching out of field means a teacher may be certified to teach Biology, but be asked to teach Physics or Chemistry instead. In these cases, secondary science teachers have reported lower self- efficacy. Primary school teachers generally do not have a degree in science and may have limited coursework in science because they are
trained to be general educators, not specialist. As a result, primary school teachers generally report lower self-efficacy in teaching science. Having low self-efficacy in teaching science is problematic because having low confidence for teaching may mean that the teacher covers only some science concepts and the teacher may practice more expository methods of instruction rather than using inquiry (Bencze and Hodson, 1999). As studies have shown teachers’ self-efficacy is an important and powerful predictor of instructional behavior (Palmer, Dixon & Archer, 2015). This research seeks to determine teachers’ self-efficacy for teaching inquiry to a specific group of students.

The level of teachers’ confidence in science is also a good predictor in how much science is actually being taught in classrooms. According to Jacinta Petersen and David Treagust (2014), science was one of the least taught subjects in the primary school curriculum. One reason for this is that not only can teachers have low self-efficacy about their science knowledge and teaching ability, but they may also have negative attitudes toward science and science teaching (Tosun, 2000, as cited in Palmer, Dixon & Archer, 2015). This combination of negative attitudes and low self-efficacy can be detrimental for students’ learning because teachers choose not to cover the required science curriculum in an attempt to avoid the subject.

Overall, studies have shown that teachers’ attitude and self-efficacy has the ability to improve students’ achievement in class because when teachers have positive attitudes and high self-efficacy, they are better able to promote the belief that their students are capable of “doing science”, which is a critical component that increases students’ level of motivation and overall achievement (Guskey & Passaro, 1994; Tschannen-Moran, & Hoy, 2001; Tasan, 2001; Templin, Guile, & Okuma, 2001). There have
been many studies exploring connections between teachers’ science self-efficacy and students’ learning (Tschannen-Moran & Hoy, 2001), but there has been little research examining CLD students’ (Karabenick & Clemens Noda, 2004) science learning. And there are no studies that have explored teachers’ self-efficacy for science through an inquiry and language-based instructional approach to CLD students. This study hopes to make a pioneering contribution to Korean science education research by investigating Korean teachers’ attitudes toward CLD students and their self-efficacy for teaching science when utilizing both inquiry and language-based instructional strategies.
CHAPTER 4. METHODOLOGY*

This dissertation study is part of a larger three-year, longitudinal project exploring the conditions and experiences that impact learning for culturally and linguistically diverse (CLD) students in primary and secondary Korean science classrooms. Extracting from the teacher participants’ component of the larger project, this study aimed to examine Korean teachers’ attitudes and their instructional practices toward CLD students. There is much research addressing the challenges and needs of CLD students learning science in a language other than their home language (L1). Yet there is a dearth of research looking at Korean teachers’ classroom experiences, focusing on the affects of their attitudes toward CLD students and their self-efficacy on inquiry and language-based instructional strategies.

In order to begin examining this multi-dimensional and complex issue of investigating teachers’ attitudes and self-efficacy, this study aimed to utilize both quantitative and qualitative data that informs one another through the comparison of converging and diverging areas of interest. Thus, a mixed-methods approach was deemed to be most favorable in collecting, analyzing, and interpreting the data in a more comprehensive manner. In the next section, the method of the convergent parallel mixed-methods design that was utilized in this study will be further described.

4.1 Convergent Parallel Mixed Methods Approach

An increasing number of studies in the social sciences have been adopting the mixed-methods design approach, which is the utilization of both quantitative and qualitative techniques, in a single study, when conducting research (Creswell & Plano Clark, 2007). According to Onwuegbuzie and Leech (2004), this design is complementary (i.e. seeking elaboration, illustration, enhancement, and clarification of the findings from one method with results from another method), flexible, and holistic in the ways issues are investigated in an effort to understand and address complex research questions. Mixed-methods research provides both empirical and descriptive insights through the combined use of both quantitative and qualitative data sets. This combination allows for a more rich and complete illustration of the issues to be examined compared to the use of only one type of method (Newman, Ridehour, Newman & DeMarco, 2003). Thus, the mixed-methods design has begun to emerge as a predominant structure in educational research. Among the variety of different mixed-method designs that exists, the complexity and characteristics of this study best fit the convergent parallel mixed-method design. This method is discussed in greater detail in the following sections.

Convergent Parallel Design

According to Anthony Onwuegbuize and Nancy Teddlie (2002), convergent, or concurrent, parallel mixed-method design is defined as the utilization of a quantitative data set collected and analyzed separately from a qualitative data set, which are then merged and compared seeking for areas of similarities and differences. The design is a process of probing further into different, but complementary data sets in order to have a better
grasp and fuller understanding of the findings, its meanings, and the verification of both.

The convergent parallel characteristic is illustrated in Figure 4-1, where the quantitative and qualitative data are separately developed, collected, and analyzed. Then the convergent process occurs after when both data sets are merged and used to interpret any convergent and divergent areas of interest. This was the design of choice in which both data sets were examined and valued.

![Figure 4-1. Visual of concurrent parallel mixed-method design.](image)

The design of this study is geared toward concurrently collecting and analyzing complementary data, which eventually informs one another through empirical and descriptive means making both the utilization of quantitative and qualitative data sets necessary. Although different, the data collection focuses on the overarching goal of the study, which was understanding Korean teachers’ attitudes toward culturally and linguistically diverse students, self-efficacy on teaching CLD students using inquiry and language-based instructional strategies, and other factors (such as teacher training or personal experiences with CLD students) that influence their attitudes and self-efficacy. The combination of both
quantitative and qualitative data provides more context and nuanced understanding of how teachers feel towards CLD students and how effectively teachers are instructing them in both content areas (such as science) and Korean language development. Each of the data sets hold separate identities in the way information is collected and analyzed, but the most important step of this design is the process of merging the data sets to seek after areas of convergence and divergence. This is used to inform the development of effective teacher training and professional development programs, particularly for this study. According to Onwuegbuzie and Leech (2004), in order to conduct a study using the convergent parallel mixed-method approach there are three things that should hold true: 1) both data set analyses should occur separately, 2) neither type of analysis should built on the other during the data analysis stage, and 3) the results from each type of analysis are neither compared nor consolidated until both data set analyses are completed. In other words, this design has the least amount of data mixing or integration before the interpretation of the data. In addition, the analysis of these data sets, even though separate throughout the entire collection and analysis process, still follow the same analytical framework. In this case looking at teachers’ attitudes and self-efficacy in the teaching and learning of science with CLD students (refer to Chapter 3). Through these procedural steps, the approach allows for various areas of concern to be contextualized and addressed, better informing the development of teacher training programs geared to effectively instruct CLD students.

Addressing the Research Questions

The quantitative and qualitative data sets focused on schoolteachers from both primary and secondary grades, utilizing different data collection
strategies through the development of a questionnaire and semi-structured interviews. Table 4-1 compiled a general description from whom data was collected, how it was collected, what data collection source was used, and the number of participants involved for both quantitative and qualitative data sets.

Table 4-1

<table>
<thead>
<tr>
<th>Method</th>
<th>Participants</th>
<th>Data collected</th>
<th>Data collection source</th>
<th>Number of participants</th>
</tr>
</thead>
<tbody>
<tr>
<td>Quantitative data set</td>
<td>Korean schoolteachers (ES, MS, HS)</td>
<td>Three-part Questionnaire (K-TASILT)</td>
<td>Survey Monkey (online questionnaire resource)</td>
<td>144 teachers</td>
</tr>
<tr>
<td>Qualitative data set</td>
<td>Korean schoolteachers (ES, MS, HS)</td>
<td>Interview (Semi-structured)</td>
<td>Face-to-face interviews</td>
<td>16 teachers</td>
</tr>
</tbody>
</table>

Four research questions were formulated at the beginning of this study in order to seek after a better understanding of teachers’ attitude towards CLD students, their level of self-efficacy when teaching CLD students through inquiry and language-based strategies and ways in which teacher trainings can better inform their teaching practices through the findings’ emergent factors:

1) What are Korean teachers’ attitudes toward CLD students?
2) What are Korean teachers’ self-efficacy about teaching CLD students using inquiry and language-based instructional strategies?
3) What significant correlations exist between teachers’ attitudes toward CLD students and their self-efficacy on teaching CLD students using inquiry and language-based instructional strategies?
4) What factors (i.e. language learning experiences or experiences of interactions with people who are CLD) influence Korean teachers’ attitude towards CLD students and their self-efficacy on teaching CLD students using inquiry and language-based instructional strategies?

The convergent parallel approach helps to seek a way to address the four research questions that frames this study. Although both data sets provide pertinent information and findings, the way that qualitative data is collected and analyzed provides opportunities emphasize findings to a greater degree. For example, factors that influence teachers’ attitudes and self-efficacy may obtain more substantial findings through semi-structured interviews rather than from a complete questionnaire asking about the same content.

Therefore, the questionnaire data will address the four research questions, while the qualitative data will only address questions one, two, and four since the correlation between two concepts cannot be measure and addressed in this type of data collection. The rest of this chapter further describes the process of how each data set was developed, collected, and analyzed using a three-scaled questionnaire and semi-structured interviews.

**4.2 Quantitative Approach: K-TASILT Questionnaire**

The quantitative approach to this study was based on the development and implementation of the *Korean Teachers’ Attitude and Self-Efficacy for Inquiry and Language based Teaching* (K-TASILT) questionnaire. The aim is to seek after findings for the four research questions, grounded in teachers’ attitudes and self-efficacy. The following sections offer a detailed explanation on how the K-TASILT questionnaire was developed, validated,
implemented, and analyzed targeting primary and secondary schoolteachers in Korean public schools.

**K-TASILT Questionnaire Development**

The K-TASILT consists of three scales designed to measure elicit self-reported data from Korean teachers focusing on their 1) attitudes about CLD students and the growing diversity in classrooms, 2) self-efficacy on using inquiry-based teaching strategies with CLD students, and 3) self-efficacy on using language-based teaching strategies with CLD students. Rather than using each scale independently, they were used as one to measure the relationship between teachers’ attitudes and their self-efficacy.

The framework of K-TASILT was developed from a review of literature studies (refer to Chapter 3), focusing on teachers’ attitudes and self-efficacy the impact it can have on CLD students they are instructing in classrooms. Teachers’ attitudes are fixed entities that have the power to influence not only themselves, but also those around them through their enacted practices. The attitude teachers have toward something can highly depict the way in which they executed various tasks. For instance, teachers’ attitude can impact how they prepare their lessons, how they teach in the classrooms, and how they work with CLD students depending on their level of positivity or negativity. In addition, the concept of teachers’ self-efficacy has great impact on how they go about teaching specific content, and in this case while utilizing language-based instructional strategies for the benefit of CLD students. Self-efficacy also

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*The K-TASILT uses the terminology Korean as Second Language (KSL), as well as multicultural student, and Korean Language Learners (KLL) rather than culturally and linguistically diverse students (CLD) because participants are not familiar with the generalized terminology of culturally and linguistically diverse (CLD) students.*
has great impact on the way teachers prepare, teach, and instruct content that provides opportunities for CLD students to access and appropriate the information. More specifically, teachers’ level of inquiry and language-based self-efficacy has great influence on how science classrooms are structured and how science is taught and learned. Thus, in order to determine teachers’ self-reflected and reported thoughts on their attitude towards CLD students and their self-efficacy on inquiry and language-based teaching, the K-TASILT questionnaire items were carefully developed.

Items in the questionnaire were developed through a process involving both the extraction of previously existing item-statements related to already established questionnaires. However, many items were newly developed in order to consider the Korean context and the CLD student population, being more aware of the cultural and linguistic circumstances. These new item-statements were designed to elicit information pertinent to teachers’ general attitudes and their self-efficacy. Using a six-step developmental process (refer to Table 4-2), the K-TASILT questionnaire was constructed, validated, revised, and piloted to a larger and purposeful sample of Korean primary and secondary schoolteachers.
### Table 4-2
*Six-step development process of the K-TASILT questionnaire*

<table>
<thead>
<tr>
<th><strong>Step 1: Instrument conceptualization</strong></th>
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<tbody>
<tr>
<td>• Conduct literature review studies to define the constructs of teachers’ attitudes and self-efficacy; usage of concepts and vocabulary</td>
<td></td>
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<tr>
<td>• Conduct studies about the Korean government policies and about the education CLD students and families</td>
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<tr>
<td>• Consult and adapt pre-existing questionnaires, which are valid and reliable</td>
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</table>

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<tr>
<th><strong>Step 2: Instrument construction</strong></th>
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<tbody>
<tr>
<td>• Develop items for each constructed category (scales and subscales) and assign Likert scale anchors for each</td>
<td></td>
</tr>
<tr>
<td>• Translate questionnaire into Korean and back translated into English</td>
<td></td>
</tr>
<tr>
<td>• Check for face validity of both versions (English and Korean) through consultation with experts in the field. Then refine items based on the feedback</td>
<td></td>
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<tr>
<th><strong>Step 3: Pre-test of questionnaire via face-to-face interviews</strong></th>
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<tbody>
<tr>
<td>• Engage small number of teacher participants in face-to-face interviews to check relevance of item-statements</td>
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<tr>
<td>• Discuss and refine phrasing of items based on feedback</td>
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</tbody>
</table>

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<tr>
<th><strong>Step 4: Small scale pilot-test (paper version)</strong></th>
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</thead>
<tbody>
<tr>
<td>• Pilot test paper version of pre-tested questionnaire with a new set of teacher participants to establish face validity, content validity, and reliability</td>
<td></td>
</tr>
<tr>
<td>• Engage in discussion with teachers about the results of the pilot-test questionnaire</td>
<td></td>
</tr>
<tr>
<td>• Refine questionnaire based on feedback</td>
<td></td>
</tr>
<tr>
<td>• Design online electronic version of the K-TASILT questionnaire for the large-scaled pilot-test</td>
<td></td>
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</tbody>
</table>

<table>
<thead>
<tr>
<th><strong>Step 5: Large scale pilot-test (electronic version)</strong></th>
<th></th>
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</thead>
<tbody>
<tr>
<td>• Pilot test electronic version of survey with teacher participants to establish face validity, content validity, and reliability</td>
<td></td>
</tr>
<tr>
<td>• Engage teacher participants in meetings about the results of the electronic pilot questionnaire</td>
<td></td>
</tr>
<tr>
<td>• Refine based on feedback; reduce any items that are not significant (Point-biserial correlation, p-values and Cronbach alpha reliability checking)</td>
<td></td>
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</tbody>
</table>

<table>
<thead>
<tr>
<th><strong>Step 6: Questionnaire analysis and dissemination of results</strong></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>• Using IBM SPSS version 20.0 to analyze data results (Item analysis - positive response percentages, correlation analysis between scales and sub-scales, variable analysis using MANOVA)</td>
<td></td>
</tr>
<tr>
<td>• Generate findings to merge and compare with qualitative data findings (convergences and divergences)</td>
<td></td>
</tr>
</tbody>
</table>
Instrument conceptualization

The initial phase of this process (Step 1) was essential to conceptualize constructs of the *K-TASILT* questionnaire items. After conducting literature studies, the questionnaire development framework was decided and confirmed, which included constructs for measuring teachers’ attitude towards CLD students and their self-efficacy for teaching CLD students.

![Development model of the K-TASILT Questionnaire](image)

*Figure 4-1.* The development model of the K-TASILT questionnaire.

A development model of the K-TASILT questionnaire was constructed (refer to Figure 4-1), which includes the constructs that measures teachers’ attitudes toward CLD students and their self-efficacy in both inquiry and language teaching strategies of CLD students. This is demonstrated in each scale and subscale of the questionnaire (refer to Figure 4-1).

The attitude item-statements (ATCALD) were developed based on policy and educational documents. In addition, the items that were related
to CLD students, families, and neighbors were modified based on previous studies (refer to Table 4-3).

Table 4-3.
*Existing instruments based on literature studies used to develop the K-TASILT questionnaire*

<table>
<thead>
<tr>
<th>Existing instruments</th>
<th>Authors</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Attitude</strong></td>
<td></td>
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<tr>
<td><strong>Efficacy</strong></td>
<td></td>
</tr>
<tr>
<td><strong>Pedagogical knowledge and teaching strategies of inquiry and language education</strong></td>
<td></td>
</tr>
<tr>
<td>Reformed Teaching Observational Protocol (RTOP)</td>
<td>Sawada et al., 2000</td>
</tr>
</tbody>
</table>

There are high fidelity test instruments available as resources to measure constructs in teachers’ self-efficacy, such as the *Science Teaching Efficacy Beliefs Instrument* (STEBI) and the *Self-Efficacy Teaching and Knowledge Instrument for Science Teachers* (SETAKIST), which were re-evaluated for the *K-TASILT* questionnaire. Two observation analysis instructional tools called the *Reformed Teaching Observational Protocol* (RTOP) (Sawada et al., 2000) (refer to Appendix B) and the *Sheltered Instruction Observational Protocol* (SIOP) (Echevarria, et al, 2006; 2009; 2011) (refer to Appendix
were also considered informing the development of teachers’ self-efficacy in inquiry and language instruction item-statements.

The RTOP tool is a widely used instrument that assesses the degree to which mathematics or science instruction is “reformed” (Sawada et al., 2006). More specifically, RTOP views the reformed classroom as a teaching and learning environment utilizing inquiry-based strategies. This instrument has five subscales examining lesson and design implementation, propositional knowledge, procedural knowledge, communicative interactions, and student teacher interactions. The assessment is based on a Likert scale with possible scores for each item (25 total items) ranging from 0 (never occurred) to 4 (very descriptive). The reliability of RTOP scales range from 0.88 to 0.98 (Sawada et al., 2002).

The SIOP tool is used to evaluate sheltered instructional practices, which are the extent to which teachers effectively integrate science content and language instruction. The SIOP evaluates teachers’ use of sheltered instruction practices (making the language and content comprehensible for language learners). This instrument has eight subscales examining the planning, assessment, and instructional component of teachers. SIOP is based on a Likert scale with possible scores for each item (30 total items) ranging from 0 (no evidence) to 4 (clearly evident). The reliability of SIOP scales using Cronbach alpha is over 0.90 (Guarino et al., 2001).

Through the literature studies, item-statements were able to have more context and support in items addressing the components of *K-TASILT* that seeks to identify teachers’ attitudes and self-efficacy. The following scales focuses on the three main areas of interest in the questionnaire: Attitudes toward cultural and linguistic diversity (ATCALD), inquiry teaching
efficacy for non-Korean students (ITENKS), and language teaching efficacy for non-Korean students (LTENKS).

**Attitudes toward cultural and linguistic diversity (ATCALD)**

The ATCALD scale examines the attitude teachers have toward CLD students, their language use, and their knowledge about language development and teaching strategies in the classroom. A large number of ATCALD item-statements were generated from teacher education literature focusing on cultural and linguistic experiences, competence, and level of understanding (refer to Byrnes & Kiger, 1994; Byrnes, Kiger, & Manning, 1996; 1997; Horenczyk & Tatar, 2002; Guyton & Wesch, 2005; Jackman, et al, 2001; Munroe & Pearson, 2006; Ponterotto, 1995; and Ponterotto, et al, 1998; Park, et al., 2008; Youngs & Youngs, 2001). This scale explored teachers’ attitudes about the increasing cultural and ethnic diversity in Korean society, which also increases the number of diverse students entering the classrooms. To do this, literature reviews about teachers’ (especially science teachers) attitude towards CLD students were collected and utilized (refer to Cummins, 1981; Collier, 1987; Gee, 2005; Echevarria, et al, 2009; Echevarria, et al, 2004; Honigsfeld & Cohan, 2008; Lee & Fradd, 1998; Lee, 2003; Lee, Buxton, Lewis, & LeRoy, 2006; Lee, Luykx, Buxton, & Shaver, 2007; McIntyre, et al, 2010). The ATCALD scale aims to focus on teachers’ overall attitude and knowledge of, and attitude (affective) about the CLD student population that are entering the classrooms and projected to increase the next few years.
Inquiry teaching efficacy for Non-Korean Students (ITENKS)

For items examining teachers’ knowledge and self-efficacy toward inquiry-based practices, literature examining the role of inquiry teaching in promoting dialogue and interactions between students and teachers, as well as students and their peers, were reviewed (refer to NRC, 1996; 2000; AAAS, 1989; Bransford, Brown, & Cocking, 1999). These studies contributed to the development of items designed to measure teachers’ self-efficacy - also referred to as beliefs (Enochs et al., 1995), knowledge, and practices on inquiry-based instructional strategies. In this study, inquiry is viewed as: an instructional approach outcome (Abd-El-Khalick et al., 2004), or pedagogical strategy, where teachers enact practices that help CLD students develop scientific content understanding; or an instructional outcome (Abd-El-Khalick et al., 2004) where inquiry is something students learn “to do” by engaging in inquiry-based activities through which CLD students can be expected to develop scientific knowledge and ways of seeing the world, as well as acquire inquiry skills (e.g. generating questions, designing and carrying out investigations, and articulating explanations or models to justify observations and conclusions). Thus, inquiry requires teachers to understand instructional strategy as a pedagogical approach for developing scientific knowledge, as well as understanding scientific processes necessary for supporting students to reason and think critically; this allows CLD students to develop meaning and communicate their ideas within a larger community.

To help frame some item-statements that incorporate both connotations of inquiry, several items were adapted from the Reformed Teaching Observational Protocol (RTOP) (Sawada et al., 2000). The items from RTOP examine teachers’ understanding of pedagogical
knowledge related to inquiry teaching, including teachers’ knowledge and self-efficacy about students as science learners, assessments in science, and reform teaching practices - particularly it focuses on strategies that engage students in constructing their own knowledge through interactions with others, conducting inquiry investigations, and building a consensus of understanding in the science classroom. Items developed from the RTOP reflect a reformed view of science teaching (Anderson, 2002) in which the roles of teachers and students are changed, re-positioning teachers less as dispensers of knowledge and more as facilitators of student learning. These items also reflect a shift in the expectations of students as learners from being passive and completely teacher prescribed tasks to being self-directed learners, actively engaged in directing their own learning. The ITENKS scale aims to focus on inquiry teaching efficacy and outcome expectancies rather than just “science” teaching efficacy. Since teachers’ beliefs about cultural differences and language learning have greater potential to negatively impact CLD students’ learning experiences. Not having a solid understanding of the importance of social interactions and language use when engaging in student-centered, inquiry activities can be detrimental.

**Language teaching efficacy for Non-Korean Students (LTENKS)**

For items examining knowledge and practices in self-efficacy related to language teaching, language education research was collected and adapted from an instrument called the *Sheltered Instruction Observation Protocol* (SIOP) (Echevarria, et al, 2006; 2009; 2011). SIOP was designed to evaluate teachers’ use of instructional practices that make language and content comprehensible for Language Learners (LL) in Sheltered Instruction (SI) classes, which generally refer to content-based classes that
only have LL students. SI is an approach to teaching second language to students in which teachers integrate language and content instruction. The two goals of SI are to provide LL students access to content that should be learned in the mainstream classroom, while also promoting the development of a second language. The SIOP tool is divided into categories that remind teachers in content courses, such as math or science, to develop and implement lessons using different language teaching strategies. The SIOP instrument represents a type of Content-Based Instruction (CBI), which refers to instructional approaches that facilitate both content and language teaching and learning (Stoller, 2004).

In SI classes, teachers use a set of teaching strategies that lower the linguistic demand of lessons without compromising the integrity of the subject matter. By modifying speech rate, relating instruction to student experiences, and making use of demonstrations, visuals, graphic organizers, or group work, teachers reduce language demands making content more accessible for those who are not proficient in the language of instruction. While the SIOP model is intended for use in SI classrooms (i.e. classrooms co-taught by both content and language teachers), mainstream teachers in science classrooms are often trained to use SIOP teaching strategies to support content-based instruction for both native speakers and LL students (Honigsfeld & Cohan, 2008). The LTENKS scale contains item-statements adopted from SIOP that help to measure teachers’ knowledge and self-efficacy related to language acquisition theories, language-based lesson planning, the use of effective instructional strategies that support CLD students’ language development, and understanding CLD students as language learners.
K-TASILT scale and subscales

The K-TASILT questionnaire delineates teaching competencies organized within the subscales of Attitude/Knowledge, Teaching Efficacy, and Outcome Expectancy. The Affective (A) subscale refers to teachers’ attitude (affective) of their own values and biases pointing towards how it can translate into culturally insensitive teaching practices, emphasizing a need in checking personal biases and stereotypes, as well as a need in developing a positive orientation towards cultural and linguistic diversity in Korea. In a sense, Attitude (affective) is connected to being both mindful of ones’ attitude about diversity and being knowledgeable about diversity.

The Knowledge (K) subscale refers to teachers’ perceptions and knowledge of their own worldview, as well as the worldview of their students and students’ families. In addition, this subscale refers to culture-specific information, such as impact of racism on CLD students, models of acculturation and accommodation for diverse learners, especially in the context of using student-centered inquiry strategies, and teaching students who are not proficient in the language of instruction.

The Teaching Efficacy (TE) subscale refers to teachers’ ability to translate attitude (affective) and knowledge into culturally sensitive and relevant pedagogies that support CLD students, who are not proficient in Korean, to successfully engage in inquiry-based activities that also supports second language acquisition and development.

The Outcome Expectancy (OE) subscale refers to teachers’ expectation that students’ academic proficiency will begin to improve as their pedagogies become more culturally sensitive and supportive to the needs of CLD students as science and language learners. Earlier research from Enochs and Riggs (1990, refer to STEBI) and Roberts and Henson
(2000, refer to SETAKIST) conducted studies determining how teachers’ Teaching Efficacy (TE) and Knowledge (K), related to language and inquiry, is connected to Outcome Expectancy (OE). By considering these variables, the K-TASILT questionnaire became an expansion of both STEBI and SETAKIST studies. Table 4-4 shows the K-TASILT comparison with other studies determining which data collection tool focused on what subscale.

<table>
<thead>
<tr>
<th>Subscales</th>
<th>STEBI</th>
<th>SETAKIST</th>
<th>K-TASILT</th>
</tr>
</thead>
<tbody>
<tr>
<td>Teaching efficacy</td>
<td>O</td>
<td>O</td>
<td>O</td>
</tr>
<tr>
<td>Outcome expectancy</td>
<td>O</td>
<td></td>
<td>O</td>
</tr>
<tr>
<td>Knowledge efficacy</td>
<td></td>
<td>O</td>
<td>O</td>
</tr>
</tbody>
</table>

The K-TASILT expands past studies by combining knowledge efficacy, teaching efficacy, and outcome expectancy for student learning. By combining these three subscales, the K-TASILT will help consider how teacher attitudes and their knowledge about inquiry and language teaching can shape their instructional practices for CLD students, which has the potential to positively or negatively impact teachers’ overall expectations for CLD students’ learning (outcome expectancy). These expectations can, in return, influence teachers’ practices by either expanding or reducing the types of opportunities teachers extend to CLD students that could help them to effectively and successfully participate in school science.
**Item validity process**

The K-TASILT questionnaire item-statements were collectively examined to check for wording clarity, redundancy, and its reliability and validity. A total of 113-items were initially developed, including 40-items on demographic background (items 1-40), 36-items in the ATCALD, 18-items in ITENKS, and 19-items in LTENKS scales. A 4-point Likert scale with (1) strongly disagree and (4) strongly agree was used for each item. The three scales consisted of two to three subscales, which were initially decided through literature studies. In developing the sub-scale item-statements, approximately 40% of the items in the attitude scale included items, which had reversed response coding. This was due to half of the items being worded negatively and half of the items including wrong facts. In this research, reverse items were designed to measure negative constructs, not only to avoid extreme response biases or acquiescent biases. The developed K-TASILT questionnaire was initially written in English. The entire questionnaire was then translated from English to Korean in order for it to be accessible for Korean teachers to complete.

**Face validation**

The translated Korean version of the questionnaire was back translated into English making sure items were correctly addressed. Both the Korean and English questionnaire versions of the K-TASILT went through a face validation process by conducted by three science educators and a science teacher examining the accuracy of the translations, working appropriateness, and if each item fit in the corresponding scale and subscale.
Content validation

Content validity checks were conducted, in English and in Korean, through multiple experts who examined the K-TASILT questionnaire item by item. Based on a Likert scale, three experts in science teacher education and five experts in general education rated each of the 113-questionnaire items on clarity (1=ambiguous to 4=very clear) and on domain appropriateness (1=not relevant to 4=very relevant) based on the descriptions of each scale and subscale (ATCALD - Knowledge and Attitude; ITENKS - Knowledge Efficacy, Teaching Efficacy, and Outcome Expectancy; LTENKS-Knowledge Efficacy, Teaching Efficacy, and Outcome Expectancy). The Item Content Validation Index (I-CVI) value ranged from 0.9 to 1, which is considered to be acceptable. The I-CVI for each item was computed as the number of experts giving a rating of either 3 or 4 (very relevant and relevant or very clear and clear), divided by the total number of experts. Items that were scored less than 0.9 on clarity, appropriateness, and relevancy (Lynn, 1986) were revised. Experts also provided some recommendations for appropriate wording and pointed out some translation problems. After completing the content validity, the entire questionnaire was revised.

Face-to-face validation

Following the translation of the item-statements, a face-to-face interview was conducted with six selected Korean teachers from a science teacher education masters program. They were asked questions regarding the questionnaire and the scale format, content, phrases of words, clarity, and relevancy. The interviewed teachers agreed with the subscales (ATCALD, ITENKS, and LTENKS), were pleased with the questionnaire format,
thought the items were clear and well worded. The teachers also believed the subscales served as a good stimulus for discussion on diversity issues in Korean contexts, especially with regards to challenges using inquiry and language-focused teaching strategies with CLD students.

**Item reduction process**

Data was collected from 144 primary and secondary school teacher participants. The collected data was used for an item reduction process by calculating a point-biserial correlation coefficient (Corrected Item-Total Correlation in SPSS output table), p-values (using positive and negative responses) and Cronbach alpha reliability. When items indicated a low point-biserial correlation coefficient (0 or below 0) and a p-value (below 0.3), as well as a low point-biserial correlation and high p-value (above 0.8), the items were deleted. This means that the deleted items did not contribute to any response patterns. A later case indicated that the deleted items were too difficult to differentiate participant response patterns because most participants could not answer the question properly (Guilford & Fruchter, 1973). Also, whenever items were deleted due to the reasons above, the Cronbach Alpha reliability for each scale and subscale were calculated to avoid being below 0.5. At the end of the item reduction process, most items from the newly developed ATCALD scale, in particular the Knowledge subscale, were deleted due to unfamiliarity of educational policies and regulations for CLD students and families. After this process was complete, a total of 97 questionnaire item-statements remained (refer to Table 4-5), which includes the 40 demographic and teachers’ personal experiences items.
<table>
<thead>
<tr>
<th>Scale</th>
<th>Subscales</th>
<th>Description</th>
<th>Cronbach alpha value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Demographic background information</td>
<td>(40 items)</td>
<td>Gender, age, teaching experience, language learning experience, experience with diverse students/families</td>
<td></td>
</tr>
<tr>
<td>Attitudes towards cultural and linguistic diversity (ATCALD)</td>
<td>Knowledge (7 items)</td>
<td>Knowledge and attitude (affective) about growth of cultural and linguistic diversity in Korea</td>
<td>α=0.5</td>
</tr>
<tr>
<td></td>
<td>Affective (19 items)</td>
<td>Attitudes about the benefits and challenges with CLD population in Korea; tolerance/acceptance of cultural and linguistic diversity</td>
<td>α=0.7</td>
</tr>
<tr>
<td>Inquiry Teaching Efficacy for Non-Korean Students (ITENKS)</td>
<td>Knowledge efficacy (5 items)</td>
<td>Knowledge and understanding of inquiry science teaching and learning and its benefits toward CLD students</td>
<td>α=0.8</td>
</tr>
<tr>
<td></td>
<td>Teaching efficacy (7 items)</td>
<td>Likelihood to act based on knowledge and attitude, understanding and executing inquiry instructional practices that benefit or do not benefit CLD learners</td>
<td>α=0.7</td>
</tr>
<tr>
<td></td>
<td>Outcome expectancy (4 items)</td>
<td>Likelihood for increased student achievement in response to teachers’ inquiry-based instructional practices for CLD students</td>
<td>α=0.7</td>
</tr>
<tr>
<td>Language Teaching Efficacy for Non-Korean students (LTENKS)</td>
<td>Knowledge efficacy (4 items)</td>
<td>Knowledge about language development and understanding of challenges associated with language learning (i.e. how language learning impacts students’ ability to communicate their understanding of concepts in different content areas)</td>
<td>α=0.5</td>
</tr>
<tr>
<td></td>
<td>Teaching efficacy (6 items)</td>
<td>Ability to understand how to effectively provide opportunities for CLD students to utilize native language, implement sheltered instruction practices, modify language and adapt content to be accessible for different language ability levels</td>
<td>α=0.7</td>
</tr>
<tr>
<td></td>
<td>Outcome expectancy (5 items)</td>
<td>Likelihood for increased CLD student achievement in response to teachers’ use of sheltered instructional practices and accommodation</td>
<td>α=0.8</td>
</tr>
</tbody>
</table>
**Item reliability**

The Cronbach alpha reliability of 57 total item-statements (except the 40 demographic background questions) was 0.7 to 0.8, with the exception of the ATCALD Knowledge subscale - measuring the cognitive attitude about the educational system and policy for CLD students - and the LTENKS Knowledge subscale - measuring knowledge about language development and understanding challenges associated with acquiring a second language (refer to Table 4-4). These two subscales showed Cronbach Alpha reliability of 0.5, which is acceptable when item measurement is connected to aspects of knowledge understanding (Nunally & Bernstein, 1994). This study did not conduct factors analysis to identify items that fit in each scale and subscale because the research was designed based on the convergent mixed methods approach, which considers both quantitative and qualitative data sets.

