Investigating the Impact of a University-based Professional Development Program for Teachers of English Language Learners in Ohio—A Mixed Methods Study of Teacher Learning and Change

DISSEPTION

Presented in Partial Fulfillment of the Requirements for the Degree Doctor of Philosophy in the Graduate School of The Ohio State University

By

Yunyan Zhang, MA
Graduate Program in Education

The Ohio State University

2014

Dissertation Committee:

Keiko K. Samimy (Advisor)
Alan Hirvela
George Newell
Abstract

The intent of the present study was to document (describe) and evaluate the impact of a PD program for the education of ELLs called ESL-content Teacher Collaborative (ECTC) on the learning and teaching practice of secondary content teachers. By employing a mixed methods multiple case study design, this study sought to answer the following four research questions:

1. What did the ECTC participants learn about teaching ELLs through the program?
2. How did the teachers’ learning from the ECTC program facilitate changes in their teaching practices?
3. What were the individual or contextual factors that either fostered or hindered changes in teacher practice?
4. How did the teachers perceive the content and design features of the ECTC program and the impact of these features on their learning experience?

Six-nine ECTC alumni teachers responded to a survey that was designed based on the four research questions, and three of them were recruited to participate in the case studies. Both the quantitative and qualitative findings indicated the effectiveness of the ECTC in bringing about changes in teacher knowledge and instructional practices for the education of ELLs. The teachers reported considerable improvement in their knowledge, beliefs, and skills with regard to TESOL methods and strategies, culturally responsive
teaching, concepts and issues in sociolinguistics related to TESOL, the SIOP Model, selection and development of second language instructional materials, and second language assessment. Application of the teachers’ learning to their classroom practices primarily occurred in the following three areas: implementation of the SIOP Model, modifications made to assessments and assignment, and teacher collaboration. However, reported improvement in the skills for the development of ELL students’ literacy skills (i.e., reading and writing) did not seem to induce much change in classroom instruction except vocabulary instruction. With regard to the teachers’ perceptions of the content and design features of the ECTC program, both the quantitative and qualitative findings indicated that the ECTC participants were consistently and overwhelmingly positive about the ECTC program. Particularly, they put a premium on “opportunity to learn specific instructional strategies,” “opportunity to collaborate with teachers from the same school or in the same content area,” and “opportunity to engage in discussion of content and strategies with other teachers.” As for the school organizational factors, the quantitative findings highlighted the following factors that teachers reported as obstacles or challenges for enacting changes in their teaching practices: “pressure to help students pass state tests,” “pressure to cover all the content standards,” “communicating with ELL students’ parents,” “other competing professional initiatives in school,” and “other teachers who lack the necessary knowledge and skills to teach ELLs.” The qualitative results revealed that student-induced challenges constituted another obstacle for teachers in their classroom. The findings about the factors that were or could become facilitating factors for teacher learning and change (depending on different schools) further pointed to the essential role of “school administration or leadership” in shaping learning
opportunities and providing resources, time, and internal structures for teacher learning and change.
Dedication

To my parents,

Jiangguo Zhang and Suzhen Yang

who have made me who I am today with their wisdom and love
Acknowledgments

The study presented in my dissertation took me nearly four years to complete. Throughout the process I have received support, guidance, and encouragement from a great number of individuals. First, I would like to thank my advisor, Dr. Keiko Samimy. Her guidance has made this an enlightening and rewarding journey. Thank you, Dr. Samimy, for the countless hours that you spent in reading and talking with me about my research and for siding with me as I went through the most difficult time of my dissertation work.

I would also like to thank my other two committee members, Dr. Alan Hirvela and Dr. George Newell for their support over the past two and a half years as my research project moved from a proposal to a completed study. Both professors provided valuable theoretical and methodological advice at my proposal meeting.

Thanks are also due to the 69 research participants who generously shared their time and ideas with me, particularly the three case study teachers who accommodated my research project with great patience. I cannot imagine how my research and writing of this dissertation would have progressed without their unwavering support.
Vita

1994..............................................Xuzhou No. 1 High School

1998...........................................B.A. English Education, Xuzhou Normal University

2001............................................M.A. Applied Linguistics, Xuzhou Normal University

2007 to 2012 .........................Graduate Research Associate, the ESL-Content Teachers Collaborative, School of Teaching and Learning, The Ohio State University

Field(s) of Study

Major Field: Education
Table of Contents

Abstract .......................................................................................................................... ii
Dedication ...................................................................................................................... v
Acknowledgments ........................................................................................................ vi
Vita ............................................................................................................................... vii
Table of Contents ......................................................................................................... viii
List of Tables ................................................................................................................ xv
List of Figures ............................................................................................................... xviii
Chapter 1: Introduction ............................................................................................... 1
   The National Trend .................................................................................................. 1
   The Situation in Ohio .............................................................................................. 6
   Statement of Problem ........................................................................................... 8
   Purpose of the Study and Research Questions ...................................................... 13
   Significance of the Study ...................................................................................... 15
   Definition of Terms ............................................................................................... 16
Chapter 2: Literature Review ...................................................................................... 18
   What We Know About Teacher Learning and Professional Development .......... 18
      Defining Teacher Learning and Professional Development .......................... 19
      Features of Effective Professional Development ....................................... 25
Evaluating the Impact of Professional Development ........................................ 27
Theoretic Model of Teacher Learning and Change in This Study .................. 33
Outlining a Knowledge Base for Teachers of ELLs ..................................... 36
Language-related Knowledge and Skills .................................................... 37
Sociolinguistics and Culture-related Knowledge and Awareness .................. 44
Student-related Knowledge ........................................................................ 46
Assessment and ESL Standards ................................................................... 48
Pedagogical Skills and Instructional Expertise ............................................ 49
Other Competences ..................................................................................... 56
Effective Professional Development for Teachers of ELLs ........................... 57
General Guidelines on Effective PD for Teachers of ELLs .......................... 58
Empirical Studies of Professional Development Programs for Teachers of ELLs 63
Summary ..................................................................................................... 83
Chapter 3: Methodology .............................................................................. 89
The Professional Development Program ..................................................... 90
Research Design .......................................................................................... 91
  Mixed Methods Research .......................................................................... 91
  Case Study Research .................................................................................. 92
Participants .................................................................................................. 97
  Participants of the Online Survey ............................................................. 97
  Participants of the Case Studies ............................................................... 98
Instruments .................................................................................................. 100
  The Online Survey ..................................................................................... 101
Chapter 5: Case Report 1 - Ann ........................................................................................................... 167

About Ann ........................................................................................................................................... 167

Research Question 1 ......................................................................................................................... 169

The SIOP Model ............................................................................................................................... 169

Second Language Assessment ........................................................................................................ 170

Cultural Awareness and Mentality Change .................................................................................... 171

Research Question 2 ......................................................................................................................... 173

Implementation of the SIOP Model ................................................................................................. 174

Teaching Academic Literacy Skills ................................................................................................. 184

Assessment Modifications and Alternative Assessments .......................................................... 192

Co-teaching with an ESL Teacher ................................................................................................. 193

Research Question 3 ......................................................................................................................... 196

Research Question 4 ......................................................................................................................... 198

Chapter 6: Case Report 2 - Lana ....................................................................................................... 201

About Lana ........................................................................................................................................... 201

Research Question 1 ......................................................................................................................... 203

Ohio ELP standards and Teaching Literacy Skills ........................................................................ 203

Test Validity and Formative Assessment ....................................................................................... 204

Heightened Awareness .................................................................................................................... 205

Cultural Sensitivity .......................................................................................................................... 206

Strategies for Teaching Reading Skills ......................................................................................... 206

Making Better Use of Resources in Classroom .......................................................................... 207

Research Question 2 ......................................................................................................................... 208

xi
<table>
<thead>
<tr>
<th>Section</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>Implementation of the SIOP Model</td>
<td>208</td>
</tr>
<tr>
<td>Teaching Academic Literacy Skills</td>
<td>214</td>
</tr>
<tr>
<td>Using Alternative Assessments</td>
<td>222</td>
</tr>
<tr>
<td>Teacher Collaboration</td>
<td>224</td>
</tr>
<tr>
<td>Working with Bilingual Aides</td>
<td>225</td>
</tr>
<tr>
<td>Assuming More Diverse Roles</td>
<td>226</td>
</tr>
<tr>
<td>Research Question 3</td>
<td>227</td>
</tr>
<tr>
<td>Facilitating Factors</td>
<td>227</td>
</tr>
<tr>
<td>Major Challenges</td>
<td>229</td>
</tr>
<tr>
<td>Research Question 4</td>
<td>233</td>
</tr>
<tr>
<td>Chapter 7: Case Report 2 – Karen</td>
<td>235</td>
</tr>
<tr>
<td>About Karen</td>
<td>235</td>
</tr>
<tr>
<td>Research Question 1</td>
<td>239</td>
</tr>
<tr>
<td>Reflection, Action, and Changes</td>
<td>239</td>
</tr>
<tr>
<td>Integrating the Four Language Skills</td>
<td>240</td>
</tr>
<tr>
<td>Attitude Change</td>
<td>241</td>
</tr>
<tr>
<td>Research Question 2</td>
<td>242</td>
</tr>
<tr>
<td>Implementation of the SIOP Model</td>
<td>242</td>
</tr>
<tr>
<td>Teaching the Four Language Skills</td>
<td>252</td>
</tr>
<tr>
<td>Instruction Differentiation</td>
<td>258</td>
</tr>
<tr>
<td>Unit Reflection</td>
<td>261</td>
</tr>
<tr>
<td>Providing Professional Training</td>
<td>262</td>
</tr>
<tr>
<td>Research Question 3</td>
<td>263</td>
</tr>
</tbody>
</table>
Meeting Everybody’s Needs ................................................................. 263
Time as an Obstacle ........................................................................... 264
Less Emphasis on Social Studies Education ....................................... 264
Attitude of Other Teachers ................................................................. 266
Research Question 4 .......................................................................... 267

Chapter 8: Cross-case Analysis ........................................................... 269
Revisiting the Case Study Teachers ..................................................... 269
Impressionist Portrait of Ann ............................................................... 270
Impressionist Portrait of Lana .............................................................. 271
Impressionist Portrait of Karen ............................................................ 272
Research Question 1 .......................................................................... 274
Knowledge ......................................................................................... 277
Beliefs and Attitude ............................................................................ 278
Skills .................................................................................................... 280
Research Question 2 .......................................................................... 281
Implementation of the SIOP Model ...................................................... 283
Teaching Academic Literacy Skills (Vocabulary, Reading, and Writing) .... 285
Classroom Interaction ......................................................................... 290
Assessment Techniques ....................................................................... 291
Instruction Differentiation ................................................................... 292
Use of Scaffolding Strategies .............................................................. 293
Culturally Responsive Teaching ......................................................... 296
Teacher Collaboration ......................................................................... 298
List of Tables

Table 1. A Knowledge Base Outlined for Content Teachers of ELLs .................. 84
Table 2. Features of Effective PD................................................................. 86
Table 3. Case Study Participants................................................................. 99
Table 4. Data Collection Instruments Used in This Study............................. 100
Table 5. Major Survey Scales...................................................................... 103
Table 6. Data Collection Activities (1)........................................................ 107
Table 7. Data Collection Activities (2)........................................................ 109
Table 8. Data Analysis Procedures............................................................. 110
Table 9. Sample Summary Sheet (1)............................................................ 113
Table 10. Sample Summary Sheet (2).......................................................... 115
Table 11. Reliability and Validity of the Study.............................................. 123
Table 12. Overview of the Survey............................................................... 130
Table 13. Content Areas & Grade levels (Question 1).................................... 132
Table 14. Year of Participation (Question 2).................................................. 132
Table 15. Teaching Experience (Questions 3 & 4)........................................ 133
Table 16. Number of ELLs in Class (Questions 5 & 6)................................. 134
Table 17. Respondents’ Reported Improvement in the Major Components of ECTC Training (Question 13)................................................................. 135
Table 18. Respondents’ Reported Improvement in Their Knowledge and Skills for Teaching ELLs (Questions 14 & 15) ................................................................. 136
Table 19. Themes of Question 8: Language Development & SLA ........................................ 140
Table 20. Themes of Question 9: TESOL Methods & Strategies ......................................... 141
Table 21. Themes of Question 10: Cross-cultural Communication & Culturally Responsive Teaching ........................................................................................................... 143
Table 22. Themes of Question 11: Second Language Assessment ........................................ 145
Table 23. Themes of Question 12: Material Selection and Adaptation ................................. 146
Table 24. Number of Respondents Who Reported Increased Frequency of Implementing the ELL-Friendly Teaching Practices due to Their Participation in the ECTC Program (Questions 17, 18, 19, 20, & 21) .................................................................................................................. 149
Table 25. Overview of the Teaching Practices That More Than 50% of Respondents Reported Implementing With Increased Frequency due to Their Participation in the ECTC Program  ...................................................................................................................................................... 150
Table 26. Respondents’ Perceptions of the Impact of the ECTC Program on Their Teaching Efficacy in Relation to Teaching ELLs (Question 22) .................. 153
Table 27. Themes of Question 16: Changes in Teaching Practices ......................................... 155
Table 28. Respondents’ Perceptions of the School Organizational Factors (Question 23) .............................................................................................................................................. 157
Table 29. Respondents’ Perceptions of the Program Features (Question 24) ......................... 162
Table 30. Ann’s SIOP Scores .................................................................................................. 177
Table 31. Frequency Counts of Features at Each “Evident” Level (Ann) ................................. 179
Table 32. Visuals that Ann Used in Five Lessons .................................................................. 180
Table 33. Partner or Group Activities in Ann’s Lessons………………………………………182
Table 34. Vocabulary Words Explicitly Taught Over Five Lessons (Ann)………………186
Table 35. Ann’s Comments on How to Teach Reading.............................................189
Table 36. Lana’s SIOP Scores..................................................................................210
Table 37. Frequency Counts of Features at Each “Evident” Level (Lana)………………212
Table 38. Vocabulary Words Explicitly Taught Over Six Lessons (Lana)………………221
Table 39. Students in Karen’s Sheltered Class..............................................................237
Table 40. Karen’s SIOP Scores..................................................................................244
Table 41. Frequency Counts of Features at Each “Evident” Level (Karen)………………246
Table 42. Vocabulary Words Explicitly Taught Over Six Lessons (Karen)………………247
Table 43. Revisiting the Three Teachers.................................................................270
Table 44. Key Themes of Learnings.........................................................................274
Table 45. Key Themes of Changes in Teaching Practices.........................................282
Table 46. Features of the ECTC Program.................................................................318
Table 47. Strategies Learned and Implemented by Karen During the ECTC Program...370
List of Figures

Figure 1. Guskey’s Model of the Process of Teacher Change…………………………29
Figure 2. Clark and Hollingsworth’s Interconnected Model…………………………30
Figure 3. Fishman et al.’s Model…………………………………………………………31
Figure 4. Desimone’s Model………………………………………………………………32
Figure 5. Theoretical Model of Teacher Change in this Study…………………………34
Figure 6. Within-case Analysis……………………………………………………………119
Figure 7. Cross-case Analysis…………………………………………………………….120
Figure 8. Karen’s Modified Test…………………………………………………………261
Chapter 1: Introduction

The National Trend

The significance of preparing content area teachers (“content teachers” hereafter) to teach English language learners (ELLs) has been well recognized in light of the current demographic and policy contexts of education in U.S. schools. Across the nation, the number of ELLs has risen dramatically over the past two decades. They represent the fastest-growing student population in the US. Between the 1990–1991 and 2001–2002 school years, the number of students identified with limited English proficiency in public schools grew by 105%, in contrast to the relatively small 12% overall enrollment increase (Kindler, 2002). From 1995 to 2005, ELL enrollment in the US increased by 57.17%, while total student enrollment grew by only 3.66% (NCELA, 2007). The most recent National Clearinghouse for English Language Acquisition (NCELA) estimates (2009-2010) indicate that approximately 5.2 million ELL students were enrolled in schools across the country, representing 10.4% of the kindergarten through twelfth grade (K–12) public school enrollment. As a result, more content teachers find themselves charged with the task of teaching these students, which used to be the major responsibility of bilingual or ESL specialists. According to Zehler et al. (2003), from 1991–2001 the proportion of teachers who taught at least one ELL nearly tripled (from 15% to 43% of all teachers). More recent statistics are unavailable, but as of 1999, about 56% of public
school teachers had at least one ELL student in their class (Alexander, Heaviside, & Farris, 1999).

In addition to the demographic change, the passage of the No Child Left Behind (NCLB) Act in 2002 has also gotten content teachers more involved in the education of ELLs. The legislation mandated reporting of Adequate Yearly Progress of all students, including ELLs. By allowing ELL students shorter time to stay in an ESL or bilingual program and requiring them to take the same standardized tests as non-ELLs after they have been in US schools for one to three years, the NCLB has held schools, in general, and content teachers, in particular, more accountable for the academic achievement of ELLs.

More recently, following the decade-long implementation of NCLB was the publication of Common Core State Standards\(^1\) (CCSS), which established new guidelines for what students should know and be able to do in math and English language arts and literacy at all grade levels. In discussing the impact of CCSS and other forthcoming standards\(^2\) on ELLs and their teachers, the TESOL International Association pointed out that “by including all domains of language acquisition across content areas and requiring use of complex texts and rigorous academic language, the CCSS represent … a significant challenge for ELLs and their teachers” (“Overview of the Common Core,” 2012, p. 10). Walqui (2011) concurred that content teachers during the CCSS era should “become not only teachers of their discipline, but also develop their students’ literacy skills, and the language required to use them effectively.”

\(^1\) CCSS were developed by the Council of Chief State School Officers (CCSSO) and the National Governors Association (NGA) and were first published in 2010. Forty-six states have adopted the standards; Ohio is one of the 46.

\(^2\) One forthcoming set of standards is the Next Generation Science Standards.
All the demographic and policy shifts (i.e., standard-based reform) in combination with the diminishing number of bilingual programs and therefore bilingual teachers (Lucas & Grinberg, 2008), have posed great challenges for content teachers, who are often underprepared to teach linguistically and culturally diverse students. ELLs placed in mainstream classes need special support from their teachers to access academic content, as they are still learning the English language. Meeting the linguistic and academic needs of these students requires their teachers to have specialized knowledge and skills to address “the particular language issues relevant to teaching ELLs” (Lucas & Grinberg, 2008, p. 606). However, as Gándara and her colleagues (2003) remarked, “students with limited English proficiency are the least likely of all students to have a teacher who is actually prepared to instruct them” (cited in García, Arias, Murri, & Serna, 2010, p. 134). Research has consistently shown that content teachers are not adequately prepared by their pre-service education and/or in-service training to provide quality education for ELLs.

Until recently, few states required new teachers seeking initial licensure or certification to complete specific coursework related to working with ELLs (e.g., TESOL, instructional techniques appropriate for ELLs, educational linguistics) (Ballantyne, Sanderman, & Levy, 2008; Stevens, 2008). Moreover, most general teacher preparation programs do not offer separate courses that address ELL issues. Even in teacher education programs that emphasize diversity and culturally responsive teaching, issues of second language development and bilingualism are not addressed systemically. At the state and district levels, professional development (PD) opportunities for in-service teachers are similarly underrepresented. A 2001 National Center for Educational
Statistics (NCES) study of staff development reported that the needs of limited English proficiency (LEP) students were the least likely topic of focus for PD (U.S. Department of Education, NCES, 2001, as cited in Ballantyne et al., 2008, p. 9). While 80% of those surveyed had participated in staff development that related to state or district curriculum and performance standards, and 74% participated in PD that focused on integration of educational technology, only 26% had undergone staff development training relating to ELLs. Zehler et al. (2003) found that of teachers who had at least three ELLs in their classroom, 62% had reported attending ELL-related training within the past five years. However, the median amount of training was only four hours. According to a survey conducted among elementary and secondary teachers in California in 2005 (Gandara, Maxwell-Jolly, & Driscoll, 2005), over the past five years only 43% of teachers whose classroom population was at least 50% ELLs had received more than one in-service experience that focused on the needs of these students; for teachers with a classroom consisting of 26–50% ELLs, half of them had no or only one such PD.

Content teachers’ lack of knowledge and training in second language learning and TESOL pedagogy is reflected in not only their instructional practices but also many “unwarranted beliefs and misconceptions” that content teachers hold against ELLs (Pettit, 2011). Pettit (2011) reviewed a body of research on mainstream teachers’ belief about ELLs and identified the following major misconceptions:

- Students should be able to acquire English within two years of coming to the United States.
- Use of a first language at home interferes with learning a second language.
- Use of a native language in the classroom interferes with acquisition of English.
In addition, Pettit (2011) found that many of the teachers from the studies hold low expectations toward ELLs in terms of their ability to master curriculum. Their understanding of the role of ESL teachers is also limited. Many teachers do not feel their teaching responsibilities include ELLs.

These findings regarding content teachers’ lack of knowledge and training for teaching ELLs are particularly worrisome in light of the persistent achievement gaps between ELLs and native English speakers (de Oliveira & Athanases, 2007; Fry, 2007; Short & Fitzsimmons, 2007). A variety of school performance measures, including scores on standardized tests such as the National Assessment of Educational Progress (NAEP) and NCLB-mandated statewide reading and math tests, as well as initial pass rates of high school exit examinations and graduation (or drop-out) rates, have indicated that there are double-digit (percentage point) gaps between ELL students and their English-proficient peers.

Research has consistently identified lack of ELL preparation among content teachers as an important factor associated with the underachievement of ELLs (Ardasheva & Brown, 2011; Gándara, Maxwell-Jolly, & Rumberger, 2008). Gándara et al. (2008), for instance, documented seven dimensions of inadequate schooling for ELLs, among which lack of ELL preparation and/or inadequate PD opportunities to help teachers address their instructional needs are listed as the second most important factor that is associated with the academic underachievement of these students.

3 The other six dimensions or factors are inadequate access to appropriately trained teachers, inequitable access to appropriate assessment, inadequate instructional time to accomplish learning goals, inequitable access to instructional materials and curriculum, inequitable access to adequate facilities, and intense segregation into schools and classrooms that place ELL students at risk.
Gándara and Maxwell-Jolly (2006) stated that the primary key to successfully educating all students, particularly those who are as vulnerable as ELLs, is providing them with well-qualified teachers. Although adequate facilities, reasonable class size, good curriculum and materials, and a safe place to learn are all important conditions for the education of ELLs, nothing is more important than the qualifications of their teacher. The prospect for the continued growth of the ELL population, the greater inclusion of ELLs in mainstream content classrooms due to the NCLB mandates, and the persistent underachievement among ELLs, as well as data reporting the lack of ELL preparation among content area teachers, suggest to us the immediate need to prepare or upgrade teachers’ knowledge and skills. This can be done both at the pre-service and in-service levels in order to offer higher quality and more effective instruction for ELLs.

The Situation in Ohio

Although ELLs continue to concentrate in a few states and metropolitan areas, such as California, Texas, New York, and Florida, their presence is also being increasingly felt in other areas across the US. Paralleling the national demographic shifts, there has been a significant increase in the number of ELLs in the state of Ohio. During the 2010-2011 school year, Ohio elementary and secondary schools enrolled more than 39,800 ELLs. This number represents an almost 200 percent increase over the number reported 10 years ago. These students speak 100 different native languages, and they are made up of children of new or established immigrant families, migrant agricultural families, secondary migrants from other states to Ohio, and refugees who seek resettlement in the US because of political repercussions and persecution in their home countries.
These demographic changes are noteworthy because the presence of even a few ELLs can have a significant impact on schools that lack the necessary infrastructure to accommodate the needs of newly arrived ELL students. As Newman, Samimy, and Romstedt (2010) noted, most of the public schools in Ohio “have no program of support for content teachers to assist ELLs in meeting the state’s standards of academic achievement” (p. 153). The authors conducted a survey in six school districts in Ohio with high enrollment of ELL students. The survey collected data on “the numbers of ELLs in teachers’ classes; status of services and existing infrastructure; opportunities for professional development; collaboration between content area and ESL personnel; and interest in participating in professional development” (p. 155). Responses collected from 188 content and ESL teachers indicated that 96% of the content teachers had ELLs in their classes (56% of the teachers had 1–10 ELL students, and 19% had 11–20 students). However only 26% of the respondents reported having ever taken specific pre-service course(s) that addressed teaching of ELLs, and only 45% had participated in an in-service PD on ELL-related issues. Although most teachers lacked training, they were able to notice some linguistic and social-cultural issues that challenged ELLs and expressed an interest in pursuing PD opportunities to better accommodate ELLs. Despite the small scale of the study, it provides significant insights into the gaps in currently existing ESL services and the urgent need for providing quality PD for content teachers in Ohio. These findings are corroborated by the fact that the teacher education policies of Ohio do not require new teachers to complete specific coursework on TESOL or instructional techniques appropriate for ELLs (Ballantyne et al., 2008). It can be reasonably inferred that in many of the school districts in Ohio, the educational needs of these students are
not being adequately addressed due to the shortage of well-trained and well-qualified content teachers for ELLs.

**Statement of Problem**

Improving the academic achievement of ELLs has become an increasing concern for school administrators and policy makers. The pressures of accountability and concerns about the shortage of education personnel qualified to teach ELLs have fueled a growing interest in providing PD for content teachers. Regarding the significance of teacher PD, Yoon, Duncan, Lee, Scarloss, and Shapley (2007) asserted that “professional development for teachers is a key mechanism for improving classroom instruction and student achievement” (p. 1). The significance of in-service PD is particularly pronounced for the education of ELLs, given the fact that few content teachers have taken any coursework in TESOL through pre-service education at universities, but research has identified PD as one of the top school and district factors for ELLs’ academic success. Additionally, an emerging body of empirical research has noted a link between improved academic achievement for ELLs and the PD received by their teachers.

Despite the increasing recognition of the importance of PD for teachers of ELLs, empirical research in this regard is still in its infancy. Lucas (2011) pointed out that research is needed in “almost every aspect of the preparation of mainstream teachers for teaching ELLs” (p. 220). Although researchers have called for a transformation of teacher preparation and development to ensure that all teachers develop an expertise for teaching ELLs, little is known about how to make these changes happen in reality.

In fact, after conducting a comprehensive review of literature on pre-service preparation and in-service training of classroom teachers to teach ELLs, Lucas and
Grinberg (2008) found that the majority of the literature consisted of conceptual and theoretical pieces or policy-oriented works. The authors identified 17 relevant empirical studies published between 1987 and 2005, only eight of which focused directly on the preparation of classroom teachers for ELLs.

After conducting an extensive search in ERIC, a major educational literature databank, I was able to locate 18 more empirical studies published since 2005. The small amount of empirical research that has been done in the past two decades indicates that professional education for teachers of ELLs is one of the most under-examined areas of pre-service and in-service teacher education. Although these studies documented a variety of PD programs and their impact on teachers and their ELL students, there is no doubt that many more such innovative efforts have not been represented in the literature. Therefore, further research is still needed to investigate the characteristics, quality, and effectiveness of various in-service programs for teachers of ELLs.

Additionally, I found the following research gaps especially relevant to the present study. First, there is little research focused on in-service PD offered by colleges and universities. In-service training that is geared towards secondary teachers in particular has received little attention. Secondary teachers face different challenges than elementary teachers because the academic stakes are much higher for ELL students at the secondary level. In Ohio, for example, secondary school teachers have to prepare their students (including ELL students) to pass two significant state tests: the Ohio Achievement Assessments (OAA) for grades 3-8 and the Ohio Graduation Test (OGT) for grades 9-12. The latter decides whether students can get a high school diploma (Newman et al., 2010).
Second, absent from most of the current literature is how in-service PD could help promote collaboration between teachers in a joint effort to educate ELL students. Lucas and Grinberg (2008) maintained that willingness to collaborate with colleagues is an important attitude for classroom teachers of ELLs, especially for those who have not developed expertise in teaching ELLs. Teacher collaboration has been recently called for by researchers as a means of promoting academic achievement of ELLs (Davison, 2006; Honigsfeld & Dove, 2010). Teacher collaboration that is instructionally relevant and sustained is seen as the means through which instructional coherence to advance ELL student learning is achieved and “a powerful form of job-embedded professional development” (York-Barr, Ghere, & Sommerness, 2007, p. 305) that can result in improved knowledge and practice for teachers. A few recent research studies have begun to document PD offerings that engage teachers of ELLs (content teachers and ESL teachers) in different types of collaboration. More studies, however, are still needed to examine the impact of in-service training on teachers’ collaborative practices.

A third under-explored area that deserves more researchers’ attention is PD that prepares classroom teachers to deal with the particular language issues relevant to teaching ELLs. As a subset of language minority students, ELLs face the unique challenge of mastering academic content and the English language simultaneously. Similarly, teachers who instruct ELLs also face the unique challenge of ensuring that these students learn English without falling behind their English proficient counterparts in content area knowledge and skills. However, as Lucas and Grinberg (2008) remarked, until recently, “the preparation of classroom teachers to teach ELLs has been subsumed under the general consideration of the preparation of teachers for ‘linguistically and
culturally diverse students’ or ‘language minority students’” (p. 606). Researchers tend to treat “linguistic diversity and cultural diversity as one undifferentiated set of factors” and “language as one of many aspects of CULTURE” (p. 606). Research has shown that in addition to understanding the importance of including students' cultural references in all aspects of learning (Ladson-Billings, 1990), teachers of ELLs should also understand established principles of second language acquisition in tandem with knowledge about the similarities and differences between first and second language learning, as well as the pedagogical practices that stem from them (de Jong & Harper, 2005a; Lucas & Villegas, 2011). Effective teachers also need a wide range of language-related knowledge and skills, including knowledge of English linguistics and skills for conducting basic linguistic analysis of oral and written texts in their discipline area. Particularly important for secondary content teachers are knowledge and skills pertaining to promoting students’ academic language and literacy development, as well as teaching them the content area knowledge. This type of expertise is crucial for assisting ELL students with accessing increasingly complex curriculum content and passing high-stakes tests. Particularly, sheltered instruction and the Sheltered Instruction Observation Protocol (SIOP) Model (Echevarria, Vogt, & Short, 2013), an important approach to integrating content and language instruction, has been widely recognized as an indispensable part of the instructional repertoire of content teachers who have ELLs in their classroom. Without PD support to equip content teachers with language-specific knowledge and instructional expertise, “issues of second language acquisition are likely to get lost within diversity courses in the larger framework of ‘culturally responsive teaching’” (Lucas & Grinberg, 2008, p. 606). Although some attention has been given to identifying language-related
knowledge, skills, and dispositions that content teachers need for instructing ELLs, there is little literature focused on the approaches and strategies that teacher educators have adopted to cultivate these language-related qualities, or as Lucas, Villegas, and Freedson-Gonzalez (2008) recently put it, to train “linguistically responsive teachers” (p. 361).

In addition to the gaps in research pertaining specifically to teacher preparation and development for teaching ELLs, a review of the extant literature has also revealed some significant research gaps that reflect those in the larger field of teacher education research.

First, many of the teacher education studies have examined the impact of a teacher education program on teachers’ beliefs and attitude. However, these studies pay little attention to how teachers’ knowledge and practice are influenced by what they experience in teacher education programs and even less attention to the long-term impact on teaching practices. There is a clear need to look beyond “teacher cognition” into the realm of “practice” and to examine how, and how sustainably, a teacher education program can bring about instructional changes.

Second, some empirical studies have sought to establish a direct connection between teacher education (training) and student outcomes. However, as Zeichner (2005) stated, “studies that bypass teacher learning and teacher practices will have very little explanatory power even if they detect relationships between teacher education and student outcomes” (p. 742). We need to know how teacher education or PD programs and their key components interact with teacher learning to mediate the effects on teacher practice and on student learning. Thus, a research focus on teacher learning and practice
is necessary to illuminate particular qualities of a PD program that are connected to desired teacher and student outcomes.

To recap, research has increasingly identified continuing learning and development of teachers as one of the key factors for improving the quality of US schools (Desimone, 2009) and for achieving the reform goals that policy makers have set for the American educational system (Borko, 2004). However, the field of research on teacher learning is still developing (Borko, 2004). Although research on teacher learning has received increasing attention in recent years, “there is a full research agenda ahead of us to gather information necessary to guide PD policy and practice” (Borko, 2004, p. 3). One issue on this research agenda is to understand exactly “what and how teachers learn from professional development” (p. 3). Research in the field of teacher education has not yet fully answered the questions posed by Wilson and Berne (1999) more than a decade ago: “What exactly it is that teachers learn and by what mechanisms that learning takes place. What knowledge do teachers acquire across these experiences? How does that knowledge improve their practice?” (p. 174).

Therefore, the present study aims to address these basic questions by making a foray into an under-explored sector of teacher education research and focusing on an underserved group of students in U.S. schools—the English language learners.

Purpose of the Study and Research Questions

The intent of the present study was to document (describe) and evaluate the impact of a PD program for the education of ELLs called ESL-content Teacher Collaborative (ECTC) on the learning and teaching practice of secondary content teachers.
By employing a mixed methods multiple case study design, this study sought to examine how the teachers constructed a knowledge base for teaching ELLs by participating in the activities provided by the PD program and by attempting to enact changes in their own working environment (classroom and school).

An extensive literature review was conducted before the research questions were formulated. Through the literature review, I was able to establish where the research gaps were and how the study would make contributions to the field, as well as to identify three areas of research that would help guide and focus her research efforts. These research areas are: (1) situative perspectives on teacher learning (e.g., Borko, 2004); (2) the literature on effective professional development (e.g., Ballantyne et al., 2008; Garet, Porter, Desimone, Birman, & Yoon, 2001) and how to evaluate the impact of PD (e.g. Guskey, 2000; Desimone, 2009); and (3) the literature on the knowledge base of content teachers of ELLs (e.g., Lucas & Villegas, 2011).

Drawing on these multiple perspectives, the present study explored the following research questions:

1. What did the ECTC participants learn about teaching ELLs through the program?

2. How did the teachers’ learning from the ECTC program facilitate changes in their teaching practices?

3. What were the individual or contextual factors that either fostered or hindered changes in teacher practice?

4. How did the teachers perceive the content and design features of the ECTC program and the impact of these features on their learning experience?
These questions combine macro-level and micro-level analysis and evaluation of teacher learning and change.

**Significance of the Study**

The present study is expected to have significance in the following respects. First, this study addresses the paucity of research on the preparation of content teachers to meet the educational needs of ELLs. As discussed above, there have been few in-depth empirical studies of this kind that analyze the effects of an ELL-related PD program on teachers’ learning, practice, and classroom application. Thus, the field of teacher education may benefit by gaining a deeper understanding of the impact of a year-long PD program and its key components and features that the teacher participants viewed as critical for the implementation of changes in their instructional practice.

Second, results of this study will provide information essential to determining how the PD program (ECTC) under research could be modified for future implementation, as well as recommendations on the design and development of similar university-based PD programs.

Third, findings of the study can reinforce the need for training all teachers who are working, or if not already, will be working with ELL students. Clair (1995) pointed out that bilingual and ESL teachers cannot educate all of our nation’s language minority students without the help of content teachers. There is a profound need to explore and document the effort and effects of PD programs designed to enhance the teaching practices of all those working with ELLs.

Last but not least, the study will generate valuable insights for various audiences in education, including researchers, teacher educators (trainers), PD providers, secondary
school teachers, and school and district administrators. It has the potential to change how school districts in Ohio view the importance and imperativeness of ELL-related PD and how universities review their teacher training programs. The study will also shed light upon how universities, school districts, and teachers could form collaborative partnerships in order to enhance the educational experience of ELL students. Rich descriptions and analyses of this mixed method study will help identify an agenda for future research on effective practices of PD for teachers of ELLs.

**Definition of Terms**

**ELLs**: ELLs is the acronym for English language learners. ELLs are students (1) who are 3 to 21 years of age, and who are enrolled or preparing to enroll in an elementary or secondary school. They were either not born in the United States, or their native language is a language other than English. They are unable to communicate fluently or learn effectively in English, and typically require specialized or modified instruction in both the English language and in their academic courses.

**Teacher change**: In this study, teacher change is conceptualized as a combination of (1) teachers’ pursuit of personal development in an attempt to improve their performance and develop additional knowledge and skills, and (2) growth and learning inevitably through professional activities as they participate as learners in different learning communities (the ECTC program is a learning community) (Clarke & Hollingsworth, 2002). Because the study did not collect pre-program (baseline) data to determine the pre- and post-training differences, teacher change is operationalized as the ECTC participants’ perceptions of the impact of the ECTC program with regard to the
changes in their knowledge, skills, beliefs, and attitude, as well as their instructional practices for teaching ELLs.

**Teacher knowledge:** For the purpose of data analysis and presentation, teacher knowledge is defined in this study as theoretical, conceptual, and factual knowledge related to the education of ELLs. Teacher skills are operationalized as pedagogical skills or abilities with regard to conducting classroom instruction in a way that meets the language and academic development needs of ELL students. Beliefs and attitudes include sociolinguistic and cultural awareness, other types of awareness, understandings, and perceptions that are developed as a result of the teachers’ participation in the professional development. I differentiate between knowledge and beliefs, and for the latter, I adopt Nespor’s (1987) conceptualization of teacher beliefs, which emphasizes the “affective and evaluative components” of a teacher’s cognition (as cited in Petit, 2011, p. 125).

**Teacher practices:** Teacher practices in this study are operationalized as including teachers’ instructional practices with regard to applying ELL-friendly strategies (e.g., the SIOP Model, strategies for teaching the four language skills, culturally responsive teaching, and strategies for modifying assignments and assessments, etc.), and other work practices for improving education of ELLs, such as collaborating with ESL teachers.
Chapter 2: Literature Review

What We Know About Teacher Learning and Professional Development

Within the current climate of standards-based reforms, the continuing development and learning of teachers has been increasingly identified as one of the keys to improving the quality (of teaching and learning) in U.S. schools (Desimone, 2009). Because the central elements of current reform initiatives—curriculum standards, high-stakes assessments and accountability—dictate that teachers have knowledge and skills that they were often not taught in their pre-service education, PD for practicing teachers emerges as closely connected with and important for the success of school reform and improving educational achievement for all students.

What we know and understand about general PD influences our thinking about preparing teachers for linguistically diverse classrooms. The complexity of teacher learning and change processes, combined with the propensity of researchers and educators to adopt different theoretical views, leads to differences in ways PD is categorized, implemented, and evaluated. Nevertheless, there is some consensus regarding what is meant by PD in general and what constitutes effective PD. In this literature review, I first briefly introduce literature in the larger field of teacher education and then propose a model that helps frame the proposed study of the PD program under investigation.
Defining Teacher Learning and Professional Development

There appears to be a consensus among researchers that teacher learning is one of the most important objectives of PD. Some researchers even go so far as equating PD with teacher learning. Avalos (2011) claimed, “the PD of teachers is studied and presented in the relevant literature in many different ways. But always at the core of such endeavors is the understanding that PD is about teacher learning, learning how to learn, and transforming their knowledge into practice for the benefit of their students’ growth” (p. 10). However, researchers also acknowledge the complexity of articulating and exploring the construct of teacher learning. This is, in part, due to the scattered and serendipitous nature of teachers’ learning. Wilson and Berne (1999) summarized the state of affairs in the 90s with the observation that teacher learning is “a patchwork of opportunities—formal and informal, mandatory and voluntary, serendipitous and planned—stitched together into a fragmented and incoherent curriculum” (p. 174). The teacher learning landscape does not appear to have altered significantly since then.

Teacher learning has been conceptualized as various processes by which teachers develop a variety of knowledge types or increase their participation in the practice of teaching as a result of pursuing both externally-provided and job-embedded learning activities. These different notions of teacher learning have been informed by a diversity of theoretical perspectives, which are summarized by Desimone (2009) as reflecting three strands: cognitive, situative, and sociocultural.

Traditional cognitive perspectives typically treat teacher expertise as residing in the mind of the individual, independent of the context in which it is acquired, and learning as acquisition of a knowledge base for teaching that is transferrable from one
setting to other settings. In his seminal work, Shulman (1987) articulated a theoretical model of teacher learning, which includes seven categories that constitute a teacher’s knowledge base: content knowledge; general pedagogical knowledge; curriculum knowledge; pedagogical content knowledge; knowledge of learners and their characteristics; knowledge of educational contexts; and knowledge of educational ends, purposes, and values and their philosophical and historical grounds. Similarly, Grossman and Richert (1988) defined teacher knowledge as “a body of professional knowledge that encompasses both knowledge of general pedagogical principles and skills and knowledge of the subject matter to be taught” (p. 54). More recently, Elmore (2002) categorized teacher knowledge into three domains: knowledge of subject matter, general pedagogical knowledge, and pedagogical content knowledge. In these views, the knowledge and skills that constituted teacher expertise were forms of declarative and procedural knowledge that could be imparted to teachers through traditional PD and teacher preparation programs.

By comparison, sociocultural theorists adopt the view that learning is a social process during which we co-construct knowledge through our interactions with others in the communities and organizations in which we participate. All knowledge, they claim, is socially mediated and situated in the contexts of its use. Kelly (2006) summarized the following tenets of sociocultural perspectives on teacher learning that are primarily based on the work of Lave and Wenger (1991):

- Cognitive views of learning suggest that in order for novices to become experts, they must learn a defined “body of knowledge” and apply this to their practice. In contrast, sociocultural perspectives consider the process of teacher learning as
knowing-in-practice by which teachers construct their own knowledge base in their particular circumstances, with a view to addressing the particular problems that they identify. The potential for such knowledge construction increases greatly if participants engage in collaborative problem solving, inquiries, and dialogues. Through these collaborative activities, those involved internalize their experience of participation. The history of internalization forms the basis of the participants’ subjective “knowledge of practice.” This notion reflects the sociocultural notion of the transition from “interpsychological processes” to “intrapsychological outcomes” (or from the social to the individual plane).

- The process of learning does not lie entirely with individuals; rather, it is distributed across all participants in professional practice and relates to both the conceptual and physical resources available. For example, for teachers, their knowing-in-practice results from the collaborative actions of teachers and students together in the context of their own work by utilizing the conceptual resources that they bring and the physical resources that are provided by the classroom.

- Teacher learning is the movement of teachers from peripheral (novice) to full (expert) participation in the specific working practices and their associated ways of knowing and thinking that define particular school circumstances.

- The construction of identity takes place through participation in social situations. Teachers’ identities are neither located entirely within the individual, nor are they entirely a product of others and the social setting; instead they reflect the ways in which practitioners view themselves in response to the actions of others towards
them. Thus, teachers’ identities are situated and constantly negotiated and reconstructed.

More recently, situative perspectives have gained more currency because they coordinate cognitive and social perspectives, and thus avoid “the false dichotomy of individual cognition versus participation in social context” (Peressini, Borko, Romagnano, Knuth, & Willis, 2004). Drawing on multiple theoretical perspectives with roots in various disciplines, including anthropology, sociology, and psychology, situative theorists espouse the view that learning is both an individual and a social and interactive process. In particular, the work by Borko and her colleagues applies situative views of learning to teacher education and brings together two research themes that are of concern for this study, that is, teacher learning and teacher professional education (pre-service and in-service).

The aforementioned researchers highlight the reflexive relationship between social and psychological perspectives and consider individuals’ acquisition and use of knowledge as aspects of their participation in social practices. In their earlier work, Borko and Putnam (1996) define teacher learning as “an active constructive process that is heavily influenced by an individual’s prior knowledge and beliefs and is situated in particular contexts … for knowledge to be useful for teaching, it must be intellectually linked to or situated in the contexts in which it is to be used” (p. 674-675). Implied by this definition are two key ideas. First, teacher learning is not a passive process of acquiring new information, but an active process by which teachers construct new knowledge and understanding based on what they already know and believe. Second,
what teachers learn is also influenced by the social and cultural contexts in which the new knowledge is learned and used.

In a more recent publication, Borko (2004) adopted a more sociocultural turn and shifted her focus from “individual knowledge construction” to the process of “enculturation into various discourse communities” and redefined teacher learning “as a process of increasing participation in the practice of teaching, and through this participation, a process of becoming knowledgeable in and about teaching” (p. 4). She described the myriad of contexts in which teacher learning may take place:

For teachers, learning occurs in many different aspects of practice, including their classrooms, their school communities, and PD courses or workshops. It can occur in a brief hallway conversation with a colleague or after school when counseling a troubled child. To understand teacher learning, we must study it within these multiple contexts, taking into account both the individual teacher-learners and the social systems in which they are participants. (p. 4)

Putnam and Borko (2000) outlined three conceptual themes that are central to the situative perspective on cognition and learning:

- Cognition is situated in particular physical and social contexts so that the contexts and activities in which people learn become an integral part of what they learn. Therefore, situative theorists study teacher learning within “the interactive systems that include individuals as participants, interacting with each other as well as materials and representational systems” (p. 4).

- Cognition is social in nature. This social perspective highlights the role of interaction in the learning process, as it determines not only what is learned (i.e.,
products) but also how it takes place (i.e., process). Another idea that emerges from the social perspective is that learning is a process of enculturation into various discourse communities.

- Cognition is distributed across the individual, the others, and tools. Cognition is no longer considered the sole property of the individual. It is viewed as being distributed or stretched over agents and artifacts that have an interdependent relationship.

Bringing the three key themes of the situative perspective to bear on teacher professional education, Putnam and Borko (2000) recommended that teacher educators consider ways to situate teachers’ learning by providing them with multiple settings of learning (within classrooms and outside of classrooms). Teacher educators are also suggested to bring together teachers and university researchers in PD to form new kinds of discourse communities in which both sides contribute and share their unique sets of knowledge and skills.

Borko (2004) outlined ways in which research on teacher learning and PD could be conducted within a sociocognitive framework. She noted that research grounded in the situative perspective allows for multiple conceptual frameworks and multiple units of analysis. Depending on one’s research purposes and questions, a researcher has the flexibility to do one of three things. First, he or she can adopt a cognitive perspective and focus on an individual as a unit of analysis, examining how PD programs can help teachers to increase their knowledge and change their instructional practice. Second, the researcher can use sociocultural conceptual frameworks and the group as the unit of analysis to examine participation in the processes and activities of PD. Third, the
researcher can keep the individual and the group in focus simultaneously to “get a fuller, deeper explanation of teacher development” (p. 8). Borko (2004) also identified four key elements to consider when developing and evaluating a PD system:

- the PD program;
- the teachers, who are the learners in the system;
- the facilitator, who guides teachers as they construct new knowledge and practices; and
- the context in which the PD occurs. (p. 4)

Features of Effective Professional Development

Discussions about what constitutes effective PD have been largely based on criticism of traditional approaches to PD. Taking the form of one-shot workshops, traditional PD is frequently criticized as being decontextualized and disjointed, treating teachers as passive recipients of knowledge rather than active learners, and failing to address the specific needs of the teachers and the students that they teach.

In response to these inadequacies of traditional PD, many researchers have proposed what they believe to be characteristics of effective PD (e.g., Abdal-Haqq, 1995; Hawley & Valli, 1999). It would be outside the scope of this paper to provide detailed discussions of all these theoretical pieces; however, the work of Garet et al. (Desimone, Porter, Garet, Yoon, & Birman, 2002; Garet, Porter, Desimone, Birman, & Yoon, 2001) is introduced here because of the studies’ empirical nature and relevance to my research.

The research conducted by Garet et al. is among the small body of work that provides empirical confirmation of the assumptions maintained in the literature with respect to the best practices for effective PD. The researchers conducted a series of
studies in a cross-sectional, national probability sample of teachers and a smaller, longitudinal sample of teachers to establish the relationship between the identified features of PD activities and enhanced teacher knowledge and skills, as well as changes in classroom practice. Noting a high level of consistency across the literature, the researchers first identified—by drawing on a large body of theory and empirical research (case-study, correlational, and experimental research)—six essential factors to investigate. These included three structural features that characterize the design and process of a PD activity and three core features that constitute the characteristics of the substance of a PD activity.

The first of the structural features is the form of the activity, that is, whether the activity is organized as a reform type, such as a study group, or teacher network, traditional college course, workshop, or conference. The second structural feature is the duration of the activity, as indicated by the total number of contact hours that participants spend on the activity, and the span of time over which the activity takes place. The third structural feature is the degree to which the activity entails collective participation of teachers from the same school, department, or grade level, as opposed to participation of individual teachers from many schools.

One of the three core features of PD activities is the degree to which the activity has a content focus, whether the PD activity is focused on improving teachers' knowledge of subject matter content or improving general pedagogy or teaching practices. Another core feature is the extent to which the activity offers opportunities for active learning that involve observing and being observed teaching; planning for classroom implementation; reviewing student work; and presenting, leading, and writing. The third feature is the
degree to which the activity promotes coherence in teachers' learning and PD by offering experiences that are consistent with teachers' professional goals and aligned with state standards and assessments, as well as by encouraging continuing professional communication among teachers (Garet et al., 2001, pp. 919-920).

Based on the study results, the researchers concluded that PD experience that promotes collective participation of teachers, active learning opportunities, and coherence is more likely to produce increases in teacher knowledge and skills and changes in classroom practice. In addition, PD activities focused on specific instructional practices increase teachers' use of those practices in the classroom, and PD activities with a strong focus on subject matter content are more likely to produce enhanced knowledge and skills. Moreover, although the two studies did not generate consistent findings regarding the effects of duration and activity type on instructional practice, the results did indicate a positive impact of reform type of PD activity mediated through its long duration on enhanced teacher knowledge and skills.

**Evaluating the Impact of Professional Development**

In essence, examining the effects of PD is analogous to evaluating the quality of teachers’ learning experiences, the nature of teacher change, and the extent to which such change affects student learning. Several models have been proposed to assess the quality (or effectiveness) of PD and study the trajectories of teacher learning.

In his book titled *Evaluating professional development*, Guskey (2000) articulated a model for evaluating PD. As Figure 1 shows, effective PD requires collection and analysis of five levels of information. Guskey outlined what is to be measured or assessed at each level of evaluation, what questions to ask/address, and what
types of data to gather for addressing the questions. The first level of evaluation looks at participants’ reactions to the PD experiences. This is the most common form of PD evaluation. The second level of evaluation focuses on measuring the knowledge and skills that the participants have gained. At level 3, the focus of the evaluation shifts to the organization (school) and examines the kind of organizational support that is needed for the success of PD. The fourth level comes after an appropriate length of time has passed that allows participants to adapt the new ideas and practices to their settings. At the fourth level, participants’ use of knowledge and skills is assessed by asking if the new knowledge and skills that participants learned has made a difference in their professional practice. Level 5 addresses the “bottom line” regarding students’ learning outcomes. The questions that are asked include: what was the impact on students? Did the PD program have a positive impact on students’ academic achievement or physical or emotional well-being?

In a different publication, Guskey (2002) proposed a linear model of teacher change (Figure 1) that identifies three major goals of PD programs: change in the classroom practices of teachers, change in their attitudes and beliefs, and change in the learning outcomes of students. Guskey claimed that significant changes in teachers’ beliefs and attitudes often occur after they implement instructional strategies and observed resulting changes in student learning. This led Guskey to the conclusion that “it is not the PD per se, but the experience of successful implementation that changes teachers’ attitude and beliefs” (p. 383). In fact, this same research finds that unlike teachers who see improvements in students’ learning as a result of the implementation of
new ideas, teachers who use new procedures but see no improvement in students’
learning do not experience lasting change.

Figure 1. Guskey’s model of the process of teacher change. Reprinted from
“Professional Development and Teacher Change,” by T. R. Guskey, 2002, Teachers and

Clark and Hollingsworth’s (2002) interconnected model (Figure 2) identified four
domains that are involved in the process of teacher change: the external domain (sources
of information, stimulus or support provided mainly by PD), the personal domain
(teacher knowledge, beliefs and attitude), the domain of practice (professional
experimentation), and the domain of consequences (salient outcomes). The four domains
are analogous (but not identical) to the four domains identified by Guskey. Change in
one domain is translated into change in another through the mediating processes of
enactment and reflection. This model recognizes the complexity of professional growth
through the identification of multiple pathways between the domains. The non-linear
structure of the model enables the identification of particular “change sequences” and
“growth networks” while giving recognition to the idiosyncratic and individual nature of
teacher professional growth. Finally, any processes of professional growth represented in the model occur within the constraints and affordances of the larger change environment.


Fishman, Marx, Best, and Tal (2003) developed a model (Figure 3) for understanding teacher learning in a larger system of PD that places teacher knowledge, beliefs, and attitude in an interactive relationship with the interpretation of student change or learning as represented by various forms of assessment and through the practical experiences of classroom enactment. The researchers defined teacher knowledge/learning from a cognitive perspective, using Shulman’s categories of content
knowledge, pedagogical knowledge, and pedagogical content knowledge, but
nevertheless link enactment (classroom practice) reciprocally to teachers’ knowledge,
beliefs and attitude. The components that comprise PD include PD design elements and
PD activities. Fishman et al. identified four elements over which PD designers have
control: the content of PD, the strategies employed, the site for PD, and the media used.
These components, combined with PD activities, formed the overall PD experiences for
teachers.

![Figure 3. Fishman et al.'s model. Reprinted from “Linking Teacher and Student Learning to Improve Professional Development in Systemic Reform,” by B. J. Fishman et al., 2003, Teaching and Teacher Education, 19, 645.](image)

More recently, Desimone (2009) proposed a path model (Figure 4) for studying
teacher PD and recommended its use for empirical causal studies of PD. The model
represents “interactive and non-recursive relationships” (p. 184) between the critical
features of PD, teacher knowledge and beliefs, classroom practice, and student outcomes.
Also included in the model is context as “an important mediator and moderator” (p. 185),
which involves student characteristics, curriculum, school leadership, and policy conditions, as well as other factors.


The increasing complexity of teaching requires a corresponding sophistication in models of teacher learning (Desimone, 2009). The early linear model in which student learning outcomes were seen as the goal of teacher PD already has fallen out of favor with most researchers, who increasingly recognize the complex, interactive, and situated nature of teacher learning.

Close examination of the four models indicates that the basic components of PD—teacher knowledge, teaching practice, and student learning—are universal in theoretical
notions of the trajectories of teacher learning. The variations, however, reflect the different theoretical stances that underpin these models. Desimone’s model, for example, puts an emphasis on context, while Borko’s model highlights the role of facilitator (or PD providers). Fishman’s model includes curriculum as a factor that influences the kind of PD activities to be offered. Guskey’s linear model varies orders to reflect teacher change in beliefs and attitude as a function of improved student achievement, and his five-level evaluation model incorporates consideration of the kind of organizational (and structural) support that is necessary for the success of PD. Finally, Clark and Hollingsworth’s model acknowledges multiple pathways between change domains (teacher knowledge, practice, and student outcomes) and change mechanisms (reflection and enactment) by which change in one domain is always associated with change in another.

**Theoretic Model of Teacher Learning and Change in This Study**

Based on the literature, I devised a theoretical model (Figure 5) to frame this study of teacher learning and change.
As can been seen in Figure 5, I use the same key change domains as the reviewed models but put more emphasis on the role of school organizational conditions. Rather than committing to a theoretical perspective, I draw on both cognitive and situative (sociocultural) perspectives. The model is structured in the following way.

Teacher learning is conceptualized as a process of knowledge construction by individual teachers in response to their participation in the PD experiences. Hence, teacher learning through ECTC is studied as a process by which teachers construct a knowledge base for teaching ELLs by participating in the PD content and activities, interacting with the facilitators of the PD and other members of the learning community,
and actively applying their new learning to their work. The dynamic relationship between “knowing-in-practice” and “knowledge-of-practice” is taken into account to acknowledge the complex nature of teacher learning and teacher knowledge, which include not only formal knowledge but also practical knowledge. Additionally, teacher learning does not happen within the context of PD alone, but constantly shapes and is shaped by classroom enactment (instructional practice) as the teachers enact ideas, concepts, and instructional approaches acquired from the PD within their classroom.

The model highlights a linkage and interactive relationship between teacher learning and teacher change through professional development. The latter is understood as occurring in both the personal domain (knowledge, beliefs, and attitude), and the domain of practice. Teachers’ ELL efficacy is also included as a change domain that reflects teachers’ perception of the effectiveness of their instruction in making a difference in student learning. The model does not posit any directional relationship between changes in beliefs and changes in practice, but it does concur with some researchers’ proposition that the “process of changing beliefs and practices is interactive and synergistic” (Richardson & Placier, 2001).

Teacher practices represent changes that are enacted in and out of the classroom. In the classroom, teachers implement new strategies (enactment), reflect on their beliefs and practices (reflection), and interpret the events of the classroom in terms of outcomes that they value. Teachers then draw conclusions as to the consequent changes in student learning. Teachers may also try to enact changes outside their classroom by sharing the results of their learning and practice with other school professionals and by engaging them in a collaborative effort to improve the quality of education for ELLs.
The model identifies the multitude of factors that mediate the effects of PD on teacher learning and change. These factors reflect a comprehensive account of the role of the PD program context and the school organizational context. The PD program context consists of external facilitation provided by the features of PD activities and participation of external agents (PD facilitators and other participating teachers) in the process of teacher learning and teacher change. The school context reflects the well-recognized school conditions (e.g., school leadership, curriculum, student characteristics, resources available, and other teachers in school) in combination with the policy environment and how these conditions interact to facilitate or constrict teacher learning and changes in practice.

The model also identifies a set of critical features that define effective PD. As mentioned above, the research consensus is strong enough to warrant the inclusion of a set of features. The structural and core features that are identified by Garet and his colleagues and included in Desimone’s model are used, and the model takes into account the specific features of the PD program (ECTC) under investigation.

The model is nonlinear and highlights reflective links between the three major domains: teacher learning, teacher change, and student learning. The use of double-headed arrows between each of the three change domains conveys the idea that teacher change is an iterative rather than a linear process.

**Outlining a Knowledge Base for Teachers of ELLs**

Given the current demographic changes, educational policies, and the role of high-quality teachers in promoting students’ development and learning, there is an urgency regarding the requisite knowledge and skill base needed to better prepare content
teachers of ELLs. Despite many research gaps in “almost every aspect of the preparation of mainstream teachers for teaching ELLs” (Lucas, 2011, p. 220), a substantial body of work has accumulated over the past decade with respect to the special types of knowledge and skills needed for teaching ELLs. Contributors to this body of literature consist of not only individual scholars and researchers (e.g., Fillmore & Snow, 2000; de Jong & Harper, 2005a, b; Lucas & Villegas, 2011), but also professional organizations and state and local educational agencies (e.g., Ballantyne, Sanderman, & Levy, 2008). These researchers and organizations have made a strong case that to effectively teach ELLs, teachers must have special expertise that goes beyond “just good teaching” (de Jong & Harper, 2005a, b) for students whose first language is not English. In the following pages, a knowledge base for content teachers of ELLs is outlined based on a literature review of this body of work. This knowledge base consists of the following six major areas of teacher expertise for working with ELLs: language-related knowledge and skills, sociolinguistics and culture-related knowledge and awareness, student-related knowledge, assessment and ESL standards, pedagogical skills and instructional expertise, and other competences.

Language-related Knowledge and Skills

This category encompasses an array of topics, including “knowledge of language development processes in general and of second language acquisition (SLA) in particular” (Hutchinson & Hadjioannou, 2011, p. 93) and understanding about the nature and challenges of academic English (de Jong & Harper, 2005a, b; Short & Fitzsimmons, 2007). It also includes the ability to conduct linguistic analyses of academic tasks and
texts (Fillmore & Snow, 2000; Lucas & Villegas, 2011) and the fundamentals of structural linguistics (Fillmore & Snow, 2000).

According to these researchers, content teachers need to cultivate a profound knowledge of SLA processes (e.g., stages of SLA) and ways in which L1 and L2 language and literacy development are both similar and different. They need to understand how the processes are influenced by variety of factors (e.g., L1 literacy level, socio-economic background, motivation, personality, willingness to make mistakes, etc.) that lead to L2 learners often following a different developmental trajectory and rate in L2 acquisition. The literature emphasizes teachers’ ability to apply these understandings in their teaching. For example, when teachers understand that there is a “silent stage” (pre-production stage) in the process of L2 acquisition, they can modify their teaching strategies with ELL students at this stage by using gestures and repetitions, providing pictures and illustrations, and asking the student to match words and pictures, among other techniques.

Across the literature, there is discussion on the role of the student’s L1 in the process of learning a second language. Research indicates that concepts and skills learned in one’s L1 will transfer to one’s L2. If an ELL student is already literate in his/her L1, many of the skills developed in the process of learning to read and write in the native language (e.g., phoneme awareness, reading comprehension strategies, and language learning strategies) will support learning to read and write in English. Content teachers thus need to be able to use students’ L1 as a resource for learning. They should encourage ELL students to develop their native language and literacy skills and give
them opportunities to have a concept or assignment explained in their L1 by a peer or bilingual aide.

A common thread within the literature is the importance of “teacher talk.” Content teachers need to be able to monitor their own language use and provide input that is appropriate and comprehensible, given the student’s language proficiency level. This recommendation is based on Krashen’s “comprehensible input” (the Input Hypothesis), which states that optimal language input for L2 learners should not be so challenging so that they cannot access it, but at the same time it should go beyond their current proficiency level. Moreover, content teachers need to be able to use various questioning techniques to monitor students’ understanding and to engage ELL students at different proficiency levels in talking about academic content. The foundation of this recommendation is Swain’s “Comprehensible Output Hypothesis,” which argues that the pushed output (language use) is a mechanism through which language acquisition occurs because when learners focus on the ways they express themselves, they are “pushed to produce more comprehensible, coherent, and grammatically improved discourse” (Gibbons, 2002, p. 15). Verplaetse (2008) has advised teachers to ask “how” and “why” questions (particularly with intermediate ELLs) to elicit extended oral responses and encourage higher levels of thinking, respond to student comments in non-evaluative ways, and use instructional conversation (IC) in which the teacher acts as a facilitator rather than a questioner. All these strategies are conducive to creating situations where language learners “have access to rich and meaningful input and where they are motivated to produce output” (Lucas & Villegas, 2011, p. 64).
Drawing on the Monitor Hypothesis and the Affective Filter Hypothesis developed by Krashen, some researchers have recommended that content teachers know how to model correct language structure and provide ample opportunities to practice within carefully structured learning situations. These strategies encourage the ELLs to self-detect and self-correct in speaking and writing the target language. However, all these learning opportunities should happen in a low-anxiety learning environment where the learners feel affectively secure to practice using the language.

In a related fashion, the literature has recommended that content teachers understand the importance of interaction for language learning when the speakers clarify (negotiate) their intended meaning. This interactionist perspective of SLA views the communicative give-and-take of natural conversations between native and non-native speakers as a crucial element of the language acquisition process. A good part of what content teachers need to know and be able to do to support ELLs’ language development is embedded in the discussions about how teachers can use “structures of cooperative learning” and various “grouping strategies” to promote active, meaningful use of the language with native speakers. As Verplaetse (2008) noted, interaction between ELLs and native English speakers does not necessarily occur naturally in mainstream settings (e.g., because of native-speaking students’ negative attitudes towards ELLs or because of the ELL’s inability to participate appropriately). When such interactions do occur, they are often limited to brief exchanges that do not provide optimal language development experiences for ELLs. Therefore, grouping English learners with native English speakers requires thoughtful consideration of the multiple abilities that students bring to small group sessions. Moreover, to ensure ELL students feel comfortable taking risks using
language and exchanging ideas in English with native speakers, teachers are advised to structure the group work carefully and to explicitly model correct language use and students’ tasks. Similarly, Gibbons (2002) provided several practical suggestions as to how to make group work effective in a mainstream classroom with ELLs. She suggested that teachers provide clear and explicit instructions, use authentic tasks to “encourage” rather than to “require” talk, and make the outcome of the task explicit to students so that they understand the purpose of what they are doing. In addition, a well-designed group task entails that all students are involved and have a role to play, and that they are provided with enough time to complete the task. Teachers should also make the assumed and unwritten rules about how to work collaboratively explicit to students, especially to those ELLs who are less familiar with the learning culture and norms of American schools.

A key focus of much of the literature on secondary teachers of ELLs is discussion about the extraordinary language and literacy demands faced by ELLs to learn core content in middle and high schools. Unlike their native English speaking peers, most of whom have already mastered sufficient levels of oral language and literacy skills in English to effectively participate in language-rich content classrooms, ELLs come to secondary schools with varying levels of English language proficiency and literacy skills in their L1. This is compounded by the fact that they are learning increasingly complex curriculum content and have to pass high-stakes assessments through a new genre of school language—academic language.

Academic language has been defined in various ways by researchers using different approaches (Bunch, 2010). While space does not allow a full discussion of all
these approaches, Echevarria et al. (2013), for instance, defined academic language as “a specialized academic register of the formal written and spoken code” (p. 10) and pointed out that despite lacking a single agreed-upon definition, educators and researchers have considered how language is used in school to acquire knowledge and promote success on academic tasks.

Indeed, many researchers concur that students’ success as measured by standardized tests is determined by their academic language development within and across the secondary school curriculum. Lempke (1988) stated that “…… the mastery of academic subjects is the mastery of their specialized patterns of language use, and that language is the dominant medium through which these subjects are taught and students’ mastery of them is tested” (as cited in Echevarria et al., 2013, p. 9).

The statement is particularly true for adolescent ELL students who are developing their second language at the same time they need to develop academic skills to engage in subject content. They are challenged not only by the demands of learning a second language in general, but also by having to learn “rigorous standards-based curriculum” and pass “high-stakes assessments.” Thus, ELLs must perform “double the work” of native English speakers in middle and high schools (Short & Fitzsimmons, 2007). Bunch (2010) noted that as the linguistic demands of academic work increase at the middle and high school level, so does the importance of ELLs’ ability to comprehend and produce academic English necessary for successful engagement in content-based instruction and assessment. Therefore, ELLs “require access to modeling, practice, and feedback in using the language valued in academic settings as they negotiate the language demands
associated with participating in learning activities and demonstrating what they are learning” (Bunch, 2010, p. 361).

Without exception, the literature recommends that content teachers need to understand the differences between conversational language and academic language (or the differences between basic interpersonal communication skills (BICS) and cognitive academic language proficiency (CALP), a distinction first proposed by Cummins (1979, as cited in Cummins, 2008). In addition, they need to know that for many ELLs, oral language proficiency is not an indicator of their literacy skills, nor can it be equated with limited academic or cognitive ability. De Jong and Harper (2005a) reminded teachers not to “simply assume the same sequential progress from oral proficiency to literacy development for ELLs as for native English speakers” (p. 108). Such an assumption ignores the facts that some ELLs “have had previous language and academic learning experiences, are cognitively mature, and can therefore understand significantly more than they can demonstrate through oral language” (p. 104), while many other ELLs are fluent in conversational English but lack academic literacy skills. Content teachers need to know that L2 oracy (i.e. oral proficiency) and literacy skills often develop in an integrated manner.

A final area of language-related knowledge that is recommended in the literature for teachers to know in order to support language learning consists of the formal aspects of the English language (fundamental aspects of linguistics). According to some researchers (e.g. Fillmore & Snow, 2000; Lucas & Villegas, 2011), content teachers need a grasp of the grammatical, morphological, and phonological aspects of the English language, as well as the text structures and discourse features of their subject area or
discipline. This type of knowledge enables them to provide explicit feedback on students’ language use (spoken and written) and to identify the language demands of their own curriculum and instructional tasks so that they can provide extra language support in these aspects that may interfere with ELLs’ understandings.

**Sociolinguistics and Culture-related Knowledge and Awareness**

In addition to emphasizing the need to pay attention to linguistically-oriented knowledge and skills, researchers have also recommended that content teachers develop some types of perspectives and dispositions in relation to the sociolinguistic and socio-political dimensions of language and language acquisition, as well as cross-cultural communication. Cultural awareness is a common thread in the literature. Researchers are almost unanimous in recommending that content teachers should increase their sensitivity to cross-cultural differences related to “culturally different classroom patterns” (de Jong and Harper, 2005b, p. 133). Such differences are reflected in classroom participation structures, instructional formats, norms of speaking to authority figures, non-verbal communication styles, and expectations about teacher-student interactions. Another factor to be aware of consists of cultural differences specific to a certain content area that teachers of math, science, and social studies each have to consider when teaching their subjects to ELLs. Content teachers, according to de Jong and Harper (2005a), need to “learn more about their students’ cultural backgrounds and experiences so that they can anticipate and respond to cross-cultural differences. They explore alternative explanations for observed behavior in the students’ own cultural context and refrain from making assumptions based on their own cultural norms for behavior” (p. 112).
Another common thread in the discussions of what teachers of ELLs should know and be able to do is “valuing linguistic and cultural diversity.” This is demonstrated in their awareness of “the sociopolitical dimensions of language—the understanding that no language or language variety is inherently better than another, and that the dominant position of a language or language variety within a particular social context derives solely from the power of the speakers of that language” (Lucas & Villegas, 2011, p. 59).

Teachers who embrace cultural and linguistic diversity have “the inclination to advocate for ELL students” and “take action to improve their education” (p. 60). They show respect for and interest in students’ home languages and cultures and encourage them to continue developing literacy in their home languages. In addition, teachers who truly respect cultural differences are more apt to believe that their ELL students are capable learners, even when these students enter school with limited English proficiency and ways of thinking, talking, and behaving that differ from the dominant cultural norms. They demonstrate this confidence in how they organize their instruction; by providing ELL students with an intellectually rigorous curriculum; and by capitalizing on the personal, cultural, and linguistic experiences of ELL students as resources for teaching.

Lucas and Villegas (2011) and de Jong and Harper (2005a) have argued that content teachers of ELLs should be aware of the interrelation between language, culture, and identity and the ways in which students use language to reflect their cultural values and their affiliation with social and cultural groups. They need to have an understanding of “the socio-psychological foundations of second language learning” and “the sociocultural and sociopolitical pressures” (de Jong & Harper, 2005a, p. 115) that ELL students experience in the process of acculturation and bicultural identity development.
According to de Jong and Harper (2005a), the process of acculturation is not linear (a simple assimilation into the mainstream culture). A multitude of social, contextual, and individual factors lead to different acculturation patterns among ELL students. While some ELLs reject the host culture and language as they see their own identity and language threatened, other ELLs see themselves excluded from both the home culture and the new culture. The pressures caused by having to learn the English language in order to assimilate into the mainstream culture may lead to students’ feelings of ambivalence and frustration and, consequently, their demonstration of anti-social or disruptive behaviors in school. de Jong and Harper (2005a) argued that a socio-linguistically conscious teacher is willing to examine his/her own socio-cultural positioning and assumptions about language, culture, race, and multilingualism because the teacher is aware of the potential impact of his/her attitudes on students’ learning and social and emotional well-being.

Lucas and Villegas (2011) and Whelan Ariza (2006) have also warned teachers of the danger of stereotyping. Scholars and teacher educators’ opinions are divided between those who recommend that teachers learn some general information about different cultural groups and those who argue that this simplistic approach leads to stereotypes that do not apply to individual students.

**Student-related Knowledge**

This category involves teachers having not only general understanding of “the diversity among ELLs,” but also “personal knowledge of the ELL students in their classrooms” (Lucas & Villegas, 2011, p. 61). ELLs are diverse along the dimensions of race, class, and cultural background. Researchers, including Olsen and Jaramillo (1999)
and Ruiz-de-Velasc, Fix, and Clewell (2000), have identified three types of ELLs according to their years of stay in the US, English proficiency levels, and formal schooling experience: long-term ELLs, recent arrivals with limited or interrupted formal schooling, and recent arrivals with adequate schooling. A related term is Generation 1.5 students, which refers to those immigrant students who move to the US at the age of 12 or older and enroll in middle school or high school in this country. The aforementioned researchers have recommended that content teachers learn something about the linguistic and cultural backgrounds of their ELL students, the students’ academic and literacy skills in their native language, language(s) spoken at home, and their English-language proficiency levels. Teachers should also be aware of “their students' perceptions of the value of school knowledge, their experiences with the different subject matters in their everyday settings, and their prior knowledge of and experience with specific topics in the curriculum” (Villegas & Lucas, 2007, p. 30). All these experiences are “integral parts of ELLs’ knowledge, skills, and identity” (de Jong & Harper, 2005a, p. 113). Teachers who are oblivious to these experiences fail to identify and draw on the skills and strengths that ELLs bring to school and may subsequently miss opportunities to systematically develop these resources in their curriculum planning and instruction. Villegas and Lucas (2007) also recommended some effective strategies for getting to know ELL students at the personal level, including “conducting home visits, creating opportunities in the classroom for students to discuss their aspirations for the future, posing problems for students to solve and noting how each student goes about solving them, and talking with parents and other community members” (p. 31).
Assessment and ESL Standards

Content teachers of ELLs should be familiar with high-stakes assessments and standards of English language proficiency. They need to know how to interpret the scores of state-mandated English proficiency tests (Faltis, Arias, & Ramirez-Marin, 2010), how to minimize the English-language demands of assessments to allow ELLs to demonstrate their content knowledge, and how to employ and interpret classroom-based/alternative assessments to get a fuller picture of students’ knowledge and ability. In addition, teachers need to be familiar with the types of accommodations that are made available for ELL students on large-scale assessments, and know how to use some of the testing accommodations in their classrooms to maximize the performance potential of their ELLs.

In addition to linguistic complexity, cultural bias is another factor that may threaten the reliability and validity of test items. Rohan (2011) reminded teachers to pay attention to test items that require students to have certain background knowledge and experience to answer correctly. Thus, content teachers need to know how to determine if a test is culturally biased or culturally responsive. Recent years have seen an increasing number of book publications on assessment of ELLs, which address nearly all the topics mentioned in the literature on the knowledge base of ELL teachers.

Increasingly, states have developed English language proficiency (ELP) standards to guide the instruction of English learners, in response to the mandates of NCLB Title III for the states to develop and implement ELP standards, and to implement a single, reliable, and valid ELP assessment that annually measures listening, speaking, reading, writing, and comprehension (Abedi, 2008). These federal mandates have significant
implications for what content teachers need to know and be able to do to improve the academic achievement of ELLs. Accordingly, content teachers need to be familiar with the state’s ELP standards and be able to use the standards to plan their instruction. This requires teachers to know how to coordinate their content standards with English language standards to develop appropriate learning objectives (Ballantyne et al., 2008).

**Pedagogical Skills and Instructional Expertise**

*An overview.* Instructional expertise is another focus of the literature on what teachers need to know and be able to do to teach ELLs well. In addition to the body of literature reviewed, there is also a complementary body of literature that recommends pedagogical practices for planning and organizing high-quality instruction for ELLs (e.g., Echevarria et al., 2013; Egbert & Ernst-Slavit, 2010; Perego & Boyle, 2013; Reiss, 2005; Rohan, 2011; Whelan Ariza, 2006). “The many publications that offer suggestions for how to design and adapt instruction for ELLs in mainstream classrooms range widely in breadth, depth, and extent of grounding in theory and research” (Lucas, 2011, p. 8). This variability is equally noticeable in this literature review. Some scholars describe very general instructional strategies that apply to all the content areas, including strategies for modifying classroom instructional techniques to increase the engagement of ELL students, strategies for adapting instructional materials to make them more accessible to ELLs, strategies for differentiating instruction (to address different learning styles, language proficiencies, and levels of literacy development), and strategies for culturally responsive teaching, to name just a few. Others focus on strategies that are specific to math, language arts, science, or social studies. Some provide a lengthy list of good strategies as an integral part of the conceptual framework that they propose for what
teachers should know and be able to do for teaching ELLs, while others examine one broad instructional approach in depth, such as instructional scaffolding (Gibson, 2002; Walqui, 2006), using sheltered instruction (Echevarria, Vogt, & Short, 2008, 2013), and promoting classroom interaction (Verplaatse, 2008). Some make suggestions based on an extensive review of the literature, while others draw on empirical research they personally conducted with school teachers and ELL students. In addition, the theories that inform this body of literature are diverse and include SLA principles, sociocultural theories, systemic functional grammar, culturally responsive teaching, and literacy development (in both first and second language), among others.

There has been a notable increase in the publications that pay special attention to the knowledge and practices specific to secondary teachers of ELLs (Faltis et al., 2008; Rohan, 2011 Whelan Ariza, 2006). In addition to suggesting a knowledge base that applies to both elementary and secondary teachers, experts are almost unanimous in emphasizing that secondary content teachers be able to integrate content and language instruction and to facilitate students’ development of academic literacy skills.

The instruction of academic English is as diverse as how it is. There is thus a great deal of variability in the literature regarding what aspect(s) of academic language should be taught and how (Solomon and Rhodes, 1995). Bunch (2010) summarized four types of research-based instructional strategies that have been supported by the literature as effective for promoting academic language development:

- explicit instruction of linguistic features of academic genres and texts and ways writers employ such features to achieve purposeful communication,
• explicit instruction of cognitive and metacognitive strategies to assist students’
  comprehension and production of academic texts,
• building students’ background knowledge through the incorporation of ELL
  students’ funds of knowledge into curriculum and instruction in academic
  vocabulary, and
• providing comprehensive input and opportunity to practice both social and
  academic language and registers.

Some researchers focus more on how to support ELLs’ development of academic
literacy skills (e.g., August & Shanahan, 2006; Short & Fitzsimmons, 2007). They have
suggested that teachers know how to assist ELLs in the development of academic
vocabulary through a variety of methods and strategies. In addition, they need to know
how to support development of the four language skills: listening, speaking, reading and
writing. The literature favors an integrated approach through which literacy skills
(reading and writing) are developed hand-in-hand with oral language proficiency (Cloud,
Lakin, Leininger, & Maxwell, 2010). Reading and writing, the two significant
components of literacy, are given more attention by some researchers. Their
recommendations for developing ELLs’ reading skills include assisting students in
learning and implementing reading strategies through pre-, during-, and post-reading
activities; making textbooks more comprehensible through the application of
modification strategies or providing supplementary texts of varying difficulty; and giving
attention to the influence of L1 literacy skills on how ELLs learn to read in English.
Recommendations have also included teaching reading in small groups or through group
work (e.g., instructional conversations) and allowing time for structured and purposeful
independent reading, among others. With regard to teaching writing, some of the recommended approaches and strategies involve adopting the process approach to writing, using graphic organizers to assist ELLs with improving writing skills, and incorporating informal writing activities (e.g., story writing, journal writing, learning logs) to promote writing fluency, to name just a few.

Indeed, the best way to develop academic language and literacy in a secondary setting is to learn these language skills through discipline-specific content (Cloud et al., 2010). Both SLA research and current federal mandates dictate that ELL students have access to quality academic content simultaneously while they are learning English. Research has indicated that instruction that focuses simultaneously on language, literacy, and content will accelerate English language learning more effectively than language-only classes because content-area classrooms present the English language in a more meaningful and authentic context. The literature on secondary teachers of ELLs recommends that middle and high school content teachers develop a repertoire of strategies to integrate language and content instruction and to make their cognitively challenging course materials accessible to ELL students. For these ends, they need to be able to use scaffolding strategies and/or sheltered instructional strategies, which include introducing key vocabulary linked to content, building background knowledge, contextualizing new concepts, cooperative learning, and content adaptation, to name just a few. Particularly, sheltered instruction and the SIOP Model (Echevarria et al., 2013), which is one of the most widely-accepted and used models of a language-integrated approach to teaching content, is recommended by the literature as an indispensable part of what teachers should know and be able to do.

52
Sheltered instruction and the SIOP Model. Sheltered instruction is a highly effective approach for developing ELL students’ academic language and literacy skills. “In sheltered content classes, English learners participate in a content course where teachers deliver grade-level objectives through modified instruction that makes the information comprehensible to the students while promoting the students’ academic English development” (Echevarria et al., 2013, p. 15). In the real world of practice, the concept of sheltered instruction is realized in a variety of ways.

Verplaetse (2008) and Verplaetse and Migliacci (2008), for example, divided the sheltered instructional strategies recommended in the literature into two major types: those that make content comprehensible and those that increase interaction opportunities for students in class. The first type includes strategies that address whole lessons, academic texts, and teacher talk. Verplaetse and Migliacci (2008) stated that contextualizing lessons is critical for sheltered instruction. Content area teachers need to find ways to build background knowledge and create a shared history; use an abundance of visuals, gestures, and realia; and provide plenty of opportunities for students to negotiate meaning. Moreover, academic texts could be made more comprehensible through the use of graphic organizers, timelines, and summary outlines, as well as text modifications. The researchers also recommend four strategies that would make classroom talk more comprehensible: adjusting teachers’ speech, using study guides, and modeling correct language use and the use of word walls.

The second type of instructional strategy focuses on strategies that promote students’ use of language in class, both oral and written. Verplaetse (2008) identified six specific ways content teachers can provide opportunities for student interaction:
modifying teacher questions and answers in a teacher-fronted classroom, increasing small group and pair work activities, asking questions and assigning tasks based on students’ language proficiency level, modeling the language needed for responses for beginner and early immediate ELL students, challenging intermediate ELL students to produce extended utterances, and promoting students’ use of their first language.

No explicit model for effectively delivering sheltered instruction existed until the creation of the Sheltered Instruction Observation Protocol (SIOP) Model. Through a seven-year research study sponsored by Center for Research on Education, Diversity, and Excellence (CREDE) and funded by the U.S. Department of Education, Echevarria et al. researched, developed, and refined the SIOP Model, which brought together best practices for teaching content and academic literacy to English language learners. As the researchers themselves put it,

The SIOP Model is a framework for teachers to present curricular content concepts to ELLs through strategies and techniques that make information comprehensible to the students. While doing so, teachers develop student academic language skills across the domains of reading, writing, listening, and speaking. (Short, Echevarria, & Richards-Tutor, 2011, p. 364)

The SIOP Model, which is used both as an approach for lesson planning and delivery and an observation instrument for rating the fidelity of lessons to the model, is composed of 30 features of instruction grouped into eight components: lesson preparation, building background, comprehensible input, strategies, interaction, practice and application, lesson delivery, and review and assessment.
The features under “lesson preparation” help teachers produce well-planned lessons by including language and content objectives, using supplementary and/or adapted materials, and creating meaningful activities. “Building background” considers how teachers can connect the students’ background and past experiences with the new learning and develop their academic vocabulary. “Comprehensible input” focuses on how teachers should adjust their speech, model academic tasks, and use a variety of techniques to enhance comprehension. The “strategies” component emphasizes teaching learning strategies to students; scaffolding instruction, and supporting higher-level thinking that involves predicting, summarizing, problem solving, organizing, evaluating, and self-monitoring. “Interaction” prompts teachers to encourage students to elaborate on their responses and to promote student interaction through flexible grouping configurations. “Practice and application” reinforces the importance of using hands-on material and manipulatives and providing activities to practice content and language learning. “Lesson delivery” ensures teachers deliver a lesson in a way that meets the language and content objectives and keeps students engaged. “Review and assessment” reminds teachers to review the key vocabulary and content concepts, use assessment to track students’ comprehension and learning of all objectives, and provide regular feedback on their output.

Echevarria et al. (2013) stated that the SIOP Model is not a revolutionary approach, but draws upon effective ESL methods developed during the last two decades. The key features of the SIOP Model reflect the following strategies for promoting academic literacy among ELLs in all content areas:

- identifying the language demands of content courses,
• planning language objectives for all lessons and making them explicit to students,
• emphasizing academic vocabulary development,
• activating and strengthening background knowledge,
• promoting oral interaction and extended academic discourse,
• reviewing vocabulary and content concepts, and
• giving students feedback on language use in class.

Several empirical studies (e.g. Short et al., 2011) have indicated that teachers who were trained in the SIOP Model and who fully implemented it were more successful in improving the performance of their ELL students in academic language and literacy assessments than teachers who were not trained in the model. The SIOP Model has also been developed into a PD program and has been used by many schools, states, and districts as a framework to improve the quality of instruction for ELLs and their English language achievement.

Other Competences

In addition to the competencies discussed above, other necessary knowledge and skills have also been mentioned by many of the scholars. These competencies are sufficiently important to warrant inclusion here.

First, content area teachers need to cultivate the ability to work collaboratively in teams that include specialists and non-specialists in bilingual and ESL programs. They also need to be aware of the resources and services that are made available to ELLs and their families at the school and district level. Moreover, content teachers need to be familiar with the procedures for identification and initial placement of ELLs and the
kinds of special instructional services that ELLs experience at different stages of participation in bilingual or ESL programs.

The history of ELL issues and language policies account for another important aspect of ELL teachers’ expertise. Faltis et al. (2010) noted that in order for secondary school content teachers to be advocates for ELL, they need to know the legal cases (such as *Plyler v. Doe*, 1982; *Castañeda v. Pickard*, 1981; *Lau v. Nichols*, 1974) that guarantee all students the right to attend public schools and to receive ESL service, regardless of the legal status of their parents. They also need to have a sound understanding of state laws regarding the use of languages other than English in school for non-instructional purposes, as well as the rights of students’ parents to have access to information about school policies, daily routines, and safety measures.

**Effective Professional Development for Teachers of ELLs**

Although scholars have identified a wide range of knowledge, skills and attributes of quality teachers for ELLs, little is known about *how* to build a corps of teachers who possess these qualities through pre-service and in-service education. Discussions on what constitutes an effective program design are only available in a handful of conceptual articles and through suggestions and guidelines provided by professional organizations.