**Institutional Review Board (waived consent for questionnaire participants)**

Although the K-TASILT questionnaire data collection involved teacher participants, the Institutional Review Board (IRB) at Seoul National University waived the requirement for consenting participants because the questionnaire did not elicit any personally identifying information. In accordance with the IRB guidelines for conducting ethical research, the names or IP addresses of teachers who took the questionnaire, via paper copy or electronic format, and who participated in the item validation interviews were not collected. Teacher participants were recruited to complete the K-TASILT by using the snowball method in which an email
invitation was sent to 20 teachers, within known research networks. These teachers were then asked to forward the email invitation to additional teachers. The email contained a URL linking recipients to the online questionnaire program called Survey Monkey (refer to section 4.3.6). Teachers were informed they were under no obligation to participate in the questionnaire and if they chose not to participate, they were welcome to stop at any time. The following section provides a brief overview of the participant demographics for the quantitative data set of this study.

K-TASILT questionnaire participants

The K-TASILT questionnaire was distributed via Survey Monkey (refer to Appendix E), an online questionnaire development and implementation program that enables researchers to quickly and easily collect data from large sets of participants. In addition, Survey Monkey offers simple descriptive analysis abilities, as well as formats and exports data ready for SPSS analysis. Using Survey Monkey, responses were collected from 156 public school teachers working. However, 12 of the surveys were incomplete, so they were not included in the final analysis, which left a total of 144 teachers participants analyzed for this study.

The study sample included elementary (48.0%), middle (36.6%) and high school (15.4%) teachers located in schools throughout Seoul and neighboring suburbs. The majority of the participants were women (n=119; 82.6%), and the rest were men (n=25; 17.4%). About 68.8% of teachers (n=99) reported they had experience teaching CLD students at some point in their teaching career, and the remaining 30.6% (n=45) reported not having experience. Participants’ years of teaching ranged from one to forty, and the average number of years teaching was twenty. All of the teachers
were ethnically Korean and native-Korean speakers, of which one-quarter 
\(n=36\) spoke a language other than Korean. A majority of participants 
\(n=87; 60.4\%\) reported they had not received teacher training to support 
them to work with CLD students, but close to 40\% \(n=57\) indicated 
they had received some type of training. Only a few teachers \(n=14\) 
reported they had taken college coursework related to teaching and 
supporting CLD students, while one-third of the teachers \(n=46\) had 
attended professional development. Less than 3\% of all teachers in the study 
\(n=3\) had experienced both types of training.

**K-TASILT questionnaire analysis**

The analysis of teachers’ responses on the K-TASILT questionnaire was 
designed to address the four research questions (refer to section 4.2.1), 
which focuses on identifying teachers’ attitudes toward the increasing CLD 
students teachers’ self-efficacy on inquiry and language-based instructional 
practices in the classroom. To analyze the K-TASILT questionnaire 
responses, SPSS version 22 was used. Item analysis, correlation analysis, 
and variable analysis were conducted to investigate significant findings 
from the questionnaire data (refer to Chapter 5).

The item analysis based on each scale and subscale, used the average 
percentages of positive responses (strongly agree and agree) and negative 
responses (strongly disagree and disagree) to investigate overall trends in 
teachers’ attitudes toward CLD students and teachers’ self-efficacy in 
teaching inquiry and language in classrooms with CLD students. The 
percentage response reported in the Likert scale questionnaire is one 
reporting method, which is suitable for data interpretation to show overall 
trends of responses and several papers in science education have used this
type of analysis (Chu, Lee, Ko, Shin, Lee & Min, 2007; Chu, Treagust & Chandrasegaran, 2009; Park, Martin, & Chu, 2015). The correlation analysis using the Pearson product-moment correlation coefficient (Pearson’s $r$) was used to determine the relationships between two variables and from the subscales – the influences one variable has on the other.

MANOVA analysis was conducted to investigate the influence of the demographic variables and teachers’ experiences on items in each subscale of ATCALD, ITENKS, and LTENKS (refer to Chapter 5). The standardized mean scores ($50 \pm 10 \times (z\text{-score})$) of each subscale were calculated for variable comparison. Teachers’ general information variables (age, teaching subjects, and education background), teachers’ teaching experiences with CLD students, and teachers’ own experience as learners (e.g. teacher education programs, courses offered, or professional development on diversity and education, and foreign language studying experiences). These variables were considered to be important for analysis since they provide information about teachers’ demographic variables and experiences, which can influence their self-efficacy on their ability to effectively teach CLD students (Fraser, 2014; Kitsantas, 2012; Ramey-Gassert, Shroyer, & Staver, 1996; Siwatu, 2007). These findings were also used to consider implications for developing teacher education courses and professional development programs that could target issues to improve teachers’ attitudes toward CLD students, which can have the potential to positively impact teachers’ self-efficacy when working with CLD students.
4.3 Qualitative Approach: Semi-structured Teacher Interviews

The qualitative data set is based on semi-structured teacher interviews seeking to obtain insights into particular educational, social, and familial processes and practices that exist within a specific context (Connolly, 1998). The benefit of this type of data is that it highlights the quality of the subject, their environmental surroundings, as well as processes and meanings of potential findings that cannot be experimentally examined by quantified data sets. Qualitative research involves an interpretive approach to the world, studying things in its “natural” setting and attempting to make sense of, interpret, phenomena through a series of representations (e.g. interviews, conversations, recordings, memos, field notes, etc.) (Snape & Spencer, 2003). Thus, the interviews with teachers in this study provides an opportunity to expand upon a better understanding of their experiences in the classroom, their attitudes toward CLD students, and their self-efficacy on inquiry and language-based instructional strategies.

The goal for the interview questions was to probe how teachers experiences as teachers, their attitudes toward diversity in their classrooms, things that impact their teaching self-efficacy - in both content and language instruction - and their thoughts on their attitudes and self-efficacy having the potential to raise or lower their expectations toward CLD students’ learning in science. In the sections that follow, more details are provided about the structure of the interviews, the teacher participants, and the data collection and analysis process.
Development of Semi-Structured Teacher Interview Questions

The interview questions were developed and shaped based on five categories: general background information, experiences as a teacher, beliefs about diversity and science (STEM*) education, support and challenges with CLD students, and expectations on parental involvement. Table 4-6 shows a compilation of question categories that were addressed to each schoolteacher during the interviews.

Table 4-6
Categories of questions for teacher interviews

<table>
<thead>
<tr>
<th>Interview questions category</th>
<th>Example of type of questions</th>
</tr>
</thead>
<tbody>
<tr>
<td>General background information</td>
<td>How long have you taught?</td>
</tr>
<tr>
<td></td>
<td>What subject did/do you teach?</td>
</tr>
<tr>
<td>Experiences as a teacher</td>
<td>(If) What are some challenges you experienced with CLD student</td>
</tr>
<tr>
<td></td>
<td>enrolled in your class?</td>
</tr>
<tr>
<td></td>
<td>What value do you see in having CLD students?</td>
</tr>
<tr>
<td>Beliefs about diversity and science (STEM)</td>
<td>What value do you place on the learning of science and mathematics for CLD students?</td>
</tr>
<tr>
<td>education</td>
<td></td>
</tr>
<tr>
<td>Support and challenges with CLD students</td>
<td>Have you had any courses or professional development about working with CLD students and families?</td>
</tr>
<tr>
<td>Expectations on parental involvement</td>
<td>How involved are parents at your school, in general?</td>
</tr>
<tr>
<td></td>
<td>How often and in what ways? How does this compare with CLD parental involvement?</td>
</tr>
</tbody>
</table>

Each category had questions that sought to further examine teachers’ attitudes toward CLD students and their self-efficacy on CLD students’ achievement based on their efforts in providing a thorough lesson for students. The questions revolved around teachers’ personal experiences in teaching CLD students (or just knowing about CLD students), being in similar positions/situations as CLD students, experiences in receiving some

* Science, Technology, Engineering, and Mathematics
type of teacher training regarding best instructional practices - especially for CLD students, and descriptions of what their past or current experiences/relationships with CLD parents.

Institutional Review Board (Consent for Interviewed Participants)

Since the interview data involved direct interaction with teacher participants, the Institutional Review Board (IRB) at Seoul National University, required teachers to be consented before engaging in interviews. No personally identifying information was collected during the interviews (e.g. names, addresses, etc.) and all teacher participants were assigned a pseudonym for the reporting of the data.

Teachers were informed they were under no obligation to participate in the open-ended, semi-structured interview, thus if they chose to no longer participate in the interview, they were welcome to stop at any time.

Interviewed Participants

A total of sixteen Korean primary and secondary schoolteachers were interviewed for this study - the teacher subjects were to be associated to a Korean primary or secondary school (this included “after school” programs or institutes). Since the goal of the interviews was intended to provide a broad view of teachers’ experiences, participants were recruited across a series of different sites hermeneutically selected for balance in gender, teaching experiences, educational background, language, science teaching/learning experiences, etc. All teacher participants were identified by active recruitment through known networks and advertisements, and recruited based on their availability and willingness. Each participant, in particular those that were teaching in schools identified as serving CLD
population of students, but not limited to, were asked to participate in semi-structured interviews. Due to the sensitive nature of the interviews, many identified teachers declined and were unwilling to participate in the interview process. This response was understandable due to the nature of researchers closely investigating teachers’ attitudes and self-efficacy on a topic that is still not commonly discussed, as well as placing a feeling of challenging teachers’ instructional practices. Table 4-7 provides an overview of the teacher participants’ pseudonyms, most recent grade level taught, the subject(s) and position(s) they have been responsible for, and the number of years they taught.

Table 4-7
List of interviewed teachers and their general background information

<table>
<thead>
<tr>
<th>Participant/ role in school</th>
<th>Grade level</th>
<th>Subject &amp; position</th>
<th>Teaching experience (years)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Sunny</td>
<td>ES</td>
<td>English (영어)</td>
<td>5</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Science (과학)</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Homeroom (담임)</td>
<td></td>
</tr>
<tr>
<td>2. Hyesook</td>
<td>ES</td>
<td>4th grade</td>
<td>26</td>
</tr>
<tr>
<td>3. Sang</td>
<td>MS</td>
<td>Science (과학)</td>
<td>24</td>
</tr>
<tr>
<td>4. Malee</td>
<td>MS</td>
<td>English (영어)</td>
<td>30</td>
</tr>
<tr>
<td>5. Yang</td>
<td>MS</td>
<td>English (영어)</td>
<td>17</td>
</tr>
<tr>
<td>6. Saeun</td>
<td>--</td>
<td>English (영어)</td>
<td>5</td>
</tr>
<tr>
<td>7. Haesun</td>
<td>MS</td>
<td>Math (수학)</td>
<td>23</td>
</tr>
<tr>
<td>8. Mijung</td>
<td>MS</td>
<td>Japanese language (일본어)*</td>
<td>28</td>
</tr>
<tr>
<td>9. Kyeong</td>
<td>MS</td>
<td>Science</td>
<td>12</td>
</tr>
<tr>
<td>10. Misun</td>
<td>MS</td>
<td>Science</td>
<td>10</td>
</tr>
<tr>
<td>11. Jeong</td>
<td>ES</td>
<td>3rd and 5th grades</td>
<td>10</td>
</tr>
<tr>
<td>12. Eun</td>
<td>MS/HS</td>
<td>Biology</td>
<td>3.5</td>
</tr>
<tr>
<td>13. Ju</td>
<td>HS</td>
<td>Physics</td>
<td>16</td>
</tr>
<tr>
<td>14. Yejin</td>
<td>ES</td>
<td>6th grade</td>
<td>8</td>
</tr>
<tr>
<td>15. Bumsu</td>
<td>MS</td>
<td>Ethics (도덕)</td>
<td>30</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Homeroom (담임)</td>
<td></td>
</tr>
<tr>
<td>16. Donghee</td>
<td>ES</td>
<td>6th grade</td>
<td>20</td>
</tr>
</tbody>
</table>

*Key: ES – elementary school; MS – middle school; HS – high school
*Bachelor’s degree major was French, minor language Japanese (부전공 일본어)
Interview Data Collection

The teacher interviews included both several broad-based questions, which were predetermined then probative, in an effort to clarify each participants’ responses (refer to Appendix 4-?). The interviews were guided by the objective of better understanding teachers’ experiences with the CLD student population and their experiences teaching them, if applicable. During each interview, participants were reminded that the session would take about 60 to 90-minutes to complete. They were also reminded that they were able to take breaks, pass on a question and move onto another question, or ask to stop their participation. The interviews were conducted with one or two interviewers – interviewer 1 was a native Korean-speaking co-researcher, part of the larger research, and interviewer 2, a native English speaking and intermediate Korean speaker, solely responsible for this study. Interviews took place at the teachers’ school, at the university office space, or in spaces such as a café or at the participants’ home.

The interviews were conducted mostly in Korean, with the exception of very few questions and responses being conducted in English, based on the needs of the teacher participants and the language abilities of the researchers in the study; roughly 31% of the teachers responded to questions in English, whether it was completely addressed in English or mixed with Korean.

All interviews were either audio or video recorded to be transcribed in efforts to provide additional data for analysis regarding participants’ perceptions about their attitudes toward CLD students and families, their self-efficacy (level of confidence) in teaching CLD students, as well as the challenges of teaching and learning science in the school and community. All transcriptions were completed in the language the interview was
conducted. If the interview was conducted in Korean with some English words incorporated, the transcriptions were written in the same exact way where portions conducted in English were transcribed word-for-word.

All other transcripts were translated from Korean to English. However, the English translations were not a direct, word-for-word translation, but rather translated at a level that provided exact information that teachers’ stated, in addition to the nuances that associated each statement. This offered the data with enough detail and information to provide the interview with clearer opportunities in understanding and interpreting the content discussed. These translations were read and annotated multiple times over a 6-week period in order to fully understand the statements teachers made. The translations were discussed with other native Korean speaking researchers in the larger project to determine if transcripts were clear and captured the intent of the speaker.

Due to the potential sensitive content of the semi-structured interview questions, for some teacher participants, there were times when teachers responded with short simple answers or they expressed difficulty in expanding their response or they expressed their thoughts very thoroughly. At other times, a participant would become focused on one or two topics providing a great deal of detail while neglecting or running out of time to remark on other topic areas. However, interview sessions where teachers spent larger amounts of time describing their experiences or concerns, on few areas, were instrumental in providing this study with in-depth understanding of some teachers’ attitudes, experiences, and their thoughts about their teaching self-efficacy and outcome expectancies of CLD students, as well as their past training experiences.
Interview Data Analysis

This section, briefly describes the process that took place to analyze each of the translated transcripts to retrieve anticipated and emerging findings (refer to Chapter 6 for greater detail). Based on the characteristics of qualitative research and data, the analysis provides more content-specific support in areas other research cannot gather through the investigation that allows broader, at the same time more in-depth perspectives on teachers’ attitudes and self-efficacy.

There were three waves of analysis that were conducted for each transcript. Using two types of coding processes, the qualitative data was disaggregated using a priori’ coding and inductive coding. A priori codes were developed and assigned before examining the transcripts. The codes were primarily based on preconceived ideas regarding teachers’ attitudes and self-efficacy (refer to Figure 4-3). This type of coding was used specifically during the descriptive and analytic analysis, which is based on words, phrases, and/or anticipated relationships in each transcript that is more thoroughly described in the next sections.
Inductive codes are emergent after a priori codes are completed, established, and highlighted. Inductive codes appear after analyzing the transcripts multiple times and may align to a priori codes or they may be different from them (refer to Figure 4-4). These emergent codes can offer the researcher information that can be salient for providing a deeper understanding of the context. This type of coding was used specifically during the interpretive analysis, which is based on a sense of trends, patterns, and contradictions in each transcript that is more thoroughly described in the next sections.

**A priori codes**

*Preconceived and/or anticipated related topics coded*

- Positive and negative attitude towards CLD students and parents
- Language-based challenges teachers face
- Experiences with teacher education programs
- Experiences with CLD parents (positives/negatives)
- Modifications made in class (CLD or others)
- Experiences with CLD population
- Experiences learning a new language, being in a CLD environment, and/or having personal CLD friends.

*Figure 4-3. List of a priori code examples. This is the list of a priori codes that were preconceived and/or anticipated when conducting the first wave of analysis for each transcript.*
**Inductive codes**

* Non-content or language-based challenges teachers face in the classroom with CLD students
* Challenges CLD students face that are impact teachers’ outcome expectancies
* Positioning of CLD students as “the Other” through actions and words/phrases (“them” versus “us”)
* Misconception/misalignment of who CLD students are
* Misalignment in knowledge and actual teacher practices

*Figure 4-4. List of inductive code examples. This is a list of inductive codes that may emerge after each transcript was coded a few times using the second wave a priori codes.*

Compared to the a priori codes, these codes are often based on frequency of particular words or phrases that appear throughout and across all of the interviews or can range from words and ideas to the meanings and/or relationships between phrases or nuances that arise.

Coding is a judgment call since researchers are bringing in their own subjectivities, personalities, and predispositions into the process (Saldana, 2009). However, it’s an initial step toward more rigorous and evocative analysis of the text. To maintain validity, it’s important that coding occurs in repeated steps over a certain period of time so as not to analyze data in a biased way.

*Figure 4-5 shows a general flow of how the transcripts were coded and analyzed in a three-step process. Although the process occurred in steps, the reported analyses are not necessarily presented in this manner due*
to the nature of the findings being interconnected with one another. In the following sub-sections, the three waves of analysis will be further described.

**Descriptive analysis coding**

First wave of coding of raw data; trying to get a clear picture of “what’s going on”

**Analytic analysis coding**

Words or phrases of interest; factors or relationships describing the context

**Interpretive analysis coding**

Areas of interest to understand and further explain potential factors of influence

*Figure 4-5.* Visual of the three waves coding analysis conducted. There were three coding processes that took place for each transcript analyzing schoolteacher interviews looking for preconceived/anticipated words, phrases, nuances, and/or statements, as well as any new emergent findings.

**Descriptive coding and analysis**

The first wave of analysis was based on describing the overall data collected from each interview to contextualize “who are the teachers” and “what’s going on” in the classrooms using a priori coding. Each transcript underwent general coding to retrieve comprehensive information on teachers’ experiences with CLD students, their attitude toward CLD students, their experiences with teacher education or professional development programs, challenges they believe are crucial to take into consideration when teaching CLD students, etc.

This coding analysis took into consideration eight areas of interest with CLD students: *experience teaching, positive attitudes, feelings of helplessness, challenges faced, modifications made, teacher education or*
professional development programs attended, desire for more teacher education or professional development programs, and experiences with CLD parents. These areas of interest were addressed in the interviews with all 16 teachers. Interviews took approximately 60 to 90 minute to complete (refer to Chapter 6). Each area of interest was extracted from the interview questions, which were consistently asked and recorded from all teachers (refer to Chapter 6, Table 6-1) to describe their past and current teaching experiences thus far in their career.

Analytic coding and analysis

The second wave analysis was based on an analytic approach looking more specifically at three of the eight categories from the descriptive analysis that occurred first. The three areas of interest were based on a priori coding: teachers’ general attitude toward CLD students (including deficit perspectives, misconceptions, and the frequency in words/phrases that has potential to marginalize CLD students), their experiences with CLD students (whether it be through teaching or through other means), and their teacher education or professional development training experiences (when they were trained, what were mandated hours they needed to complete, or what courses were required and not required). All teacher interview transcripts were coded for evidences pertaining to these three areas of interest to provide more in-depth perspectives on their attitudes and self-efficacy in inquiry and language-based pedagogical practices working with CLD students. Something to consider in analyzing interview data is that teachers’ attitudes and self-efficacy are based on external and internal contextualized factors, meaning individual teachers decide either to acknowledge their practices and accommodate, accordingly. Such changes
can be due to systems in place that mandate change (i.e. the ministry of education or school districts), or no change occurring for those teachers who disregard such factors and continue teaching according to their own established teaching practices.

**Interpretive coding and analysis**

The third wave of analysis was based on an interpretive approach that was used for making sense of trends, patterns, and contradictions in teachers’ interview responses. Such areas were composed by taking notice of the ways in which teachers addressed CLD students (the use of certain Korean terminologies that have the power to marginalize), ways in which teachers phrased certain situations or experiences (any type of nuanced hesitations or continued references regarding other teachers), and misalignments in what teachers expressed during the interview process (contradictions in their statements regarding CLD students and their overall attitudes and/or concerns about them). To interpret meaning from the responses, the data was first coded in a different way compared to the descriptive and analytical analysis coding. This data set was focused mainly on inductive coding analysis, seeking for emergent findings outside of the preconceived areas that the first two waves of analysis sought after.

As mentioned above, the coding process is an important way of analyzing qualitative data in order to more clearly understand and organize collected information; it allows words or phrases that symbolically assign a summative, salient, essence-capturing attribute from a portion of language-based data to be extracted and understood holistically (Saldana, 2007). The coding process is always meant to help the researcher describe what is happening, what is being said, what it represents, and how it supports the
researcher when extracting the data in order to make claims and providing concrete examples. This analysis was more comprehensive and attempted to provide further information that informs the way in which teacher training and professional development programs should be developed.
CHAPTER 5. QUANTITATIVE DATA SET FINDINGS: K-TASILT QUESTIONNAIRE*

This chapter shares findings from the analysis of teachers’ responses to the Korean Teachers’ Attitude and Self-Efficacy for Inquiry and Language based Teaching (K-TASILT) three-scaled questionnaire addressing teachers’ attitudes toward the cultural and linguistic diverse (CLD) population, in particular students, and teachers’ self-efficacy on utilizing inquiry and language-based teaching strategies with CLD students in their classroom. The quantitative data set aimed to explore the four research questions that were listed in Chapter 2. Investigating teachers’ attitudes and self-efficacy, the research questions were:

1) What are Korean teachers’ attitudes toward CLD students?
2) What are Korean teachers’ self-efficacy about teaching CLD students using inquiry and language-based instructional strategies?
3) What significant correlations exist between teachers’ attitudes toward CLD students and their self-efficacy on teaching CLD students using inquiry and language-based instructional strategies?
4) What factors (i.e. language learning experiences or experiences of interactions with people who are CLD) influence Korean teachers’ attitudes toward CLD students and their self-efficacy on teaching CLD students using inquiry and language-based instructional strategies?

The quantitative data set focuses on these research questions seeking to make connections between teachers’ attitudes toward diversity and teachers’ self-efficacy on working with an increasingly diversifying student population in Korea’s public schools. In addition, this study seeks to uncover and address the potential for change in teachers’ attitudes and self-efficacy for working with CLD students impacting the possibilities for CLD students to become successful in school science and the Korean language.

The K-TASILT questionnaire was based on both primary and secondary Korean teachers’ responses to each item-statement (refer to Chapter 4 for subscales and item descriptions). The data analysis was disaggregated to describe teachers’ attitudes toward the diverse society in Korea and the CLD student population, as well as their self-efficacy on teaching strategies used when instructing CLD students and the potential impact it has on how CLD students experience in school, science in Korea, and the Korean language. Based on the questionnaire data collection and analysis, it was revealed that Korean teachers who participated in this study hold a variety of conceptions about CLD students and how to effectively teach them.

The following section describes each questionnaire subscale (ATCALD, ITENKS, and LTENKS) and how each item-statement was analyzed based on the percentages of positive responses that were collected from each participant and averaged. In addition, discussions on the process of correlation and variable analyses, using ANOVA and MANOVA, are also discussed.
5.1 Item Analysis

The initial item analysis focused on identifying teachers’ percentage of positive response answers to the questionnaire items in each subscale. Areas where the percentage of positive answers fell below 50% were identified as important points which to focus on since these areas indicated negative attitudes toward CLD students and low self-efficacy in using inquiry and language teaching practices with CLD students. Teachers’ responses were counted as positive when items were answered agree (3) or strongly agree (4) on a Likert scale.

For example, if a teacher responded strongly agree (4) to ATCALD item-statement #43 (the children of non-Korean/multicultural* families are currently the fastest growing population of students in Korea) then the item was considered to be positive. For negatively stated items, the data was coded in reverse. For example, if a teacher responded strongly agree (4) to ATCALD item-statement #47 (there is no need to include multicultural education theories and strategies if there are no multicultural students in the classroom) the response was reverse-coded as positive.

In addition, when teachers strongly disagreed with an item statement, the response was coded as negative. This coding method allowed for a general view of how teacher participants tended to respond to both positively and negatively worded item statements.

* As stated in Chapter 2, the term multicultural is used differently in the established international research literature, which can cause some confusion when reporting findings in international contexts. In addition, because the term is not inclusive of the diversity that exists in classrooms, the use of culturally and linguistically diverse (CLD), which encompasses all non-traditional Korean students, including children of mixed ethnicity, foreign immigrants who are not Korean, North Korean refugees, transnational Koreans, etc.
Teachers’ Attitudes Toward Teaching CLD Students and efficacy on inquiry and language-based teaching strategies

In the following sections, teachers’ responses on each of the three subscales are reported. Overall, these responses reflect that teachers in this survey tend to hold positive attitudes toward CLD students and about the potential benefit of implementing differentiated instructional strategies that account for CLD students’ learning needs. However, their responses also suggest that teachers have somewhat negative perceptions about diversity in Korean society.

ATCLD responses: Knowledge and attitude subscales

The Attitude Toward Cultural and Linguistic Diversity (ATCALD) subscale contains two sub-sections labeled Knowledge (cognitive) and Attitude (Affective). Table 5-1 shows the mean and range of positive response percentages of these two subscales based on the ATCALD subscale, specifically looking at two subscales.
The Knowledge (K) sub-section has two item groups: 1) teachers’ attitude (affective) about the expansion of the CLD population in Korea and 2) teachers’ attitude (affective) about the need/value for professional development to support CLD students as learners. This group resulted in the lowest mean percentage of positive responses (57%) while the overall mean percentages of positive responses in other item groups were all fairly high (71-88%).
The Affective (A) subscale consisted of three item groups on tolerance/acceptance of: 1) CLD population expanding in Korea, 2) teaching CLD students, and 3) parents of CLD students (refer to Table 5-1 above). There were some item statements where teachers responded less positively, which revealed that teachers were not well informed about who makes up the CLD population in Korea. For instance, less than half (44%) of teachers responded positively to item #41 (the majority of non-Koreans living in Korea are Chinese - status of legal nationality), indicating that majority of teachers are not aware that the largest source of immigrants in Korea are from Mainland China. At the same time, nearly all of the teachers (86%) acknowledged the need for additional professional development programs to improve their ability to effectively teach CLD students (item #45, refer to Appendix D for K-TASILT questionnaire).

The ATCALD item responses showed that even while teachers had mostly positive affective attitudes (69%) toward increasing diversity in Korea (item #57), they had more negative attitudes (53%) about their ability to effectively communicate with non-Korean students (item #68). In addition, only 68% of teachers agreed that non-Korean students could do well in school academically or socially (item #70), and only a few teachers (27%) believed that CLD students’ limited Korean language proficiency would be a hindrance to conceptually understanding science (item #76).

To supplement these findings with other item statements from the ATCALD questionnaire teachers responded most positively (99%) when asked whether effective teachers should take into consideration students’ cultural and linguistic differences in order to modify classroom content and instruction to fit the learner (item #66). Also, nearly all teachers (95%) agreed that the parents of CLD students needed to be taught how to
effectively support their children to do well in the Korean school system (item #71).

Overall, these responses reflect a portion of Korean teachers’ strong positive attitudes about the potential benefit of implementing differentiated instructional strategies that account for CLD students’ learning needs, but it also suggests that teachers have somewhat negative perceptions about diversity in Korean society.

**ITENKS responses: Knowledge efficacy, teaching efficacy, and outcome expectancy subscales**

The *Inquiry Teaching Efficacy for Non-Korean Students* (ITENKS) subscale includes *Knowledge Efficacy (KE)*, *Teaching Efficacy (TE)*, and *Outcome Expectancy (OE)* subscales. Table 5-2 shows the mean and range of positive response percentages based on the ITENKS subscale, specifically looking at each subscales. The item groups in these subscales measures: 1) teachers’ knowledge about inquiry and social learning theory, 2) teachers’ self-efficacy about their ability to implement inquiry teaching strategies in the classroom, and 3) teachers’ outcome expectancy for CLD students learning when implementing inquiry activities.

The mean percentage of positive responses regarding teachers’ knowledge about inquiry teaching was quite high (86%). In addition, teachers were very positive (92%) that the use of inquiry instructional approaches with CLD students would result in increased achievement and performances. This indicated that Korean teachers have overall high *outcome expectancy (OE)* for CLD students learning when using inquiry-based teaching strategies.
Overall, the mean percentage of positive responses was moderately high (77%) on teachers’ ability to effectively employ inquiry-based instructional practices. Yet, when asked about their ability to effectively implement inquiry-based strategies with CLD students (item #83), teachers responded less positively (only 31%). This indicates that teachers are much less confident in their ability to support CLD students, which may be reflective of the limited opportunities most Korean teachers had to actually teach CLD students.

Teachers’ high mean positive response regarding knowledge about inquiry teaching methods (86%) and efficacy for utilizing inquiry in the classroom (77%) both reflected positively on the Korean teacher education
system as it is an indication that Korean teacher education programs have effectively prepared teachers on inquiry teaching. Inquiry was introduced as part of the Korean science curriculum over 40 years ago. Since that time, there has been much progress in the development and implementation of student-centered inquiry teaching and learning approaches in both pre-service and in-service professional development programs (Kim, 2015).

Currently a stronger shift toward inquiry teaching is occurring, especially at the primary school levels where the majority of Korea’s CLD students are enrolled. This places a heavy burden on primary school teachers who have received little or no coursework focused on how to teach students with Limited Korean Proficiency (LKP) or how to facilitate social learning among CLD students. In addition, primary school teachers in Korea tend to have limited science content preparation and may have had fewer opportunities as science learners to experience inquiry or participate in a student-centered classrooms. As a result, teachers’ confidence and self-efficacy regarding science content and inquiry teaching with CLD students may be limited.

One finding in particular focused on primary school teachers’ self-efficacy about CLD students and forming implications for primary school science teacher education for and beyond Korea. Many studies have consistently found that primary school teachers lack the science content knowledge and science-specific pedagogical content knowledge needed to teach science at the primary levels (Appleton, 2003; Duschl, Schweingruber, & Shouse, 2007). In addition, there are studies indicating that primary school teachers do not have the training necessary to effectively adapt materials to support science learning for CLD students (Lee, 2003; Lee, et al., 2007).
As a result, primary school teachers are limited in their ability to engage students in interactive discourse that supports divergent thinking and conceptual understanding (Newton, Driver, & Osborne, 1999; Shallcross, et al., 2002) and students lack opportunities to participate in hands-on activities (Nowicki, et al., 2013) or to engage in peer-to-peer interactions that help gain proficiency in “talking” science (Roth, 2002; Barton & Tan, 2009) – all of which can result in achievement gaps for CLD students (Tao, Oliver, & Venville, 2013).

However, a recent study (Settlage, et al., 2009) examining science teaching self-efficacy for diverse learners suggested that to some degree teachers’ “self-doubt” may be useful in promoting “reflection and revision of practices” that could help them to better support diverse learners. By providing teachers opportunities to be made aware of their knowledge and self-efficacy, as well as being well supported to examine their practices with a goal of transforming them, would positively influence not only their instructional practices, but also the learning of both CLD students and all students with different learning needs.

**LTENKS responses: Knowledge efficacy, teaching efficacy and outcome expectancy subscales**

The *Language Teaching Efficacy for Non-Korean Students* (LTENKS) subscale contains similar subscales as ITENKS (refer to previous section). Table 5-3 shows the mean and range of positive response percentages based on the LTENKS subscales. The items in the LTENKS subscale measures teachers’ knowledge about language development and the theory about language learning, teachers’ efficacy about their ability to implement language teaching strategies in the classroom, and teachers’ outcome
expectancy for student learning when implementing language instructional strategies for CLD students. Teachers’ mean percentages of positive responses to items in knowledge efficacy (KE) and teaching efficacy (TE) subscales were rather low, 48% and 56%, respectively.

Table 5-3
Mean percentages and range of positive responses in each LTENKS subscale.

<table>
<thead>
<tr>
<th>Subscale (number of items)</th>
<th>Examples of items (% of positive responses)</th>
<th>Mean (%)</th>
<th>Range (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Knowledge Efficacy (4 items)</strong></td>
<td>Teachers are aware and understand how people learn languages and how to plan accordingly</td>
<td>100. I am aware of resources available to help me to communicate more effectively with parents who do not speak Korean (20%)</td>
<td>48</td>
</tr>
<tr>
<td><strong>Teaching Efficacy (6 items)</strong></td>
<td>Teachers develop/modify instructional strategies to better prepare and work with CLD students</td>
<td>108. I am well prepared to work together with culturally and linguistically diverse students in my classroom (44%)</td>
<td>56</td>
</tr>
<tr>
<td><strong>Outcome Expectancy (5 items)</strong></td>
<td>Teachers’ usage of sheltered instructional modifications improve CLD students’ language skills and understanding</td>
<td>110. If I provided students with opportunities to integrate content learning with language learning activities, students would be better able to learn the content (81%)</td>
<td>83</td>
</tr>
</tbody>
</table>

In particular, teachers showed low self-efficacy (20%) related to their knowledge regarding how to access resources to help them to effectively communicate with parents who do not speak Korean (item #100). Teachers also reported low self-efficacy (38%) related to their knowledge about how to use standard Korean notation, grammar, and vocabulary to effectively teach CLD students (item 101). In other LTENKS subscale questionnaire items (refer to Appendix D), more than half of the teachers (58%) responded positively regarding their ability to design lessons that account for differences
in students’ Korean language proficiency levels (item #102) and most Korean teachers (70%) indicated that they understood there are different stages of second language learning (item #98). In contrast, less than half (44%) showed they felt sufficiently prepared to work with CLD students in their classroom (item #108). In a special education research context, one study found that teachers with low self-efficacy are less likely to implement innovative teaching strategies or to take responsibility for students who require additional support (Allinder, 1994). Another study by Kathryn Wentzel (1998) found that when students perceived a lack of care or support from their teachers, they tended to misbehave and to have lower achievement in comparison to their peers. These findings are troubling since it could mean that Korean teachers’ low self-efficacy for supporting CLD students could have a significant impact on students’ motivation to learn and achieve (Tschannen-Moran & Hoy, 2001).

Nonetheless, with regards to the outcome expectancy subscale for language teaching, more than 80% of teachers indicated that the use of language teaching strategies could positively impact students’ learning outcomes. For example, 81% of teachers indicated that the integration of content learning with language learning activities could enhance CLD students’ content learning (item #110). These results suggest that while Korean teachers may have low self-efficacy with regards to their own knowledge about language development and language education theory, they are more positive about the potential for learning new knowledge on language theory and instructional strategies to support their CLD students’ learning. Wentzel (1994) found that students’ perception on the support from their teachers strongly correlated to their interest in school and was also a positive predictor of their effort and tendency to develop positive
relationships with their teacher and peers. This finding is heartening since the questionnaire results showed that teachers have relatively positive outcome expectancy for students’ learning should they be provided the skills needed to teach them. This also implies positive potential in providing professional development for Korean teachers to be better prepared to teach CLD students with appropriate language teaching strategies, which could improve students’ language skills and positively impact their inquiry learning.

5.2 Significant Correlation between Teachers’ Attitude and Self-Efficacy

The correlation analysis that was conducted between the eight subscale variables discovered some significant findings between teachers’ attitudes toward CLD students and their self-efficacy on inquiry and language teaching strategies for CLD students. Table 5—4 shows all the variables that are correlated with one another to determine the significance of each relationship. The ATCALD, ITENKS, and LTENKS were correlated significantly and the correlation between ATCALD and ITENKS were strongest in this study ($r = 0.3$).

By only looking at the three large scales, there would not be sufficient information that can indicate meaningful correlations between teachers’ attitudes and their self-efficacy in inquiry and language-based teaching. For instance, the correlation of the subscales can determine if there are any significant connections between teachers’ cognitive attitude (knowledge) and their attitude (affective) or if there is any significant connection between teachers’ efficacy in their outcome expectancy subscales.
Table 5-4
Correlation between subscale variables of all three scales (ATCALD, ITENKS, LTENKS)

<table>
<thead>
<tr>
<th>Variable</th>
<th>(1)</th>
<th>(2)</th>
<th>(3)</th>
<th>(4)</th>
<th>(5)</th>
<th>(6)</th>
<th>(7)</th>
<th>(8)</th>
</tr>
</thead>
<tbody>
<tr>
<td>ITENKS–OE</td>
<td>1.00</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>ITENKS–KE</td>
<td>0.20**</td>
<td>1.00</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>ITENKS–TE</td>
<td>0.15*</td>
<td>0.48**</td>
<td>1.00</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>ATCALD–K</td>
<td>0.20**</td>
<td>0.05</td>
<td>-0.06</td>
<td>1.00</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>ATCALD–A</td>
<td>0.40**</td>
<td>0.34**</td>
<td>0.37**</td>
<td>0.12</td>
<td>1.00</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>LTENKS–KE</td>
<td>0.04</td>
<td>0.08</td>
<td>0.12</td>
<td>0.10</td>
<td>0.18*</td>
<td>1.00</td>
<td></td>
<td></td>
</tr>
<tr>
<td>LTENKS–TE</td>
<td>-0.04</td>
<td>0.23**</td>
<td>0.31**</td>
<td>0.06</td>
<td>0.09</td>
<td>-0.01</td>
<td>1.00</td>
<td></td>
</tr>
<tr>
<td>LTENKS–OE</td>
<td>0.51**</td>
<td>0.21**</td>
<td>0.10</td>
<td>0.12</td>
<td>0.42**</td>
<td>0.07</td>
<td>-0.16</td>
<td>1.00</td>
</tr>
<tr>
<td>Mean ± SD</td>
<td>3.05 ±</td>
<td>3.06 ±</td>
<td>2.87 ±</td>
<td>2.91 ±</td>
<td>2.99 ±</td>
<td>2.78 ±</td>
<td>2.62 ±</td>
<td>2.96 ±</td>
</tr>
</tbody>
</table>

**p<0.01   *p<0.05
Subscales labeled as follows: A for attitude, K for knowledge, KE for knowledge efficacy, and TE for teaching efficacy, and OE for outcome expectancy.
The two points to highlight in Table 5-4 are the significant correlation between teachers’ attitudes and its relationship with their self-efficacy in both inquiry and language, as well as teachers’ attitude and self-efficacy in the language-related variables. Overall, there was a fairly strong correlation between teachers’ attitudes and affective behavior (ATCALD-A) toward CLD students and their level of inquiry knowledge (ITENKS-KE) and teaching self-efficacy (ITENKS-TE) in inquiry-based instruction for CLD students. However, there was a weak correlation in teachers’ attitudes (ATCALD-A) and their language knowledge (LTENKS-KE) and teaching self-efficacy (LTENKS-TE) in language-based instruction for CLD students. This suggests even if teachers have positive attitudes toward CLD students and the diversity in their classroom, their knowledge and teaching efficacies are vastly different.

Teachers seem to be confident in their knowledge about inquiry and how to teach using inquiry-based teaching strategies to students, especially CLD students, however teachers’ self-efficacy on language teaching is lower. The correlation between teachers’ knowledge and practices on teaching CLD students using language-based strategies was found to be insignificant. This shows that teachers believe they have the knowledge to teach CLD students using language-learning strategies, yet their teaching practices are limited. Teachers are not well equipped to execute the beliefs they have in teaching CLD students, mainly due to their limited experiences with CLD students, as well as a lack in teachers training preparing them to instruction a diverse type of student learners.

Furthermore, Figure 5-1 illustrates a visual on the relationship between the eight variables that have medium to high strength in their correlations.
There are three findings to emphasize based on teachers’ attitudes, teachers’ self-efficacy on knowing how to teach and executing those teachings, and teachers’ outcome expectancy of CLD students. First, teachers’ affective attitudes (ATCALD-A) have significant correlations with mostly all variables (see Table 5-4), which suggests that having a positive attitude toward CLD students and the growing diversity in the classroom has strong influence on their, self-efficacy on inquiry and language teaching, and expectations of CLD students’ academic achievement in science.

Second, similar to Table 5-4, there is a strong correlation between teachers’ knowledge of inquiry teaching (ITENKS-KE) and knowing how to teach inquiry-based lessons (ITENKS-TE) to CLD students. However, teachers’ knowledge of and knowing how to teach inquiry-based lessons are not connected to the outcome expectancy variable (ITENKS-OE), which
suggested that teachers know how to structure their inquiry lessons and they’re confident in teaching CLD students, yet they lack in actual implementation of what they know. In other words, teachers find it difficult to implement such teaching practices in their own classrooms. Third, the outcome expectancy variable for both ITENKS and LTENKS had significant correlations to teacher’s attitude (ATCALD-A). Although this study did not look at teachers’ outcome expectancy, it is a part of Albert Bandura’s (1977) theory measuring what teachers “expect” will happen as a result of their teaching efforts. According to Park and colleagues (2016), found that outcome expectancy for language teaching is a particularly important factor if teachers intend to use inquiry and language teaching in science classrooms with CLD students.

5.3 Demographic and Personal Experience Variables Analysis

In this final section, MANOVA analysis was conducted to determine which demographic and personal experience variables from the questionnaire significantly influenced each of the subscale variables. Eight demographic variables (ATCALD - knowledge and affective attitude; ITENKS - knowledge efficacy, teaching efficacy, and outcome efficacy; and LTENKS - knowledge efficacy, teaching efficacy, and outcome efficacy) were grouped into three categories: general information, experience with CLD students, and experiences as a learner.

The general information category has two attributes, of which only teachers’ grade level taught was taken into consideration. The category for experience with CLD students considers whether CLD students are enrolled in teachers’ schools or whether teachers have had experience teaching them
in their own classrooms. The experience as a learner category includes information about teachers’ personal experiences learning a second language or whether they have participated in a teacher education and/or professional development program focused on how to effectively teach CLD students. The variable analysis revealed important factors that could have an impact on teachers’ attitudes toward CLD students and on their self-efficacy for using inquiry-based teaching strategies with CLD students. These variables were identified from the literature on teaching self-efficacy and science teaching self-efficacy that showed internal factors (i.e., teacher characteristics, attitudes, and interests), external factors (i.e., student variables and school environment) (Riggs, 1988; Ashton & Webb, 1986), antecedent experiences related to inquiry teaching and teacher preparation (Ramey-Gassert & Shroyer, 1992), and vicarious experiences (i.e. with diversity) in and out of school. These can be important factors that influence teachers’ teaching self-efficacy (Bandura, 1997; Ramey-Gassert, Shroyer, & Staver, 1996).

**Teachers’ Grade Level**

According to the variable analysis (refer to Table 5-4), primary grade teachers were generally found to have positive attitudes toward CLD students and, interestingly, they were also more positive about their knowledge and teaching self-efficacy across all subscales compared to secondary school teachers.
### Table 5-5

*Teachers’ teaching grade demographic variable across all subscales.*

<table>
<thead>
<tr>
<th>Variables</th>
<th>ATCALD</th>
<th>ITENKS</th>
<th>LTENKS</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Knowledge</td>
<td>Attitude (Affective)</td>
<td>Knowledge Efficacy</td>
</tr>
<tr>
<td>Primary school (n=73)</td>
<td>50.8±9.8</td>
<td>52.4±10.1</td>
<td>51.5±10.5</td>
</tr>
<tr>
<td>Secondary school (n=70)</td>
<td>49.2±10.2</td>
<td>47.6±9.4</td>
<td>48.6±9.2</td>
</tr>
<tr>
<td>F</td>
<td>0.56</td>
<td>6.77*</td>
<td>3.27</td>
</tr>
<tr>
<td>Eta²</td>
<td>0.00</td>
<td>0.05</td>
<td>0.02</td>
</tr>
</tbody>
</table>

*This table shows the influence general variables, such as teachers’ teaching grade, has across the ATCALD, ITENKS and LTENKS subscales (n=143). Key: K – Knowledge; A- Attitude; KE - Knowledge Efficacy; TE - Teaching Efficacy; OE - Outcome Efficacy. *p<0.05
Nonetheless, only three subscale variables were significant: ATCALD attitude (affective) of primary school (52.4±10.1) and secondary school (47.6±9.4; $F=8.67^*$, $p<0.05$, $\eta^2=0.06$) teachers; ITENKS teaching efficacy for primary school (52.0±10.1) and secondary school (47.9±9.6, $F=6.23^*$, $p<0.05$, $\eta^2=0.04$) teachers; and LTENKS teaching efficacy for primary school (51.7±12.6) and secondary school (48.3±5.9, $F=4.09^*$, $p<0.05$, $\eta^2=0.03$) teachers. This finding is not surprising when considering primary school teachers are generally trained using multidisciplinary approaches that support them to engage in cross-curricular teaching by integrating various subjects in their lessons. For example, teachers may integrate mathematics and science instruction or Korean language (국어) and history, even science and society (사회). In fact, there has been a strong push in the Korean science curriculum in the last ten years to emphasize socio-scientific issues (SSI) and Science, Technology, Society and Environment (STSE) (Choi, et al, 2011; Lee, et al, 2013), which emphasizes cross-curricular approaches to instruction. Evidence of this trend is visible in the curriculum standards, textbooks, and activity guides for science teachers (Song, 2006; Ministry of Education and Human Resources, 2007; Kim, Yoon, Ji, & Song, 2012). Due to the nature of the Korean secondary schools’ focus on college entrance exam preparations (College Scholastic Ability Test - CSAT), fewer opportunities may exist for secondary school teachers to design lessons that incorporate content from other disciplines or even to utilize student-centered inquiry teaching approaches in any classroom (Kang, Han, Jeong, & Noh, 2001; Park, Chu, & Martin, 2015) (refer to chapter 3). Other research has shown secondary school teachers working with language learner students
reporting lower levels of perceived teaching efficacy than primary school teachers (Fraser, 2014). In Korea, secondary school teachers have fewer experiences in both inquiry teaching and teaching CLD students since majority of Korea’s CLD student population are primary school age children and younger (refer to Chapter 2). Thus, it’s anticipated that secondary level teachers would require more support to help prepare them to effectively teach CLD students.

Experiences with CLD Students

Two variables measuring teachers’ experiences with CLD students, whether the teacher had personal experience of having CLD students enrolled in their school or had experience actually teaching CLD students in their own classroom, were analyzed. Table 5-5 shows the influence general variables have across the three scales, for example teachers’ personal experiences with CLD students, who are either enrolled in their school or their classroom, and teachers’ attitudes.
Table 5-6. Teachers’ personal experience with CLD students.

<table>
<thead>
<tr>
<th>Variables</th>
<th>Mean ± Standard Deviation</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>ATCALD</td>
</tr>
<tr>
<td></td>
<td>Knowledge</td>
</tr>
<tr>
<td>CLD students in school</td>
<td></td>
</tr>
<tr>
<td>Yes (n=107)</td>
<td>51.3± 9.9</td>
</tr>
<tr>
<td>No (n=37)</td>
<td>46.3± 9.6</td>
</tr>
<tr>
<td>F</td>
<td>7.16*</td>
</tr>
<tr>
<td>Eta²</td>
<td>0.05</td>
</tr>
<tr>
<td>Experience of teaching CLD students</td>
<td></td>
</tr>
<tr>
<td>Yes (n=99)</td>
<td>51.1± 9.3</td>
</tr>
<tr>
<td>No (n=45)</td>
<td>47.5± 10.9</td>
</tr>
<tr>
<td>F</td>
<td>4.25*</td>
</tr>
<tr>
<td>Eta²</td>
<td>0.03</td>
</tr>
</tbody>
</table>

* Key: K – Knowledge; A- Attitude; KE - Knowledge Efficacy; TE - Teaching Efficacy; OE - Outcome Efficacy.
*p<0.05
The teachers were asked to affirm their responses to each item-statement with a “yes” or “no”. The answers to these questions were used to investigate how teachers’ experiences with CLD students influenced their attitudes towards CLD students and families. In addition, teachers’ experiences and how it impacted their self-efficacy related to the knowledge about language theory, language teaching strategies, and outcome expectancy for language-based education for CLD students was analyzed.

Teachers who reported having more personal experiences with CLD students, either in their school or in their classroom, scored higher in both ATCALD knowledge and attitude (affective) toward CLD students and their families (CLD students enrolled - Yes: 51.3 ±9.9, No: 46.3 ±9.6; F=7.16, p<0.05, eta$^2$=0.05; experience teaching CLD students – Yes: 51.1 ±9.3, No: 47.5 ±10.9; F=4.25, p<0.05, eta$^2$=0.03) and also had higher self-efficacy for most of the ITENKS and LTENKS variables. In contrast, the effect of teachers’ personal experiences with CLD students was significant only for teachers’ knowledge about cultural and linguistic diversity (ATCALD–K) and for teachers’ outcome expectancy for CLD students learning when using language education strategies (CLD students enrolled LTENKS-OE variable – Yes: 51.1 ±9.3, No: 46.9 ±11.2, F=4.98, p<0.05, eta$^2$=0.03; experience teaching CLD students – Yes: 51.1 ±10.3, No: 47.6 ±9.0, F=3.9, P<0.05, eta$^2$=0.03). These findings suggest that teachers who have experiences with CLD students have more knowledge about the changes occurring in Korean society and are more likely to believe that effective teaching can overcome obstacles, such as limited language proficiency, to help CLD students learn. This is an important finding that confirms other research (Echevarria, Vogt, & Short, 2009; Youngs & Youngs, 2001) showing that teachers who believe CLD students are capable
of learning when provided language support (e.g. scaffolding, extended wait time, or modification of instructional materials) are more likely to try new methods to support CLD students to learn. This helps to expand previously reported research showing that teachers may be more willing to implement innovative strategies and curriculum ideas as a result of higher self-teaching efficacy.

**Experiences as Learner**

For teachers’ experiences as a learner, three variables were examined: whether teachers’ had experience taking multicultural education courses or enrolled in a teacher training-type program, studying in a foreign country, and/or experiences learning a foreign language. Table 5-7 shows the influence general variables (such as teachers’ experience with coursework or training programs to teach CLD students effectively, their experiences living or traveling abroad, and/or teachers learning a foreign language) have across the scales (n=143). The teachers were asked to affirm with a “yes” or “no” to these item-statements. Responses were used to investigate how teachers’ experiences as a learner influenced their attitudes toward CLD students and families, and whether their experiences impacted their self-efficacy related to the knowledge about inquiry and language theory, inquiry and language-based teaching strategies, and outcome expectancy for inquiry and language teaching education for CLD students.
Table 5-7
Teachers’ personal experience as a learner.

<table>
<thead>
<tr>
<th>Variables</th>
<th>ATCALD</th>
<th>ITENK</th>
<th>LTENK</th>
</tr>
</thead>
<tbody>
<tr>
<td>Coursework or PD focused on multicultural education for CLD students</td>
<td>Yes (n=14)</td>
<td>50.7±10.4</td>
<td>50.8±9.6</td>
</tr>
<tr>
<td></td>
<td>No (n=130)</td>
<td>49.9±10.0</td>
<td>49.9±10.1</td>
</tr>
<tr>
<td></td>
<td>F</td>
<td>0.09</td>
<td>0.10</td>
</tr>
<tr>
<td></td>
<td>Eta²</td>
<td>0.01</td>
<td>0.01</td>
</tr>
<tr>
<td>Experience living or traveling in a foreign country</td>
<td>Yes (n=15)</td>
<td>57.2±11.2</td>
<td>51.7±9.3</td>
</tr>
<tr>
<td></td>
<td>No (n=129)</td>
<td>49.2±9.5</td>
<td>49.8±10.1</td>
</tr>
<tr>
<td></td>
<td>F</td>
<td>9.25*</td>
<td>0.47</td>
</tr>
<tr>
<td></td>
<td>Eta²</td>
<td>0.06</td>
<td>0.00</td>
</tr>
<tr>
<td>Foreign language fluency</td>
<td>Yes (n=36)</td>
<td>53.8±9.6</td>
<td>52.4±11.8</td>
</tr>
<tr>
<td></td>
<td>No (n=107)</td>
<td>48.6±2.9</td>
<td>49.2±9.2</td>
</tr>
<tr>
<td></td>
<td>F</td>
<td>7.84*</td>
<td>2.70</td>
</tr>
<tr>
<td></td>
<td>Eta²</td>
<td>0.05</td>
<td>0.19</td>
</tr>
</tbody>
</table>

* Key: K – Knowledge; A- Attitude; KE - Knowledge Efficacy; TE - Teaching Efficacy; OE - Outcome Efficacy.

*p<0.05
Teachers who had enrolled in some type of educational program or received professional development on how to effectively teach CLD students had the most significant impact on their self-efficacy regarding knowledge in how to teach using inquiry instructional strategies (ITENKS-TE). Those teachers also reported a significant increase in their self-efficacy regarding their inquiry-based instructional knowledge on how to teach CLD students (ITENKS-KE) \( (Yes: 59.0 \pm 9.0, No: 49.0 \pm 9.6; F=13.8, p<0.05, \eta^2=0.09) \). Teachers who reported being fluent in a language other than Korean had more knowledge about cultural and linguistic diversity (ATCALD-K) and had higher self-efficacy for all ITENKS and LTENKS variables. Conversely, the effect of teachers’ language learning experiences was significant only for teachers with increased knowledge about cultural and linguistic diversity (ATCALD-K) \( (Yes: 53.8 \pm 9.6, No: 48.6 \pm 9.8; F=7.84, p<0.05, \eta^2=0.05) \). These teachers are anticipated to have more appreciation for language education theory and recognize the challenges learners face when acquiring a second language. In addition, these teachers have higher outcome expectancies for CLD students, but no significant impact was found. Finally, teachers who had experience living abroad were more knowledgeable about cultural and linguistic diversity (ATCALD-K) \( (Yes: 57.2 \pm 11.2, No: 49.2 \pm 9.5; F=9.25, p<0.05, \eta^2=0.06) \) and showed increased outcome expectancy for CLD students’ learning when using inquiry teaching strategies (ITENK-OE) \( (Yes: 56.2 \pm 12.5, No: 49.2 \pm 9.5; F=6.7, p<0.05, \eta^2=0.05) \). Overall, teachers were less aware of the students’ language learning development and theory about language learning (LTENK-KE) \( (Yes: 43.2 \pm 27.6, No: 50.0 \pm 10.4, F=8.15, p<0.01, \eta^2=0.05) \).

These findings indicate that the knowledge variable for ATCALD and teaching self-efficacy variables for ITENKS and LTENKS are
positively influenced by teachers’ experiences as learners. On the other hand, they do not necessarily impact teachers’ outcome expectancy for CLD students’ learning when using inquiry (ITENK-OE) and language-based teaching strategies (LTENK-OE) and theories (LTENKS-KE). Thus, teacher preparation programs and professional development should be carefully designed in order to introduce teachers to research and practical examples that promote the use of a student-centered inquiry teaching approach while also providing necessary language support that expands learning opportunities for CLD student who vary in language proficiencies. The data suggests that developing teacher education programs that expose teachers to more language learning opportunities or to teaching experiences in other cultural contexts could improve their attitudes toward diversity while also improving their knowledge and self-efficacy, especially their teaching self-efficacy, on how to improve the challenges CLD students face when engaging in student-centered inquiry activities with limited language proficiency.
CHAPTER 6. QUALITATIVE DATA SET FINDINGS: 
TEACHER INTERVIEWS

This chapter shares findings from teacher interviews that were conducted with 16 schoolteachers, varying in their teaching grade levels (refer to Chapter 4). Teacher interview data was collected and analyzed to provide additional and more in-depth information that quantitative method approaches cannot access. The findings from this data set are seen as salient points for further investigation and will be treated as valuable data for raising new questions for the future (refer to Chapter 8). Out of the four research questions that were posed at the beginning of the study, the qualitative data set attempts to answer only three:

1) What are Korean teachers’ attitudes toward CLD students?
2) What are Korean teachers’ self-efficacy about teaching CLD students using inquiry and language-based instructional strategies?
3) What factors (i.e. language learning experiences or experiences of interactions with people who are CLD) influence Korean teachers’ attitudes toward CLD students and their self-efficacy on teaching CLD students using inquiry and language-based instructional strategies?

The teachers that were interviewed ranged in their grade levels, content areas, and years of teaching experiences (refer to Chapter 4, Table 4-7). The data set consisted of audio and video recorded data that were transcribed, translated, and coded accordingly. Three waves of coding were conducted, extracting both anticipated and emergent findings via descriptive, analytic, and interpretive analyses (refer to Chapter 4).

The following sections include more thorough information in the form of teacher participant statements that “humanize” data findings and
claims, shedding some light on another dimension of this growing concern occurring in the diversifying Korean classrooms. The qualitative data set focused on conveying teachers’ attitudes toward CLD students, their understanding of the CLD population, and their self-efficacy in teaching CLD students through inquiry and language-based strategies. In addition, the findings help start the discussion of various relationships that arise, which can ultimately aids in the development and implementation of teacher training or professional development programs focusing on CLD students’ achievement, both academically and linguistically.

6.1 Korean Primary and Secondary School Teachers

Although the qualitative data set is not necessarily structured based on the way transcripts were coded and analyzed - using the three types of analyses (refer to Chapter 4) – the first group of findings were extracted from the interviews in order to contextualize the study; in other words, “who are the teachers” and “what is going on” in the classrooms. Each transcribed video data underwent descriptive coding to retrieve generalized information, taking into consideration teachers’ attitude self-efficacy, during a 60 to 90-minute interview. Table 6-1 shows eight areas of interest that were extracted from each of the 16 teacher interview responses and compiled together. This table provides a descriptive idea of who are the teachers, their experiences with CLD students, and a general context of what is occurring, or not occurring, in the classrooms where CLD students are enrolled.
Table 6-1
Eight categories of interest collected and gathered from teacher interviews.

<table>
<thead>
<tr>
<th>Teachers</th>
<th>Experience teaching CLD</th>
<th>Positive attitude toward CLD</th>
<th>Helpless/worried about CLD</th>
<th>Language challenge big concern</th>
<th>Modifies for CLD</th>
<th>TEP/PD experience</th>
<th>More TEP/PD desired</th>
<th>Contact with CLD parents</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Sunny</td>
<td>O</td>
<td>O</td>
<td>O</td>
<td>O</td>
<td>O</td>
<td>O</td>
<td>O</td>
<td>O^</td>
</tr>
<tr>
<td>2. Hyesook</td>
<td>O</td>
<td>O</td>
<td>O</td>
<td>O</td>
<td>O</td>
<td>O</td>
<td>O</td>
<td>O</td>
</tr>
<tr>
<td>3. Sang</td>
<td>O</td>
<td>O</td>
<td>O</td>
<td>O</td>
<td>O</td>
<td>O</td>
<td>O^</td>
<td>O</td>
</tr>
<tr>
<td>4. Malee</td>
<td>O</td>
<td>O</td>
<td>O</td>
<td>O</td>
<td>O</td>
<td>O</td>
<td>O</td>
<td>O</td>
</tr>
<tr>
<td>5. Yang</td>
<td>O</td>
<td>O</td>
<td>O</td>
<td>O</td>
<td>O</td>
<td>O</td>
<td>O</td>
<td>O</td>
</tr>
<tr>
<td>6. Saeun</td>
<td>O</td>
<td>O</td>
<td>O</td>
<td>O</td>
<td>O</td>
<td>O</td>
<td>O</td>
<td>O</td>
</tr>
<tr>
<td>7. Haesun</td>
<td>O</td>
<td>O</td>
<td>O</td>
<td>O</td>
<td>O</td>
<td>O</td>
<td>O</td>
<td>O</td>
</tr>
<tr>
<td>8. Mijung</td>
<td>O</td>
<td>O</td>
<td>O</td>
<td>O</td>
<td>O</td>
<td>O</td>
<td>O</td>
<td>O</td>
</tr>
<tr>
<td>9. Kyeong</td>
<td>O</td>
<td>O</td>
<td>O</td>
<td>O</td>
<td>O</td>
<td>O</td>
<td>O</td>
<td>O</td>
</tr>
<tr>
<td>10. Misun</td>
<td>O</td>
<td>O</td>
<td>O</td>
<td>O</td>
<td>O</td>
<td>O</td>
<td>O</td>
<td>O</td>
</tr>
<tr>
<td>11. Jeong</td>
<td>O</td>
<td>O</td>
<td>O</td>
<td>O</td>
<td>O</td>
<td>O</td>
<td>O</td>
<td>O</td>
</tr>
<tr>
<td>12. Eun</td>
<td>O</td>
<td>O</td>
<td>O</td>
<td>O</td>
<td>O</td>
<td>O</td>
<td>O</td>
<td>O</td>
</tr>
<tr>
<td>13. Ju</td>
<td>O</td>
<td>O</td>
<td>O</td>
<td>O</td>
<td>O</td>
<td>O</td>
<td>O</td>
<td>O</td>
</tr>
<tr>
<td>14. Yejin</td>
<td>O</td>
<td>O</td>
<td>O</td>
<td>O</td>
<td>O</td>
<td>O</td>
<td>O</td>
<td>O</td>
</tr>
<tr>
<td>15. Bumsu</td>
<td>O</td>
<td>O</td>
<td>O</td>
<td>O</td>
<td>O</td>
<td>O</td>
<td>O</td>
<td>O</td>
</tr>
<tr>
<td>16. Donghee</td>
<td>O</td>
<td>O</td>
<td>O</td>
<td>O</td>
<td>O</td>
<td>O</td>
<td>O</td>
<td>O</td>
</tr>
</tbody>
</table>

*Key: TEP/PD – teacher education training/professional development; ^ - teacher has good relationship with parents; ^ - if responsibilities of teachers lessen.
Areas of interest were extracted from each interview transcript as response quotes providing information describing teachers’ attitudes toward CLD students - what they know about the CLD population, in both their home and school situation - based on either their past or current teaching experiences.

The coding process, especially the descriptive analysis, attempts to understand the general context of teachers shedding light on challenges they believe are crucial to take into consideration when teaching CLD students. Examining the small number of teachers who received some type of teacher training and/or desires to receive training, in knowing how to better instruct CLD students in inquiry and language development skills, were areas of interest that this study sought to highlight for more future implications. In efforts to assemble the information in Table 6-1, the qualitative data was quantified by calculating the eight categories of interest into percentages for easier access. All interviews conducted were based on interview questions (refer to Appendix I), while some were topics that arose due to the nature of the semi-structured interview approach.