Despite the scarcity of theoretical conceptualizations of effective PD approaches, there has been a growing body of empirical studies that report PD efforts by school districts and colleges of education that have met with certain success. Consisting of brief program reports, evaluative studies, and descriptive studies using ethnographic or in-depth case study methods, this body of work offers real-life examples of PD initiatives that serve mainstream content teachers, ESL teachers, paraprofessionals, or higher
education faculty. The approaches adopted by program developers are as diverse as the institutional and geographic contexts in which these initiatives take place, including online instruction, institutionalized mentoring and coaching, and collaboration between colleges and school districts, among others. The studies in this review focus exclusively on PD geared towards content area teachers.

**General Guidelines on Effective PD for Teachers of ELLs**

Clair and Adger (1999) were among the earliest to summarize the elements of effective PD for teachers of ELLs and the conditions that allow it to be successful. They argue that successful PD for teachers of ELLs should incorporate principles of adult learning. Knowles, who is known for his influence on the development of andragogy, or adult learning theory, set forth several key assumptions about adult learners. Clair and Adger cited Knowles (1980) and stated that adult learners need to be self-directed. Adults are motivated to learn what they perceive to be relevant to their immediate needs and interests; they are motivated to learn when the learning can help address their current problems. They desire immediate application of new skills and knowledge. When applying these principles to PD, Clair and Adger noted that effective PD should be embedded in the reality of school and teachers’ work and designed with teachers’ input. Effective PD fosters critical reflection and teacher collaboration and allows teachers to take ownership of the PD processes to become knowledge creators, as opposed to mere receivers of information. Additionally, some contextual conditions are indispensable for PD to be able to improve schooling for ELL students. Clair and Adger pointed out that district and school policies must support coherent and integrated PD for teachers of ELLs so that it does not take a back seat when competing with other initiatives. This requires
strong and knowledgeable leadership among district and school leaders who are willing to make ELL students and their teachers a priority. The administrators must also be aware that tackling the complexities of teaching culturally and linguistically diverse students is a new and challenging task facing teachers, which requires sustained time, focus, and resource.

Ballantyne et al. (2008) outline a set of guidelines to the design and structure of PD for teachers of ELLs based on the National Staff Development Council (NSDC) standards. The standards are organized into three categories: context, process, and content. First, the context for PD should be grounded in collaborative, active learning within professional learning communities, which include not only mainstream teachers but also ELL experts, nurtured by educational leaders who are committed to the responsibility of providing quality teaching and learning for ELLs and supported by human, fiscal, and physical resources at the school, district, and state levels. The PD process should be driven by accurate data concerning the numbers and performance of ELLs and by evaluation that takes the data into consideration. Programs should also incorporate research-based knowledge bases that address language learning and cultural issues in relation to ELLs and across the content areas and should be tailored to the PD needs of mainstream teachers. Also important is the coherence of program design, which should be aligned with disciplinary standards, as is PD, which fosters knowledge and skills for effective teacher collaboration. Finally, the content of PD programs should include strategies for involving families and the wider community and for addressing inequities in schools. The content should have a strong focus on instructional strategies that would result in ELLs meeting rigorous academic standards.
Waxman, Tellez, and Walberg (2004) suggested that PD for ELL teachers must be comprehensive and systematic at all levels. PD providers should adopt a holistic approach that emphasizes teacher collaboration and ongoing analysis of teachers’ and students’ needs. Training in language acquisition and in instructional strategies specific to ELLs, sustained classroom-based coaching, and program evaluation measuring teacher implementation and program impact are all essential strategies for an effective PD. Additionally, in-service programs for ELL teachers should incorporate outreach to parents, families, and communities and encourage teachers to reflect on and assess their teaching and conduct action research that would lead to changed attitudes and teaching practices. Similarly to Clair and Adger, Waxman et al. also emphasized the role of school leadership (as contextual support) in creating a favorable context for ELL students and their teachers by balancing the demands of state accountability with a focus on the needs of ELL students.

Wilde (2010) proposed five principles that are essential for successful and productive PD based on the tenets of adult learning. According to Wilde, effective PD should:

- build upon the current foundations of knowledge, skills, and expertise of the educational personnel involved;
- engage participants as learners by providing rich and varied opportunities for learning that cater to different learning styles and needs and offer the opportunity to apply new knowledge and skills;
- provide practice, feedback, and follow-up;
- demonstrate a measurable increase in participants’ knowledge and skills; and
measure changes in students’ performance.

In an attempt to adopt Vygotsky’ developmental theory as theoretical framework in which to ground PD, Eun (2011) proposed six principles of effective PD for in-service teachers who teach culturally and linguistically diverse (CLD) students, including ELL students.

- Effective PD equips teachers with the cultural tools that can enhance the instruction of CLD students. These cultural tools are what mediate the interaction between teacher and students and can take many forms, including instructional materials, teaching methods, and forms of assessment and evaluation, as well as the cultural resources and personal knowledge that students bring to classroom. (p. 324)

- Collaboration and communication among teachers is important for sustaining the effects of PD as teachers form learning communities to continuously reflect upon their instructional practices. This practice is especially important in the context of supporting CLD students because it enables teachers to come together and share their respective expertise in content area and ESL instruction. The collaboration between a mainstream and an ESL teacher can result in instructional practices that are more grounded in a comprehensive view of each individual student. (p. 325)

- “Providing continuous follow-up support” is also important for maintaining the effects of PD. Follow-up support is needed particularly by monolingual, white teachers who work with students from different cultural and linguistic backgrounds. Because of the complexity of knowledge and skills that need to be learned, teachers need extra time and support to reflect on how their current
practices can be modified and expanded to meet the needs of CLD students. The support can come from many levels (school, district, and community) and take diverse forms (time, resources, and mentors). (p. 326)

- The principle of “focusing on development” emphasizes the importance of equipping teachers with knowledge and skills that are generalizable to a variety of classroom settings. The context of teaching continuously changes and demands constant development. PD thus needs to provide teachers with generalizable knowledge and skills they can effectively implement in increasingly diversified classrooms. (p. 326)

- The fifth principle entails integrating research, theory, and practice when designing and implementing PD. This principle reflects the interconnections between research, theory, and practice, which become even more important in the context of teachers working with CLD students. The fact that little progress has been made in establishing standards for effective PD in this field dictates that researchers need to theorize about the special needs of teachers working in these settings. (p. 327)

- According to Eun, an often neglected but important principle of PD is “integrating all aspects of human functioning in a unified system”. This principle acknowledges not only the cognitive and intellectual aspects of teacher learning but also the emotional and motivational dimensions of teaching. “A teacher’s knowledge about the content of the subject, the social interactional norms established in the classroom, and the actual instructional methods evidenced will all be influenced by the feeling, motivations, beliefs, and values that teacher
possesses” (p. 328). Researchers who exclude these personal traits fail to provide satisfactory answers to questions related to the relationship between PD and classroom practices.

Eun also noted that because the real challenges of PD become apparent only after the implementation process has begun, more attention needs to be paid to whether the content of PD becomes implemented in the classroom. The goal of PD should be bringing PD to the classroom, as opposed to focusing only on designing a perfect program.

**Empirical Studies of Professional Development Programs for Teachers of ELLs**

PD programs that have achieved success provide suggestions for potentially effective approaches. In this section, I review five program reports (Bearse, 2010; Cervone, 2010; Hansen-Thomas & Casey, 2010; Kang Shin, Edmonds, & Browder, 2010; Sakash & Rodriguez-Brown, 2011) and 20 recent empirical studies of PD for teachers of ELLs. These studies and reports are introduced according to the context in which a PD program took place, the theoretical framework(s) and principles that informed the program’s content and design, the major content and process features of the program, and findings from inquiry into the outcomes/impact of the program with regard to (1) teacher satisfaction, (2) teachers’ acquisition and use of knowledge and skills with respect to teaching ELLs (teacher outcomes), and/or (3) ELL students’ learning outcomes (student outcomes).

**Content.** The content of these PD initiatives has drawn upon not only fully developed and widely used PD or instructional models (e.g., QTEL; the CLASSIC Model; the SIOP Model), but also research and theories. For instance, systemic-functional

---

4 The 20 empirical studies are marked with an asterisk in the reference list.
linguistics (SFL), which features a functional view of language and language learning, has been the focus of a few PD initiatives that presented teachers with SFL-based approaches to developing academic literacy, the most typical of which are genre-based literacy programs (e.g., Aguirre-Munoz, Park, Amabisca, & Boscardin, 2008). Another important theoretical lens is the socio-cultural theory of teaching and learning, which has served as the theoretical framework of not only the most influential instructional approaches to teaching ELLs (including instructional scaffolding and sheltered instruction) but also some successful PD models (e.g. QTEL in Walqui, 2011). A couple of more recent PD initiatives (e.g., He, Prater, & Steed, 2011; Hutchinson & Hadjioannou, 2011) have begun to incorporate recommendations made by experts (e.g. de Jong & Harper, 2005a) on the essential expertise of teachers of ELLs.

Some initiatives are able to address a comprehensive scope of topics through a sequence of courses because of their long duration. For instance, Hutchinson and Hadjioannou (2011) reported a hybrid PD program that combined web-based and face-to-face interactions. Participants enrolled in a two-course, six-credit series over two semesters. The courses, divided into three modules, provided teacher training in five distinct areas: theoretical understanding of SLA, cultural awareness and its impact on language learning, content knowledge aligned with state standards and assessment, teaching strategies for working with ELL students, and professional learning communities organized to design, implement, and evaluate classroom practices and teacher inquiry projects.

Other PD initiatives have focused on developing support for student learning in a certain content area (e.g., math, science) (e.g. Hart & Lee, 2003; Truxaw & Staples,
2010), addressing how to incorporate English language and literacy development as part of content instruction. Still other PD initiatives have concentrated on the development of academic literacy (e.g., Aguirre-Munoz et al., 2008; Brisk & Zisselsberger, 2011) equipping participants with research-based strategies to improve the learning of academic vocabulary or to achieve fluency in a certain language skill (e.g., writing). Finally, the SIOP Model has been the focus of or a component of a few PD programs (e.g. Batt, 2010; He et al., 2011; McIntyre, Kyle, Chen, Muñoz, & Beldon, 2010).

**Program design.** Recent PD initiatives for teachers of ELLs have already moved beyond the traditional one-shot workshop training format and are now providing training as well as classroom support that is long-term, sustained, and firmly situated in the contexts and needs of particular schools and teachers. These PD initiatives have embraced characteristics of effective PD and have been delivered through diverse formats, including graduate level courses, workshops, summer institutes, after-school training sessions, teacher collaboratives (opportunities to build collaborative relationships with colleagues), and coaching and mentoring, among others. Moreover, many of the initiatives have involved a partnership between school personnel and university faculty. The following features of effective PD are highlighted by such PD programs.

**School-university partnerships.** School-university partnerships are a prevalent element of successful PD. Many of the studies reviewed involved universities and schools or school districts working together by combining and focusing resources to deliver professional education for in-service teachers. This type of collaboration is reciprocal and mutually beneficial. On the one hand, university faculty/professors contribute their expertise in ELL education (research-based information) and also provide
funding, usually acquired through state or federal (governmental/external) grants. They offer tuition-free graduate-level courses (e.g. Bearse, 2010); help schools set up workshops, meetings, or study groups to promote teacher collaboration; facilitate development of content curricula that incorporate strategies for English literacy development; and provide on-site coaching and mentoring to support implementation of elements of the PD program. Through the partnerships, teachers have the chance to take intensive, high-quality training that leads to not only an additional ESL certificate or master’s degree, but also an expanded knowledge base and repertoire of skills applicable to the needs of ELL students. The partners at the schools, on the other hand, are able to reciprocate with strong administrative support and use their personal relationships within their school district to promote the PD initiative and make it more successful because they are insiders. All these collaborative elements not only help the faculty and school administrators to create an effective PD program, but also contribute to changes in teachers’ instructional practice and ultimately to improved student academic achievement.

One successful case can be found in York-Barr et al. (2007). At an elementary school in Washington, university partners assisted the school administrators and teachers in developing and implementing inclusive and collaborative instructional models for ELL students. In addition to offering initial training at a workshop, the university partners provided PD and support throughout the first year by both informal and formal means.

Successful school-university partnerships do not happen without all parties involved being committed to developing a trusting relationship in which (local) concerns and needs are openly discussed and taken into consideration during planning and implementation. Several of the studies provide examples of PD initiatives that were
successful in bridging the gaps between institutions of higher education and local school districts by tailoring the program to address the specific concerns and needs of the teachers in the schools (e.g., Cervone, 2010; He et al., 2011; Hansen-Thomas & Casey, 2010). Another example is *Step T for ELLs*, reported by Kang Shin et al. (2010), which featured four levels of collaboration:

- collaboration in the development and implementation of PD with the state educational agency, local school districts, and university;
- collaboration among content area coordinators, resource teachers, and teachers within the local school district;
- collaboration between content teachers and ESOL teachers; and
- collaboration among teachers in the PD workshop.

The authors stated that the PD program was designed collaboratively by a development team that included representatives from the university and local school districts, from ESOL and subject areas, and education professionals at different levels, from administrators to teachers.

*Teacher collaboration.* York-Barr et al. (2007) noted how teacher collaboration “that is instructionally relevant and sustained offers a powerful form of job embedded PD that holds great potential to improve teacher knowledge and practice” (p. 305). While collaboration is part of any well-designed teacher education program, it is especially important for PD aimed at improving ELL instruction, because education of ELLs requires school professionals who usually do not collaborate (content teachers and ESL teachers) to pool together their expertise and resources.
The need for collaboration between ESL and mainstream teachers has been highlighted recently by a number of teacher educators. Many of the PD projects reviewed brought together ESL, bilingual, and content teachers or interdisciplinary teams of teachers to support the academic success of ELL students. The strategies that these projects employed to promote teacher collaboration included the following.

*Colleague teams or collective participation of teachers from the same site through the establishment of school-based cohort groups.* Some of the PD initiatives featured collective participation of teachers from the same school. For example, in He et al.’s (2011) study, a team of teachers was recruited from the same school building and included at least one ESL teacher and one content area teacher working at the same grade level. This type of “purposeful recruitment and grouping of teachers from the same school during the PD could serve as a potential initiation of a school-based learning community to sustain PD efforts” (p. 10). In another program (Edstam & Walker, 2009; Walker & Stone, 2011), teams of teachers, consisting of grade-level classroom teachers, ESL teachers, and paraprofessionals, formed a learning community in their individual schools. Collaboratively, the teachers developed a school action plan that would guide their effort to improve ELLs’ achievement, resulting in several long-term goals agreed upon by all participants. This collective plan was supplemented by an individual PD plan created by each group member to guide personal professional growth in alignment with school-wide goals. Sakash and Rodriguez-Brown (2011) reported an in-service offering in which mainstream teachers were trained alongside ESL/bilingual teachers. The program offered courses focused on transitioning ELLs from special programs into the mainstream. Embedded in the courses were seminar sessions addressing topics selected
by participants, as well as school-based meetings during which teachers from the same school developed a school change plan based on a needs assessment that they conducted of all teachers at their school. Through the program, mainstream and ESL/bilingual teachers were given the time and structure to collaborate to make improvement in the learning environment of ELLs and to influence other non-participating teachers and school administrators about the needs of these students.

**Collaborative inquiry groups.** In such groups teachers co-construct new professional knowledge, engage in the development and practice of new skills, and reflect on their teaching in a purposefully constructed learning community as members of a group. Honigsfeld and Cohan’s (2006) study reported a PD initiative that focused on the SIOP Model. A cohort of teachers formed teams and collaboratively developed SIOP lesson plans. The teachers were then provided with an opportunity to implement their lessons with their own ELLs, while being observed by other members of the team. In Murry and Herrera’s (2010) study, participating teachers were organized into “collegial inquiry groups.” The group members challenged each other to check their existing assumptions about language differences in the context of CLD classrooms, connect research/theory to their own professional practice, and employ practices that promote literacy development and content-area learning for their ELL students.

**Co-teaching where ESL teachers and content area teachers work side-by-side in mainstream classrooms.** Co-teaching has been recommended by researchers as a means of providing inclusive and integrated services to make the mainstream classroom a place where ELLs learn both English and academic content. In Edstam and Walker’s (2009) study, the mainstream teachers and the ESL teachers made deliberate efforts to work
together by setting aside collaborative planning time and aligning their instruction. In York-Barr et al’s (2007) study, general education (content area) teachers, ESL teachers, and special education teachers in a Washington elementary school collaboratively provided instruction to students (including ELL students) in a ninety-minute (literacy) instruction block in each of the Grade 1 and Grade 2 classrooms. “The instruction was co-designed by all the participating teachers, aligned with the literacy and language focus for the entire class, and differentiated to meet both group and individual learning needs” (p. 315).

**Coaching and mentoring.** Nine of the PD projects incorporated different models that “move the learning of how to teach ELLs closer to the actual practice of classroom instruction” (Castro, 2011, p. 15) through coaching, mentoring, or observations. Coaching and mentoring were usually offered along with formal courses, summer institutes, seminars, or workshops and provided teachers with opportunities to implement and reflect upon new teaching practices (typically the SIOP Model) with the assistance of coaching experts. The focus on PD in a formal learning environment, coupled with observations and coaching during a typical school day, incorporated the following elements for effective teacher training: participants' theoretical understanding of the method proposed, opportunity to observe the method demonstrated by “experts,” opportunities for low-risk practice with feedback, and coaching in the authentic teaching context (Batt, 2009). Staff who served as coaches included not only university professors but also ESL teachers who were selected by the school (or the school district) as “peer coaches.” “The strength of peer coaching lies in its potential to promote a culture of collaboration and professionalism among teachers. It is also designed to improve the
level of implementation of new instructional techniques and curriculum” (Wong & Nicotera, 2003, as cited in Stowe, 2010). This type of coaching relationship has become the highlight of a few recent PD initiatives. For instance, one program (Project STELLAR, Stowe, 2010) funded one certified ESL teacher from each of the participating schools to serve in the role of instructional coach. Duties of the instructional coach included having the participants observe in the ESL classroom, observing the participants in the general education classroom, providing supplies and resources, and conferencing with participants regarding any questions or concerns surrounding educating ELLs.

**Long duration and sustained support.** One feature reported to have an impact on the outcome of PD is the total amount of time of a program. The programs reviewed typically ranged in duration from six months to two years. Although there is no specified amount of time required for effective PD, longer duration is usually preferred because it provides teachers enough time to fully process the newly learned information, explore new concepts and teaching strategies in enough depth, form collegial relationships, and implement pedagogical change.

A related feature is sustained support provided by the structure of a PD program, which offers teachers chances to ask questions and interact with professional developers and their colleagues outside of the classes and provides the teachers with opportunities to receive feedback on new teaching strategies after using them in their classrooms. The reviewed studies featured a variety of ways to support teachers (particularly outside the PD site), including class visits, supervised implementation of new teaching practices after formal training was completed, colleague teams to share problems and concerns, and various types of remote support, like emails, online chat groups, and threaded discussions.
**Site-specific.** An effective strategy that has been emphasized by PD providers is to tailor the design and implementation of a PD program to the specific needs of the school and the teachers so that the program can have an immediate and deep impact on teacher practice. This approach involves PD providers consulting with school administrators or conducting needs assessment before designing the program curriculum, forming a PD team that includes school administrators, or identifying topics of interest through teacher feedback as the program progresses. For example, in He et al.’s (2011) study, the university professors did not design the PD sessions purely based on their own knowledge as teacher educators or on research findings. Instead they conducted a needs assessment to ensure that the PD content was coherent and consistent with the school district’s efforts to promote the SIOP instruction model in mainstream classrooms.

**Opportunities for active learning and reflection.** The PD programs reviewed in this study provided varied opportunities for teacher participants to be actively engaged in meaningful discussion, reflection, planning, and practice. Eleven programs promoted teacher reflection through discussions, journal entries, reader responses, and reflective pieces, among other outlets. Literature on teachers’ professional knowledge points out the value of reflection for bringing about teacher change. Programs that provide explicit time for reflection may encourage teachers to be more metacognitive about what they know, how they know it, and what they do. Ten programs required teachers to develop and/or implement a lesson plan or curriculum.

Another element of active learning is the opportunity for teachers to observe expert teachers, be observed teaching in their own classroom, and obtain feedback. These opportunities take a variety of forms in the PD programs reviewed, including
watching and providing feedback on videotaped lessons, having teachers visit and observe each other’s classrooms, having teachers observe expert teachers’ lessons, and having mentors and coaches observe classroom teachers to help them improve instructional effectiveness through reflective discussions and extensive feedback.

Finally, eleven of the 25 programs engaged teachers in various (teacher-as-researcher) inquiry/action projects to enrich teachers’ understanding of ELL-related issues and to help promote theory-into-practice application of the PD. Individually or collectively, the PD participants conducted home/community visits to enrich their community experience, examined students’ work, or documented and analyzed their own teaching practice through case studies of selected students. In two of the PD programs, school-based teams of teachers created school change plans to help bring about school-wide changes to better serve ELL students.

**Effectiveness and impact of professional development.** Best practices in teacher PD include thorough evaluation of the effects of the PD in terms of teacher outcomes and student outcomes. Research that links PD, teacher learning, teacher change, and student achievement is still in its infancy in the field of ELL education. However, researchers and PD providers have begun to address these research gaps. The body of research reviewed has investigated the impact of PD initiatives regarding five aspects: (1) quality of the PD sessions based on teacher feedback, (2) participants’ learning of knowledge and skills regarding teaching ELLs, (3) teachers’ instructional practices, (4) ELL students’ learning outcomes, and (5) organization/institutional supports and barriers.

---

5 I reviewed 20 empirical studies.
**Teacher evaluation on the quality of PD.** This category represents the most traditional evaluation of PD through administering a satisfaction survey at the end of a workshop. One program I reviewed reported on the participants’ evaluation of the overall quality of the PD program (Batt, 2010). Another program collected teachers’ feedback on each of the nine PD sessions to help PD providers adjust the course content to better meet the needs of the participants (He et al., 2011).

**Teacher change (improved teacher knowledge, change in teacher beliefs, and change in instructional practice).** The second and third categories address the link between PD and teacher learning and practice. As Desimone (2009) has pointed out, teacher learning may be the most difficult aspect to measure in PD. One reason, when it comes to PD for teachers of ELLs, is that PD providers have not reached a consensus as to what aspects of teacher knowledge are critical or how to measure them. The PD programs reviewed vary in how teacher learning (knowledge) is defined and assessed.

**Teacher knowledge.** Five out of the 20 empirical studies I reviewed reported on enhanced teacher knowledge as a result of the PD. One study (Hutchinson & Hadjioannou, 2011) used pre- and post-PD surveys of knowledge and course-related writings triangulated by classroom observations to demonstrate improvement in the participants’ knowledge of SLA and TESOL strategies. One study (Truxaw & Staples, 2010) reported on math teachers’ improved knowledge of and confidence in teaching academic language through pre- and post-knowledge assessment. Batt’s (2010) study employed a survey and a knowledge test to document enhanced knowledge about the SIOP Model. Friend, Most, and McCrary (2009) used a survey of teacher perceptions to identify teaching strategies learned through the PD. However, since the researchers did
not have baseline data on teacher knowledge prior to the training, they made no attempt to associate the training with enhanced teacher knowledge, but reported that the teachers identified methods for comprehensible input, vocabulary strategies, and aspects of the SIOP Model as important strategies learned from the PD. A final study (He et al., 2011) employed a pre- and post- ESL knowledge inventory to examine areas of learning identified by participants in relationship to the program’s focus on teachers’ understanding about language and culture and effective practices. Comparing participants’ pre- and post- responses to the inventory, the authors did not find significant difference in the participants’ quantitative scores on the inventory but noted that the participants reported knowledge of more concrete and relevant strategies that they could use to work with ESL students in the post- inventory. Additionally, the participants were able to identify specific books, websites, and community resources on their post-inventory responses, compared to only referring to dictionaries and standards as their major resources in the pre-inventory.

Teacher beliefs. Two of the studies reported on changes in teacher beliefs regarding academic literacy instruction as a result of the PD. Hart & Lee (2003) examined teachers’ conceptions of the goal of literacy instruction and ways to promote literacy development in the context of science instruction through a questionnaire and focus group interviews. One study (Murry & Herrera, 2010) used a qualitative, open-ended survey to document changes in participants’ perspectives or dispositions towards linguistic differences and appropriate literacy paradigms for ELLs.

Instructional practices. Eleven studies reported on the impact of PD on instructional practices. Measurements of enhanced teacher practice included interviews,
surveys, classroom observations, and student work. Classroom observations were usually rated with an observation protocol, the most popular of which was the SIOP protocol. Five studies documented teachers’ implementation of the SIOP Model as a result of PD. Among these, two studies (Honigsfeld & Cohan, 2006; Batt, 2010) used teacher self-report data (questionnaires, interviews, teacher self-assessment checklists, etc.) as evidence of improvement in the teachers’ knowledge and use of the SIOP/sheltered instructional strategies. One study (McIntyre et al., 2010) used pre- and post-observations to assess enhanced teacher ability to implement the SIOP Model, while another study (Crawford, Schmeister, & Biggs 2008) collected both pre- and post-observational and interview data to demonstrate improvement in both knowledge and use of sheltered instruction. The fifth study (Short et al., 2011) employed a quasi-experimental design to demonstrate the differences between the treatment teachers and the comparison teachers in terms of level of SIOP implementation.

Three other studies examined the impact on teacher practice of PD programs that drew on Halliday’s theory of Systemic Functional Linguistics (SFL) and looked at how teachers incorporated SFL-based pedagogy into the teaching of academic literacies. One of these studies (Gebhard, Willett, Pablo, Caicedo, & Piedra, 2011) involved an ethnographic case study that documented how a teacher learned to use SFL to teach narratives to her students. One study (Brisk & Zisselsberger, 2011) investigated how learning about SFL in the context of a PD project impacted the teaching of writing in mainstream elementary classrooms with bilingual learners. The authors first used qualitative data collected from PD meetings, teachers’ perceptions of the PD, classroom observations, and student work to demonstrate the impact of the project on all the
participating teachers, and then through a case study of one teacher, the authors provided a detailed examination of how the teacher implemented what she learned from the PD.

The third study (Aguirre-Munoz et al., 2008) used multiple instruments, including pre- and post- tests, classroom observations, and student work to investigate how a week-long training on a genre-based approach grounded in SFL had improved teachers’ ability to evaluate students’ written work and how the impact was evident in their classroom instructions.

Two studies documented the impact of PD programs that either provided teachers with or helped them design curriculum that integrated language and content instruction. Zetlin, MacLeod, and Michener’s (1998) study used teacher self-report data, classroom observations, and teacher interviews as evidence of improved language arts teaching effectiveness. Hart and Lee (2008) investigated the impact of a PD intervention that featured the provision of science curriculum materials and teacher workshops. Through focus group interviews and classroom observations, the authors noted that the participating teachers were more effective at providing students with linguistic scaffolding to enhance scientific understanding after the training.

The final study (Teemant, 2010) employed a quasi-experimental design to document the effectiveness of a coaching model. Using pre- and post- observations, the author found that the PD “transformed” treatment teachers’ instructional practices. Compared with un-coached teachers, the coached teachers demonstrated more effective pedagogy, as evidenced in how they differentiated instruction, contextualized new learning by using students’ previous knowledge, valued and promoted student talk and
interaction, required cognitively challenging work, and provided assistance and feedback that improved student learning.

**Teacher collaboration.** Four studies examined the impact of PD from the perspective of teacher collaboration. Zetlin et al. (1998) found that one of the changes in teacher behavior that ensued from the PD program under study was increase in teacher collegiality and formation of peer teams. Crawford et al. (2008) reported that many of the teachers in the PD program collaborated with each other and used their grade-level team meetings to share approaches and ideas. Some teachers even took on mentor roles for their peers and made themselves available for consultation on an informal basis. Edstam and Walker (2009) found that both the mainstream teachers and the ESL teachers in their study reported having benefitted from their collaborative instructional efforts. Not only did the mainstream teachers begin to incorporate language objectives into their teaching in systemic ways, the ESL teachers also felt energized by the development of strong relationships with the mainstream teachers, “relationships that went beyond the typical fast-paced on-the-fly consultations that typify contact between mainstream and ESL teachers” (p. 6). Pawan and Ortloff (2011) conducted a descriptive qualitative study to investigate ESL and content area teachers’ perceptions of collaboration as a result of a joint PD. The authors reported that the ESL and content area teachers engaged in three types of collaborations: information exchange, consultations, and transfer of responsibilities. The information exchange activities made up over a third of the collaboration activities. These activities took place at both informal and formal levels. Consultation activities involved ESL and content area teachers seeking each other out for support and advice. In addition to these two types of collaborative activities, ESL and
content teachers engaged each other in activities that required responsibility transfers from one teacher to another. However, the authors found that the transfer mainly involved ESL teachers taking over the responsibilities of translation and communicating with ELL parents from content area teachers. This one-directional transfer of responsibility, according to the authors, was reflective of content area teachers’ perceptions that ESL teachers belonged to the “service category” and could only provide “marginal help,” rather than being equal partners, experts, and professionals in their own rights.

**Changes in student learning.** The category of impact study represents the most expensive and time consuming aspect of PD research. Literature is just beginning to emerge that examines the impact of ELL-oriented PD on student learning, mediated by change in teacher practice. Eleven out of the 20 empirical studies investigated the extent of enhanced student learning as manifested by increased academic achievement, the quality of students’ written/class work, and changes in their behavior, motivation, classroom participation, and engagement.

Seven studies (Friend et al., 2009; He et al., 2011; McIntyre et al., 2010; Olson & Land, 2007; Short et al., 2011; Truxaw & Staples, 2010; York-Barr et al., 2007) used objective measures of student performance, including students’ scores on district-wide standardized assessments; state reading, writing, or math assessments; high school exit exams; or state tests of English language proficiency as evidence of students’ enhanced academic performance. While all these studies compared pre- and post-test results, only three studies (McIntyre et al., 2010; Olson & Land, 2007; Short et al., 2011) included a comparison or control group to control for the influence of confounding variables. For
the other four studies, it was difficult to establish a causal relationship, that is, to
determine if the teachers’ involvement in the PD led to the increase in their students’
achievement.

Two studies (Aguirre-Munoz et al., 2008; Brisk & Zisselsberger, 2011) used
writing samples from case study students to document how they gained ability in and
enthusiasm for writing as a result of their teachers’ participation in the PD. The final two
studies (Batt, 2010; Zetlin et al., 1998) documented teachers’ perceptions of student
growth, measured by interviews or open-ended questions on a survey, as evidence of the
impact of the PD.

Organizational support and change. Absent from most of the studies is research
that addresses the third level of Guskey’s model. According to Guskey (2000), PD
should be evaluated within the larger context of the school or school district in which it
happens. Because organization has a powerful influence on all aspects of PD, careful
analysis of “organization support and change” is indispensable for any PD evaluation.
Current research is lacking on this aspect of PD evaluation. Only four of the 20 empirical
studies that I reviewed have examined the organizational factors that either enhance or
impede the implementation and/or the impact of PD. However, none of the studies
seriously examined school-level (or district-level) effects, though they included some
anecdotal reports from teachers.

One of the four studies, Batt (2010), found that the obstacles that were reported by
participating teachers in post-training interviews regarding implementation of the SIOP
Model included the perceived lack of time in the professional schedule to fully
implement what the teachers had come to view as effective instruction for ELLs and
cultural diverse students. Zetlin et al. (1998) identified four types of barriers that were encountered as teachers and university faculty attempted to promote changes in classroom practice and improve student performance: district, school, process, and university barriers. District barriers included an unstable school calendar, the “tensions” between the teachers’ union and school district, and conflicts between teachers’ freedom to choose which grades to teach based on their seniority and their participation in ongoing innovative programs. The school and the process barriers originated from within the school. The authors reported that the reassignment of principals to other schools resulted in temporary disruption of the school-university partnership. Additionally, the following factors contributed to an unfavorable environment for teachers trying to adopt new instructional practices:

- constantly changing class rosters;
- lack of more planning time, financial support for materials/resources, and scheduling flexibility due to poor administrative understanding and support;
- the existence of other competing PD initiatives in the school; and
- the reluctance of some teachers to participate in “innovative school reforms” as a result of past frustrations and a tendency to cling to the “old habits.”

Finally, university barriers mainly involved the faculty members’ struggles to establish their role as facilitators in the school-university partnership, their faculty obligations other than being PD trainers, and a lack of support from university administrators.

The teachers in Edstam and Walker’s (2009) study reported a number of administrative features that either enhanced or impeded their effort to establish collaborative practices in their school. They believed that a supportive and enthusiastic
principal with strong curricular knowledge, as well as school district administrators who were supportive of grass-roots changes, were critical for the success of school-based PD initiatives. However, a proactive principal was also a double-edged sword in the egalitarian culture of elementary schools. An in-service opportunity offered to a selected small number of teachers often met with hostility from non-participant teachers who were resistant to new reform efforts and school-wide changes proposed by the PD team. The situation was further compounded by challenges brought by lack of collaboration time and looming shadows of high-stakes testing that dictated planning, scheduling, instruction, curriculum, and general school culture.

Drawing on D’Amour’s model developed in the context of professional collaboration among health care teams, Pawan and Ortloff (2011) identified organizational and interactional factors that helped sustain or impeded teacher collaboration beyond completion of the PD. The authors found that ESL and content teachers had different views regarding what supported or challenged sustained teacher collaboration. With regard to the supporting factors, the ESL teachers in the study viewed leadership and administrative support (direct involvement of principals and other school administrators) as being essential for the success of collaboration, while the content teachers believed that mutual trust and a sense of interdependency as members of a supportive team were primary in sustaining their collaboration with the ESL teachers. As far as barriers to collaboration were concerned, while the ESL teachers perceived their colleagues’ professional distrust and lack of knowledge for what they did as obstacles to collaboration, the content teachers attributed failure of collaboration to the lack of formal processes and effective leadership.
Summary

In this chapter, I reviewed the general teacher education literature with regard to different theoretical perspectives on teacher learning, characteristics of effective PD for teachers, and various models for evaluating a PD program. Based on the review, I proposed my own model to help frame the evaluative study of the ECTC program (p. 32).

A large portion of this chapter was devoted to PD for teachers of ELLs. I provided a synthesis of the theoretical and empirical work regarding three issues that are of particular relevance to this study: (1) the types of knowledge and skills that content teachers, particularly secondary content teachers, should possess to successfully teach ELLs; (2) the specific content and structural features of PD for teachers of ELLs as revealed in the literature; and (3) what current research has revealed about the impact of ELL-related PD on teacher learning and practice, as well as on student academic performance.

With respect to the first topic, I found a consensus among researchers that to provide quality education for ELLs, content teachers must have special expertise that goes beyond “just good teaching” to teach students whose L1 is not English. However, researchers have not reached a consensus as to what constitutes this expertise. Based on a review of several theoretical pieces that made recommendations for what teachers of ELLs should know and be able to do, I outlined a knowledge base for secondary content teachers of ELLs. This knowledge base consists of six major areas of knowledge and skills, as detailed in Table 1.
Table 1

* A Knowledge Base Outlined for Content Teachers of ELLs*

<table>
<thead>
<tr>
<th>Areas of knowledge &amp; skills for teaching ELLs</th>
<th>What constitutes the areas</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Language-related knowledge &amp; skills</strong></td>
<td>• Knowledge of language development processes in general and of SLA in particular</td>
</tr>
<tr>
<td></td>
<td>• Major SLA principles and applications in relation to teaching ELLs (e.g., Comprehensible Input, BICS &amp; CALP, Out Hypothesis)</td>
</tr>
<tr>
<td></td>
<td>• Understanding about the nature and challenges of acquiring academic language and literacy</td>
</tr>
<tr>
<td></td>
<td>• The ability to conduct linguistic analyses of academic tasks and texts</td>
</tr>
<tr>
<td><strong>Sociolinguistics &amp; culture-related knowledge &amp; awareness</strong></td>
<td>• Culture awareness with regard to teaching ELLs (e.g., knowledge about the culturally different classroom patterns, approaches to literacy, and cultural differences specific to a certain content area)</td>
</tr>
<tr>
<td></td>
<td>• Awareness and ability to anticipate and respond to cross-cultural differences in teaching</td>
</tr>
<tr>
<td></td>
<td>• Awareness about the interrelation between language, culture and identity</td>
</tr>
<tr>
<td></td>
<td>• Having a positive attitude toward linguistic and cultural diversity at school</td>
</tr>
<tr>
<td><strong>Student-related knowledge</strong></td>
<td>• General understanding about diversity among ELLs</td>
</tr>
<tr>
<td></td>
<td>• Personal knowledge about the ELL students in one’s own classroom</td>
</tr>
<tr>
<td><strong>Assessment &amp; ESL standards</strong></td>
<td>• National and/or state standards on English language proficiency (e.g., the Ohio ELP standards)</td>
</tr>
<tr>
<td></td>
<td>• The ability to employ and interpret classroom-based/alternative assessments</td>
</tr>
<tr>
<td></td>
<td>• The ability to minimize English language demands of assessment by using various test modification strategies</td>
</tr>
<tr>
<td></td>
<td>• Knowledge about test accommodations for ELL students</td>
</tr>
</tbody>
</table>

(continued)
### Table 1 (continued)

<table>
<thead>
<tr>
<th>Areas of knowledge &amp; skills for teaching ELLs</th>
<th>What constitutes the areas</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Instructional expertise</strong></td>
<td>• Instructional strategies regarding how to integrate content and language instruction (e.g., sheltered instruction techniques &amp; the SIOP Model)</td>
</tr>
<tr>
<td></td>
<td>• Strategies for teaching the four language skills in an integrated manner</td>
</tr>
<tr>
<td></td>
<td>• Strategies for promoting academic literacy development (reading, writing, &amp; academic vocabulary)</td>
</tr>
<tr>
<td></td>
<td>• Strategies for differentiating instruction to meet the differential needs of ELL students</td>
</tr>
<tr>
<td></td>
<td>• Strategies for incorporating students’ L1 and culture as resources into teaching</td>
</tr>
<tr>
<td><strong>Other competencies</strong></td>
<td>• Ability to work collaboratively with ESL teachers and other school professionals</td>
</tr>
<tr>
<td></td>
<td>• Knowledge about procedures of identification and placement of ELLs and services and resources for ELLs</td>
</tr>
<tr>
<td></td>
<td>• Knowledge about policies and legislation that affect education of ELLs</td>
</tr>
</tbody>
</table>

What is largely absent from the literature on teacher education is the second topic. As already mentioned, theoretical discussions on what constitutes effective PD for teachers of ELLs are inconsistent and incomplete in the literature. Despite the scarcity of research in this area, a review of the few theoretical pieces on PD for teachers of ELLs indicates some features that are highly recommended. These features, together with the features identified from the review of empirical studies, could be categorized according to the six features proposed by Garet and his colleagues (2001, 2002) to define an effective PD (Table 2).
Table 2

*Features of Effective PD*

<table>
<thead>
<tr>
<th>Core &amp; structural features</th>
<th>Recommendations made by researchers for PD in relation to teaching ELLs</th>
</tr>
</thead>
</table>
| Content focus              | • Focus on instructional strategies to help ELLs meet rigorous academic standards  
|                             | • Incorporate research-based knowledge bases that address language learning and cultural issues in relation to ELLs  
|                             | • Design and implement PD programs informed by theory, research and practice |
| Opportunities for active learning | • Offer opportunities for applying new knowledge and skills  
|                             | • Offer opportunities for teacher reflection and teacher research  
|                             | • Incorporate outreach to parents, families and communities  
|                             | • * Promote teacher reflection through discussions, journal entries, reader responses, and reflective pieces  
|                             | • *Incorporate teacher inquiry/action projects  
|                             | • * Provide opportunities for teachers to observe expert teachers, be observed teaching in their own classroom, and obtain feedback |
| Coherence                   | • Tailor PD to the teachers’ learning style and needs  
|                             | • Embed it in the reality of school and teachers’ work  
|                             | • Align it with state standards and assessment  
|                             | • Provide teachers with knowledge and skills that can be used in a variety of class settings  
|                             | • Provide feedback, coaching, and follow-up support to facilitate knowledge application  
|                             | • Ground PD in collaborative learning and formation of teacher communities  
|                             | • Design it to be informed by the teacher and student outcomes data as measures of the impact of the PD program  
|                             | • Ensure support from school leadership and other resources  
|                             | • ** Consult with school administrators or conduct needs assessment before designing the program curriculum |
| Form                        | • *Utilize a variety of forms: graduate level courses, workshops, summer institutes, (after-school) training sessions, teacher collaboratives, and coaching and mentoring  
|                             | • *Employ a school-university partnership as a mechanism for providing high-quality PD |

(Continued)
### Table 2 (continued)

<table>
<thead>
<tr>
<th>Core &amp; structural features</th>
<th>Recommendations made by researchers for PD in relation to teaching ELLs</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Duration</strong></td>
<td>*Create programs ranging in duration from six months to two years</td>
</tr>
<tr>
<td></td>
<td>*Offer sustained support including class visits, supervised implementation of new teaching practices after formal training is completed, colleague teams to share problems and concerns, and various types of remote support (e.g., emails, online chat groups, and threaded discussions)</td>
</tr>
<tr>
<td><strong>Collaborative participation</strong></td>
<td>*Encourage collective participation of both content and ESL teachers from the same school</td>
</tr>
<tr>
<td></td>
<td>*Form collaborative inquiry groups</td>
</tr>
<tr>
<td></td>
<td>*Enable co-teaching by content and ESL teachers</td>
</tr>
</tbody>
</table>

*Note. * indicates features identified from the empirical studies*

With regard to the third topic, I reviewed 20 empirical studies and five program reports. These studies and reports presented findings from research on the PD initiatives that were provided in different contexts and in different formats. The review was organized according to three important aspects of PD: content, program design, and impact of PD. The content of PD offerings concentrated on three major areas: the SIOP Model and sheltered instruction, approaches to the development of academic literacy informed by Halliday’s systemic functional linguistics, and PD programs that focused on promoting content and language learning in one specific content area. With regard to the program design, I found convergences in the key features of an effective PD program between the empirical studies and the theoretical pieces (Table 2), as well as some new features reported by the empirical studies. Finally, the impact of the PD programs was demonstrated through different measures (quantitative and qualitative) that documented
improved teacher learning and practices (including teacher collaboration), changed teacher beliefs and attitude, and/or enhanced student academic performance.

The review of the literature revealed some areas that are underexplored in addition to those that have already been discussed in Chapter 1. First, most of the empirical studies examined teacher learning as outcomes, as indicated by measurable pre- and post-training knowledge growth, belief change, or differences in the use of certain pedagogical strategies. These studies lack in-depth descriptions of how these changes occur, that is, the process by which the teachers develop expertise (knowledge and skills) over time, through “multiple, coherent opportunities to experience, understand, act, and reflect” (Walqui, 2011, p. 160).

Second, although some of the studies followed the participants throughout the duration of the PD program, none of the studies continued after the program was completed and provided information about retention of and changes in teacher knowledge and practices over time. These studies thus failed to reveal the long-term impact of the PD on teachers and their students.

Third, most of the studies only reported success stories, while challenges of creating and implementing an effective PD for teachers of ELLs remained largely unstudied. Challenges that teachers encounter in the process of implementing their new learning and enacting changes in their classrooms have not been studied in depth either. All these gaps need to be addressed by future research. My research aims to address some of these gaps.
Chapter 3: Methodology

A mixed methods, multiple case study design was employed for the present study to investigate the impact of the ECTC program as manifested at two levels: the program level and the individual teacher level. The study sought to answer the following research questions:

1. What did the ECTC participants learn about teaching ELLs through the program?
2. How did the teachers’ learning from the ECTC program facilitate changes in their teaching practices?
3. What were the school organizational factors that either fostered or hindered changes in teacher practice?
4. How did the teachers perceive the content and design features of the ECTC program and the impact of these features on their learning experience?

The chapter begins with an introduction of the PD program under study, followed by an introduction of the research design. Characteristics of the mixed methods design are presented, as well as the rationale for choosing the design. Characteristics of case study research and the nature of the case studies in this research are discussed, along with my considerations for selecting multiple cases. The chapter then proceeds to describe the data collection instruments and procedures for participant recruitment, as well as the data collection and analysis processes. It also accounts for the issues of reliability and validity.
and my ethical considerations. Finally a separate section is devoted to a reflection on my roles and theoretical assumptions.

**The Professional Development Program**

The professional development program analyzed in this study was titled ESL-Content Teacher Collaborative (ECTC). The ECTC Program was a five-year grants program funded by the U.S. Department of Education's Office of English Language Acquisition, Language Enhancement, and Academic Achievement for Limited English Proficient Students (OELA). The goal of the program was to train teachers to integrate content and language instruction to meet the academic and linguistic needs of ELL students. Using a blend of online learning technology, onsite workshops, and professional mentoring, the program promoted a collaborative “trainer-of-trainers” approach that prepared teachers to become ESL mentors for their fellow content area teachers within their school district.

Every year, the ECTC team worked with district administrators from six districts to recruit a team of 6-7 content teachers (in language arts, math, science, and social studies) and an ESL teacher coach in each district. The program offered three on-site workshops and a series of four graduate-level courses. Two courses—Introduction to TESOL Methods (640) and TESOL Field Experience (887.46)—were offered online, each over the course of the ten-week quarter. The other two courses—Selecting and Developing Second Language Materials (710) and Second Language Testing (963.08)—were two-week-long intensive summer courses that were taught using a combination of onsite and remote classrooms linked by live videoconferencing.
The course design was based on the TESOL endorsement guidelines in the state of Ohio and a learning needs survey conducted in six public school districts in Ohio during the 2006-2007 academic year (Newman et al., 2010). The content covered by the courses included (a) basics of second language acquisition in order to better understand ELLs’ language phenomena; (b) practical methods of teaching English to ELLs and adaptation of instruction, materials, and assessment in a way that made language accessible but preserved the integrity of the content; and (c) the SIOP Model, developed by Echevarria et al. (2008), to address the need to integrate English language and content instruction. It is pertinent to note here that one of the courses in the summer (710) was actually a replacement of a summer course (titled Language & Society) that was offered during the first three program years. The course, which offered an introduction to the basic concepts and issues in sociolinguistics as they relate to TESOL, made way for the Material Development course as a “response” to the teachers’ course feedback.

The ECTC program, which lasted from 2007 to 2012, trained 159 content teachers and 36 ESL teachers from 23 school districts in central Ohio. These districts have high numbers of ELLs, rapidly growing ELL enrollment, overall ELL enrollment percentages exceeding the state average, or a combination of these factors. Among these districts, five ranked in the state’s top 10 for ELL enrollment.

Research Design

Mixed Methods Research

This study used a mixed methods design, which is a procedure for “collecting, analyzing, and mixing both quantitative and qualitative data in a single study” (Creswell & Clark, 2011, p. 5). The rationale for mixing both types of data is that neither of the
two methods was deemed sufficient for capturing the overall trend and pattern, as well as the details of the situation of the PD program. When used in combination, however, the quantitative and the qualitative methods provide “a better understanding of the research problem than either approach alone” (p. 5).

The quantitative component of the study includes a survey to capture the overall pattern of changes in teachers’ knowledge and practice as a result of their participation in the ECTC program, as well as their perceptions of the content and structural features of the ECTC program. The quantitative data provides a wider context for understanding the impact of the training on the learning experience and teaching practice of the case study teachers.

The qualitative component involves three case studies. The cases, or the units of analysis, are three secondary (middle or high school) content teachers who were trained by the ECTC program. The combination of the survey and the multiple case studies enabled me to draw upon the strengths of each method, that is, the breadth of the quantitative and statistical methods and the depth of the qualitative case studies, which is inherent in the detail, richness, completeness, and cross-case variance (Flyvbjerg, 2011, p. 312). The two components also served to validate and confirm each other and provided me with different lens to examine the impact of the ECTC program.

**Case Study Research**

An overview of case study research. Case study research is an essential form of social science inquiry. It has also been a significant research approach in education within the broader social science trend toward qualitative inquiry over the past forty years (Simons, 2009, p. 13).
In the field of teacher education, case studies fall under the larger category of (qualitative) interpretive research as one of the important genres of empirical teacher education research (Borko, Liston, & Whitcomb, 2007). Different from “process-product” studies, which mainly rely on experimental, quasi-experimental, or correlational methods (i.e., quantitative methods) to establish direct links between teacher education and student outcomes, studies within the genre of interpretive research focus on teacher learning and practice by providing a more in-depth and nuanced understanding of teachers as learners and a complex portrait of the impact of teacher education or PD programs on teachers’ learning process (i.e., how teachers learn to teach).

In the literature on case study research, different authors (Merriam, 1998, 2009; Simons, 2009; Stake, 1995, 2005; Yin, 1988, 2003; 2009) have defined it in terms of the research process, unit or object of study, and end product of the inquiry. Synthesis of these definitions, however, reveals that the researchers generally agree on the following important characteristics of case study research.

First, case study research is an intensive, detailed, in-depth examination or investigation of a single unit—the case—where the focus is on the particular. A case is defined by Stake (1995) as “an integrated system” (p. 2) and by Merriam (2009) as “a single entity, phenomenon, or social unit …… in a bounded context” (p. 46). As Simons (2009) noted, “the case can be a person, a classroom, an institution, a program, or a policy” (p. 4).

Second, case studies provide tools for researchers to study a complex phenomenon within its context. It is a design particularly suitable for real-life situations in which it is impossible to separate a phenomenon from its context. In fact, case study
researchers aim to “reveal the multiplicity of factors [that] have interacted to produce the unique character of the entity” (Yin, 1988, p. 82) under study and to cover contextual conditions that are highly pertinent to the phenomenon of study. The purpose is to provide a comprehensive and holistic understanding of the case, or as Yin stated, “to enable holistic and meaningful, context-constituted knowledge and understandings about real life events” (Yin, 2003, p. 12).

Third, data collection in case study research is typically extensive, drawing on multiple sources of evidence. This ensures that the issue is not explored through one lens, but rather a variety of lenses, which allows for multiple facets of the phenomenon to be revealed and understood. The evidence may come from sources as diverse as archival records, documents, structured or open interviews, various types of observation, and physical artifacts in order to provide converging evidence known as triangulation” (Yin, 2009, p. 98).

Fourth, the end product of a case study contains rich, thick description and analysis of the phenomenon so that knowledge of the case can be co-constructed by the researcher and those who read and utilize the research. Merriam (1998) noted, “the description [of case studies] is usually qualitative, that is, instead of reporting findings of numerical data, case studies use prose and literary techniques to describe, elicit images, and analyze the situation. They present documentation of events, quotes, samples, and artifacts” (Wilson, 1979, p. 448, as cited in Merriam, 1998, p. 30). The purpose, as Stake (2005) explained, is to provide “opportunity for vicarious experience, [through which] readers extend their perceptions of happenings. Knowledge is socially constructed, and
through their experiential and contextual accounts, case study researchers assist readers in the construction of knowledge” (p. 454).

**Nature of the case studies in this research.** Case studies can be further defined by the overall intent of the study (Yin, 2003) and the size of the cases (Stake, 1995; Merriam, 2009). Yin (2003), for instance, differentiated three types of case studies: descriptive, explorative, and explanatory. The descriptive case study is used to describe an intervention or phenomenon and the real-life context in which it occurred. The explanatory case study not only describes the phenomenon, but also seeks to explain the presumed “causal” links in real-life interventions that are too complex for survey or experimental measures, and it is most suitable for answering “how” and “why” questions. In evaluation language, the explanations would link program implementation with program effects. Indeed, explanatory case studies can establish cause and effect, and one of their strengths is that they observe effects in real contexts, recognizing that context is a powerful determinant of both causes and effects. An explorative case study is used to explore those situations in which the intervention being evaluated has no clear, single set of outcomes.

Based on the categorization, the case studies in this research are characterized as being descriptive and explanatory in nature. The descriptive nature of the case studies serves to secure a detailed account of the teachers’ learning experiences and teaching practices and to gain information about their perceptions of the PD program under study. These are areas where empirical research has been scant. Merriam (1998, 2009) noted that descriptive case studies are useful in presenting information in areas where little research has been conducted. The explanatory nature of the case studies contributes to
revealing how the PD training facilitates teacher change (i.e., the impact) and how the impact is mediated by school organizational factors.

Depending on the number of cases studied, case studies can be categorized into single case studies and multiple case studies. As Stake (2006) explained,

In multicase study research, the single case is of interest because it belongs to a particular collection of cases. The individual cases share a common characteristic or condition. The cases in the collection are somehow categorically bound together. They may be members of a group or examples of a phenomenon. (pp. 5-6).

Multiple case study design is often preferred over single case study design because the former allows for the preservation of multiple perspectives on the phenomenon and enhances the robustness of the overall study. Merriam (2009) noted, “the more cases included in a study, and the greater variation across the cases, the more compelling an interpretation is likely to be” (p. 49). The inclusion of multiple cases is, in fact, a common strategy for enhancing the external validity or generalizability of research findings (Yin, 2003).

In this study, three secondary teachers (cases) were recruited to participate in multiple case studies. Each teacher was regarded as a particular case to be studied in her own right within the context of her own pedagogical setting.

As the literature review indicates, longitudinal studies are needed to examine the effects of PD on teachers over time, particularly with regard to their instructional practices. Thus, case studies of the three teachers conducted over a year and a half aimed to illuminate the ways in which the PD program had continued to influence practice and
the contributions of the teachers to their schools or even the larger professional community. Teacher learning, as demonstrated by the teachers’ development of a knowledge base regarding teaching ELLs and changes in their attitude and perceptions, was also studied to help contextualize inquiry into teacher practice. Moreover, investigation into the teachers’ perceptions and practice was facilitated by data from multiple sources: survey, interviews, classroom observations, and different types of documents. My intent with this diverse and varied dataset was to access as much information as possible regarding the teachers’ potentially emerging and developing theoretical and practical knowledge of teaching ELLs and the use of appropriate, research-based instructional strategies for meeting the needs of ELLs.

**Participants**

This study collected data from secondary school content teachers who participated in the ECTC program from 2007 to 2012. The pool of teachers from which the research participants were selected included 177 ECTC graduates from 23 Ohio school districts.

**Participants of the Online Survey**

The ECTC graduates who had ELLs in their classes at the time of the study were invited to participate in the survey. I first emailed all the ECTC alumni teachers and asked whether they were currently teaching ELLs, and then sent recruitment emails to those teachers who positively replied to my inquiries. Eighty-seven teachers agreed to participate in the survey, and they were sent a second email with a URL link to the survey, which was conducted online. The teachers were informed that they would have 60 days to complete the survey. I sent reminder emails two weeks and then one week before the deadline. Upon the request of some teachers, the deadline was extended to the end of
May (80 days in total for completion). Although a few teachers gave up in the middle, 69 completed responses were successfully collected. The respondents came from 22 school districts in Ohio; further demographic information is provided in Chapter 4.

**Participants of the Case Studies**

Merriam (2009) states that because case studies focus on developing an in-depth analysis of a single case (or multiple cases) “from which the most can be learned” (p. 77), the most appropriate sampling strategy is purposeful sampling. Following this guideline, I selected the “information-rich” cases for in-depth study; the strategy of “maximum variation” was employed to sample teachers from as diverse backgrounds as possible. Because the selection of participants was also determined by availability (whether the teacher was willing to participate) and proximity (how far away the research site was) of the participants, convenience sampling was also employed.

Initial screening of case study participants involved two criteria: the number of ELLs that the teacher was currently teaching and the distance from my home of the school where the teacher was working. As for the first criterion, I focused on teachers who were currently teaching two or more ELLs. The latter criterion however, was set for practical reasons. Because constraints of time and funding did not allow me to travel as far and frequently as needed, recruitment was focused on the teachers who worked in schools that were accessible by car within 45 minutes. I sent recruitment emails to the ECTC participants who met the two criteria and provided information about the planned research activities and an estimate of the time commitment. Eight teachers from six local schools (and four school districts) agreed to be the research participants. After careful consideration based on having as much variation as possible in terms of the teacher’s (1)
content area, (2) school district, (3) years of teaching experience related to ELLs (before the ECTC program), (4) grade level, and (5) year of participation in the ECTC (in that order of priority), I selected three teachers (Ann, Karen, and Lana\(^6\)). Basic information about the three case study teachers is detailed in Table 3, and more information about these teachers is provided in Chapters 5-7. As can be seen in Table 3, the three teachers represented two content areas (science & history), three school districts, two grade levels (middle school and high school), and two cohorts (2009-2010, 2010-2011). They also had varied teaching experience with ELLs: Ann had no experience with teaching ELLs before the ECTC program; Lana had three years of experience teaching a sheltered physical science class; and Karen, the most experienced among the eight teachers, had seven years of experience.

### Table 3

*Case Study Participants*

<table>
<thead>
<tr>
<th></th>
<th>Content area</th>
<th>Grade level</th>
<th>Years of teaching ELLs</th>
<th>School district</th>
<th>Year of participation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ann</td>
<td>Science</td>
<td>6(^{th})</td>
<td>0</td>
<td>LH</td>
<td>2010-2011</td>
</tr>
<tr>
<td>Karen</td>
<td>History</td>
<td>7(^{th})</td>
<td>7</td>
<td>D</td>
<td>2009-2010</td>
</tr>
<tr>
<td>Lana</td>
<td>Chemistry</td>
<td>9(^{th})</td>
<td>3</td>
<td>SW</td>
<td>2010-2011</td>
</tr>
</tbody>
</table>

\(^6\) Pseudonyms were chosen for all participants and candidates for this study.
**Instruments**

The mixed methods case study design involved collection of both quantitative and qualitative data. Table 4 shows the data collection instruments that were used to address each of the research questions.

Table 4

*Data Collection Instruments Used in This Study*

<table>
<thead>
<tr>
<th>Research questions</th>
<th>Quantitative Program level</th>
<th>Qualitative Individual level (Case studies)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Survey</td>
<td>Interviews</td>
</tr>
<tr>
<td>1. What did the ECTC participants learn about teaching ELLs through the program?</td>
<td>√</td>
<td>√</td>
</tr>
<tr>
<td>2. How did the teachers’ learning from the ECTC program facilitate changes in their teaching practices?</td>
<td>√</td>
<td>√</td>
</tr>
<tr>
<td>3. What were the school organizational factors that either fostered or hindered changes in teacher practice?</td>
<td>√</td>
<td>√</td>
</tr>
<tr>
<td>4. How did the teachers perceive the content and design features of the ECTC program and the impact of these features on their learning experience?</td>
<td>√</td>
<td>√</td>
</tr>
</tbody>
</table>
The Online Survey

The survey instrument was developed based on analysis of the relevant literature and careful review of the course materials (including course syllabi and teaching materials used or created by the instructors) and pilot tested on two ECTC graduates. Feedback on the format and content of the survey instrument was also collected from a panel of professors who taught in the ECTC program to enhance content validity of the survey items.

The survey consisted of 24 questions (see Appendix A). The core survey questions formed six scales (Table 5) that were related to the four research questions and were developed using relevant literature on each dimension of teacher knowledge and practice regarding effectively teaching ELLs and school organization conditions. They also took into consideration the specific situations of the ECTC program. These questions were organized under six headings: (1) knowledge, (2) skills, (3) teaching practices, (4) teacher efficacy, (5) perceptions of the school environment, and (6) evaluation of the ECTC as a professional development program. Scales 1 and 2 measured the teachers’ perceived improvement in their knowledge and skills regarding teaching ELLs as a result of the ECTC training. Scale 3 asked the teachers to report their implementation of practices in the following five areas: (1) the SIOP strategies, (2) assignment and assessment modification, (3) teaching reading and writing skills, (4) incorporating students’ L1 and culture, and (5) teacher collaboration. Scale 4 gauged whether teacher efficacy in relation to ELL education had been improved as a result of the ECTC program. Scale 5 elicited the teachers’ perceptions about an array of school organizational factors that may either enhance or impede their implementation of
effective teaching practices for ELLs. Finally, Scale 6 asked the teachers whether the various content and design features of the ECTC program had an impact on their learning experience and subsequent application of effective teaching practices for ELLs.

Questions on Scales 1 and 2 were rated on a five-point improvement scale, where 1=no improvement, 2=little improvement, 3=somewhat improvement, 4=much improvement, and 5=very much improvement. Questions on Scale 3 were rated on a five-point frequency scale, where 1=never, 2=rarely, 3=occasionally, 4=frequently, and 5=very frequently. The respondents were also asked to indicate whether increased frequency of implementing a teaching practice was due to their participation in the ECTC program by checking the ECTC box. Finally, questions on Scales 4 to 6 were rated on a five-point agreement scale, where 1=strongly disagree, 2=disagree, 3=not sure, 4=agree, and 5=strongly agree.

Table 5 presents the relationship between the survey scales and the research question addressed by each scale.
Table 5

*Major Survey Scales*

<table>
<thead>
<tr>
<th>Scale</th>
<th>Themes</th>
<th>RQs addressed</th>
<th>Survey questions</th>
<th>Type of scale used</th>
</tr>
</thead>
<tbody>
<tr>
<td>Scale 1</td>
<td>Knowledge</td>
<td>1</td>
<td>13, 14</td>
<td>5-point Likert scale of Improvement</td>
</tr>
<tr>
<td>Scale 2</td>
<td>Skills</td>
<td>1</td>
<td>13, 15</td>
<td>5-point Likert scale of Improvement</td>
</tr>
<tr>
<td>Scale 3</td>
<td>Teaching practices</td>
<td>2</td>
<td>17, 18, 19, 20, 21</td>
<td>5-point Likert scale of Frequency</td>
</tr>
<tr>
<td>Scale 4</td>
<td>Teacher efficacy</td>
<td>2</td>
<td>22</td>
<td>5-point Likert scale of Agreement</td>
</tr>
<tr>
<td>Scale 5</td>
<td>School factors</td>
<td>4</td>
<td>23</td>
<td>5-point Likert scale of Agreement</td>
</tr>
<tr>
<td>Scale 6</td>
<td>Evaluation of the ECTC</td>
<td>3</td>
<td>24</td>
<td>5-point Likert scale of Agreement</td>
</tr>
</tbody>
</table>

In addition, the survey contained seven questions that gathered demographic information (Questions 1-7), six open-ended response questions (Questions 8-12) that asked respondents to list their important learnings from the ECTC program, and one open-ended response question (Question 22) that asked respondents to briefly talk about changes in their teaching practices after the ECTC program (more information is provided in Chapter 4).

**Multiple Case Studies**

The case study data were obtained by means of three triangulated methods: classroom observations, teacher interviews, and analysis of the documents. I conducted the data collection and analysis by observing behaviors in their natural setting and serving as a listener, reporter, and interpreter of the perspectives of the teachers.
Data collected through the interviews helped to capture the teachers’ perspectives on and interpretation of the process(es), content, and impact of the PD program and how they made sense of their own teaching and learning activities (experiences) and the sociocultural contexts. The observational data and the documents served to triangulate the findings obtained from the interviews. Triangulation between the research participants’ self-report and my observations made sure that a balance was maintained between “emic” and “etic” perspectives.

**Interviews.** One of the most important sources of case study evidence is interviewing (Merriam, 2009). The three case study teachers were interviewed multiple times (see Table 3.5 for more information) in the process of data collection. All the interviews were semi-structured and guided by a researcher-prepared protocol (see Appendix B) consisting of both highly-structured questions that were formulated to address the four research questions and a list of topics and issues to be explored depending on their relevance to a specific research setting. This ensured that I obtained uniform information from each participant while also allowing for probing and clarifying “to respond to the situation at hand, to the emerging worldview of the respondent, and to new ideas on the topic” (Merriam, 2009, p. 90).

The interviews were audio-recorded. I listened to and transcribed (verbatim) the recording before the next scheduled interview. The transcripts were entered into a double-entry interview log, side by side with my reflections and questions. More specifically, the content of the interview log included (1) the questions and topics that had been covered by the previous interview, (2) insights and themes suggested by the
interview, (3) questions that needed to be clarified, and (4) interpretations that were to be confirmed by the interviewees.

**Classroom observations.** Observational data is another valuable source of data in qualitative research, as it “represents first hand encounter with the phenomenon of interest rather than a second hand account of the world obtained in an interview” (Merriam, 1998, p. 94); therefore, observations are often conducted in conjunction with interviews. In this study, classes of the case study teachers were observed six times (see Table 3.5 for more information), and all the observed sessions were videotaped. The purpose of the observations was three-fold: (1) to gain familiarity with the research setting and things that had become daily routines for the participants (Merriam, 2009, p. 123), (2) provide answers to the relevant research questions (RQs 2&4) and generate findings that would be triangulated with the findings of the interviews and document analysis, and (3) identify potential areas of interest and topics that would be addressed by the interviews.

The observations were mainly guided by the SIOP protocol. I had a copy of the protocol at hand for each observation and kept brief notes of instances when individual SIOP features were recognized. In addition, I was open to what transpired in the class session: the physical setting, the participants, class activities that were conducted, and interactions and conversations between the teacher and the students.

Following each observation, I viewed the videotaped lesson a couple of times and scored the lesson on the 30 SIOP features. The scoring was based on a five-point scale, ranging from “not evident” to “highly evident.” By using a template from the SIOP Model book (Echevarria, Yogt & Short, 2008, pp. 222-229), I not only assigned scores to
each SIOP feature but described the instances under each corresponding feature to substantiate the score. By doing so, both quantitative data and qualitative data were on the record for further analysis.

In addition to rating the lessons using the SIOP protocol, I also entered the field notes into a double-entry observation log. In the left column of the log were detailed transcripts of what occurred in the lesson that were elaborated on based on the notes that I jotted down in the field; in the right column were my reflections, tentative themes that emerged, and ideas to pursue further. The observational notes would inform the next data-collection session by helping me plan what questions to ask during the interview or what classroom activity or instructional practice to focus on for observation.

**Documents.** Another important source of data is documents. *Documents*, as an umbrella term, refers to “a wide range of written, visual, digital, and physical materials relevant to the study at hand” (Merriam, 2009, p. 139). A wide range of documents was collected and reviewed for the case studies and included:

- the teachers’ online discussion posts;
- assignments that the teachers submitted online for each program course, including reflective journals, final exams, teaching demonstrations and reflections, and an action plan that the teachers from the same school district created collaboratively to disseminate their “ECTC learning” to their school colleagues; and
- handouts that the teachers distributed in class (e.g., study guides, reading materials, instructions for class activities, etc.), copies of the tests that they designed for the ELL students, and PowerPoint slides for content presentation.
Data Collection Procedures

Timeline

Table 6 summarizes the data collection activities and the time frames during which the activities took place.

Table 6

Data Collection Activities (1)

<table>
<thead>
<tr>
<th>Activity</th>
<th>Time frame</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Online survey</strong></td>
<td></td>
</tr>
<tr>
<td>Participant recruitment</td>
<td>March, 2013</td>
</tr>
<tr>
<td>Survey administration</td>
<td>March-May, 2013</td>
</tr>
<tr>
<td><strong>Case studies</strong></td>
<td></td>
</tr>
<tr>
<td>Ann</td>
<td>Recruitment: January, 2012</td>
</tr>
<tr>
<td></td>
<td>6 Observations and 3 interviews: February-May, 2012</td>
</tr>
<tr>
<td></td>
<td>Follow-up interview: May, 2013</td>
</tr>
<tr>
<td>Karen</td>
<td>Recruitment: January, 2012</td>
</tr>
<tr>
<td></td>
<td>6 Observations and 5 interviews: February-March, 2012</td>
</tr>
<tr>
<td></td>
<td>Follow-up interview: May, 2013</td>
</tr>
<tr>
<td>Lana</td>
<td>Recruitment: January, 2012</td>
</tr>
<tr>
<td></td>
<td>6 Observations and 5 interviews: February -April, 2012</td>
</tr>
<tr>
<td></td>
<td>Follow-up interview: May, 2013</td>
</tr>
</tbody>
</table>

The Online Survey

The procedure for collecting the survey data mainly consisted of recruiting the survey participants (as previously introduced) and distributing and collecting the survey through Survey Share, an online survey tool. Participants accessed the survey through a URL link sent to their email addresses. A $15 incentive was offered to those who successfully submitted the survey online.
Data Collection for the Case Studies

After the case study participants were recruited, I met with each participant at her school before data collection started. During the first meeting, I explained in detail the nature and purpose of the study and the research activities to be conducted, walked the participants through the IRB informed consent and got their signatures, and asked about school policies regarding permitting outside researchers to conduct research in their schools. I also asked for permission to videotape the teacher’s classes and discussed with the teachers how to gain permission from the students’ parents.

The formal data collection process occurred after consent was obtained from all parties. Observations and interviews with the three teachers took place from February to May 2012. Schedules for each data collection session (Table 3) were negotiated with the teachers through email. In addition to accommodating the teachers’ schedules, I gave primary consideration to having variety in the type of lesson I observed (e.g., new content presentation, review, lab, hands-on activities, etc.) and tried to avoid days when a test or quiz was arranged. However, one observation with Ann (DCS 4) was wasted, because there was miscommunication, and the “lesson” turned out to be a quiz session during which no teaching occurred.

A follow-up interview based on the case study teachers’ survey responses was conducted one year later in April and May 2013. During the last interview, the teachers were asked to clarify their responses to some of the survey questions and share information about their new ELL students and any changes that occurred in their school, classroom, or instructional practices. Despite being more informal in the way it was
conducted, the last interview was also guided by a brief interview protocol (see Appendix B).

Detailed information about each data collection session (DCS) is summarized in Table 7.

Table 7

*Data Collection Activities (2)*

<table>
<thead>
<tr>
<th>DCS</th>
<th>Ann</th>
<th>Karen</th>
<th>Lana</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Observation: 45 min</td>
<td>Observation: 60 min</td>
<td>Observation: 50 min</td>
</tr>
<tr>
<td>DCS 1</td>
<td>February 22, 2012</td>
<td>February 17, 2012</td>
<td>February 16, 2012</td>
</tr>
<tr>
<td></td>
<td>Interview: 78 min</td>
<td>Interview: 30 min</td>
<td>Interview: 35 min</td>
</tr>
<tr>
<td>DCS 2</td>
<td>March 9, 2012</td>
<td>February 24, 2012</td>
<td>March 2, 2012</td>
</tr>
<tr>
<td></td>
<td>Observation: 45 min</td>
<td>Observation: 60 min</td>
<td>Observation: 50 min</td>
</tr>
<tr>
<td></td>
<td>Interview: 40 min</td>
<td>Interview: 30 min</td>
<td>Interview: 53 min</td>
</tr>
<tr>
<td>DCS 3</td>
<td>April 30, 2012</td>
<td>February 27, 2012</td>
<td>March 13, 2012</td>
</tr>
<tr>
<td></td>
<td>Observation: 45 min</td>
<td>Observation: 60 min</td>
<td>Observation: 50 min</td>
</tr>
<tr>
<td>DCS 4</td>
<td>May 1, 2012</td>
<td>March 7, 2012</td>
<td>March 15, 2012</td>
</tr>
<tr>
<td></td>
<td>Observation: 12 min</td>
<td>Observation: 60 min</td>
<td>Observation: 50 min</td>
</tr>
<tr>
<td></td>
<td>Interview: 35 min</td>
<td>Interview: 35 min</td>
<td>Interview: 35 min</td>
</tr>
<tr>
<td>DCS 5</td>
<td>May 3, 2012</td>
<td>March 15, 2012</td>
<td>April 17, 2012</td>
</tr>
<tr>
<td></td>
<td>Observation: 45 min</td>
<td>Observation: 60 min</td>
<td>Observation: 50 min</td>
</tr>
<tr>
<td></td>
<td>Interview: 22 min</td>
<td>Interview: 27 min</td>
<td>Interview: 50 min</td>
</tr>
<tr>
<td></td>
<td>Observation: 45 min</td>
<td>Observation: 60 min</td>
<td>Observation: 50 min</td>
</tr>
<tr>
<td></td>
<td>Interview: 38 min</td>
<td>Interview: 38 min</td>
<td>Interview: 45 min</td>
</tr>
<tr>
<td>DCS 7</td>
<td>April 29, 2013</td>
<td>May 9, 2013</td>
<td>May 24, 2013</td>
</tr>
<tr>
<td></td>
<td>Interview: 42 min</td>
<td>Interview: 45 min</td>
<td>Interview: 45 min</td>
</tr>
</tbody>
</table>
Data Analysis

Data analysis combines quantitative and qualitative approaches, reflecting the broad range of data used to inform this evaluative study of the PD program. The process of data analysis consisted of the following procedures, outlined in Table 8.

Table 8

Data Analysis Procedures

<table>
<thead>
<tr>
<th>Steps</th>
<th>Procedures</th>
<th>Activities</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Creating a case study database for each case</td>
<td>A computer file folder was created for the data of each case study participant.</td>
</tr>
<tr>
<td>2</td>
<td>Analyzing the case study data</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Typological analysis of the interview data according to the four research questions</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Observational data were analyzed using the SIOP protocol and coded for the teachers’ instructional practices regarding promoting academic literacy development</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Within-case analysis was followed by cross-case analysis to identify similarities and differences among the cases.</td>
</tr>
<tr>
<td>3</td>
<td>Analyzing the survey results</td>
<td>The survey responses were analyzed using descriptive statistics.</td>
</tr>
<tr>
<td>4</td>
<td>Mixed methods interpretation</td>
<td>The qualitative and quantitative findings were integrated for interpretation and discussion.</td>
</tr>
</tbody>
</table>

The Online Survey

The survey data (quantitative) were analyzed descriptively. Univariate analyses of each scale (treated as variable) included frequency counts, percentages, means, and standard deviation. All analyses were performed using the statistic program Minitab 17. In addition, the open ended questions were analyzed using content analysis, a procedure usually recommended for analyzing survey open ended questions (Fink, 2003). Fink
(2003) described how content analysis is used for the evaluation of qualitative information of a survey.

Analyzing data from open-ended questions means poring over respondents’ written or verbal comments to look for ideas or repeated themes. The ideas and themes found in the comments are then coded so that they can be counted and compared. Unlike the response choices found in statistical surveys, which are precoded, qualitative information is coded after it is collected. (p. 102)

Following the prescribed steps of content analysis, I first read through the teachers’ responses to each open-ended question, and took notes of some common themes that emerged through the initial review. This was followed by developing coding categories for the different themes, and assigning each response to a category. I then checked to see if all the categories were appropriate. After I coded all the responses and refined the categories, I reviewed to see which of the categories had the most responses, and therefore represented the major themes. These themes were presented in Chapter 4 in descending order of the percentages of categories along with the representative responses.

**Case Study Database**

While the basic strategies for analyzing qualitative data apply to all types of qualitative approaches, some features of case studies require that researchers take special care in documenting and organizing the case data collected. Yin (2003) suggested that case study researchers create a formal, retrievable database of the evidence collected so that other researchers can easily review the original material.

Every case study project should strive to develop a formal, presentable database, so that in principle, other investigators can review the evidence directly and not be
limited to the written case study reports. In this manner, a case study database increases markedly the reliability of the entire case study. (p. 102)

Establishing a cases study database facilitates the process of “maintaining a chain of evidence,” which represents another strategy to enhance the reliability and construct validity of case studies.

Based on Yin’s suggestion, the collected case data were organized and prepared for the more intensive phase of data analysis. A file folder were created for each case study teacher, which contained sub-folders to separately store the interview and observation notes, SIOP ratings, all documents, and audio and video data. All the files were organized for easy data retrieval.

**Data Analysis for the Case Studies**

**Analysis of the interview data.** The interview data were analyzed through typological analysis. Typological analysis is one of the five qualitative analysis models that Hatch (2002) introduced in his guide for doing qualitative research in education settings, and it combines both deductive and inductive processes. Hatch noted that typological analysis is particularly suitable for studies that rely on interviewing as the primary data collection tool and mainly involves “dividing the overall data set into categories or groups based on predetermined typologies” (p. 152). Typologies, according to Hatch, “are generated from theory, common sense, and/or research objectives” (p. 152). For this study, the typologies were generated based on the four research questions, so there were four major typologies or categories to start with: ECTC learning, changes in instructional practices, evaluation of the ECTC program, and school factors that either facilitated or hindered implementation of ECTC learning. After the typologies were
established, I conducted analysis according to the following steps suggested by Hatch (2002).

I first read the interview transcripts carefully and color-coded excerpts (or portions) that would be entered under each typology. For instance, I highlighted in yellow all the excerpts that I identified as evidence for answering RQ1. The other RQs were coded as blue, green and orange. Each excerpt was numbered for easy retrieval.

I next created a summary sheet (Table 9) for each case study teacher. This involved first writing a brief statement to summarize an excerpt and then recording it into a grid, as shown in Table 9.

Table 9

*Sample Summary Sheet (1)*

<table>
<thead>
<tr>
<th>TP1</th>
<th>TP2</th>
<th>TP3</th>
<th>TP4</th>
</tr>
</thead>
<tbody>
<tr>
<td>ECTC learning</td>
<td>Changes in teaching practices</td>
<td>Evaluation of the ECTC program</td>
<td>School factors</td>
</tr>
<tr>
<td>Excerpt 1 (p. 1)</td>
<td>Excerpt 2</td>
<td>Excerpt 12 (p. 15)</td>
<td>Excerpt 16</td>
</tr>
<tr>
<td>Lana learned to connect the language objectives with the Ohio ELP standards.</td>
<td></td>
<td>Lana liked the slower pace of the ECTC program.</td>
<td></td>
</tr>
<tr>
<td>Excerpt 5</td>
<td>Excerpt 3</td>
<td>Excerpt 13</td>
<td>Excerpt 20</td>
</tr>
<tr>
<td>Excerpt 6</td>
<td>Excerpt 4</td>
<td>Excerpt 20</td>
<td></td>
</tr>
</tbody>
</table>

Using the summary sheet as a reference, I read the entries by (and within) typology and looked for patterns, relationships, and themes. Although the themes were
generated inductively, some of the themes were actually anticipated based on the
literature review (e.g., time constraint as a roadblock) and the content of the ECTC
training (e.g. implementation of the SIOP Model), while others were more unexpected
(e.g., student discipline issue as a roadblock or challenge). Entries were then coded
according to the themes identified. Excerpt 1 in the grid, for instance, was coded as “the
Ohio EPL standards,” and there was actually another excerpt that was coded the same
way. The two excerpts were used as evidence to support my claim that one important
aspect of Lana’s ECTC learning was “the Ohio ELP standards.” Some of the themes
were more complicated and contained two or more sub-themes. These sub-themes were
also listed, as exemplified by the two sub-themes (“awareness regarding the necessity to
incorporate the ELL-friendly strategies” and “awareness regarding ‘why’ behind the
SIOP Model”) under “heightened awareness.” When the coding was done, I created
another summary sheet (Table 10) to display the codes (the themes) and the supporting
excerpts.
The final steps involved me writing one-sentence generalizations to express the findings and selecting “powerful” examples to be included in the final write-up. The generalizations summarized relationships between two or more excerpts and served as a syntactic device for commutating what I had found about the theme. For the theme “the Ohio ELP standard,” the generalization I recorded was “Lana believed that her most important learning from the ECTC program was the Ohio ELP standards.” I selected the following quote from an interview with Lana to illustrate the generalization:

(Before the ECTC) I was doing it (the language objectives) but I wasn’t tying them to the ELP standards. To be honest I didn’t know about the ELP standards before the ECTC program. While I have language objectives, I thought ok I needed have some listening, some reading, some writing and some speaking, and...
I knew that I needed to do those four things, but I didn’t know that I really need to tie it to an ELP standard, to make sure I’m covering each one of those. (Interview 1)

**Analysis of the observation data.** The observation data were analyzed mainly to decide the teachers’ level of implementation of the SIOP protocol and to examine whether the teachers’ self-reports via the survey and the interviews were supported by my observations.

First, the SIOP scores were calculated based on the SIOP ratings that had been done during field work. This involved tallying average scores for each SIOP feature, as well as total scores for each lesson, and converting the total scores into percentages. In addition, another percentage was calculated to illustrate how many of the 30 features were consistently included in the teachers’ lessons, because the SIOP Model book defined “high implementers” as those teachers whose lessons consistently used 75% (22) or more of the 30 features.

Next, the observation notes were read carefully and repeatedly and coded for examples of the presence or absence of each SIOP feature, and generalizations were made about the teachers’ implementation of the SIOP protocol. For instance, my generalization about Lana’s “adaptation of content to all levels of student proficiency” (SIOP feature 5) was that “the various types of instructional materials that Lana used indicate that she adapted the grade-level content for her ELLs in a number of ways.” One example used to substantiate the score was her using leveled readers to accommodate for the low reading levels of her ELL students. It is worth noting here that the examples could take different forms depending on the specific feature being evaluated. It could be
descriptions of a class activity, an excerpt of dialogue, or even the words that the teacher wrote down on the board.

In addition, the observation notes were analyzed for two “pre-determined” themes, that is, the classroom interaction pattern and how (and how effectively) the teachers approached instruction of academic literacy skills. Although these themes had been briefly examined under the relevant SIOP features, I believed their importance for the second language acquisition and academic success of ELLs warranted separate and more in-depth discussions. Analysis of the classroom interaction pattern focused on how the teachers offered opportunities for using academic language by facilitating teacher-student(s) and student(s)-student(s) interactions. Analysis of the second theme involved teasing out the reading (including vocabulary instruction) and writing activities that the teachers conducted and examining them in terms of whether (and to what extent) the design and conduct of the activity supported the academic language development needs of their ELL students. Moreover, convergences or discrepancies between the survey and the interview data (self-report data) and the observation data were examined. I was also open to other themes, including culturally responsive teaching, instruction differentiation, and use of scaffolding strategies.

**Analysis of the documents.** As mentioned previously, there were two major types of documents: the teachers’ online discussions and assignments during the ECTC program and the documents that I collected in the field (which were mainly the teachers’ instructional materials). The online discussions and the teachers’ assignments were analyzed to answer the first research question. This was done by searching for and coding themes that emerged from repeated reading of the data. The instructional
materials were coded for examples that helped to substantiate my generalizations regarding the teachers’ instructional practices.

**Cross-case analysis.** Data analysis in multiple case studies usually consists of two stages: within-case analysis and cross-case analysis (Yin, 2003; Merriam, 1998, 2009). Within-case analysis allows researchers to be thoroughly immersed in the data within a single study. This fosters the emergence of the case’s unique attributes and patterns, before the researcher attempts to locate general patterns and themes that run across the cases (cross-case analysis).

In this study, the three teachers were investigated, analyzed, and presented as separate cases. Data analysis was performed at two levels: within each case and across the cases. I first analyzed each case using the different types of analysis as described above. This led to writing case reports that were organized around the four research questions and included descriptions of the backgrounds of the participants and the contexts in which they were being studied, as well as themes, assertions, and my interpretations. Quotes from the interviews and classroom vignettes were presented as evidence and to provide the readers with a vicarious experience of the cases by directly hearing the voices of the teacher and visualizing them in action.

The stage that followed was cross-case analysis, which involved identifying similarities and differences across the cases and making assertions and generalizations. The relationships between the two stages can be visualized using Figure 5 and Figure 6.

*Note.* DS = data source; DS1 = interviews; DS2 = observations; DS3 = documents
Mixed Methods Interpretation

The final step of data analysis was mixed methods interpretation, which involved “looking across the quantitative results and the qualitative findings and making an assessment of how the information addresses the mixed methods question(s) in a study” (Creswell & Clark, 2011, p. 212). For this study, the quantitative and the qualitative data were merged at two points in the process of data analysis and interpretation. First, survey results of the case study teachers were combined and compared with the various types of case data (interviews, observations, and documents) when I performed the within-case analysis. Second, cross-case findings and program-level findings derived from analysis of the survey data were merged at the last stage of data analysis, when I drew interpretations and conclusions and related the findings to the research questions.

Organization of the Chapters

Organization of the remaining chapters parallels the order of data analysis as described in this chapter, so that Chapter 4 presents the survey results, and Chapters 5-7 contain reports of the three cases. Cross-case analysis is incorporated into discussion of the four research questions in Chapter 8. Finally, Chapter 9 is where I merge the quantitative and qualitative findings, plug the major findings into the theoretical model proposed in Chapter 2, and draw conclusions and implications for this study.

Validity & Reliability

Validity and reliability are two factors that qualitative researchers should be concerned about while designing a study, analyzing results, and judging the quality of the study. Yin (2003) identified four tests for judging the quality of case study designs: construct validity, internal validity, external validity, and reliability. Similarly, Guba and
Lincoln (1985) suggested four criteria for developing the trustworthiness of a qualitative inquiry: credibility, transferability, dependability, and confirmability (as cited in Denzin & Lincoln, 2011).