According to the interview question asking about teachers’ experiences directly teaching CLD students, 12 teachers (75%) had experience directly teaching CLD students (refer to Table 6-1). Three interview excerpts showed an interesting finding, in that teachers have an unclear understanding of who are considered CLD students. Teachers Sunny, Saeun, and Minjung expressed their understanding of who they thought were considered CLD, as they recalled their CLD students enrolled in their class.
<table>
<thead>
<tr>
<th>Speaker</th>
<th>Korean transcript</th>
<th>Rough English translation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sunny:</td>
<td>다문화를 직접, 다문화 학생을 직접 가르친 적이 한 번 있는데, 어, 우리가 혼히 알고 있는 그런 다문화 학생이라고 하기, 그러니까 외모는 한국 학생이고, 한국 학생인데, 아버지가 유학을 가시느라고 초등학교 1 학년이 되기 전에 미국을 간 거예요. 그래서, 그런 학생을 다문화 학생이라고 생각한다면 그 학생을 가르친 경험이 있고, 혼히 좀게 말하는 다른 나라의 국적이나, 다른 피부색을 가진 아이를 가르친 적이 있나고 하면 그 학생은 그런 학생을 가르친 적은 없어요.</td>
<td>I had experience teaching multicultural students once students once. He is not the typical multicultural student that we usually consider. Physically he looks Korean and he is Korean [citizenship and nationality]. Because his was father was going abroad, before he [CLD student] was in first grade they went to the United States. Yeah, if you think of this type of student being multicultural, I have had experience teaching, but I have never taught those type of students whose nationality is different or color of their skin is different</td>
</tr>
<tr>
<td>Saeun:</td>
<td>네, 있습니다. 사실, 저는 다문화 학생들의 경우에, 어, 한국어가 많이 부족하다거나, 한국적 배경이 많이 익숙하지 않은 애들을 접해 본 적은 사실 없어요. 그러니까, 이미 한국 문화에 익숙해져 있고, 언어적인 문제도 거의 없는 학생들로.</td>
<td>Yes, it is. Honestly, in terms of multicultural (CLD) students, I’ve never had experiences where they didn’t know Korean well or was unfamiliar with Korea’s [cultural] background. So, I’ve had students who were already familiar with Korean culture and there were no language-based problems</td>
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<td>Minjung:</td>
<td>네. 올해 이제 처음 그, 저희 반에 다문화 학생이 두 명 있어서 올해 처음 가르쳐 봤어요 [...] 어, 한 명은 인제 그, 중국 화교... 한 명은 엄마 쪽이 필리핀인 아이하고 그렇게 두 명이요.</td>
<td>Yes. This is the first. There are two multicultural [CLD] students this year that I’m teaching for the first time. One student is [overseas] Han Chinese and the other student the mom’s side of the family is Filipino.</td>
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Many of the comments regarding CLD students were associated to their physical attributes, such as facial features and color of their skin, or biracial
students; transnational students, on the other hand, were not considered CLD since they just “looked Korean”.

Regardless of teachers’ having personal teaching experiences with CLD students or being able to identify them in the class, 13 out of 16 teachers (81.3%) expressed an overall positive attitude and were hopeful in CLD students’ academic success despite the challenges they face. Among the extracted statements from three schoolteachers, the definition and belief in having a “positive attitude” toward CLD students differed; some teachers were more positive in students’ academic achievements, while others were more focused on CLD students “just being socially accepted”.
Um, that student was quite active. The student’s sociability level is quite high and because the student likes to play he/she adapts well. The student works hard to be part of the community with other students.

Yes, but there were not many obvious differences between CLD students [and native Korean students] if there are differences, honestly, I wasn’t able to notice them. Expectation-wise, like I mentioned before because they were students that didn’t have much language barriers in language they were the same as other [native Korean] students

So, even though they are a minority, a small in number, naturally getting along with one another and slowly learning from one another I believe is a good thing.

When teachers were asked about what the greatest challenge was that limits CLD students academically and socially, 14 out of 16 of the teachers (87.5%) voiced that they believed CLD students’ limited Korean language proficiency was the greatest challenge. There were many examples where teachers clearly voiced their concerns about this language issue. Teachers Haesun, Mijung, and Eun mentioned a resounding agreement that CLD students’ communication and the lack of understanding the Korean

* Rather than referring individuals as “he” or “she” they use terminology describing the individual’s position in the given circumstance, in this case “the student” or “students”.

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language was the greatest challenge for both CLD students and teachers.

In contrast, 3 of the 14 teachers (21.4%), who believed that although being limited in the Korean language does hinder students’ level of achievement, CLD students are still capable of learning science despite their Korean language fluency, emphasizing thus the importance in inquiry-based science being taught in the classroom. When the question regarding science learning for CLD students was rephrased – through the use of different wording, descriptions, and nuances - 5 out of 16 teachers (31.3%) mentioned that language was not a huge interference. A few teachers stated that CLD

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<tr>
<td><strong>Excerpt 1</strong></td>
<td>Haesun: 이제 그랬을 때, 좀 이 아이들이 조금, 아이들과 조금 섞이는 데에 좀 어려운 점이 있고, 좀 의사소통 하는 데에 있어 조금 어려운 점이 좀 있다 보니깐, 애들이 학급 구성원으로서 그렇게 활발하지는 않은 것 같습니다</td>
<td>When the mixing [of native Korean and CLD students] happens there are challenging factors. And with the addition of slight communication challenges…the [CLD] students, as members of the class are not actively participating in class</td>
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<td><strong>Excerpt 2</strong></td>
<td>Mijung: 지금 이, 그 아이, 필리핀인, 염마가 필리핀인 이, 이 아이의 경우는 일단은, 그녀가 의사소통이 잘 본인이 안되니까, 본인이 많이 위축되드라구요, 아이가 많이 위축되구, 이, 그래서 언제 아이가 소극적이고, 원가 활동을 할 때 참여를 못하고, 그러는 부분이 많으니까, 이제 그런 부분에 대해서 한 번씩은 더 신경을 쓰게 되더라구요.</td>
<td>In the case of the Filipino student, with the Filipino mom, he can’t communicate very well in Korean. He gets very intimidated. So he’s very introverted and when there are activities he doesn’t participate. There are many instances like this and so I end up thinking about and caring [for him] here and there.</td>
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<td><strong>Excerpt 3</strong></td>
<td>Eun: 교사는 CLD 학생이 정확한 이해를 하였는지에 대한 확인이 필요할 것 같아요.</td>
<td>Teachers are not very clear in understanding what CLD is and needs some clarification [regarding the definition of the word]</td>
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students are not completely separate from native Korean students since the
learning of science and how to conduct inquiry is overall challenging and
needs each student’s efforts.

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</table>
| **Excerpt 1**  
Sunny: | 내가 한국어를 못하기 때문에 내가 공부도 못한다고 생각하면 안 될 것 같아요. 그런 걸 안 그렇게 할라고 되게 노력할 것 같아요. 그러니깐 제가 한국어를 못하는 거지 과학을 못하는 건 아니잖아요. | Students should not think they can’t do something because they don’t know Korean. So, I feel like they would try hard not to feel this way. So the situation is that they multicultural student can speak the Korean language, not that he can’t do science |
| **Excerpt 2**  
Interviewer 1: | 혹시 이런 애들이 과학이나 수학을 배울 때, 그, 어렵다고 생각을 하십니까? 일반 학생들하고 비교해서? | When teaching these type of students [CLD] did you encounter any difficulties or challenges? When comparing with “regular” [native Korean] students? |
| Saeun: | 언어적인 문제가 없던, 제가 만난 학생들은 없다고 생각합니다. 똑같다고 생각합니다. | From what I remember, there were no language related problems from the students that I met. They were all the same. |
| **Excerpt 3**  
Kyeong: | 경험상, 오히려 탑구수업이 한국어가 부족한 학생들에게 더욱 효과적입니다. | In my experience, inquiry-based lessons were more effective for students especially if they are limited in Korean proficiency |

The positive attitudes that teachers Sunny, Saeun, and Kyeong communicated emphasize the importance of inquiry-based practices to be utilized more in the classrooms. According to Lee & Fradd (1998), learners generally participating in inquiry-based science are engaged in authentic communicative interactions (e.g. describing, hypothesizing, summarizing, explaining, etc.), as well as having opportunities for CLD students to
communicate their understanding in a variety of ways (e.g. orally, drawing, creating tables and graphs, etc.).

In continuation with the 12 teachers who had some type of experience with CLD students enrolled in their classes, only 6 (50%) shared that they provided some type of modification (e.g. speaking slower, providing translations, repeating vocabulary words, etc.) for their CLD students.

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<td>Excerpt 1</td>
<td>Sang:</td>
<td>When I taught, when I explain it to you now you may not understand, but when there were some vocabulary words or areas like that I thought about it some, like I was considering [the CLD student] so made sure to focus on that.</td>
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<td>그 아이, 언제가르칠 때는 언제 지급, 설명하는 데에 이해를 못할 수 있는, 그런 용어라든지 고려 부분에 대해서 좀 생각을 뒤서, 배려한다면든지, 그런 것에 초점을 냈습니다.</td>
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<tr>
<td>Excerpt 2</td>
<td>Haesun:</td>
<td>Intelligence level is on the lower side; there are instances where she can’t understand a conversation like this. So I have to explain slowly and carefully like this then…</td>
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<td></td>
<td>지능이 낮은 편이어서 조금 이렇게 대화하는 데에 말씀 잘 이해를 못하는 경우도 더러 있더라도요. 그래서 이렇게 차분하게 설명해주면…</td>
<td></td>
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<tr>
<td>Excerpt 3</td>
<td>Mijung:</td>
<td>When I teach class, the kid doesn’t understand what I’m saying well, you know? Since he/she doesn’t understand me well, when I ask questions or something, I have to explain more by being repetitive, mentioning things multiple times.</td>
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<td>수업을 할 때 보면, 그 때도 역시 그, 그러니까, 그러니까 내 얘기가 아이가 잘 못 알아들까요? 잘 못 알아들으니까 뭐가 질문을 하거나 할 때도 이렇게 설명을 좀 반복적으로 좀 여러 번을 해줘야 되고 그러니까 그런 부분에 대해서 신경을 좀 더 많이 써야 했었어요.</td>
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Based on the extent of how teachers Sang, Haesun, and Mijung describe their way of making modifications/accommodations for their CLD students, it’s evident that there is a lack in understanding effective ways to support
CLD students in and outside of class, as well as utilizing a variety of hands-on resources, not just auditory modifications. Similar to Lucas and Villegas (2008) study conducted in the United States where the number of CLD students well exceeds Korea, yet is still continuing to grow, many mainstream teachers are not sufficiently trained through education programs, experienced in Second Language Acquisition (SLA) and with CLD students, and prepared to provide the type of support and assistance CLD students need.

In connection, among all 16 teachers only 6 teachers (37.5%), regardless if they had actual experience with CLD students in their classrooms or not, received/enrolled in some type of teacher education program (TEP) or professional development (PD) training during the course of their teacher certification process or teaching career. According to the teachers’ descriptions, TEP/PD trainings ranged from online-based tutorials to lecture-based seminars that mandated a certain number of hours to be completed (refer to Chapter 2 for more teacher education and training requirement references). When asked about how the government can assist or support teachers in learning how to better teach CLD students, 7 out of 16 teachers (43.8%) shared their interest in receiving teacher training that is less abstract and more concrete in how CLD students’ learn and teaching effective instructional strategies teachers can implement in the classrooms.
Well, probably for the CLD students our language and culture is probably a little, a lot strange. To them providing those supplementary guidance, for example some language-related type thing… comprehensive materials type [that students can study from]. Things similar to this if they were supported a little more I think maybe it will help toward [CLD students’] learning.

A lot of teachers don’t really know how to teach multicultural [CLD] students, you know? Since only one teacher can’t teach inquiry science efficiently, so team practicing is very important for inquiry, then language learning is basic and necessary for multicultural [CLD] students

Well…although face-to-face lectures are very effective, there are a diverse number of situations so T wonders about the practice-based trainings should maybe get started [can be beneficial

Teachers Haesook, Jeong, and Mijung seemingly followed a consensus that there needs to be more support in language-based practices, supported by the government, and not just talking or discussing about it with other teachers, but actively involving all teachers in some type of participatory training sessions.

Being in contact with or requesting contact with CLD parents for semester conferences or other school-related activities can be a difficult task. One main reason has been the limitation in the level of communication
between the teacher and CLD parents, but another hindrance is the lack of time CLD parents can spare. Since most CLD families are immigrant families who came to Korea through job opportunities, many of them work during their child’s school hours.

However, interestingly, among the 12 teachers that had experience teaching CLD students, 11 of them (91.67%) had at least one encounter in a semester with CLD parents. Although contacts with CLD parents were minimal, teachers either made phone calls home or met with one or both parents one-on-one during the semester’s conference and/or open class*. According to teachers Sang, Yang, and Haesun, the availability and/or willingness of parents, expectations parents have of their children, and the way in which brief communications between parent(s) and teacher is described varies greatly among CLD families.

* Each teacher conducts an “open class” where parents are welcomed to come watch what a normal school day and class period looks like for their children. This is a mandated practice that all teachers must participate in.
Excerpt 1

Sang:

Yes, I’ve met the dad [transnational CLD student] once…his expectations were quite high [for his child]. There were times like this…In a multicultural school participation is very rare, I want to say because North Korean students or students that are not in good situations now [attend the school and are kept confidential].

Excerpt 2

Yang:

Yes, the mother was so busy because she has to care for her family she has to work. Even if I told her to come [visit for a conference] she continued to mention that she didn’t have time.

Excerpt 3

Haesun:

With the male students’ parents, directly calling them…[didn’t come in contact with them]. Usually the mom avoids phone calls from the school, but during [CLD student] grade 1 to see the teacher have good conversation [with the mom] seems like the mom is good [at speaking Korean]. Since they’re generationally Korean-Chinese…since the mother is Korean-Chinese language-wise she is the same as me so she’s very good [speaking Korean]. In the female student’s mother’s case, she is Vietnamese so her communication didn’t seem to work out well. Even if she says something, I couldn’t understand her.

The diversity in teachers’ responses to their experience with CLD parents highlights the fact that no one type of CLD student and their families are the same. This in turn stresses the idea that not all CLD students and families
learn the same, understand information the same, and should be grouped to
learn in the same way. Thus, the need for well-equipped teachers in
knowing how to develop and maintain an inclusive classroom is imperative.

6.2 Teachers And CLD Students In The Classroom

Teachers’ attitudes toward CLD students, as well as their self-efficacy on
inquiry and language-based teaching practices are based on external and
internal factors, of which individual teachers decide either to accommodate –
according to systems in place (i.e. mandates from the ministry of
education or from school districts) – or to overcome (based on their already
established teaching practices). When teachers’ self-efficacy on inquiry and
language-based teaching strategies are influenced, the outcome expectancy
of CLD students is affected, as well, which is based on teachers’ efforts in
implementing new strategies in the classroom. Teachers’ attitudes and self-
efficacy can be recognized not only through their enacted practices in the
classroom, but also in conversation. Thus, the following section describes
the gathered data sets addressing more in-depth teachers’ experiences with
CLD students.

The transcript analyses revealed overall themes that addressed
teachers’ general attitude toward CLD students (including deficit
perspectives, misconceptions, and the frequency in words/phrases (that has
potential to marginalize CLD students), their experiences with CLD
students (whether it be through teaching or through other means), and their
teacher education or professional development training experiences, or lack
of, alluding to their desires for new strategic training improvements to be
made.
Teachers’ Attitudes toward CLD Students

Studies have shown that teachers’ positive attitudes have tendencies to respond positively on how to prepare, approach and engage the classroom. Teachers are more open to new ideas and more willing to practice different methods of instructional approaches in order to meet the needs of their students (Berman et al., 1977; Guskey, 1988, Stein & Wang, 1988, as cited in Tschannen-Moran & Hoy, 2001). In contrast, negative attitudes also have the same powerful impact, thus teachers who carry deficit perspectives and misconceptions about CLD students and families cause detrimental effects to CLD students’ academic performances.

As mentioned, a large number of the interviewed teachers (81.3%) expressed an overall positive attitude towards CLD students and were hopeful in their academic success despite the challenges they face. Furthermore, although 87.5% of the teachers were concerned about the limited language proficiency hindering CLD students from doing well academically, considering many of them believe that language and science learning go hand-in-hand, teachers Sunny, Malee, and Yejin begged to differ. Teacher Sunny agreed that students are capable of learning/doing science despite their limited Korean proficiency. She stated that CLD students should not think that they “can’t do something” because they do not know Korean; the actual situation is that CLD students cannot speak the Korean language, not that they cannot do science. Sunny also mentioned that the accumulated language-based frustrations could lead to CLD students disliking the subject of science overall.
Teacher Malee stated that there was not much difference between native Korean students and CLD students especially if their level of interest and efforts are present, driving them to do well in science-related content and fields.

But I can say that when I think about these kids and science-related particular textbooks related things you can see that it’s possible for those kids [CLD] to be interest in science too. With science of course you have to consider the intellectual component, but if we’re only considering kids’ ability and level of interest, those that are interested in that field [science] I don’t think there is a difference between our Korean kids [and CLD students]. If that’s the case, then they should take their interest and if it’s a hard working, kid same with our Korean kids, I think they can fulfill it [when it comes to future job opportunities in science]
Teacher Yejin emphasized that all students, not just CLD students, must learn how to solve problems, draw a conclusion, and provide evidence for their conclusions which are characteristics of inquiry-based teaching and learning. She said that this is an overall beneficial practice for all students.

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<td>Excerpt</td>
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<td>Interviewer 1:</td>
<td>그림 이런 학생들이 과학이나 수학을 배움으로써 얻을 수 있는 중요한 가치 같은 게 있다고 생각하세요?</td>
<td>Then with these [CLD] students what do you think is an important thing students will take with them in science or math classes.</td>
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<td>Yejin:</td>
<td>다문화 학생들이요? 아니면 그냥 전체?</td>
<td>The multicultural [CLD] students? Or just everyone?</td>
</tr>
<tr>
<td>Interviewer 1:</td>
<td>다문화 학생들이요.</td>
<td>The multicultural [CLD] students</td>
</tr>
<tr>
<td>Yejin:</td>
<td>그렇 일반 학생들하고도 공통점인 것 같지만 문제 해결 방법이나, 자기가 이제 결론 도출, 뭐 실험을 통해서 결론 도출을 하거나 증거를 세우거나, 이런 것들에서 도움이 되지, 따로 다문화 학생한테 도움이 되는 거는 없는 거 같은데...</td>
<td>It seems like it’s mutual among the regular students too how to solve a problem, drawing a conclusion through an experiment, finding evidence things like this it’ll be of help. I don’t think there’s a separate way of helping multicultural [CLD] students</td>
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Generally, teachers believed that language and science achievement are two things that go hand-in-hand - language informs the learning of science and the interesting topics of science inform the learning of language. However, many of the teachers still inferred their belief that without the proper Korean language proficiency it’s very difficult for CLD students to fully understand the science content-based information. Even though the
interviews showed teachers’ positive attitudes and positive outcome expectancies of CLD students, a large number of teaches held similar concerns regarding CLD students’ language limitations and its affects on their overall academic achievement.

**Teachers’ Experiences Teaching CLD Students**

The interviewed teachers had a variety of experiences teaching CLD students over the course of their teaching career. For some, the year the interview was conducted was their first experience teaching identified CLD students while for others it was their third consecutive year. Teachers mentioned that there were probably instances when they taught CLD students, but were not sure since there were no visible differences or language barriers.

According to the teachers, if the school is not considered a “multicultural school”, which is funded by the government to provide support for the CLD community, CLD students are not typically identified by their ethnicity to teachers before the school year begins; this is in essence to prevent any preconceived biases before meeting the students. Teachers Haesun and Mijung explained that unless the government provides information based on students’ ethnicity, the only way they know CLD students are enrolled in their class is if the students tell them directly or they find out after having a chance to see and/or speak with the student.
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<tr>
<td><strong>Interviewer 1:</strong></td>
<td>ᵇcidade ᵇ경계 ᵇ있었습니까?</td>
<td>How did you know they were multicultural [CLD] students?</td>
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<tr>
<td>Haesun:</td>
<td>음, 인정 자기 소개서를 보고 알았죠.</td>
<td>Um...when they introduce themselves I found out</td>
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<tr>
<td><strong>Interviewer 1:</strong></td>
<td>그림은 그, 과거 2 학년 때의 담임 선생님이라고, 아니면 학교 측에서 어떤 명단이 오거나 그러진 않았습니까?</td>
<td>So, [you found out from] the past when you were grade 2-homeroom teacher or did the schools provide you with some sort of student list [with their ethnicity listed]?</td>
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<td>Haesun:</td>
<td>그것은 이제 나중에, 그런 알게 됐구요. 일단은 자기 소개서 보고 일단 알았습니다.</td>
<td>That came later. I found out about that. But when the students introduced themselves [that’s how] I found out</td>
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<td><strong>Excerpt 2</strong></td>
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<tr>
<td><strong>Interviewer 1:</strong></td>
<td>그럼 어떻게 알게 되셨어요?</td>
<td>Then, how did you get to know [they were CLD]?</td>
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<tr>
<td>Mijung:</td>
<td>다문화라는 걸요? 아, 그런 아이가 얘기해서 알게 됐어요. 네.</td>
<td>Knew that they were multicultural [CLD]? That was because the kid told me so I that’s how I found out. Yes.</td>
</tr>
<tr>
<td><strong>Interviewer 1:</strong></td>
<td>자기가, 화교라 이렇게 얘기해서...</td>
<td>The student they said they overseas Chinese just like that he/she said...</td>
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<tr>
<td>Mijung:</td>
<td>아니, 그러니까 그, 3 학년, 그 원서 쓰기 전에 상담하고 그런 때, 그, 자기 사회 통합 전형... 거기에 관심해서 이제 문의를 하면서, 본인이 이제 이러한 경우다라고 얘기기 해서 알게 됐어요.</td>
<td>No [they didn’t just tell me they were Chinese-Korean]...so before...in grade 3 before completing an application when counseling [students] at that time the [unified society screening application-type] it asked [students] inquires about this and that so through that I found out [about the student be CLD]</td>
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The classrooms with CLD students brings forth challenges that all teachers have acknowledged, with a majority agreeing that it’s based on students’
limited language proficiency; yet the challenges that teachers have experienced were very distinct from one another. The language obstacles CLD students have to work through is something teachers expect and have positive attitudes in providing the help students’ need to be successful, yet there were other factors that were unexpected.

Some teachers shared that issues of teasing and marginalizing of CLD students from other native Korean classroom peers was an influential factor hindering CLD students’ academic achievement. Teachers Hyesook, Saeun, and Yejin shared their concerns about the CLD students who were enrolled in their classes and the social difficulties the students faced, which eventually influenced how they participated and achieved in class.

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<th>Speaker</th>
<th>Korean transcript</th>
<th>Rough English translation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hyesook</td>
<td>언어 말고, 그런, 그런 문제가 있었어요. 애들이 처음에는 그 애가 몽골 애라는 것을 알고, 처음에 그, 3 월, 4 월에 좀 왕따시키는 그런 분위기가 있었어요.</td>
<td>Aside from language there was this problem. At first after the kids found out that the [CLD] student was from Mongolia at first for about 3-4 months they ostracized him/her…it was that kind of environment.</td>
</tr>
</tbody>
</table>

Teacher Saeun also mentioned about the ostracizing of CLD students through teasing, which largely influenced their participation in class. She voiced that this is her great concern.
The biggest concern is multicultural [CLD] students getting teased, honestly. For example their mom is from so and so country and hearing this kind of talk can hurt the [CLD] kids a little. 

Despite teachers putting forth effort in providing more interactive lessons with the use of inquiry and language-based instructional strategies, situations similar to teacher Yejin’s CLD student addresses much concern. She mentioned that even though students have opportunities to participate in class activities and interact with other peers, there are factors that limit CLD students’ full participation, such as being ostracized. In this type of activity CLD students tend to become more intimidated, self-conscious, and non participatory in class.
Although teachers similar to Hyesook and Saeun have made attempts to inform other native Korean students about the positives of cultural and linguistic diversity and emphasizing its value, the marginalization of CLD students continues to affect their academic performances. Findings such as this reveals that it doesn’t seem to matter how well CLD students perform in the class, similar to teacher Yejin’s case, since CLD students are continuously considered “different from Koreans”, which seems to be the common ground for being marginalized.

Cummins (2014), and other literature on academic achievement (DeVillar, Jiang, & Cummins, 2013), stated that students from communities that are commonly seen as “disadvantaged”, or different from the language of school instruction, have been marginalized or excluded from education and social opportunities as a result of discrimination in the wider society. Cummins (2014) also mentions, since “disadvantage” is not a fixed or static construct, it’s possible that such marginalization’s can be eliminated in the classroom only if the schools and teachers respond appropriately to them. The interaction between teachers and students are crucial in providing educational advantages or disadvantages in the classroom, especially for CLD students.

Another challenge teachers shared during interviews were their burdened feelings when CLD students enroll in their classes. Literature has shown that teachers’ tend to relate CLD students as added burdens placed on them due to the thought of putting more time in developing lessons that CLD students can understand or providing extra help on the side (Reeves, 2006). The time it takes to make modification was one factor, but having to prepare these types of extensive supplemental materials for one student was what caused many teachers to lack interest. Teacher Yejin honestly shared
about her experiences – her personal, as well as shared thoughts she had with other teachers - on feeling burdened about having CLD students enrolled in her class.

An interesting finding that is related to teachers feeling burdened about CLD students enrolled in their classes is the extent to which accommodations, or in some cases modifications, are provided for the CLD students. As teacher Yejin pointed out, there are teachers who constantly think about how to support their CLD students to be successful in their classroom. From providing English translations on classwork to extra support outside of class to applying for limited yet available resources from the education district office or ministry of education, there are teachers that have gone over and beyond expectations to help their CLD students.

Yes, teaching them is difficult also because other student ostracizing them [CLD students] occurs often so for my colleagues and I when we find out that there is a multicultural [CLD] student in our class it’s a great burden to us. Um...for starters we need to keep a careful eye on the students [CLD] and if they’re following along well and when they are completing out some evaluation time paperwork, we tend to look over it. After that during break time I wonder what the [CLD] students are up to so I tend to keep an eye on them often. It does look like I have much interest in [the well being of] the student and when the student looks depressed or facial expressions is not good, I wonder what happened and want to talk with/counsel with the [CLD] student. I think I’m just that type of teacher [caring for CLD students].
Teacher Sunny stated that much of the time she didn’t make modifications for her CLD student because he was very good at understanding Korean, but when there were difficult vocabulary words she provide translations*. She shared a time when she translated one section of an assessment, in particular math, to help her CLD student understand how to solve the problems; he had much confidence in that subject. She believed that it was important for him to maintain his confidence in math instead of being overwhelmed with frustration due to the language barrier.

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* Luckily, in the case of teacher Sunny, she is intermediately proficient in English and was able to provide her CLD student with translation accommodations on his schoolwork and assessments when able.
translations, since he knows the concept…

Teacher Sunny also believed that it was up to teachers, her, to provide CLD students the help and support they need since many of their parents are busy working two jobs to support the family.

Teacher Yejin also provided extensive modifications for her CLD students. During the time when primary school students needed to apply to various middle schools of their choice, Yejin provided information to her CLD student on potential international middle schools that he may be interested in.

She added that there was an additional limitation in accessing helpful information due to her language barrier – needing to know enough English
to access the international school information from available resources - and being able to relay the message to his parents.

<table>
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<tr>
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<tbody>
<tr>
<td>Yejin</td>
<td>도 중업 같은 경우에도, 저 아이가 이렇게 국제중에 가고 싶어하긴 했어요. 좀 관심이 있었는데, 그래서 제가 그냥 브로셔나 이런 걸 쌓어서 정도만 했어요, 근데 제가 영어를 좀 더 잘한다면, 그런 부분들과 통화를 해서 많이 설명도 해주구, 그랬으면 더 좋지 않았을까. 근데 가격이 비싸서 포기하긴 했어요. 입학하고, 등록금이? 근데 그런 거 아니더라도, 좀 더 정보를 제공할 수 있지 않았을까 해서 좀 그게 아쉬웠어요.</td>
<td>In the instance of applying for middle school selections, the [CLD] student wanted to go to an international middle school. He/she had some interest in that so I gathered some brochures [regarding international middle schools] just to that extent. But if only my level of English proficiency higher then I would have talked with the parents and explain a lot [of information regarding international schools and middle school applications] things to them, thinking that would be nice. But because tuition was very expensive the student had to give up [the application]. After admission the tuition fee? But even if it wasn’t for that I wonder if there are any other information or resources available, that was the unfortunate thing.</td>
</tr>
</tbody>
</table>

The degree of how much teachers Sunny and Yejin helped their CLD students stemmed from their care and concern for CLD students to be academically successful. Teacher Sunny and Yejin’s efforts were despite having experience in any type of teacher education or professional development training program. Conversely, there are other teachers who equally have the care and concern for their CLD students, but their misconceptions and deficit perspectives have interfered and prevented them from taking further action in knowing how to support CLD students. The next section discusses some misconceptions and deficit perspectives that teachers have shown through the interviews.
Misconceptions and Deficit Perspectives toward CLD Students

The way that classes are structured and instructed indicates an underlying assumption that all students learn the same, thus CLD students are expected to make adjustments in order to follow along. Despite teachers providing modifications or assistance for their CLD students, the way they structure their instructional practices reveal their preferences in one type of teaching and learning would reap more benefits than another.

Studies have shown that CLD families all have different ways of talking, doing, learning, and understanding (Heath, 1983; Ochs, 1982, as cited in McLaughlin, 1992). Furthermore, the culture of each family is different, thus social cues and the way things are understood vary. Thus, by teachers incorporating one explicit type of teaching and learning, it exacerbates the reproduction that all students learn in the same way and that it is the most effective for all students.

Due to curricular responsibilities teachers have in covering a certain amount of content over a certain amount of time, much of the lessons implied were more didactic rather than inquiry-focused. The instruction that teachers expressed were primarily based on learning vocabulary words, being able to understand verbal or written instructions, grammar-based Korean language, and mentioning that schools were more assessment-focused than learning content through inquiry. Teachers Sunny, Yejin, and Saeun mentioned how student work was mostly via handouts, grammar and language-based classwork, and assessments.

In the case of Teacher Sunny, it was implied that the work of her coworker’s Thai CLD student, whom she temporary substituted for, was mostly in written form since the student and Thai-Korean bilingual teacher
The teaching assistant and the [CLD] student were together. So the Thai student was with the TA. I went into substitute for a teacher friend once because she was sick...it was a Korean language class. So as I was generally teaching [the class] the TA went to the Thai student and started to talk to him/her in Thai and showed him/her what was happening. So, the Thai student did everything in Thai. The areas where he/she knew Korean, he/she would fix, but usually wrote in Thai since there was a TA helping him/her. This is the kind of experience I had before.

Teacher Yejin mentioned the importance of grammar, especially in knowing and understanding the Korean language, which eventually feeds into other content subjects such as science influencing CLD students’ challenges and success level.
Subject? Well, for starters the language has to be the same to communicate I think you have to have the language down. But the language proficiency in all students is different so first learning Korean at the basic, elementary level would be good. If there’s a chance to learn it first the better. So right now is the 6th grade and it [class] is very grammar-based…other subjects like the arts are not too formal, but because of the Korean language subjects like math and science there’s a lot of [language-based] influence…

Teacher Saeun mentioned that there is a lack in seeing the importance of programs focusing on the diversification in schools and that the availability of such classes is very limited. She also mentioned that since schools are assessment-focused she hopes that there would be more cultural and experiential-type courses in places that are supported by the government. She believes that this would benefit all students.
The usage of didactic and textbook-oriented instructional practices is more common practice and emphasized for all students to learn, in the same way. Although inquiry is believed to be a favored pedagogical practice by teachers, as well as mandated by the education system, the reality of practicing such approaches in the classroom with CLD students was implied to be very difficult. With teachers reiterating the importance of CLD students needing basic language foundations established before being able to implement any new pedagogical strategies, the usage of inquiry-based instruction to help CLD students become academically successful in science was not evident.

The emphasis on CLD students’ lack in their Korean language proficiency was seemingly the primary reason for the challenges they faced. However, there was evidence of teachers’ misconception regarding CLD students’ academic performance based on their language needs. For example, teacher Malee stated that the biggest challenge CLD students that she has heard about or seen, was more an academic delay or potential overall delays possibly caused by having non-Korean speaking parents rather than multicultural parents, who are described as one parent being Korean while the other is non-Korean.
**Excerpt**

Malee: More than a language barrier, I think that it was a lack of the student’s effort that brought upon challenges to the student academically. Also, more than saying, “it’s because they are multicultural [CLD] students”, both parents are from Iraq, so because of the parents the student came to Korea and I wonder that it must be a bit difficult living in Korea. In terms of the language, the student learned Korean at an early age first, but the parents struggle with the language. I think from there because of the gap there was some academic delay in the [CLD] student.

This deficit perspective toward CLD students and parents expressed teacher Malee’s lack of experience with CLD students, as well as a lack in understanding the way in which learning occurs. According to Davison (1999), he warns that specific expectations based on curriculum-based standards or benchmarks can be inappropriate for CLD students who often have different developmental trajectories and rates in learning language and content information not in their home language.

Teacher Saeun suggested that if it were possible for the government to provide more funding or support for CLD students, it would be nice to have some type of Korean language education or mentoring program for CLD students, as well as providing financial support for some of the CLD families in need.
Teacher Yejin also agreed that CLD students learning more Korean from language-based resources, such as the placement of bilingual teacher assistants, granted and provided by the Ministry of Education would be beneficial for CLD students.

I wish there were more opportunities for students to learn Korean just like when the bilingual TA [a resource that was funded by the government] comes to do. It would be nice through some experiential activities where we can provide more opportunities to help others understand our culture a little more.