I synthesized key literature (Yin, 2003, 2009; Merriam, 1998, 2009) on case studies and developed a list of procedures for achieving validity and reliability in this type of research. The list then served as a guide throughout the research process. Table 11 shows whether or not these procedures were employed in this study. The information also sheds light on the limitations of the study, which will be discussed in Chapter 9.
Table 11

**Reliability and Validity of the Study**

<table>
<thead>
<tr>
<th>Construct validity (confirmability)</th>
<th>Definition</th>
<th>Procedures</th>
<th>Phase in which the strategy occurs</th>
<th>Used or not in this study</th>
</tr>
</thead>
<tbody>
<tr>
<td>Whether the operational measures are suitable for the concepts being studied?</td>
<td>triangulation; use multiple sources of evidence</td>
<td>data collection</td>
<td>Yes</td>
<td></td>
</tr>
<tr>
<td></td>
<td>establishing a chain of evidence</td>
<td>data collection</td>
<td>Yes</td>
<td></td>
</tr>
<tr>
<td>Internal validity (credibility)</td>
<td>How do research findings match reality?</td>
<td>member checking</td>
<td>data collection; data analysis</td>
<td>Yes</td>
</tr>
<tr>
<td></td>
<td>long-term observation</td>
<td>data collection</td>
<td>No</td>
<td></td>
</tr>
<tr>
<td></td>
<td>peer review and debriefing</td>
<td>data analysis</td>
<td>No</td>
<td></td>
</tr>
<tr>
<td></td>
<td>collaborative modes of research</td>
<td>all stages</td>
<td>No</td>
<td></td>
</tr>
<tr>
<td></td>
<td>examination of the researcher’s biases</td>
<td>at the outset of the study</td>
<td>Yes</td>
<td></td>
</tr>
<tr>
<td>External validity (transferability)</td>
<td>How generalizable are the results of a research study?</td>
<td>rich thick description</td>
<td>writing</td>
<td>Yes</td>
</tr>
<tr>
<td></td>
<td>multisite designs achieved through purposive sampling</td>
<td>participant selection</td>
<td>Yes</td>
<td></td>
</tr>
<tr>
<td></td>
<td>using replication logic in multiple case studies</td>
<td>research design</td>
<td>No</td>
<td></td>
</tr>
<tr>
<td>Reliability (dependability)</td>
<td>The extent to which research findings can be replicated</td>
<td>clarifying the investigator’s position</td>
<td>writing</td>
<td>Yes</td>
</tr>
<tr>
<td></td>
<td>using case study protocol</td>
<td>research design; data collection</td>
<td>Yes</td>
<td></td>
</tr>
<tr>
<td></td>
<td>using external audits</td>
<td>after writing</td>
<td>Yes</td>
<td></td>
</tr>
<tr>
<td></td>
<td>developing case study database</td>
<td>data collection</td>
<td>Yes</td>
<td></td>
</tr>
</tbody>
</table>
As can be seen, the reliability and validity of the study were enhanced by triangulation, rich description, multisite design, using interview and observation protocols, and developing a case study database to maintain a chain of evidence (as already introduced in the other sections). The following procedures also contributed to reliability and validity.

- **Member checking.** Member checking is crucial for establishing credibility of qualitative research. For this study, member checking was carried out throughout the conduct of field work and then after data analysis was completed. The former type was done informally during the interviews when I restated or summarized information and then questioned the participant to determine accuracy by asking such questions as, “You just said … Do you mean …?” or “do I understand this in the same way you meant it?” The more formal type of member checking took place when the data analysis was completed and I was preparing to write up the final report. I first contacted the three teachers to explain my intention and met with the two teachers who agreed to help in September 2013. Because of time constraints, I was not able to share all the research findings with the teachers, but they were told that a copy of the case study report would be available upon request when it was ready. Questions for the teachers were mainly focused on my analysis and interpretations regarding two of the research questions (RQs 1&2), as well as some factual questions that were missed during the previous interviews, like asking Lana how frequently she would attend a sheltered teacher meeting.

---

7 One teacher was too busy to meet with me.
Examination of personal biases. This procedure involves “clarifying the researcher’s assumptions, worldview, and theoretical orientation at the outset of the study” (Merriam, 1998, pp. 206-207). I made every effort to be reflexive, keep track of my personal influence on the research setting and the participants, and bracket my biases (Hatch, 2002). A later section in this chapter is devoted to my reflections on my theoretical and philosophical orientations, motivation for pursuing this study, and position vis-à-vis the PD program and the participants under study. In addition, by explaining the assumptions and theory behind the study (Chapter 2), the basis for selecting participants and a description of them (Chapter 3), and the social context from which the data were collected (Chapters 3, 5, 6, 7), I made my positions transparent (Merriam, 1998, p. 205) and made sure that the readers would get information that they need to determine whether or not the study could be replicated in other education settings.

Using external audits. This procedure calls for the involvement of external consultant(s) to examine both the process and the product of a research study. This study was conducted under the supervision of a panel of professors (my dissertation committee), who critically evaluated the quality of the research project. They examined whether or not the research design was appropriate for addressing the research problem, whether or not the data collection and analysis procedures were adequate to answer the research questions, and whether or not the final findings, interpretations, and conclusion were supported by the data presented.
Ethical Considerations

I made sure that the study was conducted in an ethical manner. Measures to gain informed consent and protect the privacy and confidentiality of the research were well stipulated in my IRB protocol and were strictly followed in the process of data collection, data storage, and dissemination of the research findings. In addition, I built professional relationships with the research participants by being patient and responsive to their needs and respecting their perspectives. I reciprocated their participation through research incentives such as gift cards and coffee, feedback on the observed lessons upon request, and a copy of the key findings for each case study teacher.

Researcher Roles and Theoretical Assumptions

Position and Roles

Being a learner of the English language for more than 25 years and a language teacher trainer for six years before I pursued doctoral study in the US, I had long been interested in how to support language learners to achieve success. However, my research interest in English language learners in the US and their teachers did not fully develop until I was recruited by the ECTC program as a graduate associate. For five years, I worked closely with 177 middle and high school teachers in Ohio by communicating with them online, talking with them in person at the workshops, and visiting them at their schools. The five-year journey with the ECTC was where I saw my personal learning and growth happen as a researcher, a teacher trainer, and an advocate for the ELLs. Over the years, I found a few questions more regularly occupying my mind, and they all boiled down to a simple one: “so what happened after the ECTC?” Although I was repeatedly informed, through reading the teachers’ course reflections and program evaluations and
hearing their success stories, that the program had brought about many changes in their knowledge and practice, I felt pieces were still missing regarding to what extent and for how long the impact would last and how the impact played out in their schools and classrooms. In fall 2011, I was sent by the ECTC program on a few field trips to observe four teachers’ classes. This was my first “real” contact with American public schools. Although I was fascinated by everything that I saw and heard, the questions still clung to me, and they began to evolve and take shape into the topics that I wanted to pursue for my dissertation research.

Reflecting on my position vis-à-vis my research participants, I was both an insider and outsider. I was an insider in terms of my affiliation with the ECTC program and my personal acquaintance with the teachers. At the same time, I was an outsider because I was a foreign woman who did not even know how many class periods there were in a school day in American schools before I embarked on this 18-month research project. My role as a researcher, in which I tried to keep “the researched” unaffected by my presence and unwittingly adopted the “take-the-data-and-run” approach, also dictated that I was an outsider. I felt that I was both challenged and blessed by my multiple roles. On the one hand, I felt challenged because I started off not knowing what were the appropriate or smart questions to ask or what to focus on for the observations. It took me a long time to feel at ease when I stepped into a classroom full of students of different skin colors or when I hit the record button on my voice recorder and started to talk casually with an American teacher. On the other hand, I felt blessed by the outsider’s lens that I brought into the study because I could view in a new light things that had been taken for granted with relatively fresh eyes. I found myself switching back and forth
among multiple lens: a researcher trying to keep her distance from the participants, on
constant lookout for her personal bias; a language learner who could put herself in the
shoes of those students when judging the effectiveness of a lesson; a teacher trainer who
was looking for evidence of the impact of the training; and a friend of those teachers who
would sometimes be a good listener of their joys and frustrations. These perspectives not
only enriched my research experience, but made my research participants feel refreshed
and empowered by the remarks that I made on their lessons or the information that I
shared based on my research experience in other schools. As one of the teachers said,
“you made me think differently sometimes.”

**Theoretical Assumptions**

Although I started out as an adherent of the constructivism paradigm, which
espouses the idea that reality is socially constructed, I later adopted some of the
theoretical and methodological assumptions of pragmatism because it was in
correspondence with my intent to gather all types of data to best answer the research
questions. Pragmatism “draws on many ideas, including employing what works, using
diverse approaches, and valuing both objective and subjective knowledge” (Creswell &
Clark, 2011, p. 43). As one type of world view or paradigm, it has actually informed the
work of many mixed methods researchers.

The idea of using a mixed methods design did not show up in my original
research plan, which represented a purely qualitative design. However, as my research
progressed, particularly after I began to immerse myself in the field, I felt that some of
my questions could not be adequately answered by the methods that I had chosen so far,
particularly in terms of what I aimed to achieve through answering the research questions
to examine the impact of the ECTC program at both a macro- and a micro- level. I realized that qualitative study (i.e., case studies in this study) by itself (and the constructivism that underlies it) would not provide me with the macro-level perspectives that included five cohorts of ECTC graduates. I decided to look for other options, and Creswell and Clark’s (2011) book gave me inspiration for adding a more quantitative element into my research: survey. Suddenly, I felt that my vision was brought to a higher level where I could see a more holistic picture, without losing sight of the particulars.

In retrospect, I believed that I did not abandon constructivism, because by using case studies and qualitative methods such as interviews, observations, and document reviews that were predominant in this paradigm, I attempted to understand the complex world of lived experience from the point of view of those who live it and to construct reality on the basis of the interpretations of data with the help of the participants who provided the data in the study. At the same time, I did not keep my personal values and subjectivity outside my research, but treated them as something to capitalize on. I found myself more distanced from the debate on the nature of reality, but more attuned to the freedom endowed by pragmatism to “study what interests you and is of value to you, study it in the different ways that you deem appropriate, and utilize the results in ways that can bring about positive consequences within your value system” (Tashakkori & Teddlie, 1998, p. 30).
Chapter 4: Survey Results

As described in Chapter 3, the survey consisted of six scales that corresponded with the four research questions (Table 12).

Table 12

Overview of the Survey

<table>
<thead>
<tr>
<th>Research question</th>
<th>Survey scales</th>
<th>Survey questions</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>1-2</td>
<td>8-12 (open-ended questions)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>13-15</td>
</tr>
<tr>
<td>2</td>
<td>3-4</td>
<td>16 (open-ended question)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>17-22</td>
</tr>
<tr>
<td>3</td>
<td>5</td>
<td>23</td>
</tr>
<tr>
<td>4</td>
<td>6</td>
<td>24</td>
</tr>
</tbody>
</table>

This chapter starts with a presentation of the demographic information of the 69 respondents. Following that, the survey participants’ responses are reported in the order of the four research questions.

Demographic Information of the Respondents

The seven demographic questions (Qs1-7) gathered information on the following topics:

- the subject content area and the grade level(s) that the respondents were teaching (at the time of survey administration),
• in which school year they attended the ECTC program,
• for how many years they had worked as a school professional,
• for how many years they had instructed ELL students,
• whether or not they were currently teaching any ELL students (if yes, how many),
• whether or not they had taught any ELLs after the ECTC program (if yes, how many), and
• whether or not they had participated in any PD activities in relation to teaching ELLs after the ECTC program.

Table 13 summarizes the frequency counts and percentages of the respondents’ content area(s) and grade level(s). As can been seen, language arts/English was more represented than the other subject areas, and there were more respondents teaching at high schools than at middle schools.
Table 13

**Content Areas & Grade levels (Question 1)**

<table>
<thead>
<tr>
<th>Language arts/English</th>
<th>Math</th>
<th>Science/Biology</th>
<th>Social studies/History</th>
</tr>
</thead>
<tbody>
<tr>
<td>22</td>
<td>11</td>
<td>16</td>
<td>11</td>
</tr>
<tr>
<td>31.9%</td>
<td>15.9%</td>
<td>23.2%</td>
<td>15.9%</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>LA &amp; Science</th>
<th>Reading &amp; History</th>
<th>Intervention 8</th>
<th>ELL inclusion 9</th>
<th>Spanish</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>1</td>
<td>3</td>
<td>3</td>
<td>1</td>
</tr>
<tr>
<td>1.45%</td>
<td>1.45%</td>
<td>4.3%</td>
<td>4.3%</td>
<td>1.45%</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Grades 6, 7, and/or 8</th>
<th>Grades 9, 10, and/or 12</th>
<th>Grades 5&amp;6</th>
<th>Grades 7-12</th>
<th>Grades 8&amp;9</th>
<th>Grades 8-10</th>
</tr>
</thead>
<tbody>
<tr>
<td>26</td>
<td>39</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>37.7%</td>
<td>56.5%</td>
<td>1.45%</td>
<td>1.45%</td>
<td>1.45%</td>
<td>1.45%</td>
</tr>
</tbody>
</table>

The 69 respondents represented all five cohorts of ECTC participants. Frequency counts (and percentages) of the respondents’ year of participation are listed in Table 14.

Table 14

**Year of Participation (Question 2)**

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>10</td>
<td>10</td>
<td>13</td>
<td>17</td>
<td>19</td>
</tr>
<tr>
<td>14.5%</td>
<td>14.5%</td>
<td>18.8%</td>
<td>24.6%</td>
<td>27.5%</td>
</tr>
</tbody>
</table>

The respondents’ years of teaching experience as a teacher and as a teacher of ELL students are summarized in Table 14. As can be seen, 60.9% (17.4% for 1-3 years

---

8 This category includes one reading intervention, one reading/math intervention, and one English 11 and algebra/geometry intervention.

9 This category includes one math resource room and inclusion, one ELL inclusion for math, history, and biology, and one special ed. & math.
and 43.5% for 4-7 years) of the respondents have instructed ELL students for no more than seven years (including the year when they participated in the ECTC program).

Table 15

*Teaching Experience (Questions 3 & 4)*

<table>
<thead>
<tr>
<th># of years</th>
<th>Working as a teacher</th>
<th>%</th>
<th>Working as a teacher of ELLs</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>1-3</td>
<td>1</td>
<td>1.45%</td>
<td>12</td>
<td>17.4%</td>
</tr>
<tr>
<td>4-7</td>
<td>10</td>
<td>14.5%</td>
<td>30</td>
<td>43.5%</td>
</tr>
<tr>
<td>8-11</td>
<td>15</td>
<td>21.7%</td>
<td>11</td>
<td>15.9%</td>
</tr>
<tr>
<td>12-15</td>
<td>17</td>
<td>18.8%</td>
<td>11</td>
<td>15.9%</td>
</tr>
<tr>
<td>16-20</td>
<td>16</td>
<td>23.2%</td>
<td>4</td>
<td>5.8%</td>
</tr>
<tr>
<td>Over 20</td>
<td>10</td>
<td>14.5%</td>
<td>1</td>
<td>1.45%</td>
</tr>
</tbody>
</table>

In response to Question 5, 62 out of the 69 respondents (90%) reported that they were currently teaching ELLs. In response to Question 6, 64 out of the 69 respondents (92.8%) indicated that they had taught ELLs after they graduated from the ECTC program. The number of ELLs that they have taught is summarized in Table 16.
Table 16

Number of ELLs in Class (Questions 5 & 6)

<table>
<thead>
<tr>
<th># of ELLs this year</th>
<th># of teachers</th>
<th>% (out of 62)</th>
<th># of ELLs since the ECTC</th>
<th># of teachers</th>
<th>% (out of 64)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1-5</td>
<td>15</td>
<td>24.2%</td>
<td>1-10</td>
<td>29</td>
<td>45.3%</td>
</tr>
<tr>
<td>6-10</td>
<td>27</td>
<td>43.5%</td>
<td>11-20</td>
<td>10</td>
<td>15.6%</td>
</tr>
<tr>
<td>11-20</td>
<td>11</td>
<td>17.7%</td>
<td>21-30</td>
<td>8</td>
<td>12.5%</td>
</tr>
<tr>
<td>21-30</td>
<td>6</td>
<td>9.7%</td>
<td>31-50</td>
<td>5</td>
<td>7.8%</td>
</tr>
<tr>
<td>31-40</td>
<td>1</td>
<td>1.6%</td>
<td>51-75</td>
<td>5</td>
<td>7.8%</td>
</tr>
<tr>
<td>41-50</td>
<td>1</td>
<td>1.6%</td>
<td>80-100</td>
<td>6</td>
<td>9.4%</td>
</tr>
<tr>
<td>Over 50</td>
<td>1</td>
<td>1.6%</td>
<td>Over 100</td>
<td>1</td>
<td>1.56%</td>
</tr>
</tbody>
</table>

*Note.* One respondent to Question 6 didn’t report the number of ELL students that she had taught since the ECTC program.

Finally, in response to Question 7, 21 out of the 69 respondents (30.4%) reported that they had attended ELL-related PD activities after the ECTC program.

**Research Question 1:**

**What Did the ECTC Participants Learn about Teaching ELLs through the Program?**

Question 13 of the survey asked the respondents to indicate whether their knowledge and/or skills had been improved as a result of their participation in the ECTC program on a 1 to 5 improvement scale\(^1\). The items that were listed represented the major components of the ECTC training, and they were correspondent with the content of the four ECTC courses.

\(^1\) 1= No improvement; 2= Little improvement; 3= Somewhat improvement; 4= Much improvement; 5= Very much improvement
Table 17

Respondents’ Reported Improvement in the Major Components of ECTC Training (Question 13)

<table>
<thead>
<tr>
<th>Item</th>
<th>Theories of language teaching and learning (including second language acquisition theories)</th>
<th>Mean</th>
<th>SD</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>3.82</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>TESOL methods &amp; strategies</td>
<td>4.09</td>
<td>0.66</td>
</tr>
<tr>
<td>3</td>
<td>Cross-cultural communication in education</td>
<td>3.71</td>
<td>0.79</td>
</tr>
<tr>
<td>4</td>
<td>Culturally responsive teaching</td>
<td>3.94</td>
<td>0.80</td>
</tr>
<tr>
<td>5</td>
<td>Concepts and issues in sociolinguistics relating to TESOL</td>
<td>3.62</td>
<td>0.96</td>
</tr>
<tr>
<td>6</td>
<td>Sheltered instruction &amp; The SIOP Model</td>
<td>3.78</td>
<td>0.10</td>
</tr>
<tr>
<td>7</td>
<td>Selection and development of second language instructional materials</td>
<td>3.61</td>
<td>0.90</td>
</tr>
<tr>
<td>8</td>
<td>Second language evaluation and assessment for ELLs</td>
<td>3.74</td>
<td>0.95</td>
</tr>
</tbody>
</table>

*Note.* One respondent did not answer Item 1. SD=standard deviation.

As can be seen in Table 18, the item that has the highest mean (4.09) is “TESOL methods and strategies,” with 57 (82.6%) respondents indicating that their knowledge and skills about this area had much improvement or very much improvement. The item that has the second highest mean (m= 3.94) was “culturally responsive teaching,” and it is followed by “theories of language teaching and learning” (m= 3.82) and “sheltered instruction and the SIOP Model” (m=3.78).

Questions 14 and 15 were two follow-up questions to expand upon the respondents’ answers to Question 8 and consisted of a lengthy list of all the important knowledge and skills (35 knowledge areas and 22 skill areas) pertaining to teaching ELLs covered by the ECTC courses.
Table 18

Respondents’ Reported Improvement in Their Knowledge and Skills for Teaching ELLs (Questions 14 & 15)

<table>
<thead>
<tr>
<th>Item</th>
<th># of respondent</th>
<th>Mean</th>
<th>Standard deviation</th>
<th>Item</th>
<th># of respondent</th>
<th>Mean</th>
<th>SD</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>68</td>
<td>3.50</td>
<td>1.10</td>
<td>1</td>
<td>69</td>
<td>3.94</td>
<td>0.89</td>
</tr>
<tr>
<td>2</td>
<td>69</td>
<td>3.88</td>
<td>0.80</td>
<td>2</td>
<td>69</td>
<td>3.96</td>
<td>0.85</td>
</tr>
<tr>
<td>3</td>
<td>69</td>
<td>4.19</td>
<td>0.73</td>
<td>3</td>
<td>69</td>
<td>3.80</td>
<td>0.90</td>
</tr>
<tr>
<td>4</td>
<td>69</td>
<td>3.68</td>
<td>1.18</td>
<td>4</td>
<td>69</td>
<td>3.64</td>
<td>0.82</td>
</tr>
<tr>
<td>5</td>
<td>69</td>
<td>3.90</td>
<td>0.79</td>
<td>5</td>
<td>68</td>
<td>3.60</td>
<td>0.85</td>
</tr>
<tr>
<td>6</td>
<td>69</td>
<td>4.00</td>
<td>0.77</td>
<td>6</td>
<td>68</td>
<td>3.80</td>
<td>0.94</td>
</tr>
<tr>
<td>7</td>
<td>69</td>
<td>3.83</td>
<td>0.79</td>
<td>7</td>
<td>69</td>
<td>3.58</td>
<td>0.99</td>
</tr>
<tr>
<td>8</td>
<td>69</td>
<td>3.68</td>
<td>0.88</td>
<td>8</td>
<td>69</td>
<td>3.75</td>
<td>0.91</td>
</tr>
<tr>
<td>9</td>
<td>69</td>
<td>3.83</td>
<td>0.82</td>
<td>9</td>
<td>69</td>
<td>3.80</td>
<td>0.81</td>
</tr>
<tr>
<td>10</td>
<td>69</td>
<td>3.78</td>
<td>0.76</td>
<td>10</td>
<td>69</td>
<td>3.99</td>
<td>0.83</td>
</tr>
<tr>
<td>11</td>
<td>69</td>
<td>3.42</td>
<td>0.95</td>
<td>11</td>
<td>69</td>
<td>3.61</td>
<td>1.11</td>
</tr>
<tr>
<td>12</td>
<td>69</td>
<td>4.10</td>
<td>0.73</td>
<td>12</td>
<td>69</td>
<td>3.99</td>
<td>0.87</td>
</tr>
<tr>
<td>13</td>
<td>69</td>
<td>4.01</td>
<td>0.81</td>
<td>13</td>
<td>69</td>
<td>3.87</td>
<td>0.86</td>
</tr>
<tr>
<td>14</td>
<td>69</td>
<td>4.01</td>
<td>0.80</td>
<td>14</td>
<td>69</td>
<td>3.67</td>
<td>0.94</td>
</tr>
<tr>
<td>15</td>
<td>69</td>
<td>4.00</td>
<td>0.79</td>
<td>15</td>
<td>69</td>
<td>3.22</td>
<td>0.98</td>
</tr>
<tr>
<td>16</td>
<td>69</td>
<td>4.03</td>
<td>0.79</td>
<td>16</td>
<td>69</td>
<td>3.79</td>
<td>0.76</td>
</tr>
<tr>
<td>17</td>
<td>69</td>
<td>3.71</td>
<td>0.88</td>
<td>17</td>
<td>69</td>
<td>3.71</td>
<td>1.03</td>
</tr>
<tr>
<td>18</td>
<td>69</td>
<td>3.81</td>
<td>0.81</td>
<td>18</td>
<td>69</td>
<td>3.29</td>
<td>1.00</td>
</tr>
<tr>
<td>19</td>
<td>69</td>
<td>4.14</td>
<td>0.71</td>
<td>19</td>
<td>69</td>
<td>2.86</td>
<td>1.12</td>
</tr>
<tr>
<td>20</td>
<td>69</td>
<td>4.12</td>
<td>0.76</td>
<td>20</td>
<td>69</td>
<td>3.29</td>
<td>1.05</td>
</tr>
<tr>
<td>21</td>
<td>69</td>
<td>3.74</td>
<td>0.98</td>
<td>21</td>
<td>69</td>
<td>3.39</td>
<td>0.88</td>
</tr>
<tr>
<td>22</td>
<td>69</td>
<td>3.39</td>
<td>0.99</td>
<td>22</td>
<td>69</td>
<td>3.71</td>
<td>0.94</td>
</tr>
<tr>
<td>23</td>
<td>69</td>
<td>3.51</td>
<td>0.90</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>24</td>
<td>68</td>
<td>3.46</td>
<td>0.82</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>25</td>
<td>69</td>
<td>3.86</td>
<td>0.91</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>26</td>
<td>68</td>
<td>3.74</td>
<td>1.00</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>27</td>
<td>68</td>
<td>3.71</td>
<td>0.93</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

(Continued)
As can be seen in Table 18, all the items under Question 14 have a mean over 3, indicating an overall trend of somewhat improvement to much improvement in the 35 knowledge areas. Nine areas have a mean response over 4 (much improvement). These areas are ranked in descending order of the mean responses as below:

- Item 3: The nature of academic English and challenges it poses for ELLs (m= 4.19)
- Item 19: The benefits of integrating explicit instruction in the four language skills across the curriculum (m= 4.14)
- Item 20: The benefits of integrating English language teaching and academic content instruction (m= 4.12)
- Item 12: The unique difficulties and challenges that ELLs face when learning your content areas (m= 4.10)
- Item 16: The specific challenges that ELLs face when learning to listen in English (m= 4.03)
• Item 13: The specific challenges that ELLs face when learning to read in English (m= 4.01)

• Item 14: The specific challenges that ELLs face when learning to write in English (m= 4.01)

• Item 6: The benefits of using learning strategies (m= 4.0)

• Item 15: The specific challenges that ELLs face when learning to speak in English (m= 4.0)

With regard to the 22 skill areas (Question 15), 21 out of the 22 items have a mean over 3, indicating the impact of the ECTC program in the overall pattern of somewhat improvement and much improvement. Nine items that have the highest means are listed in descending order as below:

• Item 10: Creating a risk-free and socially supportive classroom environment for ELLs (m= 3.99)

• Item 12: Promoting ELL students’ academic vocabulary development (m= 3.99)

• Item 2: Modifying regular assignments and/or developing parallel or alternative assignments that maintain a high level of cognitive challenge while reducing language demands (m= 3.96)

• Item 1: Using various teaching techniques (e.g., scaffolding strategies, using visuals to represent content, etc.) to make content instruction more comprehensible for ELLs (m= 3.94)

• Item 13: Helping ELLs develop literacy skills (reading & writing) in English (m= 3.87)
Item 3: Adapting instructional materials to the needs of ELLs without diminishing the content (m= 3.80)

Item 6: Building instruction based on ELL’s prior knowledge (m= 3.80)

Item 9: Establishing group activities and cooperative learning in order to maximize social and academic interaction for ELL students (m= 3.80)

Item 16: Planning and delivering appropriate instruction for ELLs via your content area that is coupled with the teaching of listening, speaking, reading, and writing skills (i.e., the ability to integrate language and content instruction) (m= 3.79)

Item 19 (teaching phonological, morphological, and grammatical rules) has a mean response that is slightly below 3 (m= 2.86), which indicates that a majority of the respondents reported little improvement or somewhat improvement in this skill.

The survey also contained five open-ended questions that asked respondents to list “3 things” that they had learned with regard to five important areas of the ECTC training: language development and second language acquisition (Question 8), TESOL methods and strategies (Question 9), cross-cultural communication and culturally responsive teaching (Question 10), second language assessment (Question 11), and materials selection and adaptation for ELLs (Question 12). Major themes that were generated from analyzing and categorizing the responses are summarized in Tables 19-23.
### Table 19

**Themes of Question 8: Language Development & SLA**

<table>
<thead>
<tr>
<th>Themes</th>
<th>Sample responses</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Differences between BICS &amp; CALP</td>
<td>1. BICS develops prior to development of CALP language.</td>
</tr>
<tr>
<td>2. Stages &amp; process of language development and SLA</td>
<td>2. Students go through recognizable stages in language development that can be tracked by the teacher.</td>
</tr>
<tr>
<td>3. The relationship between L1 &amp; L2 development</td>
<td>3. I have also learned how important it is for ELLs to maintain their native language in order to fully comprehend or retain the new language.</td>
</tr>
<tr>
<td>4. “Silent period”</td>
<td>4. Students go through a silent period when they are new to a language.</td>
</tr>
<tr>
<td>5. Age &amp; language acquisition</td>
<td>5. the effect of age at time of immigration has on language development</td>
</tr>
<tr>
<td>6. Comprehensible input</td>
<td>6. i +1 as intended level of instruction</td>
</tr>
<tr>
<td>7. Developmental order of the four language skills (listening &amp; speaking vs. reading &amp; writing)</td>
<td>7. Speaking mastery of 2nd language comes before reading and writing.</td>
</tr>
</tbody>
</table>

*Note.* The themes are ranked in the order of the number of responses. Fifty-six respondents answered this question.

Table 19 indicates that the respondents’ major learnings with regard to language development and SLA mainly include (1) BICS and CALP, (2) stages and process of language development and SLA, and (3) the relationship between L1 and L2 development. The percentages of respondents who reported these three themes are 41.1%, 26.8%, and 16.1% respectively. Regarding the first theme, respondents reported their learning about the differences between “social language” and “academic language” and the number of years that it usually takes for the development of academic language (i.e., 5-7 years). As for the second theme, respondents indicated their understanding that even though language learners follow recognizable stages of language development, the
rate at which this occurs varies from learner to learner. The third theme was presented by the respondents as either the benefit of having L1 literacy skills (that are transferrable to L2 learning) or the importance of maintaining one’s L1 when learning a new language.

A few responses in relation to “age and acquisition” indicate some misbeliefs about SLA. For instance, two respondents believed that “it is easier for children to acquire a second language than for adults to do so.”

Table 20

*Themes of Question 9: TESOL Methods & Strategies*

<table>
<thead>
<tr>
<th>Themes</th>
<th>Sample responses</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Using visuals</td>
<td>1. Instructional delivery should include visual reinforcement as much as possible.</td>
</tr>
<tr>
<td>2. How to incorporate vocabulary instruction into lessons</td>
<td>2. Front loading vocabulary is helpful.</td>
</tr>
<tr>
<td>3. Importance of providing opportunities for practicing the four language skills</td>
<td>3. spend as much time as possible exposing them to listening, reading, speaking, and writing the language</td>
</tr>
<tr>
<td>4. Building or activating background knowledge</td>
<td>4. Building background information for ELLs before starting new units can help them participate.</td>
</tr>
<tr>
<td>5. Strategies for comprehensible input (slower speech, clear explanation of academic tasks)</td>
<td>5. I learned to slow down when speaking.</td>
</tr>
<tr>
<td>6. Strategies for promoting interaction (through partner or group work)</td>
<td>6. You can help students by having them interact with partners or small groups.</td>
</tr>
<tr>
<td>7. Repetition</td>
<td>7. Repeat the terms multiple times</td>
</tr>
<tr>
<td>8. Modeling (correct language use, or assignments)</td>
<td>8. Modeling assignments so that students have clear expectations can be helpful</td>
</tr>
</tbody>
</table>

*Note.* Sixty respondents answered this question.
As can be seen in Table 20, “using visuals,” “how to incorporate vocabulary instruction into lessons,” and “the importance of providing opportunities for practicing the four language skills” are the three major themes of learning pertaining to TESOL methods and strategies. Out of the 60 respondents to this question, 38.3%, 20%, and 16.7% of the respondents reported their learning in these aspects respectively. With respect to “how to incorporate vocabulary instruction into lessons,” respondents reported a few strategies that were emphasized by the ECTC program, including: reviewing vocabulary prior to lessons, frontloading vocabulary before a new lesson, using vocabulary activities to help students review, word walls, and making students see and use the vocabulary words in multiple ways, among others.
Table 21

*Themes of Question 10: Cross-cultural Communication & Culturally Responsive Teaching*

<table>
<thead>
<tr>
<th>Themes</th>
<th>Sample responses</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Learning about students’ cultures (especially regarding the role of education and norms of behaviors) and schooling background</td>
<td>1. I have many students in my class from various cultural backgrounds and often they include more than just ELL's. Education is not always a high priority in all cultures, but in some it is the highest. I must understand one's culture in order to meet their needs as a learner.</td>
</tr>
<tr>
<td>2. Involving parents/families in the education process</td>
<td>2. I learned the importance of including and involving parents in our school.</td>
</tr>
<tr>
<td>3. Incorporating students’ cultures into instruction and curriculum (by using multicultural materials or making instruction relevant to students’ life experience, etc.)</td>
<td>3. It is good to incorporate multicultural materials so that students feel represented in the curriculum.</td>
</tr>
<tr>
<td>4. Being culturally aware and sensitive</td>
<td>4. Many times our ideas of “respect” vary from culture to culture; be aware of varying gender roles; awareness will prevent awkward situations and learning barriers.</td>
</tr>
<tr>
<td>5. Interpreting students’ behaviors from a cultural perspective</td>
<td>5. If a student from another culture does something odd, look it up. It might be cultural.</td>
</tr>
<tr>
<td>6. Supporting and encouraging the use of students’ L1</td>
<td>6. allow some speech/communication with peers in first language</td>
</tr>
</tbody>
</table>

*Note.* Sixty-one respondents answered this question.

Sixty-one respondents answered Question 11. Four themes are evident in their responses: (1) learning about students’ cultures, (2) incorporating students’ cultures into instruction and curriculum, (3) involving parents/families in the education process, and (4) being culturally aware and sensitive. The percentages (of respondents) for the four themes were: 27.9%, 19.7%, 19.7%, and 18% respectively. Regarding the first theme, responses indicate awareness about “getting to know ELL students’ native traditions, beliefs, and values,” learning about their “prior school experiences,” and understanding
the “education culture” of the students’ home country in terms of “the norms for teacher and student behavior” and “the role of education and educators.” With respect to “involving parents/families in the education process,” respondents reported their learning about the importance of “parental communication/involvement,” as well as ways to establish communication with parents. “Incorporating students’ cultures into instruction and curriculum” is another major theme, and it was represented in two ways by the respondents: by incorporating multicultural materials and by making instruction relevant to students’ life experiences.
### Themes of Question 11: Second Language Assessment

<table>
<thead>
<tr>
<th>Themes</th>
<th>Sample responses</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Using alternative forms of assessment to gauge students’ learning</td>
<td>1. use a variety of assessment techniques; allow students to answer verbally as well as in writing</td>
</tr>
<tr>
<td>2. Ways to modify a test</td>
<td>2. Teachers can modify assessments to give less answer choices for ELLs or provide word banks.</td>
</tr>
<tr>
<td>3. Types of test accommodations</td>
<td>3. For standardized assessments, ELLs have access to certain accommodations (extended time, translators, scribes, dictionaries, etc.) for a period of time after coming to the United States.</td>
</tr>
<tr>
<td>4. Test validity (assessing content knowledge rather than language proficiency)</td>
<td>4. Assessments should assess their learning of the content without letting their language proficiency get in the way.</td>
</tr>
<tr>
<td>5. OTELA</td>
<td>5. I learned about OTELA and how it is used to make programming decisions for students.</td>
</tr>
<tr>
<td>6. Assessment including the four language skills</td>
<td>6. try to assess all 4 areas of language learning when possible</td>
</tr>
<tr>
<td>7. Feedback on students’ errors in writing</td>
<td>7. When assessing students, especially writing, focus on one of two areas of improvements - rather than overwhelming students with too many areas of concern.</td>
</tr>
</tbody>
</table>

*Note.* Fifty-eight respondents answered this question.

As can be seen in Table 22, “using alternative forms of assessment,” “ways to modify a test,” and “types of test accommodations” are the three major themes of learning evident in the responses to Question 11, and they represent 29.3%, 27.6%, and 15.5% of the respondents’ opinions. With regard to the first theme, respondents reported using the following types of alternative assessment: journal writing, cloze format questions, true or false questions, oral assessment, portfolio assessment, group/collaborative projects, and drawing pictures. As far as “ways of modifying a test”
is concerned, responses reflected a variety of strategies for test modification: reducing the number of options for multiple choice questions, providing word banks, providing word definitions, providing sentence starters, simplifying the wording of test questions, reducing the amount of reading for test questions, and highlighting or underlining key words. Finally, types of test accommodations that were mentioned by respondents included extended time, allowing the use of dictionaries, and making translators available for test administration.

Table 23

*Themes of Question 12: Material Selection and Adaptation*

<table>
<thead>
<tr>
<th>Themes</th>
<th>Sample responses</th>
</tr>
</thead>
</table>
| 1. Using visuals and pictures & choosing materials that are visually supportive | 1. (a) When selecting materials, it is better to select materials that include a lot of visuals to give students cues about what is being discussed.  
(b) include pictures as much as possible  |
| 2. How to adapt texts                                                 | 2. I learned how to adapt reading texts, simplifying the language barriers while still providing them with the same content.                       |
| 3. Using materials that are appropriate for students’ language proficiency levels | 3. Material must be on the appropriate level for the students.                                                                                       |
| 4. Using leveled texts or readers                                     | 4. Differing levels of materials need to be available based on the needs of the student(s).                                                           |
| 5. Using culturally relevant or appropriate materials                  | 5. bring in material that is culturally relevant                                                                                                       |

*Note.* Fifty-eight respondents answered this question.

Finally, responses for Question 12 indicate three themes of learning regarding material selection and adaptation: “using visuals and pictures and choosing materials that
are visually supportive,” “using materials that are appropriate for students’ language proficiency levels,” and “how to adapt texts,” and the three themes represent 41.4%, 22.4% and 22.4% of the responses. With regard to “how to adapt texts,” the following strategies were reported: “adding explanations or meanings for certain words,” “using simpler words,” “reducing the length of texts,” and “using less complex sentence structures.”

I also ranked the major themes generated from the five opened-ended questions according to the percentages of respondents. Twelve themes have a percentage at or over 20%. In descending order these ten themes are:

- Using visuals and pictures and choosing materials that are visually supportive (Questions 9 & 12)
- Differences between BICS and CALP (Question 8)
- Learning about students’ cultures (Question 10)
- Using alternative forms of assessment to gauge students’ learning (Question 11)
- Ways to modify a test (Question 11)
- Stages and process of language development and SLA (Question 8)
- How to adapt texts (Question 12)
- Using materials that are appropriate for students’ language proficiency levels (Question 12)
- How to incorporate vocabulary instruction into lessons (Question 10)
- Involving parents/families in the education process (Question 11)
- Incorporating students’ cultures into instruction and curriculum (Question 11)
Research Question 2:

How Did the Teachers’ Learning from the ECTC Program Facilitate Changes in Their Teaching Practices?

Questions 17, 18, 19, 20, and 21 of the survey focused on whether and how participation in the ECTC program had an impact on the teachers’ teaching practices. Respondents to the survey were asked to indicate on a 1 to 5 frequency scale\(^{11}\) how frequently they implemented the teaching practices that were promoted by the ECTC program. They were also asked to indicate whether an increase (if any) in the frequency of implementing the teaching practices was due to their participation in the ECTC program (by checking the ECTC box in the survey). The five umbrella questions, which consisted of varying numbers of items\(^{12}\), covered the following areas of practice in which the ECTC program sought to induce teacher change: the SIOP Model, teaching reading and writing skills, assessment and assignment, culturally responsive teaching, and teacher collaboration.

I calculated frequencies and percentages of respondents who reported increased frequency of implementing the teaching practices in the above mentioned areas for each survey item (Table 24) and used 50% as a cutting point to define the level of impact of the ECTC program on the teachers’ teaching practices, that is, if 50% or more than 50% of the respondents reported increased frequency for an item (or a teaching practice), the item would be defined as showing a significant impact of the ECTC program.

\(^{11}\) 1=never, 2=rarely, 3=sometimes/occasionally, 4=frequently, 5=always

\(^{12}\) Question 11 had 30 items, Question 12 had 11, Question 14 had 5, Question 17 had 9, and Question 18 had 5.
Table 24

*Number of Respondents Who Reported Increased Frequency of Implementing the ELL-Friendly Teaching Practices due to Their Participation in the ECTC Program (Questions 17, 18, 19, 20, & 21)*

<table>
<thead>
<tr>
<th>SIOP Model</th>
<th>Teaching reading &amp; writing</th>
<th>Assignment &amp; Assessment</th>
<th>Culturally responsive teaching</th>
<th>Teacher collaboration</th>
</tr>
</thead>
<tbody>
<tr>
<td>I1</td>
<td>21</td>
<td>11</td>
<td>I1</td>
<td>11</td>
</tr>
<tr>
<td>I2</td>
<td>32</td>
<td>12</td>
<td>I2</td>
<td>12</td>
</tr>
<tr>
<td>I3</td>
<td>34</td>
<td>13</td>
<td>I3</td>
<td>13</td>
</tr>
<tr>
<td>I4</td>
<td>46</td>
<td>14</td>
<td>I4</td>
<td>14</td>
</tr>
<tr>
<td>I5</td>
<td>46</td>
<td>15</td>
<td>I5</td>
<td>15</td>
</tr>
<tr>
<td>I6</td>
<td>11</td>
<td>16</td>
<td>I6</td>
<td>16</td>
</tr>
<tr>
<td>I7</td>
<td>22</td>
<td>17</td>
<td>I7</td>
<td>17</td>
</tr>
<tr>
<td>I8</td>
<td>17</td>
<td>18</td>
<td>I8</td>
<td>18</td>
</tr>
<tr>
<td>I9</td>
<td>38</td>
<td>19</td>
<td>I9</td>
<td>19</td>
</tr>
<tr>
<td>I10</td>
<td>55</td>
<td>110</td>
<td>I10</td>
<td>14</td>
</tr>
<tr>
<td>I11</td>
<td>51</td>
<td>111</td>
<td>I11</td>
<td>18</td>
</tr>
<tr>
<td>I12</td>
<td>29</td>
<td>112</td>
<td>I12</td>
<td>30</td>
</tr>
<tr>
<td>I13</td>
<td>33</td>
<td>I13</td>
<td>I13</td>
<td>31</td>
</tr>
<tr>
<td>I14</td>
<td>29</td>
<td>I14</td>
<td>I14</td>
<td>32</td>
</tr>
<tr>
<td>I15</td>
<td>44</td>
<td>I15</td>
<td>I15</td>
<td>34</td>
</tr>
</tbody>
</table>

*Note.* Because of space limitations, only frequency counts (no percentages) are shown in this table.

As Table 24 indicates, a significant impact of the ECTC program can be seen on 16 teaching practices that belong to four areas: the SIOP Model, teaching reading and writing, assignment and assessment, and teacher collaboration. Of the four areas, the impact of the ECTC program is more evident in the SIOP Model and assignment and assessment. For the former category, 11 items (36.7%) showed significant impact; for the latter category, three items (60%) showed significant impact.
The content of the 16 items and their mean responses are shown in Table 25 in descending order of the number and percentages of respondents who reported improved frequency in implementing the practices due to their participation in the ECTC program.

Table 25

*Overview of the Teaching Practices That More Than 50% of Respondents Reported Implementing With Increased Frequency due to Their Participation in the ECTC Program*

<table>
<thead>
<tr>
<th>Q16: Implementing SIOP strategies</th>
<th># of respondents</th>
<th>Mean</th>
<th>SD</th>
</tr>
</thead>
<tbody>
<tr>
<td>I10: I monitor my rate of speech, use pauses, and enunciate clearly while speaking.</td>
<td>68</td>
<td>4.26</td>
<td>0.75</td>
</tr>
<tr>
<td>I11: I monitor my speech patterns (e.g., minimizing the use of idiomatic expressions, simplifying sentence structure, paraphrasing, explaining difficult words and ideas, etc.).</td>
<td>68</td>
<td>4.09</td>
<td>0.75</td>
</tr>
<tr>
<td>I4: I provide ELL students with different types of supplemental materials that are appropriate for their English reading level.</td>
<td>68</td>
<td>3.67</td>
<td>0.90</td>
</tr>
<tr>
<td>I5: I adapt dense and difficult texts for my ELL students.</td>
<td>68</td>
<td>3.71</td>
<td>0.86</td>
</tr>
<tr>
<td>I15: I allow students alternative forms for expressing their understanding of information and concepts (e.g. pointing, answering yes/no questions, short answers, listing, drawing, labeling, etc.).</td>
<td>68</td>
<td>4.07</td>
<td>0.82</td>
</tr>
<tr>
<td>I18: I model correct pronunciation and language use for ELL students (e.g., by paraphrasing a student's response in other words to model correct English usage; or by repeating the student's response to provide correct pronunciation, etc.).</td>
<td>67</td>
<td>4.21</td>
<td>0.81</td>
</tr>
<tr>
<td>I9: I emphasize key vocabulary throughout the lesson, writing them, repeating them and highlighting them for students to hear and see.</td>
<td>68</td>
<td>4.19</td>
<td>0.83</td>
</tr>
<tr>
<td>I22: I do one-on-one teaching, coaching, and modeling for my ELL students.</td>
<td>68</td>
<td>4.07</td>
<td>0.82</td>
</tr>
<tr>
<td>I17: I allow students sufficient wait time they need to process information.</td>
<td>68</td>
<td>4.26</td>
<td>0.70</td>
</tr>
<tr>
<td>I3: I provide meaningful activities that integrate lesson concepts with language practice opportunities for reading, writing, listening, and/or speaking.</td>
<td>68</td>
<td>4.03</td>
<td>0.85</td>
</tr>
<tr>
<td>I30: I review key vocabulary and content concepts periodically during a lesson.</td>
<td>68</td>
<td>4.35</td>
<td>0.75</td>
</tr>
</tbody>
</table>

(Continued)
Table 25 (continued)

<table>
<thead>
<tr>
<th>Q17: Teaching reading &amp; writing</th>
<th># of respondents</th>
<th>Mean</th>
<th>SD</th>
</tr>
</thead>
<tbody>
<tr>
<td>I1: I use a variety of strategies to help students build vocabularies.</td>
<td>68</td>
<td>3.87</td>
<td>0.99</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Q18: Assignment &amp; Assessment</th>
<th># of respondents</th>
<th>Mean</th>
<th>SD</th>
</tr>
</thead>
<tbody>
<tr>
<td>I1: I provide different activities, tasks and assignments for ELL students according to their English language proficiency levels.</td>
<td>68</td>
<td>3.77</td>
<td>0.90</td>
</tr>
<tr>
<td>I5: I modify my assessments to really gauge what the ELLs have learned about subject content.</td>
<td>68</td>
<td>4.22</td>
<td>0.80</td>
</tr>
<tr>
<td>I2: I use various types of alternative assessment to allow students to demonstrate their knowledge fully.</td>
<td>68</td>
<td>3.91</td>
<td>0.82</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Q20: Teacher collaboration</th>
<th># of respondents</th>
<th>Mean</th>
<th>SD</th>
</tr>
</thead>
<tbody>
<tr>
<td>I3: I share what I learned from the ECTC program with other teachers in my school who didn't attend the ECTC program.</td>
<td>68</td>
<td>3.65</td>
<td>1.06</td>
</tr>
</tbody>
</table>

Note. One respondent did not answer Questions 17, 18, 19, and 21. One respondent did not answer Item 18 under Question 17.

As can be seen, nine items under Question 17 and one item under Question 19 have a mean over 4, indicating that they were implemented by the respondents at a (slightly above) frequently level. All the other items have a mean over 3.5, which indicates that these practices were implemented by a majority of the respondents from the sometimes/occasionally to the frequently level.

With regard to the respondents’ implementation of the SIOP strategies (Question 16), improvement was mainly seen in lesson preparation (I3, I4, I5), background building (I9), comprehensible input (I10, I11, I15), strategies (I22), interaction (I17), and review and assessment (I18, I30). As for teaching reading and writing (Question 17), improvement was only reported on helping students build vocabularies (I).

Assignment and assessment (Question 19) is a significant area where the respondents reported improvement in differentiating activities, tasks, and assignments for
ELL students according to their English language proficiency levels (I1), using alternative forms of assessment (I2), and using different types of test modification strategies (I5) to really gauge what ELL students had learned about the subject content. Finally, a majority of respondents reported that they shared what they learned from the ECTC program with other teachers at school (Question 21), as indicated by a mean of 3.65 (between “sometimes/occasionally” and “frequently”) for this item.

Question 22 asked the respondents to indicate their strength of agreement\textsuperscript{13} with six items that measured whether the ECTC program had an impact on their self-efficacy for teaching ELL students, one item that asked whether their beliefs and attitudes about ELL education had changed as a result of their participation in the ECTC program, and one item that asked whether the influence of the ECTC program had extended beyond their classroom.

\textsuperscript{13} 1=Strongly disagree, 2= Disagree, 3= Not sure, 4= Agree, 5= Strongly agree
Table 26

Respondents’ Perceptions of the Impact of the ECTC Program on Their Teaching Efficacy in Relation to Teaching ELLs (Question 22)

<table>
<thead>
<tr>
<th>Item</th>
<th># of respondents</th>
<th>Mean</th>
<th>SD</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. I believe that the ECTC program has affected the way that I instruct my ELL students.</td>
<td>69</td>
<td>4.45</td>
<td>0.56</td>
</tr>
<tr>
<td>2. The ECTC program has changed my beliefs and attitudes about education of ELLs.</td>
<td>69</td>
<td>4.28</td>
<td>0.70</td>
</tr>
<tr>
<td>3. Because of the ECTC program, I feel that I am more capable of providing quality instruction for ELLs and meeting their language and content-area needs.</td>
<td>69</td>
<td>4.42</td>
<td>0.63</td>
</tr>
<tr>
<td>4. Because of the ECTC program, I feel that I am a better advocate for the ELL students.</td>
<td>69</td>
<td>4.51</td>
<td>0.63</td>
</tr>
<tr>
<td>5. As a result of the ECTC program, my ELL students are more actively engaged in learning activities.</td>
<td>69</td>
<td>4.19</td>
<td>0.69</td>
</tr>
<tr>
<td>6. As a result of the ECTC program, my ELL students demonstrate enhanced learning outcomes.</td>
<td>69</td>
<td>4.01</td>
<td>0.80</td>
</tr>
<tr>
<td>7. As a result of the ECTC program, my ELL students have less difficulty in understanding what they are being taught.</td>
<td>69</td>
<td>3.94</td>
<td>0.80</td>
</tr>
<tr>
<td>8. The impact of the ECTC program has gone beyond my own classroom.</td>
<td>69</td>
<td>4.10</td>
<td>0.89</td>
</tr>
</tbody>
</table>

Note. Item 7 has the lowest mean score (m=3.94), responses for this item consist of 1 “disagree,” 21 “not sure,” 28 “agree,” and 19 “strongly agree.”

As can be seen in Table 26, a majority of the respondents either agreed or strongly agreed with these items, as indicated by a mean that is over 4 for all but one of the items. The slightly lower mean response for Item 7 (m= 3.94) was mainly caused by the fact that 21 out of the 69 (30.4%) respondents chose not sure as their response, but there were still 47 respondents (68.1%) who chose agree or strongly agree for the item.

The item that ranks at the top is “because of the ECTC program, I feel that I am a better advocate for the ELL students” (Item 4, m= 4.51). It is followed by “I believe that the ECTC program has affected the way that I instruct my ELL students” (Item 1, m= 4.45) and “because of the ECTC program, I feel that I am more capable of providing
quality instruction for ELLs and meeting their language and content-area need” (Item 3, m=4.42).

The three items (Items 5-7) that gauged respondents’ perceptions regarding the impact of ECTC program on the performance of their students have slightly lower means than the above three items that measured the respondents’ perceptions about their own changes.

To further address RQ2, I also included an open-ended response question (Question 16) in the survey and asked the teachers to briefly talk about some changes in their teaching practices after the ECTC program. Table 27 summarizes the major themes of changes reported by the 56 respondents.
Table 27

*Themes of Question 16: Changes in Teaching Practices*

<table>
<thead>
<tr>
<th>Themes</th>
<th>Sample responses</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Using all types of visual means</td>
<td>1. I used a PowerPoint that was comprised mostly of pictures with a short caption and a BrainPop video that had easy to understand terms and follow up questions.”</td>
</tr>
<tr>
<td>2. Vocabulary instruction</td>
<td>2. I include a pre vocabulary phase where I introduce key vocabulary before the lesson, giving students two key ideas to focus on for each lesson.</td>
</tr>
<tr>
<td>3. Teacher collaboration</td>
<td>3. I have worked closely with R.H. who is our TESOL coordinator. She and I have been a great team and I am continually learning and developing new strategies that I implement on a daily basis.</td>
</tr>
<tr>
<td>4. Modifying assignments/assessments to meet the students’ needs</td>
<td>4. For tests, I reduce wording, I take out any excessive vocabulary, or I simplify some of the technical words, the words that aren’t specific to the unit but words that I know will trip them up, in terms of science type of language.</td>
</tr>
<tr>
<td>5. Adapting reading materials/using leveled readers</td>
<td>5. Another thing we do is we look for, or modify existing material, that will be simpler for students to understand what can be abstract concepts. I will take a worksheet or short passage of reading and re-write it with simpler questions.</td>
</tr>
<tr>
<td>6. Using techniques to make content comprehensible</td>
<td>6. Repetition, speaking slowly and allowing time for thought processes are all what I do to make content comprehensible for my ELLs.</td>
</tr>
<tr>
<td>7. Scaffolding strategies</td>
<td>7. ECTC has also taught me something about like scaffolding. So for example today we are going to do an open ended statement at the end of the class. So I might give them a sentence starter and they have to complete the statement. It could be filling in a cloze of statement with vocabulary words, so instead of having the kids write just like a paragraph that uses vocabulary words, I would have paragraphs written already and then parts of it taken out and they have to fill in the vocabulary words.</td>
</tr>
</tbody>
</table>
The percentages for the seven themes of changes are (in the numbered order in which they appear in Table 27): 62.5%, 50%, 42.9%, 37.5%, 30.4%, 30.4%, and 12.5%. As can be seen, the qualitative responses revealed more nuanced insights into the changes that the teachers reported through their responses to Questions 16-20. Using different types of visual means, for instance, included using pictures, realia, online videos, hands-on manipulatives, graphic organizers, and color-coding. Vocabulary instruction was reported by the respondents as enacting changes in how they pre-taught vocabulary before lessons, had students constantly review and practice with key vocabulary words, and used such strategies as word walls, flash cards, and games to help students build vocabulary. With regard to teacher collaboration, the respondents reported working more closely with the ESL teachers and teachers who were also ECTC alumni, as well as sharing with other teachers “the tools and strategies” that they had learned from the ECTC program. In addition, various modifications were reported by the respondents regarding how they modified test questions, class activities, homework, and instructional materials to meet the needs of ELL students. Finally, the respondents reported using more SIOP strategies (in addition to using the visuals mentioned above) to scaffold instruction and to make content more comprehensible for ELLs.

Research Question 3:

What Were the School Organizational Factors that Either Facilitated or Hindered Changes in Teacher Practice?

Question 23 of the survey consisted of 14 statements (items) that described the various school organizational factors as either a “facilitator” or “hindrance” to the teachers’ implementation of their ECTC learning. Because some items were worded in
an opposite way to the others (i.e., some were phrased as a “facilitator,” while others were phrased as a “hindrance”), I found that simply comparing the means would render invisible some significant findings. Table 28 details the frequency counts of responses on the agreement scale, as well as the mean and standard deviation for each item.

Table 28

Respondents’ Perceptions of the School Organizational Factors (Question 23)

<table>
<thead>
<tr>
<th>Item</th>
<th>Strongly disagree</th>
<th>Disagree</th>
<th>Not sure</th>
<th>Agree</th>
<th>Strongly agree</th>
<th>Mean</th>
<th>SD</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>5</td>
<td>23</td>
<td>9</td>
<td>29</td>
<td>3</td>
<td>3.03</td>
<td>1.11</td>
</tr>
<tr>
<td>2</td>
<td>0</td>
<td>8</td>
<td>2</td>
<td>45</td>
<td>14</td>
<td>3.94</td>
<td>0.84</td>
</tr>
<tr>
<td>3</td>
<td>2</td>
<td>7</td>
<td>2</td>
<td>31</td>
<td>26</td>
<td>4.06</td>
<td>1.05</td>
</tr>
<tr>
<td>4</td>
<td>8</td>
<td>23</td>
<td>9</td>
<td>22</td>
<td>7</td>
<td>2.96</td>
<td>1.24</td>
</tr>
<tr>
<td>5</td>
<td>0</td>
<td>15</td>
<td>10</td>
<td>32</td>
<td>12</td>
<td>3.59</td>
<td>1.02</td>
</tr>
<tr>
<td>6</td>
<td>6</td>
<td>37</td>
<td>14</td>
<td>11</td>
<td>1</td>
<td>2.48</td>
<td>0.92</td>
</tr>
<tr>
<td>7</td>
<td>0</td>
<td>12</td>
<td>16</td>
<td>31</td>
<td>10</td>
<td>3.57</td>
<td>0.95</td>
</tr>
<tr>
<td>8</td>
<td>1</td>
<td>29</td>
<td>11</td>
<td>22</td>
<td>6</td>
<td>3.04</td>
<td>1.08</td>
</tr>
<tr>
<td>9</td>
<td>2</td>
<td>22</td>
<td>11</td>
<td>25</td>
<td>9</td>
<td>3.25</td>
<td>1.13</td>
</tr>
<tr>
<td>10</td>
<td>2</td>
<td>24</td>
<td>7</td>
<td>28</td>
<td>8</td>
<td>3.23</td>
<td>1.14</td>
</tr>
<tr>
<td>11</td>
<td>9</td>
<td>51</td>
<td>6</td>
<td>2</td>
<td>1</td>
<td>2.06</td>
<td>0.68</td>
</tr>
<tr>
<td>12</td>
<td>1</td>
<td>7</td>
<td>13</td>
<td>39</td>
<td>9</td>
<td>3.70</td>
<td>0.88</td>
</tr>
<tr>
<td>13</td>
<td>1</td>
<td>12</td>
<td>7</td>
<td>40</td>
<td>9</td>
<td>3.64</td>
<td>0.97</td>
</tr>
<tr>
<td>14</td>
<td>8</td>
<td>43</td>
<td>9</td>
<td>6</td>
<td>3</td>
<td>2.32</td>
<td>0.95</td>
</tr>
</tbody>
</table>

Note. One respondent didn’t answer Item 3.

As Table 28 indicates, the respondents’ opinions were divided on five items. For instance, the mean for Item 1 was 3.03 (SD= 1.11). Thirty-two respondents (46.4%) agreed or strongly agreed with the statement that “I don’t have enough time to make
modifications for my ELLs,” and 28 respondents (40.6%) disagreed or strongly disagreed with the statement. For the statement “I receive adequate support from school administration when ELL students are enrolled in my class” (Item 4), a mean of 2.96 was reported (SD= 1.24). Twenty-nine respondents (42%) agreed or strongly agreed with the statement that “I receive adequate support from school administration when ELL students are enrolled in my class,” and 31 respondents (44.9%) disagreed or strongly disagreed with the statement. The respondents’ opinions were also divided on Items 8, 9, and 10, indicating their different perceptions and feelings about “the range of ELL students’ ability and language proficiency levels” (m= 3.04, SD= 1.08), “resources and support services available at school for ELLs” (m= 3.25, SD= 1.13), and “the opportunities for PD in relation to ELL education” (m= 3.23, SD= 1.14).

Responses to Items 2, 3, 5, 7, and 13 revealed some school factors that posed an obstacle or challenge for the respondents. For instance, the mean for Item 3 is 4.06. Fifty-nine respondents (86.8%) agreed or strongly agreed with the statement “I feel pressured to help my students pass state tests.” The item with the second highest mean (among the 5) is the statement “I feel pressured to cover all the content standards” (m= 3.94). The next three items are “it is difficult to connect with parents, inform them of the standards, expectations, and ways to help because of language barriers and lack of school-provided venues and opportunities” (m= 3.70), “other competing professional initiatives in school interfere with sharing ECTC learning” (m= 3.59), and “other teachers lack the necessary knowledge and skills to teach ELLs” (m= 3.57).

Responses to Item 12 indicate that “the school's ESL services” is a facilitator for the teachers’ implementation of ELL-friendly teaching practices. Forty-eight respondents
(69.6%) agreed or strongly agreed that “the school's ESL services do a good job in supporting my instruction needs” (m= 3.70).

In addition, fifty-one respondents (73.9%) disagreed or strongly disagreed that “I feel isolated as a result of lack of communication and collaboration among teachers” (Item 14, m= 2.32); and forty-four respondents (63.8%) reported their disagreement with the statement “few of the teachers in our school care about ELL students” (Item 6, m= 2.48), indicating that the two factors did not create hindrances or challenges for them at school.

Finally, sixty respondents (87%) indicated their disagreement with Item 11 (m= 2.06), and this may suggest that participation in the ECTC program had made them more capable of locating resources and support services for their ELL students.

Comments left by some of the respondents to Question 23 further illustrated how they thought of the above mentioned factors as either obstacles or facilitating factors. For instance, one teacher commented “I think that the ELLs’ needs are sometimes overlooked when I am trying to follow our district’s fast-paced curriculum and cover all of the material that I need to cover during a quarter or semester of college prep English.” The remark highlighted the challenges caused by the pressure to cover the curriculum and prepare students for standardized tests. These challenges were further complicated by the new Common Core State Standards that many of the school districts in Ohio started using in 2013. As one teacher shared:

The new common core has been a big challenge this year. First of all, I have to relearn a lot of information that I haven’t done for years, and also think about how am I going to get this to the 7th graders, and on top of that, to the ELLs, really this building background piece is a challenge. It has been a difficult year trying to find resource for the kids.
Six teachers mentioned either “class size” or “the make-up of the class” as a major obstacle that was associated with challenges to differentiating instruction enough to meet every student’s need. For instance, one teacher wrote,

Differentiation is very difficult, and again knowing exactly the pace when you have that many different levels, pacing is harder, I worry about my higher end kids, it may go too slow for them and then getting bored, because I’m better at differentiation at lower end than I am at higher end, not sure what to give them after they’ve finished.

With respect to “ESL service and teachers” as a facilitating factor, one teacher elucidated how the ELL teacher in his building helped to establish an ESL-only history class for him and another teacher to co-teach.

The ESL teacher was successful in lobbying our admin to get an ESL only History class. While this was only for 8th grade, it was a big start in helping change the direction of lumping all the kids in a general History class where support was very limited. We have seen a big change in the students success this year vs last year and the ESL teacher is very pleased with how this pilot program has turned out.

Time as an obstacle was reflected in five teachers’ comments. One teacher said, “what has been the greatest obstacle is the time given in my teaching schedule to collaborate with my co-teachers and/or the ELL staff in my building. I have been given NONE.

Finally, six teachers commented on “lack of resources and support services” as an obstacle for improving education for ELL students. Four teachers interpreted this obstacle as getting access to teaching resources appropriate for ELL students. For instance, one of them remarked, “I think obstacles would be getting access to resources that could be used more consistently with the students that are easy for them to understand.” Resources and support services were also interpreted by a couple of other
teachers as the availability of ESL teachers. These teachers reported that there were not
enough certified ESL teachers in their school building or school district to support their
instructional needs.

**Research Question 4:**

**How Did the Teachers Perceive the Content and Design Features of the ECTC
Program and the Impact of These Features on Their Learning Experience?**

Question 24 of the survey asked the respondents to indicate their degree of
agreement regarding whether the various content and design features of the ECTC
program had an impact on their learning experience and subsequent changes in their
teaching practices.
Table 29

Respondents’ Perceptions of the Program Features (Question 24)

<table>
<thead>
<tr>
<th>Item</th>
<th># of respondents</th>
<th>Mean</th>
<th>SD</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Professors’ course content</td>
<td>69</td>
<td>4.06</td>
<td>0.68</td>
</tr>
<tr>
<td>2. Lectures given by invited speakers</td>
<td>69</td>
<td>3.77</td>
<td>0.88</td>
</tr>
<tr>
<td>3. The length of the program</td>
<td>68</td>
<td>3.88</td>
<td>0.82</td>
</tr>
<tr>
<td>4. Course materials/readings</td>
<td>69</td>
<td>4.07</td>
<td>0.69</td>
</tr>
<tr>
<td>5. The online format of the courses</td>
<td>69</td>
<td>4.00</td>
<td>0.82</td>
</tr>
<tr>
<td>6. The program is supported by school-university partnership.</td>
<td>69</td>
<td>4.29</td>
<td>0.69</td>
</tr>
<tr>
<td>7. The three workshops (where I got an opportunity to meet with other teachers in person)</td>
<td>69</td>
<td>4.19</td>
<td>0.81</td>
</tr>
<tr>
<td>8. Opportunity to engage in in-depth discussion of content and strategies with other teachers</td>
<td>69</td>
<td>4.39</td>
<td>0.55</td>
</tr>
<tr>
<td>9. Opportunity to collaborate with teachers in the same content area</td>
<td>69</td>
<td>4.42</td>
<td>0.69</td>
</tr>
<tr>
<td>10. Opportunity to collaborate with teachers from the same school or school district</td>
<td>69</td>
<td>4.46</td>
<td>0.58</td>
</tr>
<tr>
<td>11. Opportunity to discuss and exchange ideas with ESL coaches</td>
<td>69</td>
<td>4.22</td>
<td>0.64</td>
</tr>
<tr>
<td>12. Opportunity to be observed teaching and provided feedback</td>
<td>69</td>
<td>3.91</td>
<td>0.87</td>
</tr>
<tr>
<td>13. Opportunity to watch and comment on videotaped lessons during the SIOP course</td>
<td>69</td>
<td>3.80</td>
<td>0.98</td>
</tr>
<tr>
<td>14. Opportunity to reflect upon my own teaching practice (e.g., through the video reflection project or SIOP self-evaluation)</td>
<td>69</td>
<td>4.03</td>
<td>0.95</td>
</tr>
<tr>
<td>15. Opportunity to reflect upon and discuss the course materials and relate the course content (e.g., through online discussions) to my own teaching context</td>
<td>69</td>
<td>4.09</td>
<td>0.74</td>
</tr>
<tr>
<td>16. Opportunity to work on projects/assignments that demonstrate my newly learned knowledge and skills</td>
<td>69</td>
<td>4.15</td>
<td>0.65</td>
</tr>
<tr>
<td>17. Opportunity to do classroom-based research (e.g., a case study on an ELL student)</td>
<td>69</td>
<td>3.94</td>
<td>0.87</td>
</tr>
<tr>
<td>18. Opportunity to create curriculum materials (e.g., syllabus, instructional materials, assessment plan) that can be put into practical use</td>
<td>69</td>
<td>4.17</td>
<td>0.71</td>
</tr>
<tr>
<td>19. Opportunity to learn specific instructional strategies</td>
<td>69</td>
<td>4.52</td>
<td>0.50</td>
</tr>
<tr>
<td>20. Opportunity to learn concepts, terminologies and theories (e.g., SLA theory)</td>
<td>69</td>
<td>4.15</td>
<td>0.83</td>
</tr>
</tbody>
</table>

*Note:* One respondent did not answer Item 3. Responses to Item 2 (with the lowest mean score) consist of 7 “disagree,” 15 “not sure,” 34 “agree,” and 13 “strongly agree.”
As can be seen in Table 27, 15 of the 20 items have a mean over 4. The item that has the lowest mean is Item 2 (“lectures given by invited speakers, m=3.77”). Of those who responded to this item, seven chose “disagree,” 15 “not sure,” 34 “agree,” and 13 “strongly agree.” Although 22 respondents either disagreed or were not sure about the positive impact of this feature, the other 47 respondents (68.1%) indicated their agreement with the positive impact of “listening to lectures given by invited speakers” on their learning experience.

Items that rank as the top five in their means were (in descending order): opportunity to learn specific instructional strategies (m= 4.52), opportunity to collaborate with teachers from the same school or school district (m= 4.46), opportunity to collaborate with teachers in the same content area (m= 4.42), opportunity to engage in in-depth discussion of content and strategies with other teachers (m= 4.39), and the fact that the program was supported by a school-university partnership (m= 4.29).

**Summary**

In summary, quantitative data obtained via the online survey indicted the following major findings:

1. Respondents believed that they had seen improvement regarding all the major components of the ECTC training (Question 13), among which TESOL methods and strategies, culturally responsive teaching, and theories of language teaching and learning were the three most significant improvement areas.

2. More specifically, respondents reported learning with regard to an array of knowledge and skills and belief changes (Questions 14 & 15):
3. Responses to the five qualitative questions further revealed some significant themes of learning, including, but not limited to, concepts and theories of SLA regarding the differences between BICS and CALP, the stages and process of language development and SLA, using visuals and pictures and choosing materials that are visually supportive, using alternative forms of assessment to gauge students’ learning, learning about students’ cultures, and ways to modify a test.

4. Respondents believed that the ECTC program affected the way they instructed their ELL students, and the impact of the ECTC program on their teaching practices was mainly seen in their implementation of the SIOP Model and instructional practices related to assignment and assessment. In addition, the
majority of the respondents already shared their ECTC learning with other teachers in school.

5. The qualitative responses with respect to the changes enacted in teaching practices confirmed the quantitative findings but revealed more nuanced insights into how the respondents enacted changes in vocabulary instruction, teacher collaboration, assignment/assessment modifications, and using various means and (SIOP) strategies (visual means, strategies for making content comprehensible, and scaffolding strategies) to meet the needs of ELL students.

6. Respondents reported increased teacher efficacy for teaching ELL students. This was reflected in not only how they perceived their own ability to teach ELLs, but also their perception of the ELL students’ academic performance.

7. With regard to the various school (contextual) factors, the respondents’ opinions were divided with regard to “time to make modifications for ELLs,” “support of school administration,” “the range of ELL students’ ability and language proficiency levels,” “resources and support services available at school for ELLs,” and “opportunities for PD in relation to ELL education.” This indicates that while some respondents believed that the above-mentioned factors constituted obstacles/hindrances for their work, the other teachers did not.

8. In addition, the majority of the respondents believed that “pressure to help students pass state tests,” “pressure to cover all the content standards,” “communicating with ELL students’ parents,” “other competing professional initiatives in school,” and “other teachers who lack the necessary knowledge and skills to teach ELLs” were major obstacles (or hindrances) that had a negative
impact on their teaching practices. Comparatively, the majority of the respondents identified “the school's ESL services” as a facilitator for their teaching practices.

9. Respondents had an overall positive evaluation of the various design and content features of the ECTC program, and in particular they believed that opportunity to learn specific instructional strategies, opportunity to collaborate with teachers from the same school or in the same content area, and opportunity to engage in in-depth discussion of content and strategies with other teachers were the three most important features that had a positive impact on their learning experience and subsequence changes in their teaching practices.

Based on the four research questions, this chapter has reported the results obtained via the online survey. In the following chapters, results from the three case studies will be reported. While Chapter 4 primarily focused on the quantitative data, the next three chapters will focus mainly on the qualitative data based on the interviews and classroom observations.
Chapter 5: Case Report 1 - Ann

Chapters 5-7 present reports of the three case study teachers. Each chapter starts with a description of the case and the context of the case. This is followed by a presentation of the research findings, organized by the four research questions.

About Ann

Ann is a middle school science teacher. At the time of the study (2012), she was teaching 6th grade science and language arts and had already taught for seven years. The year with the ECTC program (2010-2011) was her first year teaching in her current school district.

Ann is a young white woman in her late twenties. She has a bachelor’s and a master’s degree in elementary education and is certified to teach 1st through 8th grade. Her early few years as an educator were spent teaching in small, rural communities, where the ELL population was very low, while her current school district has a fairly large ELL population that is growing quickly. According to Ann, her school has reached a population of 800 students, among which about 100 (12.5%) are ELL students. The majority of the ELLs (about 95%) are immigrants from Somalia, although the nationalities of the other ELLs vary. The school population has been increasing in general in recent years, but the ELL student population has increased particularly rapidly, and ELL students account for ¼ of the newly enrolled students.
Before she participated in the ECTC program, Ann had never worked with “students who speak very different languages and have extremely different cultures,” nor had she been trained to work with this population of students. So, when she was given a class with seven ELL students to teach, she felt at a loss as to what to do. The ECTC program, as Ann said, came about at the perfect time for her.

Ann described herself as an animated person who tries to build a rapport with students. She believes that mutual trust between the teacher and the students is key to promoting learning. As she said, “if they buy in to you, and if they know you buy in to them, they will buy in to you, and they will be able to learn and trust.”

When asked to describe her teaching philosophy, Ann said that she liked to “have fun and make learning a good experience,” and she always strived to “engage students, make lessons authentic to them and bring it back to what it has to do with their lives.”

At the time of this study, Ann was teaching eight ELL students, with seven of them gathered in her eighth-period science class. Ann described the ELL students that she got this year as being “an exceptional group of kids, all very very nice.” Most of these students had been in the U.S. school for a couple of years and were performing at an intermediate level; only two of them were weak in reading and writing and needed constant assistance.

When facing her students, Ann presented herself as an enthusiastic and engaged teacher. She was animated, talking in a loud and clear voice and often using bodily gestures to accompany her explanation or to emphasize a point. This side of Ann was, however, combined harmoniously with another side of her: a disciplinarian who would be
watching out for any disruptive behavior. She was vigorous yet poised; she was strict yet caring and patient.

**Research Question 1:**

**What Did Ann Learn About Teaching ELLs Through the ECTC Program?**

Ann used a “jigsaw puzzle game” metaphor to describe her experience with teaching ELLs. For her, teaching science to a group of students who did not speak her language was like “playing a jigsaw puzzle game.” The ECTC program helped her “put the pieces together.”

Ann’s story starts with “the puzzle pieces” that she had gathered from the ECTC program. Notwithstanding her reporting of “many things” learned from the ECTC across the data sources (survey, course reflections, and interviews), Ann reiterated two aspects of her ECTC learning: the SIOP strategies and strategies for modifying assessments, which had been added as important components of her pedagogical content knowledge. Underlining the learning of strategies were Ann’s shifting perspectives, which were facilitated by the more ideological aspects of her learning—cultural awareness and understanding about the challenges that face ELL students in American schools. These aspects had not only shed light upon the legitimacy of incorporating those teaching strategies, but also had become catalysts that induced changes in Ann’s teaching practices.

**The SIOP Model**

In retrospect, Ann thought that the SIOP Model was “amazing” and was what every content teacher who had ELLs in their class should be trained in. She believed that after she was exposed to the SIOP Model by the ECTC program, she was capable of examining her lesson more closely by breaking it down into “components” and seeing
“what I need to do for them to make it more meaningful, so that they can understand it better, so that they can actually grasp the concept of it.”

More importantly, Ann learned how to modify her lessons for ELL students, making sure that she gave them the content without “dumbing it down.” When asked to enumerate some SIOP strategies that she had learned from the ECTC program, Ann responded that what stuck out most in her memory were such teaching techniques as offering more visuals and monitoring her speech. Particularly, Ann reported that increasing attention to her own speech patterns was motivated by an awareness that what she, as a native speaker of English for more than twenty years, took for granted. She realized “the wording of questions and sentences” may be confusing for someone who is just learning the language.

**Second Language Assessment**

Assessment was another important area that Ann had seen much improvement on. Ann believed that after taking the ECTC classes, she was able to “more accurately assess their (the ELL students’) learning by getting through the language barriers” and “produce authentic forms of assessment.”

During the interviews, Ann was still able to recall some details from the second language assessment class in the ECTC program. She believed that what the class had taught her about changing the wording of test questions was very helpful. The class also brought to her awareness the fact that some of the questions in standardized tests (like the OAA) were worded in a non-ELL-friendly way that would be “misleading and confusing” for ELL students.
Ann’s response to one of the survey questions, which asked the respondents to list three things that they had learned about second language assessment (Question 11), indicated that her major learning regarding this area mainly included ways to modify a test, types of assessment accommodations, and incorporating the four language domains into assessment.

Some modifications for assessments would include less multiple choice options, narrow down matching and use simple sentence structure for questions and directions; some accommodations include extended time and use of dictionary; assessment should include all four language skills (reading, writing, speaking, listening).

**Cultural Awareness and Mentality Change**

In both her course reflections (during the program) and the interviews (retrospective data/reflections), Ann reported that her “first and biggest change” occurred in her attitude and how she perceived her ELL students. The change was mainly brought about by her newly acquired awareness regarding the “sociocultural aspects that surrounded students and classroom.” In her reflection journals and online discussion posts, Ann admitted her “ignorance” when it came to understanding the backgrounds, cultures, and struggles of her ELL students:

I found that there is a lot I do not know about my ELL students and their cultures. I realized that some of my frustrations are stemmed from my own ignorance. After reading how other cultures view certain behaviors completely differently from what I am accustomed to, I reflected back to how I have responded to some of my ELL students. I did not take into consideration that their culture and beliefs may be the opposite of what I was expecting from them. (640, reflection journal 1)

Knowing that some of their behaviors may be a result of their beliefs and culture had made Ann see and interact with her ELL students in a different light. She began to take into account her students' culture when she interpreted their reactions, behaviors, and
responses, and showed interest in learning more about the students’ culture in order to avoid misunderstanding and misinterpretation of students’ behavior.

I now wonder if Mark’s behavior (downcast eyes, look of shame, not completing work, etc.) is a result of his culture. It is very possible my original thought is wrong. Maybe he does care and respect my efforts to help him succeed. It is now my job to learn more about Mark’s culture and home life in order to reduce this gap between the ways we view each other. Having this new found information brought to light many negative behaviors and struggles I was noticing in my ELL students in the beginning of this course. (640, Carmen discussion)

In retrospect, Ann still believed that “changes in her mentality” were even more important than learning the “cool strategies.” Echoing the comments that she made on ELL students’ behaviors and struggles one year ago (when she took the first ECTC course), Ann thought that she had “a completely different mentality” now about the “defiant” behaviors demonstrated by some of her ELL students. As she said, “understanding, patience, and recognition are all apparent virtues that I gained from ECTC.”

Another “mentality change” was associated with her understanding about the challenges that the ELL students were facing in the American school system. Not only did she feel more empathetic of ELL students who were placed in “the school system with very little English background and familiarity with the school customs and culture,” she was more aware that ELL students were “doing double the work” for acquiring academic literacy because “they are still trying to acquire the English language and on top of that, they have to learn academic content in a language they are still not entirely familiar and comfortable with.”
This understanding caused a shift in her “mentality and thinking about using the strategies” in terms of how she should incorporate more ELL-friendly strategies into her lessons to meet the different language acquisition needs of these students.

**Collaboration with the ESL Teacher**

The collaborative format of the ECTC program provided a chance for Ann to work more closely with the ESL teacher in her building (who was also one of the ESL coaches of the ECTC program) by discussing with her how to meet the needs of her ELL students.

This class has also been a great way for me to increase my collaboration with the ESL teacher. Now that I have a better understanding of ELL students and their needs, we can discuss the best way to meet those needs. Our collaboration is not to the co-teaching point yet, and I am not sure it ever will be because she is stretched too thin in the school, but it has definitely improved in the last ten weeks. (640, reflection journal 3)

Having a better understanding of the benefits of teacher collaboration and co-teaching, Ann looked forward to an opportunity to have co-teaching experiences in her classroom because she believed that “we each have our specialties and could use the assistance of specialization from other teachers.” She wrote: “I am going to try to make a point of working more closely with our ESL teacher and really try next year to integrate our classes and try co-teaching.”

**Research Question 2:**

**How Did Ann’s Learning from the ECTC Program Facilitate Changes in Her Teaching Practices?**

Central to Ann’s story is how she “put the pieces together” through conscious implementation of her ECTC learning. Both the survey and the interviews suggest that
implementing the SIOP strategies and modifying tests were the two most important changes that Ann had brought to her classroom. These changes were facilitated by a collaborative partnership between her and the ESL teacher, Ms. D. In addition, Ann’s effort to teach academic literacy skills was reflected in her emphasis on key vocabulary and increasing attention to teaching reading skills.

**Implementation of the SIOP Model**

Ann’s survey responses (Question 16 specifically) indicated that she implemented 12 SIOP features with increased frequency after the ECTC program, and these features fell under six SIOP components: lesson preparation, building background, comprehensible input, interaction, lesson delivery, and review and assessment. During the interviews, Ann also mentioned using the following SIOP strategies with more consciousness of their benefits as a result of her ECTC training.

**Using visuals.** Ann said that one of the biggest changes in her classroom teaching techniques was using more visuals because she was more aware of the need to “have things for them (the students) to actually see, instead of yes her mouth was moving, but what does she say?” She believed that using visuals (or real objects) was an effective strategy to help students learn the content and the language at the same time.

With the language, I try to have more visuals, like today, we talked about sand, “what is sand? where do you see it?” They might look at the word and go, “sand, I don’t know what that is,” and then try to make it more meaningful so that they understand what it is. If I only give them sand, they know what sand is, that’s the language, not the content. So I try to do things like that, so that I know they know what it is. Then have something available to show them. (Interview 2)

**Giving oral and written instructions.** Compared with her other class periods, Ann found that she used the board more frequently in the eighth period and avoided
giving only oral instructions before she required the students to engage in a task or activity. She also made sure that she walked students through each step of a hands-on activity and model what they were expected to do. The use of board magnets as a visual means to give instructions/directions was an idea that she learned from the ECTC: she had ready four magnets (an ear, a lip, a book, and a pen) on the board so that “the students could quickly know the instruction was to read something, to listen, to speak, or to write.”

During our second interview, Ann showed me a project rubric that she designed, along with the project requirements. She shared that while she used the same project before the ECTC, for this year, she added the rubric and revised the way in which she presented the project requirements. The project contained a visual piece and a written piece. Ann presented her requirements for each piece in a graphic format, using bolding, underling, capitalized words, and different font sizes to highlight different types of information. In addition to going over the written requirements with the students in class, she also used the rubric as a checklist for the students to self-monitor their progress and track whether they were meeting the requirements. Ann said, “I want everything on paper so that the students could see. It’s more tangible. My ELLs like it.”

**Varying group structures.** The ECTC training had made Ann become more conscious of how effective grouping strategies would help her ELLs learn in a more supportive environment. “Focusing on grouping is a big thing, because with science we’re working in groups a lot.”

Ann told me that previously she just had all the ESL students sit together for group work, but after the ECTC, her decisions about how to group students for activities
became more purposeful. Rather than giving students the freedom to choose whom they
wanted to work with, as she did with students in the other class periods, Ann took more
effort to create and vary student group configurations according to their academic and
English proficiency levels, so that (1) weaker ELL students were supported by stronger
ELL students, (2) and stronger ELL students had the opportunity to work with English-
speaking students who were willing to help and would not dominate the talk.

She felt that because of her raised awareness and effort to “model a sense of
community,” the class this year was friendly and supportive of each other.

This class I feel like we really make it as a community. They help each other. If
someone cannot say a word correctly, they help them out, they don’t make fun. I
thought last year, we didn’t have that sense of community in that class. It was
kind of divided. I kind of think it’s my approach as well, my thoughts and
feelings about it, what I know about culture, about the students, how much more
I’m aware of them. I think that has helped a little bit as well because again if I am
not going to buy into it, you are not going to either. If I’m modeling a sense of
community, then they will as well. So I think that would be the biggest thing.
(Interview 2)

Pacing of lessons. Ann also reported making a more conscious effort to “slow
down” and provide the ELL students with more detailed instructions and explanations
and more time for group work and hands-on activities.

For the other classes, I wasn’t as detailed as my instructions. But in my eighth
period, I put things on the board. I try to hit every single group, and if they had
questions, I let them go out, and actually manipulate the tools. So it was a little
bit more slower pace, but for the other classes, I don’t give as much explanation.
(Interview 2)

Observations I conducted using the SIOP protocol confirmed Ann’s self-ratings of
her implementation of the SIOP Model.
Table 30

*Ann’s SIOP Scores*

<table>
<thead>
<tr>
<th>Lesson Preparation</th>
<th>Obs1</th>
<th>Obs2</th>
<th>Obs3</th>
<th>Obs4</th>
<th>Obs5</th>
<th>Avg</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Content objectives clearly defined, displayed, and reviewed with students</td>
<td>2\textsuperscript{14}</td>
<td>2</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0.8</td>
</tr>
<tr>
<td>2. Language objectives clearly defined, displayed, and reviewed with students</td>
<td>3</td>
<td>2</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>1</td>
</tr>
<tr>
<td>3. Content concepts appropriate for age and educational background level of student</td>
<td>4</td>
<td>4</td>
<td>4</td>
<td>4</td>
<td>4</td>
<td>4</td>
</tr>
<tr>
<td>4. Supplementary materials used to a high degree</td>
<td>3</td>
<td>4</td>
<td>4</td>
<td>4</td>
<td>4</td>
<td>3.8</td>
</tr>
<tr>
<td>5. Adaptation of content to all levels of student proficiency</td>
<td>3</td>
<td>N/A</td>
<td>3</td>
<td>3</td>
<td>N/A</td>
<td>3</td>
</tr>
<tr>
<td>6. Meaningful activities that integrate lesson concepts with language practice opportunities for reading, writing, listening, and/or speaking</td>
<td>4</td>
<td>4</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>3.4</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Building Background</th>
</tr>
</thead>
<tbody>
<tr>
<td>7. Concepts explicitly linked to students’ background experiences</td>
</tr>
<tr>
<td>8. Links explicitly made between past learning and new concepts</td>
</tr>
<tr>
<td>9. Key vocabulary emphasized</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Comprehensible Input</th>
</tr>
</thead>
<tbody>
<tr>
<td>10. Speech appropriate for students’ proficiency levels</td>
</tr>
<tr>
<td>11. Clear explanation of academic tasks</td>
</tr>
<tr>
<td>12. A variety of techniques used to make content concepts clear</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Strategies</th>
</tr>
</thead>
<tbody>
<tr>
<td>13. Ample opportunities provided for students to use learning strategies</td>
</tr>
<tr>
<td>14. Scaffolding techniques consistently used, assisting and supporting student understanding</td>
</tr>
<tr>
<td>15. A variety of questions or tasks that promote higher order thinking skills</td>
</tr>
</tbody>
</table>

(Continued)

\textsuperscript{14} 0= Not evident, 1= Barely evident, 2= Somewhat evident, 3= Evident, 4= Highly evident
<table>
<thead>
<tr>
<th>Interaction</th>
<th>Obs1</th>
<th>Obs2</th>
<th>Obs3</th>
<th>Obs4</th>
<th>Obs5</th>
<th>Avg</th>
</tr>
</thead>
<tbody>
<tr>
<td>16. Frequent opportunities for interaction and discussion</td>
<td>4</td>
<td>4</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>3.4</td>
</tr>
<tr>
<td>17. Grouping configurations support language and content objectives of the lesson</td>
<td>4</td>
<td>4</td>
<td>0</td>
<td>2</td>
<td>4</td>
<td>2.8</td>
</tr>
<tr>
<td>18. Sufficient wait time for student responses consistently provided</td>
<td>3</td>
<td>3</td>
<td>3</td>
<td>3</td>
<td>3</td>
<td>3</td>
</tr>
<tr>
<td>19. Ample opportunities for students to clarify key concepts in L1</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td><strong>Practice &amp; Application</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>20. Hands-on materials and/or manipulatives provided for students to practice using new content knowledge</td>
<td>2</td>
<td>3</td>
<td>1</td>
<td>2</td>
<td>4</td>
<td>2.4</td>
</tr>
<tr>
<td>21. Activities provided for student to apply content and language knowledge</td>
<td>3</td>
<td>4</td>
<td>2</td>
<td>2</td>
<td>4</td>
<td>3</td>
</tr>
<tr>
<td>22. Activities integrate all language skills</td>
<td>2</td>
<td>3</td>
<td>3</td>
<td>2</td>
<td>4</td>
<td>2.8</td>
</tr>
<tr>
<td><strong>Lesson Delivery</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>23. Content objectives clearly supported by lesson delivery</td>
<td>4</td>
<td>4</td>
<td>4</td>
<td>4</td>
<td>4</td>
<td>4</td>
</tr>
<tr>
<td>24. Language objectives clearly supported by lesson delivery</td>
<td>4</td>
<td>4</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>1.6</td>
</tr>
<tr>
<td>25. Students engaged approximately 90% to 100% of the period</td>
<td>4</td>
<td>4</td>
<td>4</td>
<td>4</td>
<td>4</td>
<td>4</td>
</tr>
<tr>
<td>26. Pacing of the lesson appropriate to students’ ability levels</td>
<td>4</td>
<td>4</td>
<td>3</td>
<td>4</td>
<td>4</td>
<td>3.8</td>
</tr>
<tr>
<td><strong>Review &amp; Assessment</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>27. Comprehensive review of key vocabulary</td>
<td>3</td>
<td>3</td>
<td>3</td>
<td>3</td>
<td>3</td>
<td>3</td>
</tr>
<tr>
<td>28. Comprehensive review of key content concepts</td>
<td>4</td>
<td>4</td>
<td>4</td>
<td>4</td>
<td>4</td>
<td>4</td>
</tr>
<tr>
<td>29. Regular feedback provided to students on their output</td>
<td>3</td>
<td>3</td>
<td>3</td>
<td>3</td>
<td>3</td>
<td>3</td>
</tr>
<tr>
<td>30. Assessment of student comprehension and learning of all lesson objectives throughout the lesson</td>
<td>3</td>
<td>3</td>
<td>2</td>
<td>3</td>
<td>3</td>
<td>2.8</td>
</tr>
</tbody>
</table>

**Total scores:** 93/120 94/116 71/120 79/120 85/116  
**Percentages:** 77.5% 81% 59.2% 65.8% 73.3% 71.4%

As can be seen in Table 30, the total scores for each observation were: 77.5%, 81%, 59.2%, 65.8%, and 73.3%, and the average of the five total scores was 71.4%. The
comparatively low scores of the last three lessons were mainly caused by Ann’s failure to
display content and language objectives (SIOP feature 2). In addition, two SIOP
features—“opportunities to use learning strategies” and “opportunities to clarify concepts
in L1” —that were not evident (score of 0) over the five observations further lowered the
total scores.