Overall, the interview data set described teachers’ attitudes toward CLD students, their self-efficacy in providing CLD students the proper accommodations guiding students toward academic success, as well as challenges that both teachers and CLD students face in the classroom. One key finding that was consistent was teachers’ limited knowledge and experience in being able to provide effective support for CLD students.
Although many teachers are willing to make modifications, the number of teachers actually knowing how to and making the time to provide accommodations varied.

The findings illustrate that teachers have the willingness and desire to help CLD students, but when it comes to practice their lack of knowledge and experience hinders them from following through. This highlights a need for the development and implementation of teacher education and professional development programs (refer to Chapter 8) to better equip teachers for this growing CLD student population.

6.3 Desire for Improved Teacher Education Programs and Professional Development

Based on the 16 interviewed teachers, only 37.5% mentioned they had experience in completing some type of teacher education program or professional development (TEP/PD) focused on teaching CLD students; the description of how courses were conducted varied. Teacher Sunny mentioned how teacher training was mandatory if teachers were to receive their first-degree teacher license after passing the teacher certification exam (refer to Chapter 2).

However, the online course was described as being very basic, of which courses related to cultural and linguistic diversity (or multicultural) was optional. Sunny described her TEP/PD training she completed during her early teaching career, which didn’t seem to be of much value. Either they were mandated to complete this type of TEP/PD or they were highly advised by the principal to complete such trainings.
<table>
<thead>
<tr>
<th>Speaker</th>
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</tr>
</thead>
<tbody>
<tr>
<td>Interviewer 1:</td>
<td>다평화 연수를 제가 받은 적이 있습니까?</td>
<td>You’re saying that you’ve completed some type of teaching training program, right?</td>
</tr>
<tr>
<td>Sunny:</td>
<td>아닙요. 없어요. 아-있어요, 있어요. 그 왜, 인터넷으로 클릭, 클릭, 클릭하면서 넘어가는…</td>
<td>No, I didn’t…um…I did. I did. You know the internet-type click, click, click when you click you continue to move on…</td>
</tr>
<tr>
<td>Interviewer 2:</td>
<td>Oh, really?</td>
<td></td>
</tr>
<tr>
<td>Sunny:</td>
<td>Yes</td>
<td></td>
</tr>
<tr>
<td>Interviewer 2:</td>
<td>Like free?</td>
<td></td>
</tr>
<tr>
<td>Sunny:</td>
<td>That’s mandatory</td>
<td></td>
</tr>
<tr>
<td>Interviewer 2:</td>
<td>For teachers?</td>
<td></td>
</tr>
<tr>
<td>Sunny:</td>
<td>Yes</td>
<td></td>
</tr>
<tr>
<td>Interviewer 1:</td>
<td>초등, 초등학교 교사들이 항상 다 무조건 해야 되는…</td>
<td>It’s mandatory that all elementary school teachers have to take it…</td>
</tr>
<tr>
<td>Sunny:</td>
<td>그날 인제 우리 학교에서 확 들려서 이거 코스 들어와, 라고 해가지구, 다같이 들었거든요. 근데 그게 이제 필수로 내려온 것인지, 아니면 학교 평가와 관련이 되니까 그걸 몇 명이나 들었는지 확인해야 돼서 교장 선생님이 들어와, 들이려 한 건지 모르겠지만 그냥 왔길래 저는 들었어요.</td>
<td>Our school just passed around information and said to take the course, so we all took it together. But not sure if this was a mandated thing [from the Ministry of Education] or it’s from school evaluation…not sure how many teachers took it or if it was pushed by the principal to take it due to the evaluations I’m not sure, but I completed it.</td>
</tr>
</tbody>
</table>
Teacher Malee participated in a program called “understanding international education”, of which she claimed had parallels with the international program and multicultural education at her school; this also included an induction-type training program on multicultural education that Malee had to complete in order to teach. The program allowed her to think more about the co-existence of diverse cultures [in Korea] while teaching CLD students.

**Speaker**

**Excerpt**

**Interviewer 1:**

Have you experienced any type of teacher preparation course, training or professional development that is related to CLD students or families?

**Teacher Malee:**

In 2014 there was an optional program called “understanding international education” I participated in with students. While we had class together with the kids, I had a lot of time to think about areas in multicultural [ism] and understanding international understanding. So in order to teach [this type of] class, I received training and actually taught students to know about the diverse cultures and little bit about the coexistence of different cultures and society’s awareness of [it], being aware together so there was much time in thinking about concepts such as these.

한국어 발음

만일 선생님께서는 문화적으로 언어적으로 다양한 이 학생이나 가족들과 일하는 거에 관련된 어떠한 과정이나 전문적으로 계발을 하신 적이 있으며요? 교사 연수를 받는다면나.

이제 교사 연수는 제가 2014 년도에 국제 이해 교육이라는 선택 프로그램을 아이들하고, 우리 아이들하고 같이 수업을 하면서 저 나라들대로 이해 다문화나 국제 이해 영역에서 생각을 많이 한 시간이었어요. 그래서 그걸 가르치기 위해서 연수도 받았고, 그리고 실제로도 아이들하고도 가르치면서 이제 다양한 문화를 좀 알려주고, 이 지구촌에서 공존과, 공존에 대한 개념을 좀더 민주시민 인식과 함께 공존의 개념에 대해서 좀 생각을 많이 한 시간이었어요.
Teacher Saeun completed 15-hours of teacher training after being appointed to her school. She stated that the topics covered were about CLD students and their characteristics, as well as things teachers should pay attention to when instructing classes; however, she also mentioned that the training was far from what reality really was.

<table>
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<tbody>
<tr>
<td>Excerpt</td>
<td></td>
<td>Have you had any experience with multicultural education or some related professional development or completed courses in college [related to multicultural education]</td>
</tr>
<tr>
<td>Interviewer 1:</td>
<td>선생님께서는, 그, 다문화 교육과 관련해서 연수나, 대학교 때 과목을 이수했거나, 그런 경험이 있으십니까?</td>
<td>Teacher training program. 15 hours</td>
</tr>
<tr>
<td>Saeun:</td>
<td>연경연수로. 15 시간.</td>
<td>After being placed at a school?</td>
</tr>
<tr>
<td>Saeun:</td>
<td>네</td>
<td>Yes</td>
</tr>
<tr>
<td>Interviewer 1:</td>
<td>그게 도움이 되셨습니까?</td>
<td>Was it helpful?</td>
</tr>
<tr>
<td>Saeun:</td>
<td>사실 큰, 현실감과는 좀 동떨어져 있었다고.</td>
<td>Honestly, it’s slightly far away from the reality</td>
</tr>
<tr>
<td>Interviewer 1:</td>
<td>그, 내용이 어떤가요?</td>
<td>What type of content did they cover?</td>
</tr>
<tr>
<td>Saeun:</td>
<td>다문화 학생들의 특성과, 그 학생들을 지도할 때 뭐, 유의점. 뭐 이런 견해</td>
<td>It was things like multicultural students’ characteristics, when instruction CLD students teachers need to pay attention to things like that</td>
</tr>
</tbody>
</table>

Teacher Yejin did not participate in CLD-related TEP/PD. She mentioned that there were lots of choices during the mandatory training that she had
during the early part of her teacher career, but she did not enroll in them. Although things may have changed since she received her teaching certification, Yejin was not aware of any CLD-related topics or courses during her undergraduate studies.

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<tbody>
<tr>
<td><strong>Interviewer 1:</strong></td>
<td>&amp;…ª &amp;…ª</td>
<td>Have you had some type of teacher training of some sort?</td>
</tr>
<tr>
<td>Yejin:</td>
<td>음...아뇨, 없었던 거 같아요. 따로 Grants가 되지, 저희가 연수, 직무 연수나 이런 거 때도 선택해서 드는 게 많았고, 대학교 때에도 그 때는 오히려 더 다문화 학생들이 많지 않았기 때문에 그런 과정이 개설되지가 않았던 것 같아요. 근데 요즘에 또 더 늘어날 것 같기는 한데, 아직은 제가 들은 건 없어요.</td>
<td>Um...no I don’t think I have So there are mandatory trainings we, teachers, can pick and choose to take. During my college years there were not that many multicultural [CLD] students so there wasn’t any established courses (trainings), from what I can recall. But recently there number [of course offered] seems like it’s growing, but I haven’t taken any.</td>
</tr>
<tr>
<td><strong>Interviewer 1:</strong></td>
<td>다문화 학생을 위한 프로그램이 있나요?</td>
<td>Were any of them programs focusing on multicultural [CLD] students?</td>
</tr>
<tr>
<td>Yejin:</td>
<td>프로그램까지는 아직.......예, 제가 못 들어 본 거 같아요.</td>
<td>To the point of programs, no. And yes, I didn’t take any.</td>
</tr>
<tr>
<td><strong>Interviewer 1:</strong></td>
<td>선생님은 그럼 교사 연수 중에 다문화 학생을 가르치기 위한 교사 연수 이런 건 못 들으셨다고요?</td>
<td>Then of the trainings, did you take any courses that focused on how to teach multicultural [CLD] students?</td>
</tr>
<tr>
<td>Yejin:</td>
<td>네. 그러나가 담당 업무하는 사람들이 교육청이나 이런 데에서 듣거나 이런 건 있는 것 같은데, 아직 없었던 거 같아요.</td>
<td>Yes. So there were courses where people would go to the education or district office, but I don’t think there was as of yet.</td>
</tr>
</tbody>
</table>
Teacher education courses or training in the certification programs for pre-service teachers, as well as professional development for in-service teachers seem to be very minimal. Since the CLD demographic shift is a recent phenomenon that has been increasingly making its entrance into schools, programs are yet to fully accommodate the needs that teachers are experiencing in the classroom. The lack of mandatory courses on how to instruct CLD students, in a general and concrete manner, raises concerns on teachers’ teaching efficacy and their pedagogical practices in the classroom.

6.4 Emergent Findings

The last round of analysis conducted was more interpretive, meaning the transcripts were coded inductively, examining the data without any preconceived ideas; this is in contrast to a priori coding, which is primarily based on preconceived ideas with a question in mind to address. This step was used to better understand teachers’ attitudes and their self-efficacy through various words, phrases, and/or nuances while answering the interview questions (refer to Appendix I). The emergent findings that this section highlights are teachers’ misunderstanding of Cummins’ (1999) theory on social (BICS) and academic (CALP) of language acquisition and Spivak’s (1985) concept of “other or othering”, which is when Korean teachers unconsciously position CLD students as “the other”, or not “one of us”, through words that have been structurally formed over many, many years and have been reproduced over time (refer to Chapter 2 for brief history about Korea’s “woori”, or “us”, terminology).
Understanding the Social Versus the Academic Language

As described in Chapter 1, Cummins’ (1999) theory on language acquisition, individuals have different levels of attaining and using the Korean social language versus the Korean academic language. The interview data set disclosed teachers’ misunderstanding of this difference. Teacher Sunny shared two striking points regarding her misconception on how language is acquired differently and on how the school she taught at early in her teaching career placed CLD students when first enrolled in the school. Although Teacher Sunny provided modifications for her CLD student, there were many instances when she mentioned that she did not provide any extra handouts because her CLD student’s Korean listening skill was “good” and only when there were difficult vocabulary words would she point them out and provide translations.

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<tr>
<td>Sunny:</td>
<td>수업을 할 때는 그 아이를 위한 특별한 이렇게, hand-out 을 따로 만들거나 하진 않았어요. 왜냐하면 듣는 건 잘하니까, 듣는 건 어느 정도 이해하고, 내가 너무 어려운 단어만 있을 때만, 내가 가는 신서에서 영어 단어로 알려주면, 개가 그 개념을 아니까, 아 이 선생님이 이런 말을 하고 있구나, 뭐고 했고.</td>
<td>When the student is in my class, there’s no particular handout or anything [to help support] for that student. The reason being [for not providing extra handouts] is since their listening is good. They are able to understand [Korean] to some degree and only when T uses difficult words, T utilizes English in those cases since the student understood the concept. He also responded with “ah, so that’s what the teachers is saying”</td>
</tr>
</tbody>
</table>

Teacher Sunny held the misconception regarding CLD students’ way of acquiring language. Although her CLD student was “good at listening”, understanding conversational, instructional or social language is different
than understanding conversational and instructional language that is related to content being taught in class. In this type of situation, without providing proper connections between teachers’ instructional language with the concept-based language, CLD students are not able to clearly understand the objective of the task, what they are asked to do, and how to go forth with the task. This can be very frustrating for both CLD students and teachers, since there’s a misalignment in understanding how language acquisition is developed.

Teacher Sunny also shared about a Korean language program geared to prepare CLD students to take language courses for one to two years to “better integrate” CLD students into Korean schools. She mentioned that with this course, CLD students had less difficulty assimilating into the classroom due to their quickly improved Korean language proficiency.

<table>
<thead>
<tr>
<th>Speaker</th>
<th>Korean transcript</th>
<th>Rough English translation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sunny</td>
<td>근데 그 학교가 다문화라고 할 만한 예들이 거의 없어서, 그렇게 처음이었어요. 정말, 그러니까 이렇게 영어, 한국어 거의 안되면서 온 에도 개가 처음이었고. 보통은 핫게 1-2 년 어학연수처럼 갔다 오는 거니까 전혀 이렇게 크게 어렵지 않은데...</td>
<td>But there are no types of students we can consider multicultural in the school. That was the first. The student [enrolled] was the first that was not able to communicate in either Korean or English. Usually students go to Korean language school 1-2 years then come back from so it doesn't seem like a huge problem.</td>
</tr>
</tbody>
</table>

This erroneous expectation exists among many mainstream teachers. According to language acquisition theorists, it’s estimated that language learning may take up to 4 to 7 years for advanced students (Kauta, Butler, & Witt 2000) and up to 10 years for students with weak native language literacy levels (Collier, 1987) to develop both everyday and academic
language necessary to be considered fluent (Short & Fitzsimmons, 2007) (refer to Chapter 2).

Teacher Sunny also mentioned how newly enrolled CLD students were given a content-based placement exam, written in Korean, rather than a language proficiency placement exam. This exam was established to see which grade level CLD students would best fit, but regardless of the results CLD students were seemingly placed in the same grade as where they last attended. This process is understandable since teachers, such as Sunny, have expressed high efficacy in being able to help CLD students become successful in the classroom, but also it minimizes social problems when making sure CLD students are not placed in unreasonable grade levels due to low language proficiency.

### Speaker: Sunny

**Korean transcript**

그 우선 한국 학생이면서 한국어를 잘 하지 못하는 학생이 우리 반에 왔을 때, 그 학생들은 학교에 들어오면 어느 수준에 들어와야 하는지 수준 테스트를 보어야요. 수준 테스트를 보는데 그 수준 테스트가, 다 하는 게 아니라 수학, 국어만 박요. 아, 수학, 국어, 과학, 까지도 했던 것 같아요. 국수사과 이렇게 하는데, 과학과, 그러니까 모든 과목을 채가 (CLD) 볼 수가 없는 거에요. 한국어로 되어 있으니까 [..] 그럴 때마다 이런 수준 테스트를 보지만, 정말 매우 그, 떨어지지만 않으면 그냥 그건 형식적으로 본 거고, 그냥 그 나이에 넣어 줄요.

**Rough English translation**

So when the first Korean student that doesn’t know Korean very well came into my class when that student enrolls into a school we need to do a level test and teachers look at that. The level test doesn’t cover everything; it covers math, Korean, and science. Level placement is based on those three subjects, but the [CLD] student wasn’t able to complete the test since it was in Korean...in instances like these even if the student takes the level test, if the student doesn’t completely fail they are just placed in the same grade as when they were abroad, based on their age.
The lack of understanding CLD students’ proficiency level yet placing them in the corresponding grade they last attended places them in a situation where failure is more visible than success. According to teachers’ responses that mentioned about language and science going hand-in-hand, schools are essentially setting up CLD students for failure by not properly acknowledging students’ language proficiency level and lacking in providing language-based support that they need. There is a dire necessity for language-based pedagogical practices that teachers and administrators must be trained in increase in the understanding of this crucial, and growing, situation that is all too frequently occurring the in classrooms (refer to Chapter 8 for further implications).

Teacher Malee and Saeun also revealed their misconceptions about language development and acquisition. Malee mentioned that CLD students had “no problems” with friends, but frequently stated how they were struggling to follow along in class. While Saeun mentioned that CLD students are more “used to” language-based situation since they know the importance of it at an earlier age.
There are no problems with [CLD students] communicating with friends. Culturally, thought-process things like this are similar to Korean students so in general socially there are no hardships; in particular… I haven’t discovered students that were severely struggling with the Korean language. But there are students who are slightly struggling academically.

The persons know think in these languages, so they know the importance of language, since they were exposed to it more when they were young, so compared to other academic [subjects] classes like language arts, societal studies, etc. are [of a little more importance].

The way in which teachers understand language acquisition, especially learning a language not as a foreign language, but as a second (or third, fourth, etc.) language, is crucial to acknowledge for it positions the way in which they treat and instruct CLD students.

“The Other”

Another interesting emergent finding that was discovered in this study was the usage of words that positioned CLD students as “the other”, or as the marginalized group. Throughout the interviews, teachers mentioned words or descriptions that illustrated CLD students as being in a different category from “our Korean students” (refer to Table 6-2). This table shows the
number of times teachers have used terminology that are similar to the meanings of “us” and “them” – “우리”, “개네들”, “그런 학생” 그 아이”.

Perhaps because of Korea’s strong nationalism and due to the features of the Korean language, which encourages the use of terms, such as “woori” or “us” (refer to Chapter 2), to refer to Korean people the teachers frequently used terminology that drew an invisible line between “us”, the native Koreans and “them”, CLD students and families. Four teachers were chosen at random to quantify the frequency of the four “them” terms that were used throughout each interview.

Table 6-2.
Frequency of “them” terms used during interview.

<table>
<thead>
<tr>
<th>Teachers participant</th>
<th>“우리”</th>
<th>“개네들”</th>
<th>“그런 학생”</th>
<th>“그 아이”</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sunny</td>
<td>36</td>
<td>7</td>
<td>3</td>
<td>8</td>
</tr>
<tr>
<td>Malee</td>
<td>11</td>
<td>3</td>
<td>0</td>
<td>2</td>
</tr>
<tr>
<td>Saeun</td>
<td>4</td>
<td>1</td>
<td>0</td>
<td>8</td>
</tr>
<tr>
<td>Yejin</td>
<td>6</td>
<td>1</td>
<td>1</td>
<td>0</td>
</tr>
</tbody>
</table>

Highlighting the frequency in the usage of “us” versus “them” terms is not to emphasis intentional discrimination or separation between native Korean students and CLD students, but it does address the realization that even in speech there is an underlying structure that is unintentionally utilized on a daily basis. Thus, there is a need for teachers, as well as all people and people groups, needing to acknowledge and become more aware of how individuals are positioned, spoken about, or spoken to. The positioning of CLD students as “them” can have negative ramifications in how CLD students identify themselves and perform in schools, as well as teachers’ attitudes toward CLD students and self-efficacy in having confidence to
effectively teach them. This is primarily dependent upon if the deficit perspective influences CLD students and teachers rather than it helping them to embrace the growing diversity and the needs it comes with it.

The qualitative data set provided more in-depth and humanized information of what is happening in the classroom, especially through the perspective of the teachers who have personally or from afar experienced CLD students in the classroom. The overall positive attitude teachers have toward CLD students and high self-efficacy in teachers’ willingness and confidence to teach them, there were other factors that were found to be quite influential in either confusing or altering how teachers’ responded to the interview questions.

The next chapter aims to combine the findings from both quantitative and qualitative data sets, based on the convergent parallel mixed methods approach, in finding areas of convergence and divergence with the findings that were collected and analyzed in two separate ways.
CHAPTER 7 DISCUSSION AND CONCLUSION*

7.1 Discussion

This study focused on both primary and secondary Korean schoolteachers’ attitudes toward the culturally and linguistically diverse (CLD) students that are rapidly populating schools and classrooms in Korea. In addition, this study explored how teachers’ attitude towards diversity, inquiry and language each influenced on teachers’ self-efficacy for effectively implementing inquiry and language-based teaching strategies.

Until recently, Korean society has been largely homogenous with regards to ethnicity or language use. As a result, there has been limited focus in teacher education and professional development programs to prepare teachers to be able to effectively instruct a diverse population of students. In order for teachers to be able to create inclusive classrooms, designed to support CLD students, teacher educators need to provide courses that lead teachers to examine and understand that effective teaching in diverse classrooms is complex and multi-dimensional requiring the development and implementation of new pedagogical practices that attend to social, academic, and linguistic needs of learners.

Focus of this Research

To better understand what challenges teacher educators need to address when preparing teachers to support CLD learners in Korea’s rapidly changing society, this study posed four research questions aimed at

gathering a baseline understanding of Korean teachers’ current attitudes and experiences with diversity and how these attitudes and experiences may impact their teaching of CLD students, especially when using inquiry or language teaching practices. The questions framing this research are:

1) What are Korean teachers’ attitudes toward CLD students?
2) What are Korean teachers’ self-efficacy about teaching CLD students using inquiry and language-based instructional strategies?
3) What significant correlations exist between teachers’ attitudes toward CLD students and their self-efficacy on teaching CLD students using inquiry and language-based instructional strategies?
4) What factors (i.e. language learning experiences or experiences of interactions with people who are CLD) influence Korean teachers’ attitudes toward CLD students and their self-efficacy on teaching CLD students using inquiry and language-based instructional strategies?

Understanding what factors influence teachers’ attitudes and teaching self-efficacies can help teacher educators develop courses and professional development programs that can also support teachers to become more effective for supporting the learning of CLD students.

This chapter highlights the converging and diverging findings that were investigated from the three-scaled K-TASILT questionnaire (refer to Chapter 5) and the analysis of the teacher interviews (refer to Chapter 6) that were conducted concurrently with the quantitative data collection. In this chapter, findings were merged to extract salient points from both data sets in order to discuss the convergent and divergent findings.

For clarity, the findings for each research question are presented in order and in an integrated format to highlight data from each finings
chapter. Thus, attentions was focused on discussing teachers’ attitudes and self-efficacy, as well as making sense of relationships that exist and drawing attention to factors that were identified as being influential in shaping teachers’ attitudes and self-efficacy in CLD students’ learning. Additional emergent findings that were discovered during the analysis of each data set are also discussed to help enrich the study’s aim of developing more effective teacher education and professional development programs.

Summary of Overall Findings

The quantitative and qualitative data sets revealed both converging and diverging findings according to each research question, focusing on teachers’ attitudes and self-efficacy (refer to Table 7-1).
<table>
<thead>
<tr>
<th>Table 7-1</th>
<th>Comparative results from chapters 5 and 6 data set analyses</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Quantitative Data Set</strong></td>
<td><strong>Qualitative Data Set</strong></td>
</tr>
<tr>
<td><strong>Q1</strong> Teachers have somewhat negative perceptions about diversity in Korea, yet strong positive attitude toward CLD students and positive attitudes about the value of teaching CLD using modified instructional approaches</td>
<td>Teachers are unclear about how to define or categorize CLD learners. Teachers revealed positive attitudes toward CLD learners, but expressed concerns about CLD students’ social and academic well-being in public schools</td>
</tr>
<tr>
<td><strong>Q2</strong> Teachers feel positive about their knowledge and self-efficacy for using inquiry-based teaching practices, but not for language-based practices. Teachers believe if provided proper and effective professional development, CLD students will have positive learning outcomes</td>
<td>A majority of teachers expressed high self-efficacy toward inquiry teaching. But less than 1/5 of teachers believe that CLD students could benefit from being involved in student-centered inquiry-based lessons.</td>
</tr>
<tr>
<td><strong>Q3</strong> Teachers’ attitudes toward CLD students are significantly correlated to teachers’ outcome expectancy for CLD learners in both inquiry and language-based instruction. Teachers’ limited knowledge and self-efficacy for language-based teaching practices decreases likelihood teachers will implement supportive language practices for CLD learners in student-centered inquiry-based classrooms</td>
<td></td>
</tr>
<tr>
<td><strong>Q4</strong> Having experiences with CLD population in Korean society positively impacts teachers’ attitude and self-efficacy overall. Teacher professional development experiences appears to have limited impact on practice, but have positive impact on teachers’ knowledge about diversity and CLD learners.</td>
<td>Teachers revealed a misalignment between positive attitudes about CLD learners and the belief that inquiry or language teaching strategies would positively impact students as learners. Other factors (age, experiencing learning a second language, or experiences traveling abroad) were strong indicators of teachers who were likely to have more positive attitudes toward diversity and with more appreciation for emotional or social needs of CLD learners – but not their academic needs</td>
</tr>
</tbody>
</table>
Table 7.1 offers a brief overview of salient findings from four different areas: attitudes about diversity and towards CLD learners, knowledge and self-efficacy about inquiry teaching, knowledge and self-efficacy about language teaching, and the relationship attitude and self-efficacy have on teaching CLD students using both inquiry and language-based instructional strategies. Both quantitative and qualitative data sets were integrated to provide a comparative analysis highlighting convergent and divergent findings. More detailed discussions about each findings category will be provided in the sections below.

**Attitudes about diversity and attitudes toward CLD students**

Overall, Korean teachers appear to have a positive attitude toward CLD students, based both on personal or general experiences with CLD students. However, teachers also tend to hold some perceptions about immigrants in Korean society that are somewhat negative. In addition, findings revealed that teachers have some misunderstandings about what it means for a student to be culturally and linguistically diverse, thus they have some misconceptions about which students could be characterized as CLD. Interviews with teachers revealed that the gap that exists between teachers’ perceptions about what diversity is and their attitude towards CLD learners stems, in part, from a generalized lack of knowledge and understanding about what is happening in Korean society with regards to immigration and the development of a new multicultural or CLD society.

Together, these findings suggest that teachers would greatly benefit from coursework and professional development designed to raise awareness about who is immigrating to Korea and how changes in demographics is
impacting the student population in public schools. In addition, teachers need more information about who CLD learners are and how their different characteristics (language proficiency levels, ethnicity, social class, arrival age to Korea, etc.) can be important factors in determining what types of pedagogical support a student will need to be successful in school and in science. More specific examples and findings from both data sets are offered and discussed below.

*Positive attitude towards CLD students, but not towards diversity*

Studies have shown that teachers’ positive attitudes can influence their practices in the classroom, especially with regards to how teachers prepare their lessons, how they approach their teaching, and how they engage with learners in the classroom (Hall, 2005; Nourie & Lenski, 1998; McCoss-Yergian, 2010; Squires & Bliss, 2004; Walker, Shafer, & Liams, 2004). Teachers who have positive attitudes are more open to new ideas and more willing to practice different methods of instructional approaches in order to meet the needs of their students (Berman et al., 1977; Guskey, 1988; Stein & Wang, 1988, as cited in Tschannen-Moran & Hoy, 2001). In contrast, negative attitudes also have the same powerful impact, meaning teachers with deficit perspectives and misconceptions about CLD students and their families may enact practices in the classroom that are detrimental to CLD students’ academic performances.

In this study, teachers were generally found to have positive attitudes toward CLD students, especially if the CLD students are enrolled in their school or classroom. This would suggest that when teachers have actual experiences with CLD learners, they do not automatically result to having negative perceptions of CLD students as learners. In fact, from
the interviews, teachers tended to have positive attitudes about the potential for CLD students to have high academic achievement and to be successfully integrated socially in the classroom by other native Korean peers.

From the quantitative data, it was clear that while more than half of the teacher participants (56%) acknowledged that the CLD student population is rapidly growing, teachers still seem to lack a clear understanding about who would be considered a CLD student. Responses made by teachers during interviews revealed and supported this misconception, that only students who appear to be physically different or those who are not native Korean speakers could be characterized as culturally or linguistically diverse.

This means that students who do not appear to have visible differences, such as skin coloring or different facial features, may “pass” as being Korean. In addition, students who may be bilingual, transnational, or students from North Korea could be excluded from categories of students who would benefit from language supports. Thus, teachers tended to rely on physical characteristics to identify students as CLD. This means many children who go “unnoticed” run the risk of missing opportunities to receive helpful supports for language or culture.

**Expansive knowledge and positive self-efficacy for inquiry teaching**

Both the survey and interview responses found that teachers tend to have high and positive self-efficacy for implementing inquiry-based teaching strategies at both primary and secondary levels. This finding differs from some research in other countries where teachers have tended to report lower
and more negative self-efficacy for teaching inquiry in the context of science classrooms.

One reason why Korean teachers may report higher and more positive self-efficacy could be related to the fact that the teacher certification process in Korea is very strenuous, thus teacher candidates are highly qualified and well prepared with regards to content and pedagogical knowledge (refer to Chapter 2 for more information). In countries where teacher certification requirements are generally less stringent and where becoming a teacher is less competitive, researchers have shown teachers may be less qualified – especially with regards to content knowledge in areas such as math and science.

It is very positive that Korean teachers feel competent and confident regarding their knowledge about inquiry teaching and their efficacy for enacting inquiry-based teaching practices. This means that teachers may not require specific additional coursework or professional development to support them to know about inquiry teaching or to learn how to effectively implement inquiry in their classroom. Instead, teacher educators can focus on supporting teachers to modify their use of these strategies to effectively accommodate for the needs of different CLD students. In other contexts, teacher educators are struggling to improve both at the same time; however, since the Korean education system produces highly qualified teachers, targeted educational supports could enhance Korean teachers’ capacity to meet the needs of CLD students.

**Limited knowledge and low self-efficacy for language teaching**

This study confirmed that most teachers felt they had limited knowledge about language learning and limited self-efficacy for using language-based
teaching strategies with CLD learners. This gap is significant because it means that even if teachers being competent and capable of creating and implementing a rich, inquiry-based lesson in class, they lack the tools needed to make the lesson accessible for CLD students.

Interestingly, this study discovered that teachers were generally aware of their limitations in not being able to effectively support CLD students. To address this gap, teacher educators need to provide coursework and professional development aimed at educating teachers about theories related to language acquisition and second language acquisition and about effective instructional strategies that can improve learning opportunities for CLD students with different needs.

**Overall factors impacting attitudes and teaching self-efficacy**

Overall, this research found that when teachers have limited knowledge about who CLD students are as learners, they lack the ability to make effective choices about the types of instructional strategies that would benefit CLD students in student-centered inquiry-based classrooms. Teachers’ lack of knowledge about students and about language education strategies had a negative impact on their teaching self-efficacy for working with CLD students who need language support. Gaps in teacher knowledge can result in a misalignment between teachers’ personal views about diversity and their views about CLD students as learners. This misalignment can influence how teachers act towards CLD students and how they plan their lessons to help them better understand the content.

Teachers’ attitudes have been shown to impact their practices and dispositions to act in certain ways. Viewed from a sociocultural perspective asserting that beliefs and practices exist in a dialectical relationship (Sewell,
1992; 1999), it is clear that teacher education programs seeking to expand teacher knowledge about diversity can help to promote positive attitudes. Coursework inviting teachers to consider the value of educating diverse learners, both for CLD students and for Korean society as a whole, can be an important first step in helping to promote the enactment of teaching practices that are designed to support CLD students to be successful in school and in science.

Young and Youngs (2001) mention that teachers’ attitudes and expectations can visibly change depending upon the student they are working with. These attitudes, expectations, and practices of teachers are generally done unconsciously. However, whether teachers act on their biases on purpose or by default, inequitable teaching practices can negatively impact how CLD students learn science. To counter this, many studies argue that in order for teachers to learn how to teach and work effectively with CLD students, they must possess concrete awareness of the cultural and linguistic differences that exists among all students, even among CLD students (Avery & Walker, 1993; Diaz, 1992; Harris, 1996; Lynch, 1992; Sowers-Hoag & Sandau-Beckler, 1996; Wurzel, 1988).

In this study, teachers’ attitudes toward CLD students revealed a lack of knowledge about multicultural education or language education. A large number of teachers’ questionnaire responses indicated they are generally aware of this limitation and they would welcome professional development programs (86%) that focus on teaching how to better instruct CLD students. Teachers’ interview statements supported this finding, as many of them voiced there was an urgent need for more concrete, practical, and experiential training necessary to address this.
Teachers’ lack of understanding about diversity or multicultural education practices show that they are more likely to lump all CLD students together as one type of learner who would benefit from the same instructional strategies.

However, as Colombo (2005) states, children from different cultures may have differing communication, interaction, and participation patterns from those that are valued within the mainstream. Hence, if teachers fail to see the richness and difference in students’ characteristics, they may inadvertently deter CLD students from learning in ways that are appropriate and meaningful for the student. This can be especially important in student-centered inquiry-based classrooms where the expectations for participation and interactions between the student and teacher, and between the student and their peers could be very different from the interaction patterns they are familiar with in their home.