Table 31

*Frequency Counts of Features at Each “Evident” Level (Ann)*

<table>
<thead>
<tr>
<th></th>
<th>Highly evident features</th>
<th>Evident features</th>
<th>Somewhat evident features</th>
<th>Barely evident features</th>
<th>Not evident features</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lesson 1</td>
<td>12</td>
<td>13</td>
<td>3</td>
<td>0</td>
<td>2</td>
</tr>
<tr>
<td>Lesson 2</td>
<td>15</td>
<td>10</td>
<td>2</td>
<td>0</td>
<td>2</td>
</tr>
<tr>
<td>Lesson 3</td>
<td>6</td>
<td>12</td>
<td>5</td>
<td>1</td>
<td>6</td>
</tr>
<tr>
<td>Lesson 4</td>
<td>8</td>
<td>13</td>
<td>4</td>
<td>0</td>
<td>5</td>
</tr>
<tr>
<td>Lesson 5</td>
<td>15</td>
<td>8</td>
<td>0</td>
<td>1</td>
<td>5</td>
</tr>
<tr>
<td>Average</td>
<td>11</td>
<td>11</td>
<td>3</td>
<td>4</td>
<td></td>
</tr>
</tbody>
</table>

As far as individual SIOP features are concerned (Table 31), Ann’s five lessons
demonstrated a moderate to high level of implementation of the SIOP Model. On
average, 22 features (73.3%) were implemented at the “evident” or “highly evident” level,
which meets the criterion for “high level of implementation” set by the SIOP experts

---

15 The SIOP Model book defines “high implementers” as those teachers whose lessons consistently include
75% or more of the 30 features of the SIOP protocol as measured during classroom observations. In this
study, I define high implementation of the SIOP Model as lessons that contain 22 or more SIOP features
that are implemented at the “evident” or “highly evident” level. Lessons that contain 15 or more (but fewer
than 22) SIOP features that are implemented at the “evident” or “highly evident” level indicate a moderate
level of implementation. Lessons that contain fewer than 15 SIOP features that are implemented at
“evident” or “highly evident” levels indicate an inadequate level of implementation.
(Echevarria et al., 2013, p. 285). Four features (13.3%) were implemented at the “barely evident” or “not evident” level.

In addition, the four SIOP features that Ann mentioned during the interviews—“using visuals”\[^{16}\], “giving oral and written instructions” (SIOP feature 11), “varying group structures” (SIOP feature 17), and “pacing of lessons” (SIOP feature 26) (pp. 177-178)—were implemented with high fidelity according to the observation data. The average implementation scores for the four features were 3.8, 3.6, 2.8, and 3.8. For instance, to make the content more accessible for the students Ann used a variety of “visual means” as supplementary materials, including graphic organizers, real objects, pictures, teacher’s drawings, posters, and web resources, as Table 32 illustrates.

Table 32

*Visuals that Ann Used in Five Lessons*

<table>
<thead>
<tr>
<th>Lesson 1</th>
<th>Lesson 2</th>
<th>Lesson 3</th>
<th>Lesson 4</th>
<th>Lesson 5</th>
</tr>
</thead>
<tbody>
<tr>
<td>cartoon; drawings on board; charts from textbook; periodic table poster; internet pictures; a temperature continuum on the study guide for students to label the process of physical changes</td>
<td>a plastic container with different types of cereals to help students understand “mixture”; sand, salt, iron shearing, etc. that the teacher used to demonstrate how to separate a mixture</td>
<td>drawings on board; a poster of flowering plant reproduction; internet pictures; pictures from textbook; a Venn diagram on the study guide that compared the features of sexual and asexual reproduction</td>
<td>drawings on board; a poster of DNA; pictures from textbook; animations on the web to watch mitosis in action; study guide with white space for students to make drawings</td>
<td>drawings on board; microslide viewers and onion root-tip slides</td>
</tr>
</tbody>
</table>

\[^{16}\] This strategy is a significant component of SIOP features 4 and 12.
In addition, Ann’s lessons were characterized by a number of different grouping arrangements: individual work (individual responses), partners, groups of four or five, and the whole class (Table 33). She planned lessons that used a balance of whole-class instruction for introducing new concepts and information and partner and group work that allowed the students to review and practice using academic English through the four language processes. When assigning students to partners or groups, she employed different strategies, using name sticks to assign groups randomly or pairing students on purpose according to their first languages (e.g., native speaker with non-native speaker) and/or ability levels (stronger ELLs with weaker ELLs).
Table 33

Partner or Group Activities in Ann’s Lessons

<table>
<thead>
<tr>
<th>Format</th>
<th>Content</th>
<th>Targeted language skills</th>
</tr>
</thead>
<tbody>
<tr>
<td>The “green cards” game (Lesson 1)</td>
<td>Groups of 4 or 5 (with 1 to 2 ELL(s) in each group)</td>
<td>Each student was given a green card with descriptions of one distinguishing characteristic of a state of matter (e.g., solid, liquid, gas). Each had to find other group members who had the same state of matter.</td>
</tr>
<tr>
<td>Lab activity (Lesson 2)</td>
<td>Partner work (Each ELL was assigned to work with a native speaker.)</td>
<td>Students worked with their partners to develop a procedure for separating four types of solids in a mixture.</td>
</tr>
<tr>
<td>Partner demonstration (Lesson 4)</td>
<td>Partner work (Desk pairs; each ELL either worked with a native speaker or a more advanced ELL.)</td>
<td>Students demonstrated and explained to their partner the stages of mitosis.</td>
</tr>
<tr>
<td>The cookies activity (Lesson 5)</td>
<td>Partner work (The teacher used popsicle sticks to assign partners.)</td>
<td>Students described in writing the stages of mitosis and modelled the process by using manipulatives (Oreo cookies &amp; white sprinkles).</td>
</tr>
</tbody>
</table>

Note. Listening is integrated in each of these activities.

Well-paced lessons, as another indicator of the influence of ECTC training on Ann’s classroom instruction, were evidenced by how she structured each lesson, which usually consisted of three distinct parts: (1) warm-up question(s) followed by a brief review of the previous lesson(s), (2) lectures on and/or practice of new content, and (3) a quick wrap-up or review. The warm-up questions were meant either for students to apply their newly learned knowledge or to help them build background. The warm-up question for Lesson 3, for instance, asked students to decide whether each of the organisms (i.e.,
seahorse, starfish, shark, hydra, turtle, or sea otter) reproduced through sexual or asexual reproduction. Ann also took the opportunity to build background and vocabulary for the ELL students by showing them pictures of seahorses and sea otters on the internet and providing a description of a hydra: “Hydra [drawing a picture on the board]. Remember micro-slide viewer with pictures of hydra. It’s multicellular, it’s made up of multiple cells. But it’s microscopic, it’s very very small and lives in pond water.”

The following class vignette (Lesson 1) shows how Ann used a cartoon at the beginning of the class to get students prepared for the few concepts that were to be taught for the lesson: freezing, solid, and freezing point.

Ann began the lesson by showing a cartoon on the overhead projector and said, “explain this cartoon for me.” The cartoon depicted a man jumping off a diving board into a semi-frozen pond and shouting “it’s freezing” after he was in the water. Ann asked an ELL student, “what’s this kid doing here?” The student didn’t seem to understand the question and said, “it’s cold … [inaudible].” Ann pointed at the diving board in the cartoon and asked, “what’s this thing over here?” The student replied, “a diving board?” Ann said, “right, what do you do with the diving board?” The student replied, “jump off the board.” Ann echoed his answer with a body movement that imitated water diving and said “you jump off the board, right, so this kid jumps off diving board, and he said, ‘wow you weren’t kidding, this pond really is freezing.’ What does he mean by that?”

After pausing a seconds to wait for the student’s response, Ann repeated the question, “what does he mean by that? The pond is freezing?” One student responded, “the pond is cold.” Ann shook her head and asked back, “is it cold? Is that what ‘freezing’ means here? ‘Freezing’ means cold?” The students answered with a mix of “yes” or “no.” Noticing that one ELL student got the right answer, Ann called on him. The student replied, “it’s still water, it’s solid now.” Ann restated his answer, “yes, it’s still water, but it has turned into …?” (with a rising tone). The student helped her finish the sentence, “solid.” Ann wrapped up the warm-up by saying, “it doesn’t necessarily mean cold. Freezing means when a substance, when a state of matter, goes from a liquid to a solid. This pond usually is a liquid, but reaches its freezing point, so now it is a solid.”
For two lessons, Ann ran out of time at the end to recapitulate the day’s content. In general, however, Ann paced each part pretty well, making sure that there were enough repetitions and reviews of key content concepts and that students were given time to ask questions and clarify any misconceptions that they might have. Moreover, Ann controlled the pace of the lessons by giving both oral and written instructions for activities. The written instructions were either posted on the board or typed out on paper. The following vignette taken from Lesson 5 demonstrates how Ann prepared students for the “cookies” activity by providing detailed instructions, walking them through each step of the activity, and modeling what they were expected to do.

Most of the lesson time was spent on a hands-on activity to further reinforce the students’ understanding and mastery of the process of mitosis. Students were going to work in pairs. Ann used popsicle sticks to assign partners and said, “I will give you 10 seconds. After 10 seconds, you need to be quiet and seated.” After all the pairs took their seats, Ann took out a package of Oreo cookies. She said, “you cannot eat these cookies just yet. You are going to get 5 cookies, why do you get 5 cookies? How many stages of mitosis?” Students responded in chorus, “five.” Ann said, “each cookie is going to represent a stage of mitosis.” She then took out a stack of sheets and distributed them to the students. The sheet was two-sided. On one side (titled “modeling mitosis”) were the problem, background information, materials, and step-by-step instructions for doing the activity. The other side included a table titled “the stages of mitosis,” where students were asked to place the cookie for each stage and explain in writing what was happening at this stage. Ann asked a couple of students to read out the instructions and gave more explanations as they read. Then she distributed the “materials” that each group would need: two sheets of paper towel, the cookies, sprinkles, and tweezers. Instead of asking the students to start right away, Ann first modeled to them what they were supposed to do step-by-step and answered their questions.

**Teaching Academic Literacy Skills**

**Emphasizing key vocabulary.** Ann’s effort to promote students’ development of academic literacy skills was first reflected in her constant focus on key vocabulary words.
As Ann reported in the survey and the interviews, she made it a point to have the ELL students “see the words a lot” and “say the words a lot.” To these ends, she built into her daily routine a quick review of vocabulary words (and key concepts) at the beginning of the class.

One “cool strategy” that Ann reported she learned from the ECTC program was the “word wall.” She modified it so that it became part of their daily or weekly vocabulary check.

I don’t know if you notice this little chalk board over there and this green things along the door. We have vocabulary words up there and every time we learn new vocabulary word we add it up there, and as we go out during that unit as we go out of the door, I would say, at least three times a week, they cannot leave until they touch one and they tell myself and Ms. D [the ESL teacher] the definition of it, or we will give them a definition they have to touch which vocabulary word it is before they can leave. So that’s a way for us to review it. (Interview 2)

Ann told me that she “did more of linguistic analysis of words” in her science class after the ECTC program. While lexis and grammar were always major components of her language arts class, she began to talk more about prefixes, suffixes, and word formation when she taught science and brought to the attention of the ELL students the grammatical knowledge that they had learned from their ESL class.

Analysis of the observation data indicated that Ann provided a variety of ways for students to learn, remember, and use the key vocabulary words, and her students were immersed in a “word-rich language environment,” where they got to see, hear, speak, and write the key vocabulary words. Moreover, Ann used warm-up activities, graphic organizers, and end-of-class review to help students compare, review, and/or build connections between concepts of the previous lessons and what they were learning in the
current lesson (e.g., sexual reproduction vs. asexual reproduction). Table 34 lists the key vocabulary words for each observed lesson:

Table 34

*Vocabulary Words Explicitly Taught over Five Lessons (Ann)*

<table>
<thead>
<tr>
<th>Lesson 1</th>
<th>Lesson 2</th>
<th>Lesson 3</th>
<th>Lesson 4</th>
<th>Lesson 5</th>
</tr>
</thead>
<tbody>
<tr>
<td>liquid, solid, gas, melting point, condensing point, boiling point, plasma, Celsius, Fahrenheit</td>
<td>mixture, element, compound</td>
<td>sexual/asexual reproduction, reproductive cells, sperms, eggs, fertilization, zygote, sea otter, seahorse, hydra</td>
<td>mitosis, DNA, chromosome, gene</td>
<td>mitosis, DNA, chromosome, gene</td>
</tr>
</tbody>
</table>

The way in which Ann taught the key word “mitosis” (Lessons 4 & 5) was an example of how she employed multiple means to help students learn the words through repeated exposure and practices and across different contexts. In order to “drill the word into the students’ heads,” Ann wrote it on the board and left it there for three lessons; she explicitly taught the pronunciation of the word and had the students repeat after her. She let the students write down the definition of mitosis in their notes and repeatedly explained and demonstrated the concept (the five stages of mitosis) through different means: lectures displayed on the overhead, “body demonstrations,” web animations, and drawings. Students, on the other hand, got to reinforce and practice using the concept through pair work and hands-on activity. Interestingly, during Lesson 3 I observed Ann repeating and asking the students to say “sperm and eggs” as examples of “reproductive
cells” again and again, and I even heard her saying, “I want you to get sick of saying these two things!”

Ann: (pointing to the guided notes on the overhead) Now the egg cells and sperm cells are what we call reproductive cells because these cells are cells that are used in …

Ss: Reproducing!

Ann: So a reproductive cell is a cell that is involved in reproducing that offspring, that new organism. Remember we talked about offspring is like a child, the new organisms.

Ss: Yes!

(interrupted by a student’s question)

Ann: (going back) Now your reproductive cell again, what’re two reproductive cells?

Everyone!

Ss: Sperm and eggs.

Ann: Sperm and eggs. Very good! I want you to get sick of saying these two things.

Ss: Sperm and eggs ……

**Increasing attention to reading skills.** With regard to teaching reading as an important academic literacy skill, the ECTC influence was mainly seen in how Ann used leveled readers to help ELL students access content. During our first interview, she showed me some leveled readers that they recently found:

There are 3 levels, like lower, middle, and high, and it’s same content in those books, and we haven’t used them before, I just found them this year. I give them [ESL students] these, and they read like textbook. (Interview 1)

She also had a “resource folder” of materials she had collected to accommodate the needs of different students. The resource folder contained content-related materials at different reading levels, and it was made available for the students to use for doing their group projects.

In addition, over the year I did research with Ann, she reported increasing her attention to students’ reading skills and making a more conscious effort to incorporate reading-focused activities into her lessons. The interview data indicated that Ann was
aware that her ELL students were weak in their reading comprehension. When asked what challenges that she thought the ELL students had in learning science, Ann referred to “responding with writing” and “understanding the wording of a question” as the major issues of her ELLs.

The biggest thing would be responding with written work and understanding the wording of a question. Like they read on their own, whether we’ve changed it or not, a lot of times they are like, “I don’t really understand what that means.” Structure is the biggest thing, because I think that if we went over vocabulary, they knew that word, they could pick that up, but what the question is asking them is the biggest thing, what does that question want me to do? (Interview 1)

Ann’s increasing attention to teaching reading skill was evident in how more frequently she talked about the reading activities that she had incorporated. Table 35 summarizes Ann’s descriptions and comments with regard to how she had students read in and out of class in 2012 and in 2013.
Table 3

Ann’s Comments on How to Teach Reading

<table>
<thead>
<tr>
<th>2012</th>
<th>2013</th>
</tr>
</thead>
<tbody>
<tr>
<td>• “Not a whole lot of reading”</td>
<td>• Time spent on reading was still limited.</td>
</tr>
<tr>
<td>• “Reading a procedure, or notes on the overhead together”</td>
<td>• Incorporated more reading activities like buddy reading, teacher-led reading, and independent reading</td>
</tr>
<tr>
<td>• Used the textbook as “an alternative resource”</td>
<td>• Post-reading activity: KWLW, graphic organizers, whole-group discussion</td>
</tr>
<tr>
<td>• Wouldn’t have students read pages from the textbook</td>
<td>• Scaffolding: rephrased and reiterated things to help students understand the text</td>
</tr>
<tr>
<td>• Provided leveled/supplemental reading materials for students’ projects or additional content support</td>
<td>• Taught how to read a book (reading strategy)</td>
</tr>
<tr>
<td></td>
<td>• An upcoming research project that incorporated reading and writing. Students were asked to write a one-page paper, and they were provided leveled reading books as references.</td>
</tr>
</tbody>
</table>

During our first two interviews in 2012, Ann admitted that she spent less time than she was supposed to “having students read in class …. There is not a whole lot of reading, unless reading a procedure, or notes on the overhead together.” On three occasions during our interviews, she reiterated that reading was “something that I think I should work more on.”

Ann’s difficulty in incorporating reading could be explained in part by the reading level of the textbook that the students were using, which was “a little bit higher, even for our non-ESL kids.” Having other resources/materials at her disposal (e.g., videos, internet resources, guided notes, and graphic organizers), Ann used the textbook as “an alternative resource” and would seldom make her students read (multiple pages) from the
textbook in class and even less so with her ELL students. Whenever she had to make
them read the textbook, she would try to adapt the text by changing “the way it is written
and the way I present to them, so that it’s a lot more simple sentences, not as many
complex sentences.” However, because of “time constraints,” her efforts to modify the
text for the ELL students in this way waned as the year progressed.

Ann’s reported struggle to balance reading and speaking activities was also
reflected in the observation data. Over the five lessons, I observed one instance where
Ann had students read aloud (two paragraphs) from their textbook (Lesson 3).

---

Ann: So open your books to page 50, five-zero.
(She put on the overhead a Venn diagram with bullet points that compared “asexual
reproduction” and “sexual reproduction.”)
Ann: Yesterday, we read the first paragraph about “asexual reproduction.” The rest of it
is about “sexual reproduction.” So we already know “sexual reproduction,” how many
parents? (Ss: Two.) Two. So let’s go ahead and read about sexual reproduction very
quick.
(She drew a popsicle stick and called on the student whose name was on it to read the
paragraph. The student happened to be an ELL. As the student was reading, Ann
helped her sound out “embryo.” When finished, Ann continued to nominate another
student to read the next paragraph.)
Ann: (referring to the overhead) So, sexual reproduction, a new organism is produced
from, how many parents? (Ss: Two) Two, and those parents you have form from two
different types of cells, called what?
S: Sperm cell and egg cell.
Ann: Very good. Say it aloud, (student’s name).
S: Sperm cell and egg cell.
Ann: Yes, sperm cell and egg cell. Go ahead and write this down.

---

When I conducted the last interview with Ann one year later (in 2013), she still
believed that there was “limited time and opportunity for reading” in her class compared
with the amount of time spent on guided notes and speaking activities. However, she had
already stopped using the old textbook and adopted a new one that was more at the
reading level of her students (especially her ELL students). With the newly acquired reading materials, she was able to build more reading activities into her lessons, like buddy (partner) reading and teacher-led read-aloud sessions with the teacher offering paraphrasing and explanation in the process.

When they do read, rarely is it by themselves. They always have buddies that they are reading to help them, or we read together so that I can reiterate things in a different way. You read something, you have no clue what it says, then I will say it in a different way that maybe helps them. Give them a little bit more assistance as we go over it together. (Interview 4)

Because the ELL students that she got this year were more advanced in their English proficiency, she would let them read independently occasionally but scaffolded the reading task with graphic organizers and whole-class discussion.

I say, “ok read this section here.” Maybe it is a short section, then they read on their own, then we discuss it or start filling in a KWL chart, or graphic organizer something, they might read a little bit on their own, then we will build it up to something else. (Interview 4)

Ann also mentioned teaching students how to read a book by previewing the setup of the book and using the visuals within the book to help them understand the information in the text.

… we talk about how the book is set up, while you’re reading, make sure you’re looking at the pictures that go with it, because they give you the information and captions. We do talk about how to read it a lot too. (Interview 4)

Providing leveled reading books was still a main strategy that Ann used to accommodate the different needs and reading levels of her students. Particularly, she provided books at different reading levels as resources for a research project that incorporated reading and writing.

Reading, we are going to start a research project, where they will be required to read and research on different levels of books on the topics so that they can
choose. Some will be lower level, maybe easier for the ESL, some will be higher level, but they will be required to read for that and write for that. … I like to have different levels, I don’t want just like junior high level books for them, books with lots of pictures to help them. (Interview 4)

**Assessment Modifications and Alternative Assessments**

Making modifications to assessments and assignments was another important change in Ann’s instructional practices after the ECTC program. During the interviews, Ann pointed to a variety of test modifications that she used for her ELL students. For each of the quizzes or unit tests, she would examine the wording of questions with Ms. D, making necessary changes (e.g., simplifying the language or reducing the number of choices for multiple choice questions) and adding visual and/or graphic support to make sure that the same content was tested but in a more language-accessible manner for the ELLs.

They get the same format, but some of the questions are worded differently, then maybe additional diagrams, or they have one less fewer choice. Same kind of idea, but definitely there are these changes that hopefully help them. (Interview 1)

Under the pressure of having to prepare all the ELL students for the OAA test, Ann made sure to expose her ELL students to the test format “on an informal basis, like we do warm-ups” and took care not to stress them with the worry of being graded or penalized for not performing well. She also tried to incorporate more types of assessments (especially classroom-based assessment) to gauge students’ understanding and learning of the content knowledge. In addition to paper-and-pencil assessments (like the whole-unit tests), Ann reported using the following types of assessment as well: teacher observations, thumbs-up and down, hands-on activities, collective group work, graphic organizers, projects, short quizzes (up to five questions) prior to the lesson to
The following class vignette describes an end-of-class review in Lesson 3.

Ann used the last 8 minutes of the class to do a review and assessment. She had a small orange bucket on her work desk. Within the bucket were popsicle sticks with every student’s name. Ann began to ask questions that covered some important concepts of the unit. When she posed a question, she pulled a popsicle stick to randomly choose a student to answer the question. After the student answered the question, she announced the correct answer and checked with the other students whether they also had the correct answer or not with thumbs up or down.

Co-teaching with an ESL Teacher

The year after the ECTC program was when Ann began to co-teach with Ms. D, the ESL teacher in her building, who also took part in the ECTC program as an ESL coach and on-line discussion facilitator. They were co-teaching the eighth period of Ann’s science class, where she had seven ELL students.

As Ann told me, they “worked very well together.” Usually after Ann planned the units and the curriculum with the other science teacher on her team, she would talk with Ms. D about what modifications they could make for the co-taught class. Ms. D played more of an ESL aide’s role in class, where she worked mostly with the seven ESL students, especially the two beginner-level students. Occasionally Ms. D would pull the two students out to give them individual instructions or to read and explain the test questions to them.

Ann used the word “support” and “resource” to describe Ms. D’s role:

She is more of the support for ESL, I know the content … she has knowledge, but that’s not her specialty. So the content myself and then we work together to adapt and do what we need to do so that all the students’ needs are met. (Interview 3)
A lot of the time she was just a resource. What are the ways … how can I present this to them, this is the information how can we present it, so that it is easier for them. She has excellent ideas with that what works the best for ESLs. (Interview 3)

Because this was the first year that they worked together, Ann had also experimented with different ways to get Ms. D more involved in her class. Occasionally they would divide students up, and each of them would work with a group on different activities.

We try to do, which doesn’t always work, kind of split them up, so that Ms. D was working with a group, and I am working with a group, and then we switch. We’ve done sometimes, there was, in the last unit we did, we had an article that we wanted the students to read about wind energy, and we had some guided notes we had to do, so Ms. D took half of the group, worked with group, and I took half of the group, did the notes and we switched. We’ve done that before, we had an activity, a demonstration she did with the students, while I worked on a section of notes and questions and then we switched. So we tried to do it that way. (Interview 3)

Their attempt to work together in a classroom did not come without challenges. Ann told me in the interview that her biggest struggle (as well as goal) was to make it her daily or weekly routine to keep Ms. D involved all the time. Time was apparently a factor because both of them were busy; Ann had to plan for two subjects (science and language arts), and Ms. D was stretched thin by her many duties in the building. Lacking a common planning period, Ann mainly discussed the modifications that she was supposed to make with Ms. D via email. At the beginning of each week, Ann would update Ms. D on what she planned to do for the week; and once a month, Ms. D would come down to Ann’s planning period. Notwithstanding the time constraints, Ann and Ms. D met informally in the hallways or after school to have brief conversations about such
things as the class of the day or whether an ELL student was ready to do a particular project and what kind of help he/she might need.

Another challenge, according to Ann, was “the confidence issue.” Ann told me that although she tried hard to incorporate Ms. D in the class, making it “our classroom” instead of “my classroom,” and encouraged her to teach a section of the class, Ms. D did not feel comfortable with, neither was she confident in, going beyond her duties as an ESL teacher. Ann said:

It’s very very hard. I have no problem, if she wants to teach and she knows that, go for it, but I think she sometimes feels that she doesn’t know it as well the content, so she feels that she doesn’t want to, she would do these children a disservice, I guess. She knows more than she thinks she does, but she feels that is my specialty, her specialty is ESL.  (Interview 3)

When I conducted the last interview with Ann the following year, she was no longer co-teaching with Ms. D, who had been assigned to co-teach in a math class. Although feeling somewhat disappointed about not being able to implement what she planned with Ms. D the previous year, Ann understood that “Ms. D felt that she needs to spread her wealth somewhere else, knowing I’m ok now.” Ann said the following with confidence:

I, maybe, took the ECTC classes, I’m more confident being with these students, being able to make those accommodations, understanding what I could do to accommodate them better than other teachers who didn’t take the courses.  (Interview 4)

Without the presence of Ms. D, Ann had to “manage on her own,” but she had “more tools at [her] disposal.” The informal conversations between Ann and Ms. D still carried on, as they were able to exchange information about the students that they shared.
Ms. D was still the go-to person for Ann when she needed help with content or assessment modifications.

We still talk. If I have question, obviously I go to her, and she still works with those students, she has a lot of them for class. So she knows them very well. So lot of times if I … one of the boys, “hey, give me some idea on what I can do with him because he is not doing very well. Is it because the assessment needs to be changed or in terms of my content I need to give them different things?” (Interview 4)

**Research Question 3:**

**What were the School Organizational Factors that Either Facilitated or Hindered Changes in Teacher Practice?**

Ann’s story is not complete without looking into the various contextual factors that shaped her learning and teaching experience. At the heart of the story was “a less than ideal school environment” that she was in and a mixture of “bitter awareness” and optimism about changes that would come.

Ann’s survey responses (Question 23) indicated a list of school obstacles that spoke to “a less than ideal school environment:”

- pressure to cover the content standard,
- pressure to prepare students for state tests,
- inadequate support from school administrators,
- other competing professional initiatives that interfere with sharing the ECTC learning,
- attitude of other teachers in school,
- other teachers who lack the necessary knowledge and skills to teach ELLs,
- insufficient resources and support services available in the school for ELLs,
• few professional development opportunities provided by the school (or the school
district) that focus on education of ELLs, and

• difficulty in communicating with ELL students’ parents because of language
barriers and/or lack of school-provided venues and opportunities.

The survey results were partially corroborated by what Ann reported in the interviews. When asked whether she had implemented the district educational program\(^\text{17}\) for her school, Ann admitted that when she proposed the PD program to her school administrators, she did not get their support to make it happen because they were reluctant to allocate the hours for professional development to her PD proposal.

Ann felt that the ESL students and the program in her school district were “always pushed aside” and were not treated as important as other PD initiatives. The situation, according to Ann, was caused by a combination of factors. Financial difficulty of the school, shortage of ESL resources and staff, and lack of knowledge and training on the side of school administrators were all major reasons that contributed to an overall negative attitude toward ELLs in her school. One obvious piece of evidence was that the school’s ESL department was run by a special education director who had no background in ESL.

A big thing is money. We need more money, I mean you need money in order to train generally; that’s a huge thing. We’re definitely struggling financially. Another thing would be if we did have the money, what were we going to do, what kind of training we are going to do? I don’t think our administration really knows, plus our building, we do not, our district too I believe, we do not even have an ESL, I don’t know what the title is, like an ESL leader. Our ESL teachers, but their department is run by a special ed. director. So I think that’s lacking too. So if there are any kind of training sessions that need to be done, her focus is on

\(^{17}\) The ECTC attendees were required to create and implement a district educational program as an important component of their training.
special ed. more than it would be on ESL. I think we are lacking resources, people and money, and knowledge on the administrator’s side. (Interview 1)

However, Ann was still quite optimistic about the prospect of “overcoming the attitude” if more resources, training, and administrative support were installed, as she believed that it was just a matter of time for educators to become more familiar with ESL, as they did with special education:

In our district, I think we can overcome the attitude, we just need to have the resources, the knowledge, and know what need to be done. Our administrators need to be on board and become part of it as well. Special ed. has been something that people have harped on. We’ve learned about special ed. for the last twenty years, and you heard about it. ESL is a newer. People just are not as aware of it. When we went to college, special ed. was talked about, but ESL was not. A lot of teachers have taught 20 years, they only dealt with special ed. ESL is a new thing. (Interview 1)

Research Question 4:

How Did Ann Perceive the Content and Design Features of the ECTC Program and the Impact of These Features on Her Learning Experience?

Ann believed that a successful PD program should provide practical ideas that would have direct applications for a teacher’s classroom instruction.

I think that successful PD should be giving us things that we can use. A lot of times professional development is a bunch of theories, in a perfect world, this is what should be happening, but they don’t take into consideration your student population, the resources that are available to you, and your time. Those PDs don’t work. (Interview 2)

In this sense, the ECTC program met her expectations because it took into consideration the particularities of each participant school and school district. In Ann’s opinion, the key to success of the ECTC program lay mainly in the format of the classes and the workshops where the teachers got to communicate and exchange ideas, whether
through face-to-face meetings or online discussions. Ann particularly appreciated the
opportunity to “bounce off ideas” in the online forums, through which the participants
from different school buildings and school districts were able to openly talk about their
personal and district struggles and share ideas that they could take back and apply
according to their own situations.

We were given something that we could use, we were given ideas that some
districts were working great while others didn’t. It was nice to bounce ideas off,
“hey how do you guys do this. You use it and you told us this is something that
you do in your class, here is my struggle with it. Any idea on how I could still try
to incorporate it into my classroom, and still take that information and use it?
Because I have this many students with this much time and no money, no
computers, and no technology, so what could we do?’ So it is nice to be able to
bounce ideas off with other people that are using it, instead of having one person
in a PD, and all we have to do is to talk about it, and they don’t actually show you
what you can do in a not perfect world. (Interview 2)

Adding to the communicative feature of the ECTC program was the fact that the
teachers were grouped according to their content areas in their online discussions. Ann
believed that with other science teachers their discussions were more focused on specific
ideas that she could incorporate into her science classroom.

However, Ann still thought the face-to-face meetings were more geared to her
learning style than the online discussions. Being a visual learner, Ann preferred the
immediate back and forth exchanges of idea (dialogues) that took place in synchronous or
face-to-face contexts (classrooms and workshops). She especially liked the two summer
classes where she got to actually sit in a classroom situation for 10 consecutive days.

Honestly, the biggest part was in summer when we were all together, that was
close. Me personally I’m a visual person. Online it’s ok, but I like to be able to
converse with others. While you still did the conversations on Carmen, it was not
as beneficial to me as actually talking with each other, because yes you’re
bouncing ideas off, but it is next time I get to my computer, then I can read your
response and then respond. I like the back and forth banter constant, at one time
really while the moments are hot when whatever talked we are talking about. So I think the summer classes when we were all together, was really good. That was the most beneficial for me. (Interview 2)
Chapter 6: Case Report 2 - Lana

About Lana

Lana, a white woman in her forties, participated in the ECTC program during the 2009-2010 school year. At the time of study, she was teaching physical science to a ninth grade sheltered class that contained 10 ELL students. A sheltered content class, according to the definition given by Lana’s school district is:

a modified instructional approach that is used to make academic information and concepts comprehensible to LEP students. Students in these classes are “sheltered” in that they do not compete academically with native English speakers in the classroom setting. The grade level curriculum is delivered in a way that can be comprehensible to the LEP students. The teacher adapts the language of instruction to the English level of the students. In this approach, students have the opportunity to develop the oral and written language skills they need to make academic progress in content such as mathematics, social studies and science.

The school where Lana works is an urban high school that features a high degree of ethnic diversity; 14% of the student population qualifies for ESL services. In the past few years there has been an influx of Somali refugees into the district. The fast increase in the number of ELL students, particularly new immigrant students, has put a huge strain on the schools’ ESL services and pushed the district to establish shelter programs for each of the core subject areas (language arts, social studies, math, and science) at its middle and high schools. In the high schools, students that are in ninth or tenth grade and have a composite Ohio Test of English Language Acquisition (OTELA) score of 1, 2, or 3 are placed in the school’s “shelter block.”
As Lana told me, she was hired by the school because she met two specific requirements of the district: (1) being a teacher who was willing to take on the sheltered physical science class and (2) being an experienced teacher who was able to help the students prepare for the OGT test because the school had struggled to improve ELL students’ performance on the science portion of the test.

The sheltered class that Lana taught consisted of nine Somali students and one Hispanic student; six were boys and four were girls. The number of Somali students this year was quite a bit higher, compared with previous years when the ratio of the Somali and non-Somali students (mostly Spanish-speaking students) was usually 50% to 50%. Most of the Somali students in this group had been in the US for less than two years. Except for three of them who had been schooled in the country since elementary school, the other students were recent refugees who were born and/or raised in refugee camps in Kenya.

Having certifications in both science and math education, Lana had 15 years of teaching experience in various educational settings, including public and private high schools and community college. The majority of her teaching career was in math before she started to teach science classes at SHS in 2007. When she participated in the current research, Lana was teaching physical science classes to ninth graders, including two inclusion classes and one sheltered class, and conceptual physics to 11th graders. Although she had some adult ESL students at her previous school (which was a college setting), Lana believed that her five years at SHS, particularly the year with the ECTC, was the first time she was really indoctrinated into teaching ELLs. Not only is she a member of the “sheltered team,” where she has the opportunity to communicate with and
learn from other sheltered teachers, she was also “SIOP-trained” before the ECTC program through a two-day SIOP workshop provided by the school district.

Lana portrayed herself as a “fun, enthusiastic and demanding teacher,” well-balanced between “making the learning journey enjoyable” and treating it as “a serious business.” She described her teaching philosophy as being “student-centered” as opposed to “content-centered.” Lana believed that as a science teacher she had to show to her students how much she cared about them as people, as much as she loved the science content, because the best teaching or learning results could only be achieved when the teacher was able to “make personal connection to the students” and “earn their ear to teach them content.” Lana felt that her passion for both the content and the students was “contagious” and won her popularity among the students.

**Research Question 1:**

**What did Lana Learn About Teaching ELLs Through the Program?**

Lana’s story starts from the “new additions” to her “ESL tool box.” These “additions” include not only concrete strategies but also “heightened awareness” brought about by learning the concepts and theories and using them to examine issues in her teaching.

**Ohio ELP standards and Teaching Literacy Skills**

In both her course reflections and interviews, Lana shared that her “biggest area of growth” after taking the first ECTC course (Introduction to TESOL Methods) was the Ohio English Language Proficiency (ELP) Standards, and the learning was “both eye-opening and humbling” for her. Without any previous knowledge about the “blue book,”
Lana found that her understanding about teaching the four language skills was brought to a new level when it was tied to the language standards.

Four weeks of learning and reflecting on each of the language skills and strategies to teach these skills made Lana truly understand that “my responsibility is not only to teach my content, but to assist in my students’ language acquisition as well.” Accompanying the elevated understanding was a reflection on how she could “transform” her instructional practices to better meet ELL students’ needs for language acquisition. Lana realized that she had to make adaptations to her lesson plans so that “teaching literacy” became an “on purpose” factor in her daily teaching. A good place for her to start was to post and review language objectives with students so that they (together with the teacher) would have “a long-term as well as daily view of where they were and where they were going” in terms of learning the language and the content.

**Test Validity and Formative Assessment**

Another important addition to Lana’s tool box was learning about test validity and how to design different types of alternative assessment. Lana found that the concept of test validity was particularly “intriguing” for her, and learning about the importance of a test that was valid and truly assessed students’ content knowledge rather than their reading ability brought to light for her some problems and challenges inherent in standardized tests for the ELL students. One of the challenges related to what Lana had realized about the “unbalanced English language development” of many of her Somali students, whose reading and writing abilities lagged significantly behind their listening and speaking proficiency. According to Lana, while some of her Somali students could verbally answer questions and express what they knew, they were less capable of
demonstrating their content knowledge on a test because “it [a test] is a reading situation.”

A question that she frequently asked herself during and after the ECTC program was “how can I make sure that I’m testing them on science, not on their reading?”

Relating the concept of test validity to her daily assessment/evaluation practices and the struggles of her ELL students with reading test questions and writing to demonstrate what they knew, Lana realized that another necessary change to “level the ground” for her ELLs was to integrate all four language domains (speaking, writing, reading, and listening) into assessment. Equally important was to “use various formats” that involved both formal and informal means to evaluate students’ understanding.

I probably give less written tests with the students than I did before, because I realize that I don’t need a written test to evaluate them and that that’s not the only way to evaluate them. I think I realize that evaluation has to be multi-faceted, that it has to have different portions and not all of that should be written, and it can be achieved through different means. Even having students draw pictures of a concept is a valid way to evaluate. (Interview 3)

**Heightened Awareness**

“I became more aware …” resonated over the four interviews. As Lana told me, although she utilized many of the ELL-friendly strategies “intuitively” (before the ECTC program), like using visuals, she became more aware of the need to and the effectiveness of implementing those strategies and made conscious effort to “pick a couple of strategies every day that I want to work on and see how they work.”

Another important aspect of Lana’s heightened awareness was a deeper understanding of her ELL students as to “what they don’t understand, how long it takes them to assimilate, and what are the struggles that they are dealing with in the classroom.” This type of understanding helped her “see in a different light what went into the
appropriation and integrating SIOP into my lessons.” Although Lana came into the ECTC program already knowing how to apply the SIOP components, she came out of the program equipped with a better knowledge of why she was doing it (or “why behind the SIOP” as she said on another occasion).

**Cultural Sensitivity**

Enhanced cultural sensitivity was another change brought about by the ECTC program. Equipped with an understanding that “your students' culture and acceptable behavior within that culture is vital to communicating in the classroom,” Lana found herself taking on “an ethnographer’s” role, recording what she observed and learned about the ELL students and constantly using the information as references for her to interpret the students’ behaviors. When talking about absenteeism among her Somali students, Lana provided her understanding of the issue from a cultural perspective:

> I will say this class … the attendance has been an issue, … that is a cultural situation, because they may need to take care of a sibling, … there are a lot of siblings, so mom may have to go to an appointment, and the needs at home take precedence over school. … Traditional American family would not think of keeping their kid at home to babysit and prevent them from going to school, but other cultures things at home tend to preside over. … I just think that the reasons for the absences of the Somalis are cultural reasons. (Interview 4)

**Strategies for Teaching Reading Skills**

Also added to Lana’s tool box was a list of teaching strategies, like using visuals for instructional or assessment purpose, methods for scaffolding the writing process, and others. Particularly, an important strategy that Lana learned from the course readings for building reading skills was “read-aloud.” In both her journal reflection and online discussion, Lana reiterated what she understood about the theoretical rationale for having
students read aloud and her step-by-step plan to implement the strategy in her sheltered class:

Reiss emphasizes the student’s ability to make the sound to symbol correspondence. The only way that you know if that is happening is to hear them read aloud. Seeing and hearing text allows the student to learn the pronunciation of unfamiliar words and gives them the background knowledge needed when the letter combinations appear later. This gives them the confidence to try to pronounce a new word. (640, reflection journal 2)

I have students read aloud this year. I start by being the reader and having students follow along. I then move to students taking turns reading out loud to a partner. I then allow students to volunteer to read content text aloud to the class, taking turns every couple of paragraphs. By the end of the year, I will be able to call on any student in my shelter physical science class to read aloud. (640, Carmen discussion)

Making Better Use of Resources in Classroom.