According to Angela Calabrese Barton (2000), each individual’s social and cultural setting – family, community, social class, and language – has an impact on the development of social connections, which inevitably results in various educational opportunities or detriments in the classroom. The main point is teachers who are generally from the mainstream and not familiar with cultures and practices outside of the norm may not recognize or value these different forms of interaction. Teacher education programs that include an emphasis on diversity and multicultural education can enhance teachers’ awareness and provide them more strategies for successfully engaging CLD students in school and in science.

Debora Byrnes and Gary Kiger’s research (1994) about multicultural education in the United States education system found similar attitudes in their study where they learned that most mainstream
teachers have minimal training about how to effectively adapt their curriculum, lessons, and teaching practices to properly accommodate the needs of CLD students. They also found that teachers’ attitudes toward CLD students can be a central driving factor supporting or limiting them from seeking the types of knowledge and professional development opportunities necessary to remove barriers for CLD students to be able to learn both content and language skills. Thus, it is a positive result that the teachers in both studies were not only aware of the need for support, but they were open to learning the strategies necessary for helping CLD students reach their learning potential.

In some countries, researchers have revealed that teachers’ initial attitudes are so negative about the student population that they need to first overcome the personal biases of teachers before they can begin educating the teachers to be more effective (Walker, Shafer, & Iiams, 2004). This study suggests teachers are willing and receptive to learn how to help CLD students, so there is potential for professional development to be effective if implemented. Interestingly, this research also found that teachers held some contradictory beliefs about diversity in general and about the CLD learners and their parents. In the next section, this contradiction and the potential for these negative attitudes to impact on CLD students in the classroom is discussed.

**Attitudes toward CLD parents and families**

While teachers were inclined to have positive views of CLD students, questionnaire data and interview responses revealed some deficit perspectives regarding CLD students’ abilities to learn and to be socially integrated in the school community. In addition, the majority of
teachers also held negative perceptions about the parents of CLD students. As mentioned in Chapter 5, roughly 95% of teachers agreed or strongly agreed that non-Korean parents needed to be taught how to support their children in the Korean school system (ATCALD, item #71). Specifically, this study found a majority of teachers having deficit perspectives about CLD families, even when they expressed positive attitudes towards individual CLD students.

For example, a majority of teachers (78%) responded (ATCALD, Item #73) that parents of CLD learners were likely to actively participate in school activities as parents of native Korean students; however the interview responses reflected teachers not having much contact with CLD parents nor held high expectations of meeting them. During the interview, teachers expressed that this could be due to language, which is an important factor to consider that can prevent CLD parents from engaging with the school or with the teacher.

However, this did little to diminish the deficit perspectives expressed by teachers as they discussed that parents of CLD students were likely to have low socioeconomic statuses, have limited attainment of higher education, and to be less likely to attend to their child’s education. Studies have shown that teachers working with CLD families tend to misunderstand and equate parents’ lack of attendance at school conferences or functions with having a lack of concern for their child(ren)’s education (Colombo, 2005).

Other research has found that because CLD families tend to be economically disadvantaged, the parents of CLD children are more likely to need to work long hours at low paying jobs. Since the jobs available to CLD families are not as desirable, the job hours often conflict with school
hours meaning parents of CLD children may find it difficult to schedule meetings during parent-teacher conference times offered during the work day. Teachers during the interviews voiced their prediction that the reason why CLD parents found it difficult to visit their child(ren)’s school was due to their job hours; hence, teachers stated that parents were less likely to attend to their child’s educational needs. In addition, parents who may be employed in factories or working in agriculture may work in cites that are far removed from the school, which means that one or both of the parents of CLD students may live away from their child(ren) during the week.

In such situations, a grandparent or childcare worker who may not be comfortable attending a school event, which is usually intended for parents. In Korea, this is particularly problematic as women are traditionally expected to take on the role of liaison between the school and home. For women who are non-Korean or who are not proficient in Korean language, this expectation can be difficult to fulfill. In the majority of families, men are the primary worker and breadwinner, so it would be difficult for the father in these families to attend a school meeting if it were held during the workday.

These findings speak to a need for teachers to be more informed about family structures that may differ from the mainstream or societal norm so that teachers can shift their expectations to be more realistic. Researchers in other contexts have found that when schools offer support to CLD families, parents are more likely to attend parent/teacher conferences (Delgado-Gaitan, 1991). Examples of support include, holding meetings during the evening hours or on weekends, offering to hold conferences by phone or video, offering childcare during the meeting time, and providing translators for language support. Each of these changes can expand
opportunities for CLD parents to communicate with the school and take a
more active and supportive role in the education of their child, which can
ultimately lead to improved academic outcomes for CLD students. This
research suggests that teachers have not yet considered such strategies or
have limited funded resources; yet implementing such opportunities would
greatly benefit both teachers and CLD families.

These findings are particularly troubling because according to
Jennifer Park and colleagues (2016) teachers’ negative attitudes can be
correlated to negative outcome expectancies for CLD students’ learning. In
other words, teachers’ attitudes can influence their expectations for CLD
students’ ability to learn. Other studies (Palmer, Dixon & Archer, 2015)
have shown that when teachers have lowered expectations for students’
learning, they are less likely to put forth the efforts necessary to support
students to overcome barriers in their learning. In this case, it may result in
a teacher deciding that the time required for making accommodations to
support a CLD student would not be worth the time and effort because the
teacher does not expect their efforts to actually improve the students’
opportunities for learning. Many studies in urban science education
research have found that teachers with lowered expectations for student
learning tend to implement what is referred to as a “pedagogy of poverty”
that focuses only on simple skills development rather than inquiry-based
learning (Habermas, 1992; Delpit, 1995).

Other researchers have shown that these types of negative attitudes
about learners can effectively rob students from the chance to develop
critical thinking skills or to conduct experiments because the teacher does
not see the value of engaging these learners in those kinds of activities.
This happens due to teachers’ attitudes influencing how they teach and what
practices they are likely to enact (Knopp & Smith, 2005; Pajares, 1992; Bryan, 2012). In the next few sections, how teachers’ knowledge and self-efficacy for implementing inquiry-teaching practices can impact CLD students’ learning in science classroom will be more explicitly discussed.

**Teachers’ self-efficacy on inquiry-based science teaching**

The overall findings from the questionnaire and interview data sets indicated that Korean teachers have relatively high self-efficacy in inquiry-based instructional strategies, particularly in teaching science. Currently in Korea, and in many countries around the world, there is a great emphasis on the use of inquiry teaching methods to engage students in actively “doing science” in order to learn science (NRC, 1996). For the past two decades the Korean government has devoted efforts to improving the teaching and learning of science by encouraging the use of student-centered inquiry teaching (Nam, Choi, and Hand, 2010). These science reform efforts are evident in the Korean national science curriculum and revised textbooks (Lee, Abd-El-Khalick, & Choi, 2006; Choi, et al., 2011). Most recently, the *Korea National Science Education Standards* (KNSES) (2010) emphasized the importance of science literacy for primary and secondary school students. Such changes are seen as necessary for enabling students to be able to make reasonable decisions regarding scientific issues as 21st century citizens (Nam, Choi, and Hand, 2010). In other words, national science standards have made science literacy a goal to be achieved through hands-on activities (“doing science”) and inquiry-based science investigations.

That student-based inquiry classrooms are becoming more prevalent in Korea as it is evident by the considerable research and publications in
science teaching and learning focused on using collaborative approaches for student learning (Kwak, 2001; Kang, Han, & Noh, 2002; Wong, 2003; Hwang & Park, 2011), argumentation in small and whole class (Lee, Choe, & Kim, 2010; Maeng, Park, & Kim, 2013; Yun & Kim, 2011), and implementing modeling in small and whole class activities (Lee, et al., 2012; Cho, Nam, & Lee, 2014; Lee, Cho, & Nam, 2015; Ahn, Chu, Kim, Park & Martin, 2016). As these topics are increasingly a focus for primary and secondary science teacher education programs, it is reasonable to assume some teachers in this study may have learned about inquiry-based instruction or been exposed to these pedagogies in professional development.

Currently, however, most Korean teachers have yet to encounter a CLD student in their own classroom. As a result, they may have higher self-efficacy regarding their ability to support CLD students to be successful in inquiry-based classrooms because they may lack awareness about the challenges CLD students would present in their teaching. Teachers in this study also reported positive attitudes towards the use of inquiry as a strategy for teaching CLD learners, however, secondary level teachers were less positive about implementing this strategy in their classroom.

One reason may be that in elementary and middle school grades teachers face less pressure to prepare students for the annual Korean College Scholastic Ability Test (CSAT), thus they may be able to spend more time implementing student-centered teaching practices and laboratory-based exploration compared to secondary teachers who may place more emphasis on didactic teaching. Other studies (Palmer, Dixon & Archer, 2015) have shown that while primary school teachers may more likely than secondary school teachers to adopt teaching strategies that
engage students in collaborative group work or that seek to integrate content across the curriculum, they tend to be less positive about their content knowledge (especially in subjects such as math or science).

However, since the teacher preparation requirements in Korea are very rigorous, Korean teachers tend to have better content preparation than teachers in other countries struggling with multicultural and multilingual classrooms, such as the United States or Australia. This means that both primary and secondary level teachers are more likely to have a firm foundation with regards to content knowledge. As such, it is possible that teacher education and professional development programs that are designed to improve inquiry teaching have the potential to be more effective in Korea than in some other countries.

Such programs, would however, require a focus not only on developing teachers’ understanding about how to implement inquiry, but also how to foster the kinds of learning environments that would allow CLD students to be successful. Encouraging CLD students to participate in inquiry-based tasks generally requires greater interaction between the student and their peers, which means teachers would need to be able to attend to social and linguistic needs of CLD students.

To attend to social needs, teachers would benefit from coursework and professional development that emphasizes theories of multicultural education and that helps teachers to learn to appreciate diversity and confront their own biases and prejudices. In addition to being able to manage students’ social interactions in a student-centered inquiry based classroom, teachers need to be able to attend to the linguistic demands these social activities place on CLD learners. The next section focuses on
teachers’ self-efficacy for implementing language based teaching strategies for CLD students.

*Teachers’ self-efficacy on language-based teaching*

Student-centered, inquiry-based classrooms can offer a positive learning environment for helping CLD students to develop language because they provide opportunities for language learners to negotiate meaning with peers using multi-modal forms of communication. This study emphasizes that learning science as inquiry has potential to provide the type of learning environment that could foster CLD students’ ability to become more fluent in Korean, both in everyday language and in academic language. However, in order for students to be able to benefit from these classrooms, Korean teachers need to be able to structure activities to support CLD students.

Unfortunately, teachers in this study expressed limited knowledge about language education theories, including understanding how people develop their first language and how they go about acquiring additional languages. Teachers also reported having limited self-efficacy about how to effectively teach CLD students by implementing strategies designed to support CLD students. Conversely, during interviews with teachers who had worked with CLD students, several voiced their opinion that using inquiry, as a pedagogical approach for teaching science, would be a good way for CLD students to improve their understanding of both science concepts and of the technical vocabulary used in the science textbooks.

Both the quantitative and qualitative data sets demonstrated that teachers lacked experience and self-efficacy in instructing CLD students by utilizing language-based teaching strategies. As the number of CLD
students is rising, it is imperative that Korea’s teachers are better equipped with the knowledge and tools needed to help them feel confident in their ability to educate CLD learners, aiming for them to be successful in school and science. George Bunch (2013) suggests that teachers must be taught not only content knowledge, but also knowledge about the language that needs to be taught in connection to core subject area(s). Instead of teaching and learning language in isolation, focusing on language “skills” (e.g. grammatical rules, punctuation, and spelling) from content (Ivanic, 2004), teachers need to be educated about how to combine language and knowledge so as to create purpose in learning about the “language of science”. If teachers were prepared to teach about the language of science, they could provide more authentic learning experiences for all learners.

Findings from this study suggested Korean teachers are aware they are lacking the necessary knowledge and skills to support CLD students to develop language skills while simultaneously learning content. This was especially true of secondary school teachers who, unlike primary school teachers, generally have more content area preparation but less expertise about how to integrate content across the curriculum. As a result, secondary teachers tend to struggle more when asked to help their students engage with language and texts in their subject domains in ways that expands students’ conceptual understanding and content learning (Richardson-Bruna, Vann, & Escudero, 2007). Teacher education programs that offer secondary teachers resources to expand their pedagogic knowledge beyond the lens of their discipline can help them be more successful in scaffolding the learning of CLD students (Arkoudis, 2005).

Introducing instructional tools, such as the Sheltered Instructional Observation Protocol (SIOP) (refer to Appendix C), to science teachers
could enhance their use of the types of language teaching strategies that have been shown to improve CLD students’ understanding of the kinds of academic language needed to describe science concepts and content (Echevarria, et al., 2004; Echevarria, et al., 2009; Larsen-Freeman & Anderson, 2013). By integrating discipline specific language and literacy skills, with scaffolding techniques that use inquiry-based science concepts, teachers can also be supported to implement content-specific strategies and to adapt curriculum and instruction to meet the needs of CLD students. This can help to improve teachers’ pedagogical strategies (knowledge) and their confidence (self-efficacy), as well as their level of comfort when teaching CLD students to learn science through inquiry (Durgunoglu & Hughes, 2010; Echevarria, et al., 2006).

**Significant relationships between teachers’ attitudes and self-efficacy**

Interestingly, this study found that even when teachers had positive attitudes toward CLD students and they had high levels of teaching self-efficacy for inquiry teaching, they were still not likely to implement pedagogical strategies that would be more effective for CLD learners. This finding is important because it means that simply providing teachers with professional development about diversity or how to use language strategies to teacher CLD students may not be enough to affect teachers’ classroom practices. Studies have shown that teachers need specially designed coursework and professional development that provides detailed, concrete examples about how to integrate content and language-based instruction in an inclusive classroom setting (Bruna, Vann, and Escudero, 2007; Pass and Mantero, 2009, as cited in Braden et al., 2016). It is not enough to provide teachers with generalized training about diversity and language education, but instead
teachers need programs that engage them in reflective, experiential-type training that focuses on how to make real changes in their own classroom contexts (Langman, 2003; Settlage, Madsen, and Rustad, 2005).

Professional development that fails to have teachers consider how their attitudes may influence their expectations for student learning, which could in turn, shape their classroom practices, will be limited in scope and ability to affect real change. This is an important finding because an easy fix for addressing the challenges teachers and CLD learners face in classrooms is desirable. When seeking to meet the needs of a CLD student, it is not effective to try to apply the same technique for each one. Students need teachers who can evaluate their individual needs and then develop lessons that can accommodate for that learner. If teacher educators and policy makers want to affect lasting and transformative change in schools with CLD students, they have to develop programs that equip teachers to be reflective and reflexive in how they work with diversity and change.

**Factors that influence the relationship between teachers’ attitude and self-efficacy**

In the quantitative data analysis, several important factors emerged that appeared to have the potential to positively influence teachers’ attitudes and self-efficacy. These factors included grade level, number of years a teacher had been teaching, whether the teacher had studied a language other than Korean or had traveled or lived outside of Korea, and whether the teacher had participated in any professional development about diversity or multicultural education. In addition, two additional factors emerged from the qualitative data which were important, including the need for the establishment of a Korean language proficiency exam for...
primary and secondary students and the use of language that positioned CLD students and their families as “the other” in relation to native-Koreans. In the following sections, each factor is briefly discussed.

*Differences exist between primary and secondary school teachers*

The grade level of teachers seemed to have an influence on their overall attitudes toward cultural and linguistic diversity. Specifically, teachers at the primary school level have significantly more positive attitudes about CLD students and their families than secondary school teachers. In this study, primary school teachers expressed greater knowledge and higher self-efficacy than secondary school teachers about how to effectively integrate different topics, such as language arts (국어), science, and mathematics. These findings are not necessarily surprising as it is common for primary school teacher education programs (both in Korea and internationally) to emphasize the value of content integration for improving students’ science literacy skills. Both elementary and middle school grade level (1-9) teachers tend to be responsible for teaching various subjects and they often have coursework designed to support learners to enhance reading and writing in the context of science.

There are many curriculum resources available to support teachers to integrate language arts and science (refer to McKee, McKee, & Ogle 2005; Freeman & Taylor, 2006). However, research shows that secondary school teachers tend to have more content-related coursework that lack in content integration (Barwell, 2005). This could explain why the secondary school teachers in this study (including science teachers) had difficulty in recognizing or being familiar with the language demands of the curriculum.
Other studies have shown that secondary school science teachers hold limited conceptions about literacy teaching and learning whereby they tend to think of reading and writing as basic skills to be developed in the primary school grades or by language teachers (Brinton, Snow, & Wesche, 2004; Tan, 2011). As such, science teachers do not expect to teach reading and writing to students even though there are considerable needs for specialized science literacy skills that would support students to be able to comprehend science textbooks and science specific text, such as diagrams, graphs, and tables.

Expecting CLD students, who may not be proficient in Korean, to use language to describe, hypothesize, explain, justify, argue, and summarize their science understandings (Rosebery & Warren, 2008) has important implications for the opportunities they have to actively and equitably engage in science learning. If teachers intend to effectively engage CLD students in inquiry-based learning that emphasizes critical thinking, problem solving, predicting, explaining, and asking questions then they must be able to support CLD students to engage in positive social interactions with their peers. In addition, teachers should be able to help CLD students to draw on both everyday Korean language and academic language to construct scientific knowledge and communicate their science learning to others. Thus, as discussed earlier in this chapter, findings from this research suggest that both primary and secondary school teachers would benefit from professional development programs designed to target content literacy and language teaching needs for diverse learners.
Exposure to diversity positively influences teachers’ attitudes and self-efficacy

Both the quantitative and qualitative data sets revealed that teachers’ travel experiences and foreign language learning positively influenced their knowledge about diversity and self-efficacy in teaching CLD students using inquiry-based strategies. This finding was interesting and future research should explore more closely how teachers’ experiences traveling abroad or learning a second language could influence their confidence in being able to support CLD students’ learning when using inquiry. Youngs and Youngs (2001) assert that increasing opportunities for teachers to be exposed to cultural diversity helps eliminate biases, which result in increased positive feelings toward CLD students. Similarly, they found a positive correlation between teachers who have reported living abroad at some point in their life with having higher self-efficacy for teaching CLD students.

In contrast, even though teachers’ educational experiences, time living abroad, or learning a foreign language did positively influence their knowledge about diversity, it did not positively influence their attitudes about CLD students and their families in this study. This finding is important because it demonstrates that having knowledge about diversity is not necessarily enough to impact teachers’ attitudes and practices when working with CLD students and their families.

Thus, teacher education courses and professional development programs that are designed to simply focus on expanding teacher knowledge and awareness about diversity may not be effective. Instead, these programs should seek to engage teachers in meaningful activities and experiences that
support them to interrogate their personal beliefs and biases reflecting on how their attitudes could influence classroom practices.

*Effects of teachers’ attitudes in inquiry-based science classrooms*

According to Lee and Fradd (1998), instructional congruence for CLD students in science requires that teachers have an understanding and appreciation of CLD students’ language and cultural experiences, scientific knowledge and habits of mind, and abilities to relate science to students’ background experiences. The attitudes of teachers can affect not only what science students learn, but also how they learn in the science classroom (Youngs and Youngs, 2001). Teachers’ attitudes, unconsciously projected beliefs, and expectations with regards to CLD students can lead “teachers [to be] unaware that they are communicating different expectations for different students” (Youngs & Youngs, 2001, pg. 100). Thus, it is important that teachers need to recognize and acknowledge the potential for attitudes, at both conscious and unconscious levels, to be very influential on classroom practices.

For example, several teachers interviewed in this study stated that CLD students with limited Korean proficiency levels needed to be placed in some type of language-based intervention programs or additional language courses before being integrated into their science classrooms. Such comments imply that someone else should be responsible for CLD students’ learning rather than their science teachers. Such attitudes suggest that teachers do not feel they should be responsible for CLD students’ science and language learning needs, which means they may be less likely to make the type of modifications to their science lessons that would be needed to accommodate CLD students in their classes.
Alternatively, three of the teachers interviewed in this study indicated they strongly believed that CLD students were capable of learning science content despite not being proficient in Korean. This positive assumption about their students’ ability may support teachers to enact practices designed to provide CLD students in their classroom with opportunities to represent their knowledge in ways that prioritizes the evaluation of content knowledge understanding rather than language proficiency level.

Research has revealed teachers may carry feeling of being “burdened” about their responsibility to make accommodations for CLD students, especially if the school was limited in providing support such that teachers felt they had “enough on their plate already” (Walker, Shafer, & Liams, 2004). Similarly, some of the Korean teachers interviewed voiced feeling burdened when CLD students enrolled in their classes. This feeling could be related to teachers’ general misunderstanding about who CLD students are and what kinds of challenges they may face as learners.

Such teachers may feel doubly burdened if they are required to use inquiry teaching strategies, even while lacking access to resources and time necessary for making the modifications needed to help support CLD students (Markham, Green, and Ross, 1996). These struggles speak to Korean teachers’ needs for a variety of support at both the classroom and school level. The next section describes ways in which CLD students’ language proficiency needs could be better be addressed by school officials and classroom teachers.

*Lack of language proficiency level placement tests*

According to Youngs and Youngs (2001), when teachers are faced with challenges, their eagerness to be supportive toward CLD students can be
eroded. Once such challenge discovered during the interviews with teachers was schools lack a reliable Korean language proficiency placement exam for helping teachers to identify what types of language support would benefit a CLD student. For example, in the United States, if a child whose first language is not English is to be enrolled in school, a language proficiency exam, such as the *Washington English Language Proficiency Assessment* (WELPA) is administered (OSPI, 2015). A students’ score on this assessment is use to develop an Individual Education Plan (IEP) that addresses content/academic learning goals, English language education goals, and even social learning goals. Schools in Korea where there seems to be no placement assessment, teachers reported that information about a CLD students’ language proficiency was simply “passed down” from one teacher to another.

Lacking a reliable and valid language assessment tool means that teachers’ will have considerable difficulty trying to modify lessons to accommodate specific language needs of a CLD students. In addition, because teachers are lacking the necessary tools to accurately assess a students’ language level, they are frequent forced to rely on the recommendations of a previous teacher – who may or may not be well equipped to diagnose a students’ language level. As a result, teachers may also end up passing on misinformation about CLD students basing information on their own personal biases (Clair, 1995), which can negatively influence teachers’ perspectives about students’ potential for learning (Byrnes, Kiger, & Manning, 1997; Williams & Naremore, 1974; Williams, Whitehead, & Miller, 1972).
During interviews, teachers frequently used terms that positioned CLD students as “the Other” in relation to themselves and native-born Korean students. The act of “othering” is based on socially constructed positional powers, which serve to hierarchically rank individuals, communities, and institutions (Yeh, 2013) in relation to one another. As such, personal, social, cultural, and historical experiences that are categorized or labeled as being different from the “norm” becomes “other” in relation to what is generally valued by people in the mainstream - all other, non-valued experiences, cultures, histories, etc., become marginalized in comparison. In this study, teachers used terms such as “us” or “them” to emphasize a separation between themselves and CLD students and their families.

Being fluent in Korean denotes a type of membership to a collective or group (belonging to Korean society). Those who are not fluent in Korean tend to be marginalized by being identified something “other” than Korean. Although some terms, such as “them” may seem harmless, Yeh and Borrero (2014) states that the very label of “other” consistently reminds “the Other”, in this case CLD students and families, that “they” do not belong. When teachers use these terms to describe students, it serves to marginalize them in relation to native Korean students in the classroom, which can negatively affect the way CLD students seen themselves in relation to their teacher, their peers, and even to Korean society. This research suggests the need to educate teachers and educational professionals about the power of words for developing either inclusive or exclusive learning environments.
7.2 Conclusion

Korea’s unprecedented growth in its immigrant population has progressively changed the dynamics in the schools and classrooms, which has increased the likelihood that all teachers will eventually encounter CLD students in their classrooms. Since the country has been relatively homogenous until now, teacher education programs have not placed much emphasis on developing teachers’ knowledge about how to effectively support CLD students. Utilizing the convergent parallel mixed methods design, this study revealed that a gap exists between teachers’ attitudes and their perceptions of CLD students. In addition, it was found that teachers have limited knowledge about who CLD students are and what strategies would support them to learn. Since attitudes, once established, are quite stable and hard to change (Ramey-Gassert, Shroyer, & Staver, 1996; Schoon & Boone, 1998), thus it is crucial for teacher education and professional development programs to engage teachers in meaningful experiences that initiate personal reflection and questioning about their personal beliefs, attitudes, biases, and knowledge regarding how teacher’s feel about diversity, in general and CLD students and families, specifically. In the next chapter, practical implications for helping teachers improve inquiry and language-based classroom practices that can help to expand CLD students’ language and science learning are discussed.
CHAPTER 8. IMPLICATIONS*

As a result of historical patterns of immigration and migration, the research on diversity and equity issues in science education has been conducted mainly in Western countries. Korea’s educational issues are similar to, but also distinct from much of the earlier research that has been published about CLD students. This study contributes novel research about teachers’ attitudes and self-efficacy that are influential to their classroom practices as the student population is experiencing radical change due to globalization. In this section, additional implications for this study’s findings related to policy, teacher preparation, and educational research and classroom practice will be addressed.

8.1 Policy to Support CLD Students and their Families

As reported earlier, Korea has long been characterized as a homogenous society that has experienced rapid change in the population in less than one generation. Unfortunately, the academic policies and certification requirements that govern teacher education programs present bureaucratic and financial barriers that generally prevent programs from reacting quickly to changes in society. This has important implications for policy makers who have the ability to press for changes and initiatives that can support teacher education programs and school districts to make necessary modifications to support teachers and students.

Since the introduction of the *Educational Support Plan for Children from Multicultural Backgrounds* (ESP) in 2006 by the Ministry of Education and Human Resources Development (MEHRD), the national curriculum has been revised to expand awareness about diverse cultures in the public schools and textbooks have been developed to promote increased awareness about multiculturalism, or cultural and linguistic diversity, in general. However, this policy has been criticized narrowly defining who is considered to be CLD (Lee, 2013). The ESP policy targets “children of international marriages and children of migrant workers residing in Korea” (MEHRD, 2006, p. 3), which excludes North Korean refugees or transnational and returning overseas Koreans, and any other students with diverse backgrounds. And most importantly, this policy does not target educational initiatives for Korean-born nationals based on the assumption that multicultural education is only suitable or necessary for CLD students. The focus of multicultural education should focus on creating inclusive learning environment for all students, not only on identifying problems of CLD students and their families.

The recent finalization of the *2016 Implementation Plan for Multicultural Family Policy* (MOGEF, 2016) seeks to address some of the previous issues. This new policy explicitly calls for the “fostering of multicultural (CLD) leaders” and for “the realization of a mature multicultural (CLD) society”. Funding is being provided at the federal and local levels to support CLD families while enhancing social receptiveness about the positive benefits of multiculturalism in the wider public. This policy seeks to support the development of teaching-aid materials for enhancing students’ Korean language proficiency and improved academic achievement for multicultural students. In addition, this policy seeks to
enhance social receptiveness of CLD families through a multi-media campaign and by promoting training for teachers to enhance understanding about multiculturalism (cultural and linguistic diversity) in schools and to offer more CLD education programs for native Korean students.

These policies are a step in the right direction, but results from a recent study found that the participation rate of marriage migrants in the government sponsored family integration and language education programs in 2013 was only 15.6% for the immigrant parent and 30.2% for children. In 2014, the addition of a newly added clause to the national Multicultural Families Support Act, requesting funding to support programs aimed at helping non-Korean immigrants become better integrated into Korean society (Ministry of Gender Equality and Family). The amendment called for expanded funding for vocational training to improve employment opportunities for non-Korean family members through the development of new Occupation and Employment Centers for Women and to provide additional Korean language courses to be offered at neighborhood Multicultural Family Support Centers.

Currently, there are several different branches and organizations in the Korean government working to manage immigration and associated education issues. In recent years, various policies have been passed to provide more rights and supports to CLD families and their children – including policies that impact the access and enrollment of CLD students into the public school system. Although these policies are critical, more needs to be done as the majority of these policies are designed to target only a very small segment of the CLD student and family population – marriage migrants (mainly women) and their children. The research in this dissertation has shown that there are many more categories of students and
families who should be recognized as being CLD and who would benefit from policies to support them to become better integrated into Korean society. This is specifically true with regards to teacher education initiatives designed to promote awareness about diversity in Korean society, the need for multicultural education, and the benefit of bilingual and second language education supports for CLD students.

**Korean As Second Language Teacher Certification Programs And Research**

Currently, there are no official *Korean as a Second Language* (KSL) certification programs established in any teacher education programs in Korea. While there are programs to train and certify teachers in *English as a Foreign Language* (EFL) education, the theory and pedagogy associated with foreign language education is somewhat different from what is needed for supporting CLD students to acquire a second language in an immersion context. As a result, schools with CLD students have rare access to teaching professionals with expertise in second language acquisition and language teaching.

In 2009, the Ministry of Education and the Seoul Office of Education started an initiative to recruit bilingual teachers from qualified marriage immigrant women to help promote active communication among multicultural families and efficient educational support for multicultural children. In 2011, the Ministry of Gender Equality and Family (MOGEF) expanded this initiative by training and hiring 100 “bilingual teachers” to be assigned to Multicultural Family Support Centers where they would instruct students in Korean and in the teachers’ native language. These two, overlapping programs, have been criticized for providing teachers with
limited training, insufficient teaching resources and materials, for focusing too narrowly on only a few languages (Mandarin, Vietnamese, Japanese, and Mongolian), and for not funding the programs effectively enough to retain the teachers in these positions (Kim, 2015). In 2012, the first Bilingual Education Act was passed to help promote language education initiatives that will begin to address the language needs of CLD students who are not fully proficient in Korean language to be more successful in schools. However, as this study found that rarely were teachers aware of this policy almost four years after it was passed, the law appears to have had limited impact thus far.

This study advocates for policies that expand teacher education initiatives for developing KSL programs and policies that fund the development of the curriculum resources teachers need to help CLD students to learn content, while also developing language and literacy skills. By developing the field of KSL, specialized language teachers can be effectively introduced in schools collaborating with content area teachers in efforts to support CLD students in learning and developing science content knowledge and language. Training KSL teachers to be able to support science teachers in mainstream classrooms, integrating discipline specific language and literacy skills while utilizing scaffolding techniques that are both inquiry-based and language-based, can improve science and KSL teachers’ confidence and pedagogical knowledge for teaching CLD students (Durgunoglu & Hughes, 2010; Echevarria et al., 2006). Beyond developing new teacher education programs, policies can be developed that allow teacher education programs to design add-on certifications that offer coursework designed to train specialized teachers how to adapt curriculum and instruction to meet the needs of CLD students, and model how to use
content-specific strategies in content classrooms through co-teaching (Im & Martin, 2015).

In addition, policy initiatives can expand funding for designing and implementing long-term and short-term teacher professional development programs that target primary or secondary school teachers in general education or content specific areas, along with multicultural education and second language acquisition training. Funding can support the development of resources that help teachers attend to issues, such as pacing, scaffolding student understanding, and providing explicit instruction about science language from the SIOP model (refer to Appendix C) and RTOP model (refer to Appendix B). Tools, such as SIOP and RTOP, can empower KSL and content-based teachers to identify good teaching practices in inquiry and language education that can improve CLD students’ understanding of both the academic and everyday Korean language that is used to describe content in the primary and secondary classroom (Echevarria, et al., 2004; Echevarria, et al. 2009; Larsen-Freeman & Anderson, 2013).

Finally, this study encourages funding initiatives aimed at fostering inter-disciplinary research and program development between faculty in content departments (i.e., science, math, social studies) and faculty in the Korean language, language education, and social science departments. The issues that need addressing go beyond the expertise of individuals in single departments. For example, collaborative efforts to develop assessments to help determine students’ Korean language proficiency level, through initial placement tests with official documentation, and to design complementary curriculum standards and resources to support teachers to determine what type of accommodations or modifications would be most appropriate for supporting students at different proficiency levels are needed. Language
assessment tools and curriculum resource supports take considerable time and effort to create, which requires support from funding agencies and policies that signify the value of these projects. It is a hope that policymakers and funding agencies will help to advance research initiatives that promote equity and access to education and science education in the future.

8.2 Transforming Science Teacher Education and Professional Development

An essential point for consideration in possible future research focuses on developing teacher education programs and professional development resources that can help transform Korean teachers’ attitudes and teaching efficacy in ways that truly expand inquiry and language learning opportunities for CLD students in their classrooms. Specifically, advocating for the development and integration of such courses in science teacher education programs, at both the primary and secondary school levels. This study suggests an important way to meet this goal is by improving teachers’ knowledge about diversity and supporting teachers to become aware of their biases. To do this, it’s recommend that multicultural education courses be developed and added to current teacher education programs that address the unique social, cultural, and historical issues related to the changing Korean society be developed. These courses should incorporate research and pedagogies related to multicultural education, especially related to teaching science to CLD students (Banks, 1991; Atwater, et al, 2013; Martin, Wassell, & Scantlebury, 2013).

In addition, by increasing teachers’ understanding of the process of second language acquisition, teacher empathy toward CLD students’ language difficulties and cultural differences can be improved. This can also
give teachers more confidence in their ability to effectively implement strategies in supporting CLD students to access language and build content understanding (Lee, et al, 2007; Dong, 2004; Wassell, Martin, & Scantlebury, 2013; Im & Martin, 2015). Finally, it is critical that in-service teachers receive on-going professional development that focuses on introducing practical research approaches and examples for how to promoting student-centered inquiry-teaching pedagogy while providing the necessary language support needed to expand language learning opportunities for all CLD students in the science classroom.

Moving forward, this research hopes to help influence policy and curriculum changes that improve teacher education and preparation and that offer more curriculum support for CLD students in Korean schools. In addition, invested efforts hopefully can influence policy initiatives that expand funding to support research about how to improve education for CLD students. By doing this, it can encourage policy decisions and school-based programs be better informed by all stakeholders, including classroom teachers, CLD students and, CLD parents.

8.3 Teacher Attitudes and Self-Efficacy Research

Using teacher efficacy as a way to determine whether teachers believe they can create a positive learning environment for CLD students has received little attention. This research helped identify specific areas of concern for Korean teachers when using inquiry-based instructional practices to teach CLD students in hopes to target potential relationships between different domains. These findings can then be used to help design future research and to help potentially develop different types of teacher education courses and professional development programs that would most
benefit Korean teachers and the CLD students whom they teach. Through the use of *K-TASILT*, a potentially valuable tool, can be used for both science and language teacher educators to access in-service and pre-service teachers’ attitudes and teaching self-efficacy on actual inquiry and language teaching practices in the classroom. By combining *K-TASILT* with classroom-based qualitative research, teachers’ ideas and beliefs associated with using inquiry and language-teaching strategies with CLD students can be understood better.

### 8.4 Research that Enhances Learning for CLD Students

It is critical that the Korean education system be better prepared to meet the needs of CLD learners because CLD students hold the potential for making important contributions to Korea’s future in Science, Technology, Mathematics, and Education (STEM) industries. CLD students bring diverse perspectives and experiences to the learning of science, and as such, they have much to offer Korea’s future with regards to STEM education. However, science can be either a bridge or a barrier for CLD students’ academic success. For this reason, it is critical that CLD students have equitable opportunities to learn science and language so they can benefit from expanding their science knowledge, as well as, be provided the skills needed to be able to access the same higher education opportunities as native Korean students.

This research hopes to begin building recognition for the need to support CLD students and CLD families to not only survive in Korean society, but to thrive. To meet these goals, teachers and students need more support to conduct classroom-based research that can help to identify and
develop teaching strategies that are appropriate for Korea’s educational context.

Hopefully the findings from this study can inform teacher preparation programs and professional development, as well as help to introduce teachers to research and practical examples that promote the use of a student-centered inquiry teaching approach, while also providing students necessary language support that expands learning opportunities for CLD students with varying language proficiencies. Findings from this study also suggest that developing teacher education programs that expose teachers to more language learning opportunities or to teaching experiences in other cultural contexts could improve their attitudes toward diversity while also improving their knowledge self-efficacy and teaching self-efficacy on how to improve challenges CLD students face when engaging in student-centered inquiry activities with limited language proficiency.

By using inclusive, participatory research methodologies (Barton, 2001; Martin, 2006), there is much room to learn more about how Korean teachers and the CLD students in their classrooms experience school and science so future studies can work collaboratively to affect positive changes in how teaching and learning occurs. By engaging teachers and students in collaborative research efforts, the aim seeks to develop resources and course materials that can help individual teachers and students to identify the problems they are facing and to use research to collectively attend to these issues so teachers can expand opportunities for CLD students to learn science through inquiry while developing the Korean language needed to communicate their understandings and wonderings.
국문 초록

박예리

과학교육과 생물교육전공

한 때 단일 민족 국가라고 불리던 한국은 최근 이민 인구가 급증하면서 학생 인구에도 큰 변화를 겪고 있다. 이에 한국인 학생들과는 상이한 문화와 언어를 지닌(Culturally and Linguistically Diverse: CLD) 학생들이 초등학교와 중등학교에서 급격하게 증가하고 있다. 그 동안 특정 교수 활동에서 교사의 태도가 자기 효능감에 어떠한 영향을 미치는지 살펴본 연구들은 많이 이루어져 왔다. 본 연구는 여기에서 좀 더 나아가, 혼합 연구방법에 근거한 교사들의 CLD 학생들에 대한 태도 및 학급 내 CLD 학생들이 증가하는 현상에 대한 태도와 탐구 및 언어 기반 교수 전략(inquiry and language-based teaching strategy)에 대한 교사의 자기 효능감 연구를 통하여, 교사들의 당면한 문제점을 살펴보고 교사교육이나 교사연수 개발에 대한 방향을 제언하고자 한다.

본 연구는 3 가지 영역으로 구성된 설문지와 반 구조화된 교사 면담을 실시하여 양적 연구 데이터와 질적 연구 데이터를 각각 수집하였다. 이렇게 수집한 양적 연구 자료와 질적 연구 자료를 각각 분석 및 해석한 후 결과를 도출하는 혼합 연구 방식 (convergent parallel mixed-method approach)을 사용하였다.
3 가지 영역으로 구성된 한국 교사의 탐구 및 연어 기반 교수에 대한 태도와 자기 효능감(K-TASILT) 설문지를 연구팀이 개발하였고, 한국의 초등, 중등 공립학교 교사 144 명이 설문 연구에 참여하였으며, 과학을 세부적인 학습으로 한 초등 교사 및 과학 중등 교사들이 16 명이 반 구조화된 면담에 참여하였다. 본 설문 결과는 한국 교사들이 CLD 학생들을 대하는 태도와 학급 내 CLD 학생들이 증가하고 있는 현상에 대한 태도, 그리고 CLD 학생들에게 탐구 및 연어 기반 교수 전략을 사용하는데 있어서 교사의 자기 효능감에 대한 전반적인 개관을 보여준다. 면담 연구결과는 CLD 학생들이 대한 교사의 태도가 탐구 및 연어 기반 교수 전략을 사용하는데 있어서 교사의 자기 효능감에 영향을 주었는지 이해하는데 사용되었다. 또한, 면담 결과를 통해 다양성에 대한 교사들의 태도가 CLD 학생들의 학업 성취를 어떻게 지원 또는 제한 할 수 있는지도 보여주었다. 본 연구방법을 통한 양적 질적 연구에서는 교사들이 대체로 CLD 학생들에 대해 긍정적인 태도를 가지고 있지만, 많은 교사들이 CLD 학생들에 대해 잘못 이해하고 있으며 CLD 학생들을 효과적으로 가르치기 위한 교사 교육이 부족함을 알 수 있었다. 무엇보다도 주목할 점은 교사들의 인식과 태도 사이에 간극이 존재하며, 이는 CLD 공동체에 대한 불명확한 이해에서 비롯된다는 것이다. 그 뿐 아니라 교사들이 CLD 학생들에 대해 긍정적 태도를 지니고 탐구 기반 수업에 있어 높은 자기효능감을 가지고 있음에도 불구하고, CLD 학생들이
포함된 학급에서 탐구 및 언어 기반 교수 전략을 시행하는 데에 어려움을 겪고 있다는 것이다.

본 연구 결과는 효과적인 과학 교사 교육과 교사 및 예비 교사의 전문성 향상에 시사점을 제공한다. CLD 학생에 초점을 둔 교사 교육 뿐 아니라 CLD 학생과 CLD 학생을 가르치는 교사들을 위한 탐구 및 언어 기반 과학 교수학습에 초점을 둔 교육 프로그램을 통해 효과적인 과학 및 언어 교수학습을 기대할 수 있을 것이다.

주요어: 문화적, 언어적 다양성(CLD), 자기효능감, 탐구 기반 과학, 언어 기반 교수, 교사 교육 프로그램/전문성 향상(TED/PD)

학번: 2011-31323
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Appendix A

Blooms taxonomy and levels of higher order thinking questions

Bloom’s Taxonomy

Bloom’s Taxonomy provides an important framework for teachers to use to focus on higher order thinking. By providing a hierarchy of levels, this taxonomy can assist teachers in designing performance tasks, crafting questions for conferring with students, and providing feedback on student work.

This resource is divided into different levels each with Keywords that exemplify the level and questions that focus on that same critical thinking level. Questions for Critical Thinking can be used in the classroom to develop all levels of thinking within the cognitive domain. The results will be improved attention to detail, increased comprehension and expanded problem solving skills. Use the keywords as guides to structuring questions and tasks. Finish the Questions with content appropriate to the learner. Assessment can be used to help guide culminating projects. The six levels are:

Level I Knowledge
Level II Comprehension
Level III Application

Level IV Analysis
Level V Synthesis
Level VI Evaluation

Blooms Level I: Knowledge
Exhibits memory of previously learned material by recalling fundamental facts, terms, basic concepts and answers about the selection.

Keywords:
who, what, why, when, omit, where, which, choose, find, how, define, label, show, spell, list, match, name, relate, tell, recall, select

Questions:
• What is…? • Can you select? • Where is…? • When did _____ happen?
• Who were the main…? • Which one…? • Why did…? • How would you describe…?
• When did…? • Can you recall…? • Who was…? • How would you explain…?
• How did _____ happen…? • Can you list the three…? • How is…?
• How would you show…?

Assessment:
Match character names with pictures of the characters.

Match statements with the character who said them.

List the main characteristics of one of the main characters in a WANTED poster.

Arrange scrambled story pictures and/or scrambled story sentences in sequential order.

Recall details about the setting by creating a picture of where a part of the story took place.
Appendix B

Reformed Teaching Observational Protocol (RTOP) rubric tool

### III. LESSON DESIGN AND IMPLEMENTATION

<table>
<thead>
<tr>
<th></th>
<th></th>
<th>Never Occurred</th>
<th>Very Descriptive</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td></td>
<td>The instructional strategies and activities respected students’ prior knowledge and the preconceptions inherent therein.</td>
<td>0 1 2 3 4</td>
</tr>
<tr>
<td>2</td>
<td></td>
<td>The lesson was designed to engage students as members of a learning community.</td>
<td>0 1 2 3 4</td>
</tr>
<tr>
<td>3</td>
<td></td>
<td>In this lesson, student exploration preceded formal presentation.</td>
<td>0 1 2 3 4</td>
</tr>
<tr>
<td>4</td>
<td></td>
<td>This lesson encouraged students to seek and value alternative modes of investigation or of problem solving.</td>
<td>0 1 2 3 4</td>
</tr>
<tr>
<td>5</td>
<td></td>
<td>The focus and direction of the lesson was often determined by ideas originating with students.</td>
<td>0 1 2 3 4</td>
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</tbody>
</table>

### IV. CONTENT

**Propositional Knowledge**

<p>| | | | | |</p>
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<tr>
<th></th>
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<tbody>
<tr>
<td>6</td>
<td></td>
<td>The lesson involved fundamental concepts of the subject.</td>
<td>0 1 2 3 4</td>
<td></td>
</tr>
<tr>
<td>7</td>
<td></td>
<td>The lesson promoted strongly coherent conceptual understanding.</td>
<td>0 1 2 3 4</td>
<td></td>
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<tr>
<td>8</td>
<td></td>
<td>The teacher had a solid grasp of the subject matter content inherent in the lesson.</td>
<td>0 1 2 3 4</td>
<td></td>
</tr>
<tr>
<td>9</td>
<td></td>
<td>Elements of abstraction (i.e., symbolic representations, theory building) were encouraged when it was important to do so.</td>
<td>0 1 2 3 4</td>
<td></td>
</tr>
<tr>
<td>10</td>
<td></td>
<td>Connections with other content disciplines and/or real world phenomena were explored and valued.</td>
<td>0 1 2 3 4</td>
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</table>

**Procedural Knowledge**

<p>| | | | | |</p>
<table>
<thead>
<tr>
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<tbody>
<tr>
<td>11</td>
<td></td>
<td>Students used a variety of means (models, drawings, graphs, concrete materials, manipulatives, etc.) to represent phenomena.</td>
<td>0 1 2 3 4</td>
<td></td>
</tr>
<tr>
<td>12</td>
<td></td>
<td>Students made predictions, estimations and/or hypotheses and devised means for testing them.</td>
<td>0 1 2 3 4</td>
<td></td>
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<tr>
<td>13</td>
<td></td>
<td>Students were actively engaged in thought-provoking activity that often involved the critical assessment of procedures.</td>
<td>0 1 2 3 4</td>
<td></td>
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<tr>
<td>14</td>
<td></td>
<td>Students were reflective about their learning.</td>
<td>0 1 2 3 4</td>
<td></td>
</tr>
<tr>
<td>15</td>
<td></td>
<td>Intellectual rigor, constructive criticism, and the challenging of ideas were valued.</td>
<td>0 1 2 3 4</td>
<td></td>
</tr>
</tbody>
</table>
Appendix C

Sheltered Instructional Observational Protocol (SIOP) rubric tool

V. CLASSROOM CULTURE

The Sheltered Instruction Observation Protocol (SIOP) (Echevarria, Vogt, & Short, 2000; 2004; 2008)

Observer:  
Date:  
Grade: 
ESL Level: 

Teacher:  
School:  
Class/Topic:  
Lesson: (check one)  
Multi-day  
Single-day

Directions: Check the box that best reflects what you observe in a sheltered lesson. You may give a score from 0-4 (on selected items). Cite under Comments specific examples of the behaviors observed.

<table>
<thead>
<tr>
<th>Lesson Preparation</th>
<th>Highly Evident</th>
<th>Somewhat Evident</th>
<th>Not Evident</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Content objectives clearly defined, displayed, and reviewed with students</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2. Language objectives clearly defined, displayed, and reviewed with students</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3. Content concepts appropriate for age and educational background level of students</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4. Supplementary materials used to a high degree, making the lesson clear and meaningful (e.g., computer programs, graphs, models, visuals)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>5. Adaptation of content (e.g., text, assignment) to all levels of student proficiency</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>6. Meaningful activities that integrate lesson concepts (e.g., surveys, letter writing, simulations, constructing models) with language practice opportunities for reading, writing, listening, and/or speaking</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Comments:

Building Background
7. Concepts explicitly linked to students’ background experiences  
8. Links explicitly made between past learning and new concepts  
9. Key vocabulary emphasized (e.g., introduced, written, repeated, and highlighted for students to see)

Comments:

Comprehensible Input
10. Speech appropriate for students’ proficiency level (e.g., slower rate, enunciation, and simple sentence structure for beginners)  
11. Clear explanation of academic tasks  
12. A variety of techniques used to make content concepts clear (e.g., modeling, visuals, hands-on activities, demonstrations, gestures, body language)

Comments:

Strategies
13. Ample opportunities provided for students to use learning strategies  
14. Scaffolding techniques consistently used assisting and supporting student understanding (e.g., think-alouds)
15. A variety of questions or tasks that promote higher-order thinking skills (e.g., literal, analytical, and interpretive questions)  
Comments:  
Interaction  
16. Frequent opportunities for interaction and discussion between teacher/student and among students, which encourage elaborated responses about lesson concepts  
17. Grouping configurations support language and content objectives of the lesson  
18. Sufficient wait time for student responses consistently provided  
19. Ample opportunities for students to clarify key concepts in L1 as needed with aide, peer, or L1 text  
Comments:  
Practice and Application  
20. Hands-on materials and/or manipulatives provided for students to practice using new content knowledge  
21. Activities provided for students to apply content and language knowledge in the classroom  
22. Activities integrate all language skills (i.e., reading, writing, listening, and speaking)  
Comments:  
Lesson Delivery  
23. Content objectives clearly supported by lesson delivery  
24. Language objectives clearly supported by lesson delivery  
25. Students engaged approximately 90% to 100% of the period  
26. Pacing of the lesson appropriate to students’ ability level  
Comments:  
Review and Assessment  
27. Comprehensive review of key vocabulary  
28. Comprehensive review of key content concepts  
29. Regular feedback provided to students on their output (e.g., language, content, work)  
30. Assessment of student comprehension and learning of all lesson objectives (e.g., spot checking, group response) throughout the lesson  
Comments:  
Total Points Possible: 120 (Subtract 4 for each NA given)  
Total Points Earned:  
Percentage Score:
Appendix D

K-TASILT questionnaire scales: ATCALD, ITENKS, LTENKS

<table>
<thead>
<tr>
<th>K-TASILT questionnaire: ATCALD</th>
</tr>
</thead>
<tbody>
<tr>
<td>41. 한국에 살고있는 비 한국인의 약 50%가 중국국적을 가지고있다. About half (50%) of the non-Koreans living in Korea hold Chinese passports (or nationality).</td>
</tr>
<tr>
<td>42. 한국에 있는 모든 이민자 중 결혼 이민자는 극히 소수이다. Of all immigrants in Korea, only a few are marriage immigrants</td>
</tr>
<tr>
<td>43. 비 한국인/다문화 가정의 학생은 현재 가장 빈곤 인구 증가율을 보이고있다. The children of non-Korean/multicultural families are currently the fastest growing population of students in Korea.</td>
</tr>
<tr>
<td>44. 어떤 교사들은 비 한국인/다문화 학생들을 차별을 하고있다. Some teachers carry discrimination towards non-Korean/multicultural students.</td>
</tr>
<tr>
<td>45. 교사들은 한국말이 유창하지 않은 학생들의 언어 능력을 개발 시키기위한 교사 교육을 받고있다. Teachers have enough education and professional development to effectively teach students with limited Korean proficiency.</td>
</tr>
<tr>
<td>46. 교사들은 인종적/문화적면에서 한국인이 아닌 학생들을 효과적으로 교육 시키기위한 교사 교육을 받고있다. Teachers have enough education and professional development to effectively teach students who are racially/ethnically non-Korean.</td>
</tr>
<tr>
<td>47. 학급에 다문화학생이 없다면 다문화교육 이론이나 전략은 필요없다. There is no need to include multicultural education theories and strategies if there are no multicultural students in the classroom.</td>
</tr>
<tr>
<td>48. 모든 과목이 다문화교육 이론과 다문화교육 전략 (글로벌 문제점에 대한 인식, 다른 문화에 대한 관용 및 편견의 길지 등)에 대한 이해를 필요로 하는 것은 아니다. There is no connection between the subject taught and needing to be aware of multicultural education theories and strategies [i.e., teaching tolerance for other cultures, increasing awareness of global issues, and preventing prejudice].</td>
</tr>
<tr>
<td>49. 나는 비 한국인/다문화학생들은 학교 생활에서 부담하는 어려움을 잘 알고있다. I know non-Korean/multicultural students face various difficulties in school.</td>
</tr>
<tr>
<td>50. 한국말은 잘 하지 못하는 학생들이나 비 한국인 학생들도 학교에서 친구들에게 쉽게 친구로 받아 들여지고 있다. Students who do not speak Korean well or who are not Korean are easily accepted by their peers in school.</td>
</tr>
<tr>
<td>51. 비 한국인/다문화 부모들도 다른 한국 부모들과 똑같이 그들의 자녀를 보살핀다. Non-Korean/multicultural parents care about their children the same as Korean parents care about their children.</td>
</tr>
<tr>
<td>52. 비 한국인/다문화가정들은 일정 시간이 흐르면 한국 사회에 완전히 융합될 수 있다. Usually non-Korean/multicultural families are fully integrated into Korean society after some time.</td>
</tr>
<tr>
<td>53. 비 한국인/다문화학생들의 제 2 언어 습득을 방해하는 요소 중의 하나는 가정에서의</td>
</tr>
</tbody>
</table>

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The use of the first or native language at home by the parents of non-Korean/multicultural students interferes with the speed and efficiency of second language acquisition for their child.

54. 비 한국인/다문화 학생의 한국어 능력은 그들의 인지능력을 나타낸다. Non-Korean/multicultural students’ Korean language skills reflect their cognitive ability.

55. 비 한국인/다문화 학생 혹은 한국말이 유창하지 않은 학생들은 한국학생들과 관계를 맺는데 어려움이 있다.
Students who are non-Korean/multicultural or who have limited Korean proficiency have a difficult time relating to Korean students.

56. 비 한국인/다문화 학생의 학업성취도는 반드시 한국어 능력과 비례한다.
한국말이 유창하지 않은 학생이나 비 한국인/다문화 학생에게도 일반 한국학생들과 같은 높은 학업 성취도를 기대할 수 있다.
The academic achievement of non-Korean/multicultural is proportional to their Korean language proficiency.

57. 나는 인종, 민족, 언어가 다양한 사람들로 한국사회가 구성되는 것은 바람직한 현상이라고 생각한다.
I think it is desirable to have racially, ethnically, and linguistically diverse people living in Korea.

58. 나는 나와 다른 인종, 민족, 생활, 문화, 언어를 배우는 것을 꺼리지 않는다.
I am open to learning about other racial and ethnic people’s way of life, culture, and language.

59. 나는 나와 다른 인종이나 민족이 엽적에 살거나 이웃이되는 것을 싫어하지 않는다.
I don’t mind living near neighbors that are of a different race or ethnicity than me.

60. 나는 다른 문화권에서 온 사람들이 서로 조화를 이루면서 살아가는데 필히 어려움이 따를 수 밖에 없다고 생각한다.
I think that people from different cultures inevitably have difficulty living together in harmony.

61. 나는 인종적으로 문화적으로 다양한 가족 구성원(부모와자녀)이 어떠한 장애물 없이 조화롭게 살 수 있다고 생각한다.
I believe families (parents and children) who are mixed racially and ethnically face no barriers living together in harmony.

62. 나는 모든 문화집단의 부모들은 그들의 자녀를 보살피고 지원해주고 자하는 면에서는 다 똑같다고 생각한다.
I believe that all cultural groups are equal in how much they care and support their children.

63. 나는 학생들을 가르칠 때 학습자의 문화적차이를 고려하는 것이 중요하다고 생각한다.
When teaching my students, I think it is important to consider the cultural differences of my learners.

64. 나는들듯의 대다수는 한국말이 유창하지 않은 학생들에게 특별한 언어 교육프로그램이 제공되어야 한다고 생각한다.
The majority of my colleagues believe that Limited Korean Proficient (LKP) students should be given any special services.

65. 나는 교사들이 학생의 배경과 상관없이 모든 학생들과 적절히 긍정적으로 상호작용하는 것이 중요하다고 생각한다.
I believe it is important for teachers to interact appropriately (positively) with all students regardless of the students’ background.

Effective teachers take into consideration students’ cultural and linguistic differences in order to modify classroom content and instruction to fit the learner.

Multicultural education should only be conducted in schools where there are non-Korean students.

It is difficult to understand students with different cultural backgrounds.

I am confident that non-Korean students can do well academically and socially in school.

Non-Korean parents need to be taught how to support their children to do well in Korean school system.

Children can have lots of benefits from having parents of two different cultural/racial backgrounds.

Parents of multicultural or non-Korean students are just as likely to attend school conferences as parents of Korean children.

Students who are not proficient in speaking Korean may take away resources and time from Korean children.

If students learn to read and write in their first language it could facilitate the development of reading and writing in Korean.

Students who are not fluent in Korean language cannot easily understand concepts in subjects such as science.
K-TASILT questionnaire: ITENKS

77. I know the steps necessary to teach inquiry lessons effectively.

78. I understand the content I teach well enough to effectively engage students in inquiry-based lessons.

79. I know how to provide content clearly to my students by using inquiry teaching strategies like modeling, showing visuals, providing hands-on activities, and demonstrations.

80. I understand that students need sufficient time during a lesson to verbalize their answer to a teacher’s question.

81. I know it is important for teachers to provide students with consistent feedback during inquiry-based lessons in order to support their learning.

82. I know it is important for students to explore concepts (i.e. engage in hands-on activities, small group discussions, watch a demonstration, etc.) before formally lecturing about the concept.

83. I do not feel I have the necessary skills to teach KSL student while using inquiry strategies.

84. When teaching inquiry lessons, I typically allow student questions to direct the focus of the lesson.

85. When teaching inquiry lessons, I use various scaffolding strategies (i.e. questioning, models, graphic organizers, and demonstrations) to promote student comprehension of the concepts I am teaching.
86. When teaching inquiry lessons, I provide frequent opportunities for students to interact with their peers in small groups and in whole class discussions.

87. When teaching inquiry lessons, I place more emphasis on developing students’ conceptual understanding rather than focusing on making sure students obtain the “right” answer.

88. I assess my students’ prior knowledge about a new concept before teaching about it.

89. Even if I try very hard to implement an inquiry lesson, KSL students will not benefit from the inquiry activity as much as their peers.

90. When the grades of KSL students improve, it is often due to their teacher having applied a more effective teaching strategy.

91. If KSL students are underachieving in math or science, it is most likely due to ineffective teaching.

92. If I allowed KSL students to develop models, draw pictures, create graphs, or use other hands-on materials the student would be better able to represent their understanding of the concept.

93. Even teachers with good inquiry teaching abilities cannot help to improve KSL students’ achievement.

94. Making real world connections to the concepts I am teaching can help KSL students to better grasp the content.
K-TASIL T questionnaire: LTENKS

<table>
<thead>
<tr>
<th>Question</th>
<th>Response</th>
</tr>
</thead>
<tbody>
<tr>
<td>95. 나는 2012 년에 고시된 제2 언어로서의 한국어 (KSL) 교육과정에 대해 알고 있다.</td>
<td>I understand that the KSL (Korean as a Second Language) curriculum was released in 2012.</td>
</tr>
<tr>
<td>96. 나는 교육에 사용하는 한국어와 학교에서 학문습득을 위해 사용하는 한국어 사이에는 차이가 있다는 것을 안다.</td>
<td>I understand there is a difference between language education (language arts) and Korean as a Second Language (KSL) education.</td>
</tr>
<tr>
<td>97. 나는 아동의 단계별 언어 발달 과정이 있다는 것을 알고 있다.</td>
<td>I understand that children develop language in stages.</td>
</tr>
<tr>
<td>98. 나는 사람들의 외국어 학습단계가 있다는 것을 알고 있다.</td>
<td>I understand that people acquire languages in stages.</td>
</tr>
<tr>
<td>99. 나는 한국어 능력단과 평가결과 있다는 것을 알고 있다.</td>
<td>I know the process for determining or diagnosing a student’s Korean language proficiency.</td>
</tr>
<tr>
<td>100. 나는 한국어를 모르는 학부모들과 효과적으로 의사소통을 하기 위하여 도움을 받을 수 있는 방법을 알고 있다.</td>
<td>I am aware of resources (e.g. translation services) available to help me communicate effectively with parents who do not speak Korean.</td>
</tr>
<tr>
<td>101. 나는 표준 한국어 (예: 읽음, 응여, 문법, 표기법과 표준 발음 등)를 비한국인/다문화 학생들에게 효과적으로 가르칠 수 있을 정도로 잘 알고 있다.</td>
<td>I understand standard Korean (e.g. notation, grammar, vocabulary, etc.) well enough to effectively teach students who are not proficient in Korean.</td>
</tr>
<tr>
<td>102. 나는 학생의 한국어 능력수준과 맞추어 수업의 주제를 정하고 계획할 수 있다.</td>
<td>I am able to plan my lessons according to my students’ Korean language proficiency level.</td>
</tr>
<tr>
<td>103. 나는 CLD 학생들이 학문습득을 위한 한국어를 배울 수 있도록 생활 한국어를 활용할 수 있다.</td>
<td>I am able to use everyday Korean language to help culturally and linguistically diverse (CLD) students learn academic Korean language.</td>
</tr>
<tr>
<td>104. 나는 CLD 학생들의 한국어 능력수준에 맞추어 수업자료를 개발하거나 기존의 수업자료를 변형할 수 있다.</td>
<td>I can develop or modify instructional materials according to my CLD students’ language proficiency level.</td>
</tr>
<tr>
<td>105. 나는 KSL 학생들을 위해 적절하고 다양한 교수전략을 사용할 수 있다.</td>
<td>I am able to use a variety of instructional strategies appropriate for teaching KSL students.</td>
</tr>
<tr>
<td>106. 나는 KSL 학생들이 성공적으로 학업을 수행할 수 있도록 도울 수 있다.</td>
<td>I am able to help students who have limited Korean proficiency to succeed in my classes.</td>
</tr>
<tr>
<td>107. 나는 교실 안에서 문화 또는 언어적으로 다양한 학생들과 함께하는 것에 대해 잘 준비되어 있다.</td>
<td>I am well prepared to work together with culturally and linguistically diverse students in my classroom.</td>
</tr>
<tr>
<td>108.</td>
<td>If I designed an assessment method considering students’ Korean language proficiency level, I could better evaluate their understanding of the content.</td>
</tr>
<tr>
<td>109.</td>
<td>If I modify my instruction for students with limited Korean language proficiency, the children would be able to master the content in my class.</td>
</tr>
<tr>
<td>110.</td>
<td>If I provided students with opportunities to integrate content learning (e.g. science or math) with language learning activities (e.g. reading, writing, listening and speaking) CLD students would be better able to learn the content.</td>
</tr>
<tr>
<td>111.</td>
<td>If I put CLD students in groups with other students based on their language proficiency level, the CLD students would improve their language skills and their understanding of the content.</td>
</tr>
<tr>
<td>112.</td>
<td>Increased efforts in teaching a CLD student will produce little change in the students’ achievement or motivation to learn.</td>
</tr>
<tr>
<td>113.</td>
<td>If I were to verbally repeat and write key vocabulary on the board, CLD students’ understanding of the content would improve.</td>
</tr>
</tbody>
</table>
Appendix E

Example of ATCALD scale of the K TASILT questionnaire via on survey tool called Survey Monkey

Section 1: 문화 및 언어 다양성에 대한 태도 (ATCALD)

41. 다음은 문화와 언어 다양성에 대한 태도를 알아보기 위한 것입니다 (41~50). 동의하는 경우에 따라 번호를 하나씩 선택하세요. 주의하시기 바랍니다. 질문 문장에 전혀 동의하지 않는다면 ① 매우 그렇지 않다. 약간 동의하지 않는다면 ② 그렇게 그렇지 않다. 약간 동의하면 ③ 그렇다. 완전히 동의하면 ④ 매우 그렇다를 선택해십시오.

(etri 한국인 여리분한 한국인에 반하는 단어로서 한국인아간 민족적, 언론적으로 한국인이며 한국말을 문예에 전주 어색함이 없는 한국인을 의미합니다.)

<table>
<thead>
<tr>
<th></th>
<th>① 매우 그렇지 않다</th>
<th>② 그렇게 그렇지 않다</th>
<th>③ 그렇다</th>
<th>④ 매우 그렇다</th>
</tr>
</thead>
<tbody>
<tr>
<td>41. 한국에 살고있는 비 한국인의 약 50%가 중국국적를 가지고있다.</td>
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<tr>
<td>42. 한국에 있는 아민족의 약 7% 만이 결혼 아민자이다.</td>
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<tr>
<td>43. 다문화가정의 자녀(부모 중 한 사람이 비한국인)학생수는 현재 학생 중가 증가하여 가장 빠르다.</td>
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</tr>
<tr>
<td>44. 어떤 교사들은 비 한국인 학생들을 치열히 하는 태도를 갖고있다.</td>
<td></td>
<td></td>
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</tr>
<tr>
<td>45. 교사들은 한국말이 유창하지 않은 학생들의 언어 능력을 개발시키기 위한 충분한 교육을 받고있다.</td>
<td></td>
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</tr>
<tr>
<td>46. 교사들은 인종적/문화적차이에서 한국인이 아닌 학생들에 효과적으로 교육시키기 위한 충분한 교육을 받고있다.</td>
<td></td>
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<tr>
<td>47. 나의 학급에 다문화 학생이 없다면 다문화교육 이론이나 전략은 나에 필요없다.</td>
<td></td>
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</tr>
<tr>
<td>48. 내가 가르치고있는 대학은 다문화교육 이론과 다문화교육 전략 (글로벌 문화에 대단한 이론, 다문화에 대한 관심 및 민간의 근직 등)에 대한 이해를 필요로 하고 있다.</td>
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</tbody>
</table>
Appendix F

Example of ITENKS scale of the K-TASILT questionnaire via online survey tool called Survey Monkey

Section 2: 비 한국인 학생에 대한 탐구교수 효능감 (ITENKS)

45. 다음은 비 한국인 학생에 대한 탐구교수 효능감을 알아보기 위한 것입니다 (77-86). 응답하는 순서대로 번호를 하나씩 선택해 주십시오. 주어진 문항에 전혀 동의하지 않는다면 '① 매우 그렇지 않다', 약간 동의하지 않는다면 '② 그렇지 않다', 약간 동의한다면 '③ 그만하다', 완전히 동의하신다면 '④ 매우 그렇다'를 선택해십시오.

(‘KSL’ 이런 제1 언어(모국어)로서 한국어가 서론 학생, 가정에서 한국어를 사용하지 않아 한국어가 유창하지 않은 학생, 외국생들 등으로 인해 제2 언어로서의 한국어가 서론 학생 등을 의미합니다.)

<table>
<thead>
<tr>
<th>① 매우 그렇지 않다</th>
<th>② 그렇지 않다</th>
<th>③ 그만하다</th>
<th>④ 매우 그렇다</th>
</tr>
</thead>
<tbody>
<tr>
<td>77. 나는 효과적인 탐구수업을 위해서 어떤 단계를 거쳐야 하는지 알고 있다.</td>
<td>○</td>
<td>○</td>
<td>○</td>
</tr>
<tr>
<td>78. 나는 탐구수업이 효과적으로 학생들을となる 수 있을 정도로 가르칠 수 있는 내용을 갖고 있다.</td>
<td>○</td>
<td>○</td>
<td>○</td>
</tr>
<tr>
<td>79. 나는 교육과정, 교육과정, 교육과정 및 같은 탐구수업을 이행하며 학생들에게 수업내용을 명확하게 전달하는 방법을 알고 있다.</td>
<td>○</td>
<td>○</td>
<td>○</td>
</tr>
<tr>
<td>80. 나는 학생들이 교과서의 질문에 대한 답을 언어로 표현하기 위해서 충분한 시간이 필요하다는 것을 이해한다.</td>
<td>○</td>
<td>○</td>
<td>○</td>
</tr>
<tr>
<td>81. 나는 교사들이 학생들이 탐구수업을 지도하는 일관성을 가지고 적절한 편의를 제공하는 것이 중요하다는 것을 알고 있다.</td>
<td>○</td>
<td>○</td>
<td>○</td>
</tr>
<tr>
<td>82. 나는 학생들이 개별에 대한 분명한 간략히 입시 기성별 점수 (예: 반즈, 반즈, 반즈, 반즈, 반즈, 반즈, 반즈, 반즈, 반즈) 등이 중요하다는 것을 알고 있다.</td>
<td>○</td>
<td>○</td>
<td>○</td>
</tr>
<tr>
<td>83. 나는 탐구수업을 이용하여 KSL 학생들을 가르치기 위해 필요한 기술을 가지고 있지 않은 것 같다.</td>
<td>○</td>
<td>○</td>
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</tr>
</tbody>
</table>
Appendix G

Example of LTENKS scale of the K-TASILT questionnaire via online survey tool called Survey Monkey

Section 3: 비한국인 학생에 대한 언어교수 효능감 (LTENK)


(‘KSL’이란 제1언어 (모국어)로 한국어가 서론을 작성, 가정에서 한국어를 사용하지 않아 한국어가 유창하지 않은 학생, 외국생들 등으로 인해 제2언어로서의 한국어가 서론 학생 등을 의미합니다.)

<table>
<thead>
<tr>
<th>①매우 그렇지 않다</th>
<th>②그렇지 않다</th>
<th>③그렇다</th>
<th>④매우 그렇다</th>
</tr>
</thead>
<tbody>
<tr>
<td>95. 나는 2012년에 고시된 제2언어로서의 한국어 교육과정에 대해 알고 있다.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>96. 나는 실생활에 사용하는 한국어의 학교와 학문에서 학문습득을 위해 사용하는 한국어 사이에는 차이가 있다고 한다.</td>
<td></td>
<td></td>
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</tr>
<tr>
<td>97. 나는 이론의 단계별 언어발달과정이 있다고는 한다.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>98. 나는 사물의 제2언어 습득 단계가 있다는 것을 만나.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>99. 나는 한국어 능력단단 발달절차가 있다는 것을 알.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>100. 나는 한국어를 쓰기는 학습과정에게 효과적인 의사소통을 위하여 도움을 받을 수 있는 방법 (예: 동의 서비스)를 알고 있다.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>101. 나는 표준 한국어 (문법, 어휘, 문법, 문법 표준법과 표준발음 등)을 비한국인 학생들에게 효율적으로 가르칠 수 있는 방법을 잘 알고 있다.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>102. 나는 학생의 한국어 능력수준에 맞추어 수업의 주제를 징정하고 계획할 수 있다.</td>
<td></td>
<td></td>
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</tr>
</tbody>
</table>

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Appendix H

Consent form information for primary and secondary school teachers read and signed (Korean version only)

연구참여자용 설명서 및 동의서 (교사)

연구 제목: 한국에서의 학교과학수업에 대한 이민학생의 경험과 성취를 이해하기 위하여 가정과 학교의 상호작용에 대한 이민자 부모와 자녀의 관점에 대한 연구

1. 왜 이 연구를 수행하는가?
이 연구는 이민자 가족과 다문화 가족의 학생들의 경험에 어떻게 그들의 학교 과학수업에서의 성취도에 미치는 영향을 미치는가 이해하기 위해 부모들과 자녀들의 학교-가정에서의 상호작용에 대한 관점에서 자세히 알아보는 것을 목적으로 하고 있습니다. 또한, 연구를 통해 관리자들과 가족들이 이러한 가족들과 학생들을 지원할 수 있는 방법을 더 잘 알 수 있도록 하는 데에 목적이 있습니다. 이민자 가족과 다문화 가족의 학생들의 교육을 돕기 위해 관리자들과 학부모들과 협력하고 있는 교사로서 당신은 이 연구에 참여할 것을 부탁 받을 것입니다.

2. 이 연구에 참여하게 되는 사람은 몇 명인가?
스무 (20)명의 교사들이 이 연구에 참여할 것입니다.

3. 연구 참여자는 무엇을 하게 되는가?
당신은 개방형 인터뷰에 참여하게 될 것입니다. 연구자는 인터뷰에서 무엇이 논의 되었는지 전사하는 것을 돕기 위해 음성/영상 녹화를 허락할 것을 부탁 드리는 바입니다. 인터뷰는 참여자의 편의를 돕기 위한 어떠한 장소(사무실, 학교, 카페, 대학교)에서도 실시 될 수 있습니다. 또한, 당신은 학교에 대한 학생과 가족의 관여에 대한 교사의 신뢰를 조사하기 위한 짧은 설문지를 작성할 것입니다.
4. 인터뷰는 얼마나 오래 이루어지는가?
인터뷰는 한 번의 모임을 통해 이뤄질 것입니다. 인터뷰는 약 60분 정도가 소요될 예정입니다. 참여자는 언제든지 휴식을 요청할 수 있습니다. 모든 과정은 30-45분 정도로 예상 됩니다.

5. 만약 내가 참여하기를 원하지 않는다면 어떻게 되는가?
당신은 어떠한 불이익 없이 언제든지 그만 돌 수 있습니다.

6. 부작용은 없는가?
이번 활동에 참여함으로써 발생하는 직접적인 위험요소는 없습니다. 하지만, 모든 연구는 위험요소를 가질 수 있으므로, 만약 당신이 어떠한 부정적인 영향을 경험했거나 질문이 있다면 즉각 연구자에게 연락을 해 주십시오.

7. 참여함으로서 생기는 이익은 없는가?
당신은 교사와 교육자로서의 당신의 참여에 대해 더 깊게 성찰해 볼 수 있는 기회를 얻게 될 것입니다.

8. 참여하지 않을 때의 불이익은 없습니까?
참여하지 않음으로 발생하는 어떠한 불이익도 없습니다.

9. 연구자가 연구를 위해 수집한 정보에 대한 비밀 보장은 어떻게 이뤄질까요?
개인정보관리책임자는 서울대학교 사범대학 *입니다. 저희는 이 연구를 통해 얻은 모든 개인 정보의 비밀 보장을 위해 최선을 다할 것입니다. 이 연구에서 얻어진 개인 정보가 학회지나 학회에 공개 될 때 귀하의 이름과 다른 개인 정보는 사용되지 않을 것입니다. 그러나 만일 법이 요구하면 귀하의 개인정보는 제공될 수도 있습니다. 또한 모니터 요원, 점검 요원, 생명윤리심의위원회는 연구참여자의 개인 정보에 대한 비밀 보장을 침해하지 않고 관련규정이 정하는 범위 안에서 본 연구의 실시 절차와 자료의 신뢰성을 검증하기 위해 연구 결과를 직접 열람할 수 있습니다.

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귀하가 본 동의서에 서명하는 것은, 이러한 사항에 대하여 사전에 알고 있었으며 이를 허용한다는 동의로 간주될 것입니다.

10. 이 연구에 참여함으로써 얻어지는 금전적 보상이 있습니까?
참여자가 받는 금전적인 보상은 없습니다. 하지만, 인터뷰 후 작은 답례품을 제공할 것입니다.

11. 만약 연구에 대해 질문이 생긴다면 어디로 연락해야 합니까?
만약 당신이 이 연구에 대해 질문이나 관심, 불만이 있다면 *에게 연락하십시오.

이 연구는 SNU 생명윤리위원회에 의해 검토되고 승인 받았습니다. 전화번호 * 혹은 (irb@snu.ac.kr)로 아래의 내용들에 대해 말씀하실 수 있습니다:

• 당신의 질문, 관심 혹은 불만이 연구팀들에 의해 받아들여지지 않은 경우
• 연구팀들과 연락이 되지 않는 경우
• 연구팀 이외의 누군가와 이야기하길 원하는 경우
• 연구의 주체로서 당신의 권리에 대해 의문이 있는 경우
• 이 연구에 대해 정보를 얻거나 정보를 제공하기를 원하는 경우
동 의 서

1. 나는 이 설문지를 읽었으며 담당 연구원과 이에 대하여 의논하였습니다.
2. 나는 위험과 이득에 관하여 들었으며 나의 질문에 만족할 만한 답변을 얻었습니다.
3. 나는 이 연구에 참여하는 것에 대하여 자발적으로 동의합니다.
4. 나는 이 연구에서 얻어진 나에 대한 정보를 현행 법률과 생명윤리심의위원회 규정이 허용하는 범위 내에서 연구자가 수집하고 처리하는데 동의합니다.
5. 나는 담당 연구자나 위임 받은 대리인이 연구를 진행하거나 결과 관리를 하는 경우와 보건 당국, 학교 당국 및 서울대학교 생명윤리심의위원회가 실시 조사를 하는 경우에는 비밀로 유지되는 나의 개인 신상 정보를 직접적으로 열람하는 것에 동의합니다.
6. 나는 언제라도 이 연구의 참여를 철회할 수 있고 이러한 결정이 나에게 어떠한 해도 되지 않을 것이라는 것을 알립니다.
7. 나의 서명은 이 동의서의 사본을 받았다는 것을 뜻하며 연구 참여가 끝날 때까지 사본을 보관하겠습니다.
8. 나의 서명은 면담 과정을 녹화하는 것에 동의하며, 그 녹화한 자료를 연구에 활용하는 것에 동의합니다.

<table>
<thead>
<tr>
<th>연구참여자 성명</th>
<th>서명</th>
<th>날짜 (년/월/일)</th>
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<tr>
<td>동의서 받은 연구원 성명</td>
<td>서명</td>
<td>날짜 (년/월/일)</td>
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<tr>
<td>연구책임자 성명</td>
<td>서명</td>
<td>날짜 (년/월/일)</td>
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서울대학교
Appendix I

Interview questions for primary and secondary school teacher participants

BACKGROUND INFORMATION
• Tell me about your background in education and your experience as a teacher.

EXPERIENCES (SCHOOL):
• Please tell me about your experiences as a teacher in a school that serves children who are identified as multicultural or Korean language learner students? What challenges have you experienced? What value do you see in having these students be part of your school? What are your expectations for these students as learners? What do you expect their futures will be like in Korea?
• Can you tell me something about your experiences engaging with families of multicultural or Korean language learner students? What challenges have you had? What successes have you had in supporting these families?

BELIEFS ABOUT DIVERSITY AND/OR SCIENCES AND STEM EDUCATION
• What do you think is the most important content for multicultural/KLL students to learn? What do you think is easier or harder for these students? What value do you place on the learning of science and mathematics for these students? What are your expectations for their educational futures? Careers in science or STEM?

IDENTIFYING SUPPORTS AND CHALLENGES
• Have you had any courses or professional development about working with culturally and linguistically diverse students and families? If so, what?
• What do you perceive as the biggest challenge facing teachers in educating multicultural and/or Korean language learner students? How are you overcoming these challenges? What supports from the families/government would be helpful?

EXPECTATIONS OF PARENTAL INVOLVEMENT
• How involved are the parents at your school in general? How does this compare with parental involvement of immigrant families?
• Is there anything more you would like to share with me about the topic of supporting multicultural families and children in your school? Do you have any questions for me?
Appendix J

Example of a transcribed interview conducted with a schoolteacher

Data Collection: Video and Audio Transcription
Interviewer: *
Interviewee: Sang
File name: 20150123_1B4003_audio1
Transcription date: 2015.04.09
Transcribed by: *

<table>
<thead>
<tr>
<th>Time</th>
<th>Transcription in Korean [Short description of events in English]</th>
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</thead>
<tbody>
<tr>
<td>0:08-0:29</td>
<td><strong>Information of the teacher</strong></td>
</tr>
<tr>
<td></td>
<td>I: 선생님 성함을 말씀해 주세요.</td>
</tr>
<tr>
<td></td>
<td>T: 유상재입니다.</td>
</tr>
<tr>
<td></td>
<td>I: 몇 년 경력이십니까? 교사.</td>
</tr>
<tr>
<td></td>
<td>T: 24 년이요.</td>
</tr>
<tr>
<td></td>
<td>I: 선생님 나이는 어떻게 되세요?</td>
</tr>
<tr>
<td></td>
<td>T: 만 50 세입니다.</td>
</tr>
<tr>
<td></td>
<td>I: 무슨 과목 가르치십니까?</td>
</tr>
<tr>
<td></td>
<td>T: 과학 가르칩니다.</td>
</tr>
<tr>
<td></td>
<td>I: 학교이름은요?</td>
</tr>
<tr>
<td></td>
<td>T: 신현 중학교입니다.</td>
</tr>
<tr>
<td>0:29-1:04</td>
<td><strong>Difficulty in teaching multicultural students</strong></td>
</tr>
<tr>
<td></td>
<td>I: 지금부터 다문화 학생 또는 한국어를 유창하게 하지 못하는 학생들에 대한 선생님의 의견을 조사하겠습니다. 이런 학생들을 가르치면서 어떤 어려운 점이 있었습니까?</td>
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<tr>
<td></td>
<td>T: 예 약간 있었었습니다.</td>
</tr>
<tr>
<td></td>
<td>I: 어떤 게 있었습니까?</td>
</tr>
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<td></td>
<td>T: 그 아이가 다른 아이들과 잘 응합을 (“fuse”; getting along) 못하는 부분 좀 있었구요. 가르치는 부분에 있어서는 아이가 정확히 말귀를 잘 못 알아듣는 부분 있었습니다.</td>
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<tr>
<td>1:05-1:33</td>
<td><strong>Information of a multicultural student he taught</strong></td>
</tr>
<tr>
<td></td>
<td>I: 그 학생은 어느 나라에서 왔습니까?</td>
</tr>
<tr>
<td></td>
<td>T: 예, 미국에서 왔습니다.</td>
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<tr>
<td></td>
<td>I: 미국이요?</td>
</tr>
<tr>
<td>Time</td>
<td>Dialogue Content</td>
</tr>
<tr>
<td>--------</td>
<td>-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------</td>
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<tr>
<td>1:34-1:51</td>
<td><strong>Benefits of having multicultural students in school</strong>&lt;br&gt;I: 이런 학생들도 학교 구성원으로(member) 학교에 어떤 좋은 역할을 담당할 수 있다고 생각하십니까?  &lt;br&gt;T: 예, 그 학생은 좀 적극적이었고 요 아이들하고 이제 친화력이(sociability) 있는 능기를 좋아하는 학생이었기 때문에, 잘 적응했고. 예. 학교의 구성원으로서 열심히 했습니다.</td>
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<tr>
<td>1:52-2:14</td>
<td><strong>Expectation of the student’s learning and future</strong>&lt;br&gt;I: 그러면 선생님께서는 이 학생들에게 학습하는 학습자로서 어떤 기대를 하고 계셨습니까? &lt;br&gt;T: 예, 일단 그 학생은 우리나라에 대해 긍정적인(positive) 마음을 갖고 왔고, 좀 덜가를 우리나라에 대해서 배우고자 하는 의지가 있었기 때문에 가능성이 많다고 생각했습니다.</td>
</tr>
</tbody>
</table>
| 2:38-3:03 | I: 가족하고도 그 접촉이 (contact) 있었습니다니까?  <br>T: 예, 아버지하고도, 예, 만난 적이 있었습니다.  
I: 어떤 어려운 점이 있었습니까? 가족하고 접촉할 때.  
T: 어, 뭐 특별하게 어려운 건 그, 없었고요. 기대 수준이 좀 많이 |
<table>
<thead>
<tr>
<th>Time</th>
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</table>
| 3:30-3:49 | 높였던 부분. 그런 점이 좀 있었herits.

**Supports for the student**
I: 이런 가정들이나 학생들을 특별하게 지원하는 항목이 있었습니까?
T: 수업에서 말씀인가요?
I: da요.
T: 아, 예. 여기 학생이었기 때문에, 일단 자리 배치(seating arrangement) 할 때 좀 고려를 했고요. 음, 그 중에 친화력이 있는 아이하고 했고. 수업 시간에는 좀 아이가 가우뚱거리면(moving head to the side), 약간 그 울어 같은 거를 영어로 좀 표시, 표기해 준다면가 하는 도움을 약간 했습니다.
I: 그렇게 지원을 해 줬으므로써 성공적이었다고 생각하십니까?
T: 음, 제가 거기에 대해선 이게 확실하겠말 수 없지만, 전체적으로 학교 생활을 잘 원만하게 했기 때문에, 뭐 그, 영향 미치는 부분을 정확하게 제가 말씀 드리긴 어렵지만, 예, 그렇게됩니다.

**What multicultural students should learn importantly in classes**
I: 그룹 다문화 학생들은 수업에서 어떤 내용을 가장 중요하게 배워야 된다고

생각하십니까?
T: 그 학생들은 일단 문화가 좀 다르니까, 다르다는 것을, 일단 잡고 들어가야 할 것 같습니다. 똑 같은 것들로(standard) 놓고 보면 아무래도 아이들이하고 지낼 때 좀 어려움이 있을, 더 어려움이 있을 수 있지 않겠나 싶습니다.

**What multicultural students can learn easily**
I: 이 학생들은 어떤 것을 배울 때 쉬울까요?
T: 아, 그, 과목 말씀하시는 건가요?
I: 과목도 peu하고, 내용도 peu하고.
T: 일단, 그, 미국하고 우리나라랑 문화가 다르니까, 일치하는(agreeing) 부분이 많은 게 가장 쉬울 것 같습니다. 예를 들면, 몸으로 하는 체육이라든지, 이런 활동. 뭐, 실험 활동. 이런
<table>
<thead>
<tr>
<th>Period</th>
<th>Text</th>
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</thead>
</table>
| 5:10-5:22         | **Where the teacher puts value in teaching math/science.**  
I: 이 학생들이 과학이나 수학을 배우는 데 있어서 선생님이 이 아이들한테 어떤 가치를 두고 가르친다 해 그러면, 어느 곳에 가치를 두고 가르쳐야 되다고 생각하십니까?  
T: 음, 정확히, 그, 물론의 친절을 잊어 버렸는데, 다시 한 번.  
I: 저 같은 경우에는 이제 애들한테 과학을 가르칠 때에는, 그, 도덕적인(ethical) 면하고 과연 이것은, 과학을 왜 배우는가, 이런 과학이 약으로 이용될 소지가(issue) 굉장히 높후하기(dense:permeated) 때문에, 과학을 배우기 전에 항상 밀바탕에 가치를 먼저 그, 가르치려고 애를 쓰기로요 그런 것처럼 선생님은 요컨 학생들을 가르칠 때 어느 곳에, 어떠한 가치를 염두에(bear) 두고 계십니까?  
T: 그 아이, 인제 가르칠 때는 인제 지금, 설명하는 데에 이해를 못할 수 있는, 그런 용어라든가 고려 부분에 대해서 좀 생각을 뒤서, 배려한다든지 (care), 그런 것에 초점을 뒤웁니다.  
**Vision of multicultural students working in scientific jobs**  
I: 이들, 이런 학생들이 미래에 과학이나 수학, 공학, 이런 테에 관련된 직업 가질 때, 어, 뭘라고 생각하십니까? 아니면 일반 학생들하고 비교할 때, 좀 기대 수준이 낮으십니까?  
T: 저는 오히려, 양쪽의 문화를 다 접했기 때문에 더 가능성이 크다고 보여집니다 예를 들면, 그 학생을 가르쳤던 수학 선생님이 저한테 한 얘기가 있었는데, 인수 분해하는 (factoring, in math class) 방식이 자기가 배운 거하고 우리나라의 수학 선생님이 가르치는 것이 다르다는 말씀을 했다.라고 해요. 그 얘기를 들었을 때, 그 애는 그, 미국에서 배운 거하고 한국에서 내가 가르치는 부분하고 비교하면서 좀 더 확장적인 사고를(expanded) 갖지 않을까, 그렇게 생각했습니다.예.  

<p>| 5:26-6:07         |                                                                                                                                                                                                                                                                          |
| 6:08-6:19         |                                                                                                                                                                                                                                                                          |
| 6:20-7:10         | <strong>Experiences of taking courses related in multicultural education</strong>                                                                                                                                                                                                   |
| 7:12-7:26         |                                                                                                                                                                                                                                                                          |</p>
<table>
<thead>
<tr>
<th>Time</th>
<th>Discussion</th>
</tr>
</thead>
<tbody>
<tr>
<td>7:30-7:52</td>
<td>Efforts in teaching multicultural students</td>
</tr>
<tr>
<td>7:54-8:16</td>
<td>Supports of government/family</td>
</tr>
</tbody>
</table>
| 8:16-8:50 | I: 만약에 가족들이 지원을 받는다면, 어떤 지원을 기대하십니까?  
T: 집에서는 이제 아이, 이제, 학교 생활에 관해서, 좀 도움, 마음의 상처라던가 그런 게 있다면, 좀 이렇게 보듬어(extend) 주고 하는 그런 부분, 예. 그런 걸 생각할 수 있을 거 같습니다.  
I: 만약에 정부나 교육청으로부터 지원을 받는다면 어떤 지원을 요구하겠습니까?  
T: 그, 누구에 대한 건가요? 부모에 대한 건가요, 학교에 대한 건가요? |
| 8:51-9:27 | I: 정부나 교육청이 그런 아이들을 제대로 지도하기 위해서 나한테, 학교한테, 혹은 교사한테, 어떤 지원을 해줬으면 좋겠습니까?  
T: 그런 연수라든지 (training), 그런 걸 개설한다면 (establishing), 그걸 담당하는 선생님은 좀 관심을 갖고, 가질 것 같습니다.  
I: 그, 연수가 실제로는 많이 있겨요. 교사들은, 그러면 이런 참여도를 높이기 위해서는 어떤, 방안이 (plan) 있으면 좋겠습니까?  
T: 연수라는 게 있다 하더라도, 음, 이제 그런, 일반적인 선생님이 그런 연수가 있다는 것을 잘 모를 수 있으니까, 아예, 그, 그 의무적으로 그런 걸 담당하는 선생님이라든지 담임이라든지 이런 부분이 참여할 수 있는 걸 적극적으로 그렇게, |
<p>| 9:28-9:50 | |
| 9:51-10:22 | |</p>
<table>
<thead>
<tr>
<th>시간</th>
<th>내용</th>
</tr>
</thead>
</table>
| 10:24-10:58 | 그렇다고 느낌니다  
I: 그림한למו날에 선생님이 담임하셨을 때 그 때 학부모는 참여가 좋았습니까?  
T: 아, 예. 저를 와서 이제 만나기도 했으니까, 관심이 많았던 학부모였습니다.  
I: 저조한(dull) 학부모님들의 참여율을 높이기 위해서 학교에서는 어떤 방법을 사용하고 있습니까?  
T: 특별하게 뭐, 사용하는 거 같지 않습니다.  
I: 만약에 그, 학교에서 이런 학부모님들한테 적극적인 참여를 유도한다면(induce), 그런 학부모님들은 기꺼이 참여할 생각이 있을 거 같습니까?  
T: 저는 이제 부정적으로 (negative) 보는데요, 왜냐면 좀, 요즘에 다문화가 인체, 그, 생계(living) 유지를 위해 다 일하는 부모님이기 때문에, 쉽지 않을 거 같습니다 |
| 10:59-11:25 | Supports of school  
I: 학교에서 이런 다문화 가족이나 학생들을 지원을 한다면, 어떤 것에 지원을 할 수 있을까요?  
T: 학교에서 한다면, 인체 그, 담임 개별적인(individually) 역량(compatibility), 뭐, 담임과 학부모가 자주 교류, 뭐, 통신 (communication)이라든지 뭐, 그런 교류 정도가 있을 거 같으요. 학교 차원에서 크게 뭐, 제가 생각해 본 건 없습니다. |
| 11:25-12:01 | Participation of parents in school  
I: 그 선생님 학교에서는 학부모, 이런 다문화 학생들의 학부모의 참여는 어느 정도라고 생각하십니까?  
T: 다문화 학교 학생의 참여는 저희 학교는 아마 거의 없지 않아 실했습니다. 왜냐하면 탈북 학생이라든지, 좀 여건이(conditions) 안 좋은 상황이기 때문에 현재는 |

참고: 이 기록은 서울대학교에서 수행한 연구의 일부입니다.
I: 네. 질문이 끝났습니다. 혹시, 저희 설문에 대한 질문이 있으시나요?
T: 아니죠, 제가 설문한 걸. 예, 특별한 건 없구요.
I: 인터뷰나 이쪽, 설문지에 대해서 다...
T: 제가 몇번, 포인트를 잘 못 맞춰서 한 거 같은데, 다시 해야 할 것 같은 생각도 들었습니다. 왜냐하면 다문화란 그런 부분에 대해서 정확히, 포스, 포커스를 못 맞춘 부분도 조금 있는 것 같다는 생각이 들었습니다. 둘러, 예.
I: 그래 나와요.
T: 예.
I: 그거까지 다 봐요. 그래서 적정 안 하서도 됩니다. 예, 감사합니다.
T: 예, 감사합니다.
Appendix K

An example of a teacher’s interview transcript, its translation (from Korean to English, analysis memo, and coding)
learned within a context is a lot more effective for students increasing cognitive and academic success! So for now, that [language learning] is something [CLD students] need to settle first so that later it can be a motivation. Also developing relationships with friends can be much more advantageous. Initially, if there are some difficulties in communication it can cause a block further down the road making things difficult, T believes)

The subject multicultural students can feel easy

T: 이 학생들은 어떤 과목을 배울 때 가장 쉬운가요? (Easiest subject)

1: 어, 그래, 그러나 한국 말로 좀 다르고, 각각이 체험(Encounter) 그린 환경이나? 그 리면 자라면서 본 톤스럽지 않아요. 그것은 (that differs according to the country, they’re CLD students) are from. The way each individual environment is different. According to that all different T believes). 그러나 한국 학교에 들어, 그 학교 가정의 아이의 경우는 크게 혼란이나 아이들하고 다른 점이 많는데, 해외에서 아이의 경우는 그들이 배여를 할 때는 아이가 성장이 할릴까봐요. So, in my class the Chinese-Korean student’s family, in this case, they have no differences compared to native Korean students. In the Filipino student’s case, when speaking English the student is very lively/energetic. 예, 활발하고 적극적이 되는. 또 시간 동안은. 그런데 그 외의 다른 시간에는 자기가 원하는 것을 참여하거나 그렇게 하지 못하다니깐 그건 좀 어려워요. 그런데 이제 그 아이가 저희 동안에 글쓰기하는(writing composition) 게 한 번 있었었어요. (Yes, he becomes very energetic and active, only during that time. But outside of that, during other times [classes], he can’t seem to participate in other ways— it makes it difficult for him (to participate due to language). But recently [an occurrence] there was a writing composition [assignment] once in class. So, he wrote something and submitted it. 예, 그래서 길게 치는 땐, 그건 아이가 서서 넣는데, 그러려 하

<table>
<thead>
<tr>
<th>Time</th>
<th>Transcription in Korean [Short description of events in English]</th>
</tr>
</thead>
<tbody>
<tr>
<td>10:25-</td>
<td>이제 편지 부족한 부분이 많이 보이는는데, 성장이 생겼지만 해서 많이 염두하구요. 예, 그래, 본인의 이 декаб리, 홍 관심이 있거나 그런 부분에 대해서는 좀 성장비 성실(faithful)하고 적극적으로 (active) 하는 편이어야요. (Although there were lots of areas that needed improvement [writing-wise] since he [Filipino student] thinks a lot, he wrote a lot. In the areas where he’s a little interested, in those areas he’s very faithful and active).</td>
</tr>
</tbody>
</table>
Appendix L

An example of round one of transcript coding and analysis
### Appendix M

An example of round two of transcript coding and analysis

<table>
<thead>
<tr>
<th>Teacher participant</th>
<th>Experience teaching CLD</th>
<th>Things done at school when CLD needs</th>
<th>Challenges teaching CLD</th>
<th>Positive teaching CLD</th>
<th>Modification made for CLD</th>
<th>Benefits to student and CLD</th>
<th>Anticipations/Implications</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sunny</td>
<td>Yes</td>
<td>- A fellow Korean teacher applied for assistance for a student who was granted bilingual TA and needed language proficiency test.</td>
<td>Difficulty in accommodating for one student, languages other than English would create more challenges; limitation on how much parents can help their children; parents not well informed about school and missing important information.</td>
<td>- Using bilingual TA.</td>
<td>- Assessments are all written in Korean.</td>
<td>- Word in CLD students are not proficient in Korean, but they can still do science; gaining students’ interest is crucial rather than assessing the language.</td>
<td>Knowing how to apply for assistance and language proficiency assessments.</td>
</tr>
<tr>
<td>Moon</td>
<td>No</td>
<td>- Access to TA for translation, especially for parental contact.</td>
<td>- Communication in the room, pushing to CLD, interest can help language learning increase quicker.</td>
<td>- Anticipating change about different cultures.</td>
<td>- Student was placed subject to the particular student – interest level and lab.</td>
<td>- Increasing supplementary materials – language based materials or comprehensive materials for CLD, resources for teachers.</td>
<td>- Knowing opportunities for CLD parents to be involved in trainings and programs.</td>
</tr>
<tr>
<td>Nick</td>
<td>Yes</td>
<td>- Same as in previous.</td>
<td>- More potential opportunities to engage in conversations and students are learning from one another (content, as well as language and culture).</td>
<td>- Need for professional development in teaching CLD.</td>
<td>- Needing to provide strong background information.</td>
<td>- Needing to provide strong background information.</td>
<td>- Anticipations/Implications</td>
</tr>
<tr>
<td>Yang</td>
<td>Yes</td>
<td>- Setting discrete tasks so teachers were provided with a list of CLD students enrolled in their class.</td>
<td>- Language facilitation.</td>
<td>- Anticipating change about different cultures.</td>
<td>- Anticipating change about different cultures.</td>
<td>- Anticipating change about different cultures.</td>
<td>- Anticipations/Implications</td>
</tr>
<tr>
<td>Sun</td>
<td>Usually all students are average to low in achievement; there are some students that can only speak Korean.</td>
<td>- Making extra-courses with those things are taught and worded, so it’s not biased or offensive.</td>
<td>- No opportunity in class for CLD to share their culture/language.</td>
<td>- Anticipating change about different cultures.</td>
<td>- Anticipating change about different cultures.</td>
<td>- Anticipating change about different cultures.</td>
<td>- Anticipations/Implications</td>
</tr>
<tr>
<td>Moon</td>
<td>Yes</td>
<td>- A teacher found ways to accommodate CLD students.</td>
<td>- CLD students often become more involved and more confident.</td>
<td>- CLD students often become more involved and more confident.</td>
<td>- CLD students often become more involved and more confident.</td>
<td>- CLD students often become more involved and more confident.</td>
<td>- Anticipations/Implications</td>
</tr>
</tbody>
</table>