The course readings brought to Lana’s attention how to make good use of various resources in her classroom to the greatest benefit of the ELL students. Inspired by reading the success stories of other classrooms and schools, Lana realized that one of her responsibilities as a science/ESL teacher was “to be a good steward of the resources funded to my ESL [sheltered] classroom to help students make the largest strides as possible.” One of these resources was the bilingual aide that she had in her sheltered class. Although she had the Somali bilingual aid (Mr. Muhammad) work with students who spoke the same language, she now realized that he could actually help all those in need regardless of their first language and become “a valuable asset” for her “to meet each student where they are academically and at their language proficiency level.”

I believe the best place to start is in making the best use of the bilingual aide that I have in my ESL classroom. The readings prompted me to think of the make-up of my sheltered class and how the aide’s time can be applied to be the most beneficial to the students. … I have had my aide work with one or two Somali students, but had never considered having him work with the newcomers or those
that are less proficient in English regardless of their native language. I believe he would enjoy helping the students in this capacity. (640, reflection journal 3)

Research Question 2:

How Did Lana’s Learning from the ECTC Program Facilitate Changes in Her Teaching Practices?

Central to Lana’s story is how she integrated her ECTC learning into daily instruction through “more careful and purposeful lesson planning.” Although as a sheltered teacher, Lana had to constantly change and “reinvent” depending on where the students were each year, she was more intentional in incorporating the strategies into her lesson planning. For Lana, the year after the ECTC program was “a combination of new tools and making adjustments and adaptations both from last year and along the road this year.” Changes in Lana’s teaching practices are mainly reflected in the following areas.

Implementation of the SIOP Model

In both her survey responses and the interviews, Lana reported that the ECTC program had prompted her to incorporate more SIOP strategies into her instructional practices. She reported via the survey that she implemented twelve SIOP features in increased frequency, and these features fell under six SIOP components: lesson preparation, building background, comprehensible input, strategies, interaction, and lesson delivery.

Particularly, posting language objectives and using visuals were brought up during the interviews as two “representative” examples. For the former, Lana began to use the Ohio ELP standards as reference for composing the language objectives and checking whether she had been consistently working on the students’ four language skills.
With regard to using visuals, Lana reported showing more pictures and using color-coding (colored markers) to draw students’ attention to key information.

Every lesson we will have new objectives, so I will use the Ohio LEP standards, I will choose one, if I wrote it exactly the way it says it, it might be confusing for them, so I try to apply it to whatever we are doing, so that it is strictly based on the standards, it just happens to be one that we can put it in like kid-friendly form. I want them to know where they are going, what I expect of them. (Interview 1)

This year after ECTC, I will give them pictures and say what’s going on in this picture. I think that’s a big “aha” moment for me. I think that the visual components, while I knew I needed to show them things, I know we say that a picture is worth a thousand words, I feel like that I do that more on purpose than I did before. (Interview 4)

I do a lot of color coding on the board. When we are solving formulas, if I have “force = mass × acceleration”, then I will make sure all the “masses” are in red, so that when they put the number that goes in mass, the number will be in red, and they can see that they are plugging in for mass; and then “acceleration” will be in blue, and then they will know to plug into the blue spot, but I don’t do that with my mainstream students. (Interview 5)

Observations I conducted using the SIOP protocol partially corroborated what Lana reported about her implementation of the SIOP model via the survey and the interviews. However, some discrepancies still existed. As can be seen in Table 36, the total scores for each observation were 42.5%, 60%, 63.4%, 61.7%, 65%, and 57.8%. The average of the five scores was 58.4%.
Table 36

*Lana’s SIOP Scores*

<table>
<thead>
<tr>
<th>Lesson Preparation</th>
<th>Obs1</th>
<th>Obs2</th>
<th>Obs3</th>
<th>Obs4</th>
<th>Obs5</th>
<th>Obs6</th>
<th>Avg</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Content objectives clearly defined, displayed, and reviewed with students</td>
<td>4</td>
<td>4</td>
<td>4</td>
<td>4</td>
<td>4</td>
<td>1</td>
<td>3.5</td>
</tr>
<tr>
<td>2. Language objectives clearly defined, displayed, and reviewed with students</td>
<td>4</td>
<td>4</td>
<td>4</td>
<td>4</td>
<td>4</td>
<td>0</td>
<td>3.33</td>
</tr>
<tr>
<td>3. Content concepts appropriate for age and educational background level of student</td>
<td>4</td>
<td>4</td>
<td>4</td>
<td>4</td>
<td>4</td>
<td>4</td>
<td>4</td>
</tr>
<tr>
<td>4. Supplementary materials used to a high degree</td>
<td>3</td>
<td>0</td>
<td>N/A</td>
<td>1</td>
<td>0</td>
<td>4</td>
<td>1.6</td>
</tr>
<tr>
<td>5. Adaptation of content to all levels of student proficiency</td>
<td>4</td>
<td>4</td>
<td>N/A</td>
<td>4</td>
<td>4</td>
<td>N/A</td>
<td>4</td>
</tr>
<tr>
<td>6. Meaningful activities that integrate lesson concepts with language practice</td>
<td>2</td>
<td>4</td>
<td>3</td>
<td>3</td>
<td>3</td>
<td>3</td>
<td>3</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Building Background</th>
</tr>
</thead>
<tbody>
<tr>
<td>7. Concepts explicitly linked to students’ background experiences</td>
</tr>
<tr>
<td>8. Links explicitly made between past learning and new concepts</td>
</tr>
<tr>
<td>9. Key vocabulary emphasized</td>
</tr>
<tr>
<td>Comprehensible Input</td>
</tr>
<tr>
<td>10. Speech appropriate for students’ proficiency levels</td>
</tr>
<tr>
<td>11. Clear explanation of academic tasks</td>
</tr>
<tr>
<td>12. A variety of techniques used to make content concepts clear</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Strategies</th>
</tr>
</thead>
<tbody>
<tr>
<td>13. Ample opportunities provided for students to use learning strategies</td>
</tr>
<tr>
<td>14. Scaffolding techniques consistently used, assisting and supporting student understanding</td>
</tr>
<tr>
<td>15. A variety of questions or tasks that promote higher order thinking skills</td>
</tr>
</tbody>
</table>

(Continued)
Table 36 (continued)

<table>
<thead>
<tr>
<th>Interaction</th>
<th>Obs1</th>
<th>Obs2</th>
<th>Obs3</th>
<th>Obs4</th>
<th>Obs5</th>
<th>Obs6</th>
<th>Avg</th>
</tr>
</thead>
<tbody>
<tr>
<td>16. Frequent opportunities for interaction and discussion</td>
<td>1</td>
<td>4</td>
<td>3</td>
<td>3</td>
<td>3</td>
<td>2</td>
<td>2.67</td>
</tr>
<tr>
<td>17. Grouping configurations support language and content objectives of the lesson</td>
<td>0</td>
<td>3</td>
<td>0</td>
<td>0</td>
<td>4</td>
<td>0</td>
<td>1.17</td>
</tr>
<tr>
<td>18. Sufficient wait time for student responses consistently provided</td>
<td>2</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>4</td>
<td>3</td>
<td>3</td>
</tr>
<tr>
<td>19. Ample opportunities for students to clarify key concepts in L1</td>
<td>0</td>
<td>2</td>
<td>1</td>
<td>0</td>
<td>3</td>
<td>0</td>
<td>1</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Practice &amp; Application</th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>20. Hands-on materials and/or manipulatives provided for students to practice using new content knowledge</td>
<td>0</td>
<td>0</td>
<td>3</td>
<td>0</td>
<td>0</td>
<td>4</td>
<td>1.17</td>
</tr>
<tr>
<td>21. Activities provided for student to apply content and language knowledge</td>
<td>0</td>
<td>3</td>
<td>3</td>
<td>0</td>
<td>2</td>
<td>4</td>
<td>2</td>
</tr>
<tr>
<td>22. Activities integrate all language skills</td>
<td>2</td>
<td>4</td>
<td>3</td>
<td>3</td>
<td>3</td>
<td>2</td>
<td>2.83</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Lesson Delivery</th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>23. Content objectives clearly supported by lesson delivery</td>
<td>4</td>
<td>4</td>
<td>4</td>
<td>4</td>
<td>4</td>
<td>4</td>
<td>4</td>
</tr>
<tr>
<td>24. Language objectives clearly supported by lesson delivery</td>
<td>3</td>
<td>4</td>
<td>4</td>
<td>4</td>
<td>3</td>
<td>0</td>
<td>3</td>
</tr>
<tr>
<td>25. Students engaged approximately 90% to 100% of the period</td>
<td>2</td>
<td>2</td>
<td>4</td>
<td>4</td>
<td>3</td>
<td>4</td>
<td>3.17</td>
</tr>
<tr>
<td>26. Pacing of the lesson appropriate to students’ ability levels</td>
<td>3</td>
<td>2</td>
<td>4</td>
<td>4</td>
<td>2</td>
<td>4</td>
<td>3.17</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Review &amp; Assessment</th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>27. Comprehensive review of key vocabulary</td>
<td>0</td>
<td>2</td>
<td>0</td>
<td>0</td>
<td>2</td>
<td>0</td>
<td>0.67</td>
</tr>
<tr>
<td>28. Comprehensive review of key content concepts</td>
<td>0</td>
<td>0</td>
<td>3</td>
<td>0</td>
<td>2</td>
<td>0</td>
<td>0.83</td>
</tr>
<tr>
<td>29. Regular feedback provided to students on their output</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>3</td>
<td>2</td>
<td>2</td>
<td>2.2</td>
</tr>
<tr>
<td>30. Assessment of student comprehension and learning of all lesson objectives throughout the lesson</td>
<td>1</td>
<td>3</td>
<td>3</td>
<td>3</td>
<td>2</td>
<td>3</td>
<td>2.5</td>
</tr>
</tbody>
</table>

| Total score:                  | 51/120 | 72/120 | 71/112 | 74/120 | 78/120 | 67/116 |      |
| Percentage:                   | 42.5%  | 60%    | 63.4%  | 61.7%  | 65%    | 57.8%  | 58.4% |
Out of the 30 SIOP features (Table 37), 16 features (53.3%) were implemented at the “evident” or “highly evident” level; nine features (30%) were either “barely evident” or “not evident” in Lana’s class. Her overall implementation of the SIOP model was at a moderate level. These findings did not seem to support Lana’s reporting in the survey that she implemented 26 SIOP features (86.7%) at the “frequently” or “always” level.

Table 37

*Frequency Counts of Features at Each “Evident” Level (Lana)*

<table>
<thead>
<tr>
<th></th>
<th>Highly evident features</th>
<th>Evident features</th>
<th>Somewhat evident features</th>
<th>Barely evident features</th>
<th>Not evident features</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lesson 1</td>
<td>5</td>
<td>4</td>
<td>7</td>
<td>5</td>
<td>9</td>
</tr>
<tr>
<td>Lesson 2</td>
<td>10</td>
<td>5</td>
<td>7</td>
<td>3</td>
<td>5</td>
</tr>
<tr>
<td>Lesson 3</td>
<td>8</td>
<td>10</td>
<td>3</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>Lesson 4</td>
<td>11</td>
<td>8</td>
<td>1</td>
<td>4</td>
<td>6</td>
</tr>
<tr>
<td>Lesson 5</td>
<td>7</td>
<td>10</td>
<td>10</td>
<td>0</td>
<td>3</td>
</tr>
<tr>
<td>Lesson 6</td>
<td>12</td>
<td>4</td>
<td>3</td>
<td>1</td>
<td>9</td>
</tr>
<tr>
<td>Average</td>
<td>9</td>
<td>7</td>
<td>5</td>
<td>9</td>
<td></td>
</tr>
</tbody>
</table>

Particularly, some SIOP features that are fundamental for sheltered instruction (Crawford et al., 2008) and strongly recommended by the ECTC program were not evident in Lana’s lessons. These features included concepts explicitly linked to students’ background experience, links explicitly made between past learning and new concepts,
key vocabulary emphasized, and comprehensive review of key vocabulary and content concepts.

Despite the discrepancies, “displaying language objectives,” one of the two SIOP features that Lana brought up during the interviews, was implemented with high fidelity, as indicated by an average implementation score of 3.33. Lana posted the following language objectives on the board for Lesson 2:

- Speaking: present your elements to the class.
- Listening: understand about others’ element information.
- Writing: fill in table with element information as it is written.
- Reading: reading element information from poster.

The lesson centered on a “poster presentation” activity, where the students made a poster on a chemical element and presented on it the second day in class.

As can be seen, the language objectives were written according to the four language skills (speaking, listening, reading, and writing) and were connected with the lesson activity. Lana reflected that when she designed the activity, she had the four language objectives in mind. While the activity was originally meant as a writing-speaking activity, she added the listening and reading components by having students fill in a graphic organizer as they listened and read other students’ posters (that were posted on the board after each presentation) carefully as they took notes in their graphic organizer.

Lana usually had the lesson’s objectives ready before the class started (they were typically posted on the left-hand side of the board) and asked one to two students to read
out the objectives at the beginning of the class. Sometimes she would vary the routine by inviting students to compose the language objectives together with her.

The other SIOP strategy, “using visuals,” was enacted through (1) study guides that were supported by pictures, photos, and graphic organizers; (2) an assignment where students made a poster on a chemical element assigned to them (Lesson 3); (3) using the smartboard to highlight and color code as she read aloud (Lesson 5); and (4) a hands-on activity that provided opportunities for students to draw and build “models” of chemical equations by using colored markers and blocks (manipulatives) (Lesson 6).

**Teaching Academic Literacy Skills.**

**Teaching reading and writing.** Teaching literacy skills “with purpose” and “on purpose” was a goal that Lana set for herself after the ECTC program. The interview and survey data indicated some changes in Lana’s teaching practices regarding this respect that reflected the ECTC influence. The most important ones were the read-aloud activities and using leveled readers. In addition, changes were also reported in how she approached writing instruction.

Having students who were only able to read at first and second grade levels was a big challenge for Lana this year (2012). She found that many of her ELL students learned content mainly through listening and speaking, and their low reading skill had put them at a serious disadvantage for the OGT, which was mainly “a reading situation.” Feeling the pressure to catch her students up and prepare them for the test, Lana made it a goal for her and her students to “work on reading every single day.” One of the strategies

---

21 This strategy is a significant component of SIOP features 12 & 20.
that Lana had learned from the ECTC program and had adopted as an important instructional activity was read-aloud.

When asked for the rationale of doing this reading activity, Lana explained that the activity was meant to help students build connection between the reading and what they had learned through listening and speaking. But considering that the lower readers had such a difficult time sounding out words and that the “mechanics of reading” distracted them so much from fully understanding the content, Lana would read aloud to them sometimes or have two students read aloud to each other, so that they could have a chance to concentrate on comprehending the text.

Using different types of reading material was another feature of Lana’s effort to promote students’ development of reading skills. Particularly, Lana highlighted using leveled readers as a strategy to help ELL students at different reading levels “reach their potentials in the content area.” With the help of the ESL teachers and other sheltered team teachers, Lana was able to find leveled science readers that were appropriate for the curriculum content and the students’ reading abilities, as well as some websites (text generators) that would put reading at different levels.

Now most of their readings are leveled reader so I can give some of them lower reading level or higher reading level, but all the books look the same so it’s really neat, they are covering the same thing. They can verbally give back to me what we are learning about, but they are at different reading level. We are trying to build a larger library of those, because that way I can be doing the same thing with all of them, but at their levels. (Interview 1)

I use more online stuff. In fact I’ve been using some websites that will take reading and put it at different levels, so then I’m able to print those out, and so everybody looks the same or we will be on a computer. (Interview 5)
Lana also reported using guided notes and teacher-prepared reading materials. The format of the guided notes was modified for the sheltered class so that it included more visuals, partially completed diagrams, and white spaces for students to draw pictures; more information (80 percent) that was typed out; numbers and bullets to list the key points; and blank lines for students to fill in the words.

The following excerpt taken from the notes on ‘The Bohr Model of the Atom” exemplifies some of these modifications:

- Atoms have equal number of _________ and _________.
  If an atom has 10 protons then it has _________ electrons.
- Protons and neutrons are found in the _________, which is at the _________ of the atom.
- Neils Bohr thought that electrons circled the atom like _________ orbit the sun.
  o These orbits are called _________.
  o There can only be _________ electrons in the first energy level.
  o There can be up to _________ electrons in the second energy level.
  o The third energy level can hold up to _________ electrons.

The reading materials were also adapted for the ELL students so that the texts were shorter and easier to read, and the paragraphs usually contained a topic sentence and supporting details. Below is an example of adapted reading that Lana showed me during the interview (which was also used for Lesson 4).
How are the elements listed in a special order?

There are many ways to organize information. One way is to use a chart. A chart can be used to show many facts in a small space. All the known elements are listed in a special chart called the periodic table.

In the periodic table, elements are arranged in order of their atomic numbers. The atomic number of an element is the number of protons in the nucleus of an atom of that element. Every element has its own atomic number. No two elements have the same atomic number.

Look at the periodic table on page 2. It has horizontal rows that run from left to right and vertical columns that run up and down.

Each horizontal row is called a period. All of the elements in a row belong to the same period. There are seven periods.

Each vertical column is a group, or family. All of the elements in a column belong to the same group. For example, all of the elements in the left-hand column of the table belong to Group 1.

Elements in the same group have properties that are the same or very similar. Properties help us to identify elements. Color, smell, state of matter, density are examples of some properties. Each group takes up one column in the periodic table.

An element is either a metal or nonmetal. The elements listed on the left side of the periodic table are metals. Those listed on the right side are nonmetals. There are more metals than nonmetals. Hydrogen, the first element, is in a metal group because it shares some of the properties of metals.

Note. The passage is supported by a photocopy of the periodic table.

As far as writing was concerned, Lana mentioned assigning writing tasks that she “would never think of using” before the ECTC. One instance was poetry writing (more will be discussed about the activity below). When reflecting on this writing activity during a post-lesson interview, Lana expressed that the ECTC program not only enlarged her repertoire for teaching writing skills, but prompted her to think outside the common science writing format, or as she put it, to “think outside the box” as a science teacher.

I don’t think I ever thought of having them writing a song or poetry, or anything like that. Those types of things are things that I realize I can use, even though it’s a science class. I don’t think I would think outside the box because that’s not a
science teacher, I mean when do you writing a poetry or song, you might do it in English, but what about in science how can we apply that. (Interview 2)

Some of the above-mentioned changes that Lana reported via the survey and the interviews were confirmed by my observations as well. However, the observation data presented some conflicting findings and told a more complicated story.

First, Lana’s effort to “transform” her instruction to promote students’ academic literacy development was noticeable, as demonstrated by the reading- or writing-focused activities that she planned and implemented. The observation data indicated that how Lana implemented the read-aloud (the instructional format of read-aloud) alternated among the following scenarios: teacher reading aloud to the students (Lesson 5), teacher reading aloud to model comprehension skills/strategies (finding the topic sentences) and then asking student to read aloud (Lesson 4), and students doing partner reading from the leveled readers and answering comprehension questions (Lesson 2). The following vignette describes how Lana modelled thinking out aloud and taught “finding the topic sentences” as a reading strategy (Lesson 4).
Lana gave each student a highlighter and began to draw their attention to the title of the reading, “Now, this says ‘how are the elements listed in special order?’” After she read out the first paragraph, she pointed out to the students the key sentence of the paragraph, saying, “I would highlight the sentence. It’s important information in the reading,” and providing further explanation. She asked “what do you think we are trying to do? If we read the whole page, is every word super super important? We call some of the sentences supporting information, and we are highlighting main ideas. So what we are trying to do is the main ideas, we are trying to identify those and highlight them in our reading.”

Lana then asked for a volunteer to read the second paragraph. One student read the paragraph. Lana then asked him, “If you have to pick a sentence that has the main idea of the whole paragraph, what would it be?” The student selected a sentence and read it. Lana said, “that’s true, but what piece of information did you get about the atomic number?” The student found another sentence and asked if he needed to highlight it. Lana asked him to read out the sentence, and then said, “OK, every sentence in that paragraph has the word ‘atomic number’ in it. So in the first sentence, it says … (Lana read out the sentence), so we know what it is used for. (Lana continued to read the second sentence.) So that tells me what the atomic number is. (Lana read the third sentence.) So that tells me something about the atomic number. (Lana continued to read the fourth sentence.) So it tells me how it relates to the element. So I think the most important sentence is … (Lana read out the second sentence again.) That’s what I would highlight in that paragraph.” The student was excited that he found the correct sentence and said, “bingo!”

Changes in teaching writing were enacted through Lana’s adoption of writing formats that were not “traditional” science writing like a lab report. In addition to the poster activity already discussed, in Lesson 2 students were put in pairs to compose a song or poem of the periodic table by using the words provided. When done, they were asked to perform their work to the class. This activity is also an example of how Lana combined creative practice of writing skills with oracy (i.e. oral proficiency).

**Vocabulary instruction.** With regard to vocabulary instruction, Lana approached it by incorporating definitions and explanations of key concepts into the reading texts that she prepared. The reading text on pages 196-197 is an example; in it Lana defined and explained periodic table, atomic number, properties, and other terms.
She also used various class activities (e.g., read-aloud, poster presentation, doing exercises, etc.) to make sure that students had repeated exposure to and practice with the content concepts using the four language processes. For instance, the song/poem writing activity was actually based on six vocabulary words or phrases that Lana wrote down on a note card for each student pair: periodic table, elements, Mendeleev, chemical symbols, group, and make.

In the following excerpt of teacher-student interaction that occurred during one student’s poster presentation, Lana engages the student in a question and answer sequence. Through interacting with the teacher, the student got to practice saying such key vocabulary words as: oxygen, atomic number, protons, electrons, and neutrons.

Lana: Tell me what your element is.
S: Oxygen.
Lana: So what is the symbol for oxygen?
S: O.
Lana: It’s O. Go ahead.
S: The atomic number is 8.
Lana: Its mass number is what?
S: 16.
S: The atomic number is 8, the atomic mass is 16. It’s used for rocket fuel, and it’s gas …
Lana: So it’s gas in room temperature? Ok!
S: It has 8 electrons, 8 protons, 8 neutrons.
Lana: Ok. Show me where you put your Boer model that has where all the electrons are located.
S: (pointing to the poster)
Lana: Ok, the round one with a circle has all the electrons. What does the one that just has the little dots on the ……
S: It has 6 dots.
Lana: Ok, that’s just the ones that are on the outside ring. Ok, does that make sense?
S: Yeah.
However, compared with the other two case study teachers, explicit/direct instruction of academic vocabulary words was rather limited in Lana’s class. This finding was not in congruence with her reporting in the survey that she “always”22 pre-selected and pre-taught vocabulary before reading and “frequently” used a variety of strategies to help students build academic vocabulary. Table 38 lists the words that Lana explicitly taught over the six lessons.

Table 38.

<p>| Vocabulary Words Explicitly Taught Over Six Lessons (Lana) |
|---------------------------------|-----------------|----------------|-----------------|----------------|-----------------|----------------|</p>
<table>
<thead>
<tr>
<th>Lesson 1</th>
<th>Lesson 2</th>
<th>Lesson 3</th>
<th>Lesson 4</th>
<th>Lesson 5</th>
<th>Lesson 6</th>
</tr>
</thead>
<tbody>
<tr>
<td>weaver</td>
<td>(none)</td>
<td>(none)</td>
<td>horizontal</td>
<td>text</td>
<td>(none)</td>
</tr>
<tr>
<td>indivisible</td>
<td></td>
<td></td>
<td>identify</td>
<td>reactants</td>
<td></td>
</tr>
<tr>
<td>products</td>
<td></td>
<td></td>
<td></td>
<td>products</td>
<td></td>
</tr>
</tbody>
</table>

It can be seen that for three lessons there was no explicit instruction of vocabulary. Of the seven words that Lana explicitly taught, two were core content vocabulary words (i.e., reactants, products), and Lana wrote these words down on the board and provided definitions. One word (weaver) was brought up by a student in the middle of Lana’s PowerPoint presentation; two words (indivisible, horizontal) were explained so that students could see where the root was and where the prefix and/or suffix were; one word (text) was explicitly mentioned for its multiple meanings; and one word (identify) was explained to support comprehension of the text. The following excerpt illustrates how Lana taught the word identify:

---

22 The survey questions use a “frequency” scale, where 1 = Never, 2 = Rarely, 3 = Occasionally/Sometimes, 4 = Frequently, 5 = Always.
Lana: What does “identify” mean? If I say ‘I am going to identify who Ali (a student’s name) is’?
Ss: You gonna guess. You discover. No, you have to be sure of …
Lana: I would show a picture, and I would come over (walking towards Ali) and say, “this is Ali.” That is “identifying”, is to give something a name. So when we look at the properties, if I say, “this element is shining and conducts electricity, we would narrow it down to all of what?”
Ss: Elements.
Lana: No.
Ss: Metals.
Lana: Yes, all the metals. That helps us identify which part of periodic table that we are talking about. So “identify” means to give a definition and to give a name to something. So when I identify who Ali is, I put his name with the person he is.”

It could be argued that these examples in a sense demonstrated Lana’s awareness of the multiple dimensions of vocabulary instruction—teaching word parts (indivisible, horizontal), teaching general academic vocabulary (identify), and raising students’ awareness about the multiple meanings of common words (e.g., text). However, explicit vocabulary instruction to address these dimensions had yet to come to the forefront of her daily instruction.

**Using Alternative Assessments**

Over the five years teaching in the sheltered program, Lana stated she was always exploring the best ways to assess her students. Particularly after the ECTC program, she became more conscious of using various types of (formative) assessment to evaluate her students’ content learning. The interview and the survey data indicated that what Lana had learned about test validity and alternative forms of assessment had in many ways changed her assessment practices. As Lana said, “I evaluate differently, and I have fewer tests.”
In Lana’s sheltered class, tests and quizzes accounted for 30 percent of the students’ final grades, and most of the evaluation (and assessment) occurred on a daily basis to help her gauge which areas needed more work.

I don’t give a lot of tests and quizzes. I probably give them one test and a couple of quizzes every 6 weeks, we are on 6 weeks terms here. But because I can make formative assessments, because it’s a small class, I can gauge and I can keep notes on ok this one is getting better, this one is not, or they need to work more with this one. I feel like that I can really focus. (Interview 1)

The interview data revealed the following types of alternative assessments that Lana used: projects, oral presentations, and one-on-one Q&As between the teacher and the student (oral interviews). Lana’s explanation of the last type of assessment was as follows:

I talk with them one on one. I may have a little list of 5 questions that I want to ask, while they are working I may go around, and I try to ask them those questions, and it’s kind of informal and they just think that we are having a class, but I’m actually evaluating what they know. (Interview 3)

Changes in Lana’s assessment practices had also occurred in how she modified a test to improve its validity. In the following quote, Lana talks about how she rewrote (modified the wording of) a test to make it reflect both what the students were used to hearing and reading in class and the language used in the standardized test (OGT).

I have even rewritten my test in order to reflect more what they are used to hearing, and matching that up with the standardized test, and making sure that I’m using the same terminology, that the standards in the standardized test are using in order that they would be able to make the connection when they get to the standardized test. I don’t feel like I’m teaching to the test. I think I’m just making sure that the right context is there for the information to be transferred to the test. (Interview 3)

By simplifying the language, providing word banks, and allowing students to label and draw pictures, Lana was able to gauge more accurately the learning of those
students who were more capable of verbally communicating what they knew than writing it on paper.

I will simplify the language, I specifically may if it’s a filling in the blanks situation for my other students. I may use a word bank. I had them draw a lot of pictures this year of phase changes, and forces, and things, because they could tell me what was happening, and in a picture form without writing words. They’ve been able to explain the Newton Three Laws very well or something like that using a picture, because they knew what was going on, but they had a hard time writing it on paper. (Interview 5)

**Teacher Collaboration**

Although collaborating with other teachers was a “norm” for Lana in her daily work, the ECTC program created more opportunities for her to work closely with other ECTC alumni teachers in the building. The Educational Program that they created collaboratively (as their capstone project for the ECTC program) had found its stage at the district level, as these ECTC alumni teachers were invited to speak at the district-wide SIOP workshop, and the video that they made was shown as an important component of the training.

Lana attributed the increasing collaboration (for teaching ELLs) in her building and across the buildings to the district ELL coordinator, Bill (pseudonym), who was also the district liaison for the ECTC when the program was in progress. Lana believed that because Bill “went through the process with us” and “started to see the need for collaboration during the ECTC,” he became more proactive in making more collaboration time available for the ECTC alumni teachers and sheltered teachers across the buildings. Never before had Lana felt that they were “really working together as a team” to tackle the issues that they commonly faced. How they worked together on the “discipline issue”

224
was one of the examples. As Lana told me, because of collaboration, they were able to track students’ behaviors across (different teachers’) classes and come up with an incentive plan to award positive behaviors.

**Working with Bilingual Aides**

As previously discussed, the ECTC program had made Lana see the value of having a bilingual aide. This was indicated by how she made an effort to “write him [the bilingual aide] into my lesson plan.” Lana found it important to give Mr. Muhammad, the Somali bilingual aide, specific instructions so that “he feels more part of the classroom and he feels more valued rather than just people letting go and standing at the back of the classroom.” Lana’s careful planning turned out to be fruitful, as Mr. Muhammad facilitated not only student group work (he helped her keep students on task), but when students took a test as well. “During like testing, if I have a kid that is more behind than the other, I may have him work specifically with that kid, or take a group and specifically help them write their sentences.”

During our last interview the second year, Lana told me that in addition to the Somali bilingual aide, she brought into her sheltered classroom a Spanish bilingual aide—who was actually a student taking advanced Spanish class—to help the Spanish-speaking students with reading difficulties and do two-way translation of tests.

I have a new accommodation which is kind of neat. We have a bilingual assistant for our Somali students, but we don’t have one for our Spanish speaking kids and that was the biggest hurdle this year. So I called our Spanish teacher and asked her if she had anyone in Spanish IV that would be willing to come and translate some so they would read out aloud with the students and then kind of summarize what that says in Spanish to help them. Now they’ve seen the words in English, and then reading them aloud in English, and then she is kind of explaining what that just said in Spanish. The other thing that I was able to do is … for a while, I was having this student, and she was translating our test into Spanish, the students
were answering in Spanish, and then she was translating back to English for me. (Interview 5)

**Assuming More Diverse Roles**

Over the two years after the ECTC, Lana saw herself playing more diverse roles in the building and in the district as well. The words that Lana used to describe her new roles (that came up during our interviews) included model, trainer, expert, go-to person, and resource person. Not only was she able to train other teachers on her ECTC learning, but she was considered an “expert” and one of the “go-to persons” that other teachers would prefer over the ESL teachers.

We have been meeting once a month with the ECTC teachers and the rest of the teachers that teach sheltered that haven’t been through the ECTC, we feel like we are kind of training them on ECTC not on everything, but we feel like we are kind of considered the experts now in the building. (Interview 3)

I feel like that Cyril, June and I are kind of known as the go-to people maybe even over the TESOL teachers as the resource person as the expert in this area because we have been through this program. (Interview 4)

The other new role will be that we’ve been asked to speak at the SIOP crash course kind of as … this is what did in our ECTC program, and this is what we learned from there, so we’ve become kind of a model of where they want us to go. (Interview 4)

Lana also saw her teacher’s identity as comprising not only a science teacher, but also a sheltered/ESL teacher. During the interview, Lana mentioned a job offer from another high school in the district that happened after she spoke at the district SIOP training. As she reflected on this episode, Lana said that on the one hand, she felt encouraged to see her value as an expert through all the trainings, but on the other hand, she would not want to give up her current position because “I’m in the sheltered [group] working with the ELLs, this is part of my identity, this is a very important part.”
Research Question 3:

What Were the School Organizational Factors That Either Facilitated or Hindered Changes in Teacher Practice?

The various contextual factors that facilitated Lana’s implementation of her ECTC learning constitute another highlight of Lana’s story. Unlike Ann, Lana had the blessing of getting a lot of support from the school and the school district in terms of professional development opportunities, time and structure provided for the teachers to collaborate and make modifications for the ELL students, and resources and services (e.g., ESL service) available for the ELLs and their teachers.

Facilitating Factors

“We have a lot of support in this building and then in this district” resonated in all the interviews. The interview data revealed the following forms support provided by the school for teachers who had ELLs in their classrooms.

Professional development opportunities. The PD opportunities included the district-wide SIOP training for teachers who taught sheltered classes and a portion of the district’s new teacher training that was dedicated to basic issues and strategies for teaching students whose first language is not English.

Time and structure provided for teachers to collaborate. Lana believed that she was provided plenty of opportunities to collaborate with other teachers, and this was due to the time and structure that the school and school district provided for the “sheltered team” to meet. The sheltered team was made up of sheltered teachers of all core subjects at the same grade level (so in the building there was a ninth grade sheltered team and a tenth grade sheltered team). The team members got together once per month
for two half-day meetings “to discuss students’ individual needs as well as how to service the whole group better.”

There was also a meeting of the ninth and tenth grade sheltered teachers in the spring (April/May) every year to discuss their ELL students for the upcoming school year. Lana believed that these “lines of communication” guaranteed that the teachers had a more holistic understanding of all ELL students so that their individual needs could be better met.

**ESL staff.** The ESL staff in the building and school district were great resources and support for both the sheltered teachers and regular education teachers. Through sharing with teachers from other school districts during the ECTC, Lana realized that her school district was advanced in ESL education. During the interview, Lana lauded the hard work that the former district ESL coordinator and her successor had put into establishing and improving programs for ELLs. She also provided an example of how the district personnel were efficient in filing and providing assessment data about ELLs (e.g., their OTELA and reading assessment scores) for teachers whenever needed.

Rachel [pseudonym] was great, she had all the information that you possibly want to know, OTELA scores every year in spreadsheets. All you need to do is to email her or call her, even you are a regular ed. teacher, you say, “hey, I got so and so in my room, just kind of wondering what their reading scores are,” and she would be able to get those for you within a day or two, so she was really good at getting the data and consolidating it, getting it to who needs it. (Interview 2)

**School administration.** The school principals were described by Lana as being open-minded and supportive. She mentioned one administration’s decision about separating the ESL students’ common assessment data from the main data set so that the
evaluation of teachers who have ELLs in their classes would not be negatively affected by the performance of their ELL students.

However, Lana thought that at the building level, education of ELLs had yet to become a priority when compared with other PD initiatives. One example was that while she and two other ECTC teachers tried to push for one of the early-release PD slots being used for the SIOP Model, they still had not been able to make it happen.

Lana also believed that the school administration could be more proactive in supporting the needs and effort of sheltered (and ESL) teachers in the building. For instance, establishing an “ESL data team” that was separate from the other school-based data teams (like the physical science data team) and where the sheltered teachers could “create an ESL data base and common (summative and formative) assessments for students at different language levels” was a goal that Lana and her colleagues had been pursuing for the past two years. However, Lana sounded a bit disheartened when she said the principal still had not given permission to their proposal.

**Major Challenges**

Notwithstanding the blessing of an “almost ideal” school environment, Lana’s daily work was still fraught with various challenges. The major ones were associated with a unique sector of the ELL population in her building—the Somali students—who tended to be more susceptible to misbehavior and absenteeism, gang influence, and learning disabilities due to various sociocultural reasons.

**Discipline issue.** The discipline issue was a classroom reality that Lana had to deal with almost every day. My observation data kept an account of what seemed to be a “chaotic” classroom, where the male students were boisterous and hard to control. They
were observed shouting their answers without the teacher’s permission, talking aloud when other students were making their presentations, and engaging in various off-task behaviors (chatting, having earplugs on, singing, leaving their seat). Lana had to stop from time to time to reprimand the misbehaving student(s), reiterate what her expectations of appropriate classroom behaviors were, or work with the “trouble makers” individually to keep them on task.

During the interview, Lana expressed her frustration with the discipline issue, saying, “I would say once or twice a week I probably have a [discipline] situation where I’m REALLY frustrated with that class.” In addition to having to “spend extra class time that could be used for more meaningful activities,” Lana felt that her hands were sometimes tied when she tried to implement the strategies that she learned from the ECTC. When asked why she did not vary the grouping of her students very often (as one of the SIOP features) and always had the two “trouble makers” seated at the back, Lana explained, with a bit of a sigh, that while she understood that students sometimes acted out because they felt lost or frustrated or wanted to get her attention, she did not want the two boys who “are particularly disruptive” to disturb and frustrate other students who were focused and on task. Additionally, the strained relationship between the Somali students and the Hispanic students and the gender norms of Somali culture further restricted her options for grouping students differently for different class activities.

The interview data indicated that Lana’s attitude in terms of handling the “trouble-makers” was tolerant and understanding, and her remark in the following quote about “the discipline part of the discipline issue” showed that her consideration was based on “which ways benefit the ELL students better.” When explaining why she did
not want to send the disruptive students to the school office (for in-school detention) as many other teachers did, Lana said,

I feel frustrated when they give them ISRs [in-school detentions], because it’s much harder for a non-English speaker to work on stuff themselves in that capacity that I feel that it’s a waste of time for them. So I probably put up with it a little bit more than I should, but at the same time, if I lower the hammer so to speak, then I am going to have them out of the class, and I’m not going to be accomplishing anything with them. I even said we got to figure out some other punishment for them other than ISR, because it hurts them too much to be out of a class. (Interview 4)

Lana’s tolerant attitude was also reflected in how she used “incentives” to encourage and reward appropriate behaviors. As Lana told me, she began to use stickers this year as tokens when the students were “caught” with good behavior such as taking their seat when the bell rang, completing homework, or raising their hands before speaking. She would reward them with real prizes (e.g., candies, pencils, or a lunch with the teacher) when a certain number of tokens were accumulated. During the interview, Lana expressed her excitement to the see how the incentives worked to reinforce the expectations that she set for the students and the changes in their behavior.

I’m just really pleased that all of sudden, they are working harder to get in their seat and be in their seats quiet and ready to go, all of sudden, that’s not an issue for me. Feeling so frustrated when we finally get moving because they now know the expectations, and there is some sort of a reinforcement of that expectation. (Interview 3)

When I met with Lana the following year (2013) and asked her about the discipline issue, Lana told me that it was still a challenge for her, but the situation had improved to some extent for two reasons: the first being the incentive program that was created by the sheltered team and the other being a growing recognition in the building that some of the disruptive students, especially those who had been in the country for
Students with learning disabilities. The school district’s policy regarding the identification of ELL students with learning disabilities was actually associated with another challenge that Lana has to face as a ninth grade sheltered teacher.

As Lana told me, the school district usually did not evaluate ELL students (especially Somali students) for learning disabilities in middle school due to their limited English language proficiency, so they mostly ended up being in sheltered classes when they went to the ninth grade. Because it usually took a year for the ninth grade teachers to figure out the students’ problems and have them go through the evaluation process, the students did not get their individualized education plans (IEPs) until they were in the tenth grade. Therefore, ninth grade sheltered teachers like Lana had to teach ELL students who should have been placed in an inclusion setting. Every year Lana would have twenty percent of her ELL students who were later diagnosed as having learning disabilities, and these students were usually the ones who created the most behavior problems. The first day I observed Lana’s class, she pointed out to me a Somali student who “was really acting out a lot in class.” The student had been in the country since kindergarten but was still reading on a first or second grade level. Compared with other students who “usually score in the B range,” he was lagging behind with a D minus or a failing grade in Lana’s class.

The fact that “learning disability is chopped off as a language barrier” not only created “double the challenge” for the teacher, but put the ELL students at a disadvantage,
particularly when it came to taking the state graduation test (OGT), because they could otherwise get more support and accommodations in an inclusion environment.

**Wide range of students’ levels.** The challenge related to meeting the diverse range of students’ ability levels was increasingly mentioned by Lana during our last interview in 2013 when she taught a new group of students in her sheltered class.

As Lana told me, the range of students’ abilities was even wider this year than last year, particularly in terms of their reading and writing skills. While some students were in the country for no more than a month and struggled really hard to catch up, some other students had been advanced enough to exit the sheltered program. Although Lana had made more use the resources acquired from the ECTC program to test and place the students at different reading levels and differentiate instruction and assessment accordingly, she still felt challenged by the need to “meet that diverse learning ability.”

**Research Question 4:**

**How Did Lana Perceive the Content and Design Features of the ECTC Program and the Impact of These Features on Her Learning Experience?**

Lana believed that a good portion of her growth came through the rich discussions facilitated by the online discussion boards, which opened a space for her to hear “how others handle their science classes” and then reflect on how she could implement “the new facts” that she learned from the readings and lectures. Additionally, the workshops offered valuable opportunities for collaborating, networking, and obtaining resources.

I really like our second workshop where we got some time with our content areas. Because I knew them better through the discussions, I would like to have more face to face time with them in order to collaborate. What great resources they have provided and what valuable networking happened there. (Interview 4)
The sequencing of the courses was another feature that Lana thought had boosted her learning experience. Particularly, she liked how a theory class (Introduction to TESOL Methods) preceded a “class for strategies” (TESOL Field Experience), so that she could understand “the research behind the four strategies.” As she remarked, “understanding the principles behind the [SIOP] model can allow me to be more intentional in my lesson design in delivering comprehensible input.”

When asked how the ECTC program was different from the two-day “SIOP crash course,” Lana quickly answered “slower pace” and reiterated what she believed was important for a successful PD program, “it has to provide teachers enough time to metabolize and apply what they are learning.”
Chapter 7: Case Report 2 – Karen

About Karen

Karen was a participant of the ECTC program in 2009-2010. She is a white woman in her forties and has had 15 years of middle school teaching experience. For the last ten years, she has been teaching seventh grade social studies at her current school (JMS).

Karen did not lack experience with ELL students before she participated in the ECTC program, as she had been teaching (what she called) a “semi-sheltered” social studies class for seven years (“sheltered class” hereafter). The “sheltered” class, however, was not part of the school’s sheltered or ESL program, but was established by Karen for seventh grade ELL students with the support of school administration. The composition of the sheltered class went through some changes over the years through “experimenting with different groupings” and finally came down to what Karen considered to be “the best mix.” While it started off with only ESL students and special education students, the class is now made up of a mixture of beginning, intermediate, and advanced level ELL students and a small number of native English speaking students who serve as “peer models.”

In spite of some hesitation on the part of the school administration in the beginning, the class was received warmly by the ELL students who believed that both
their test performance and confidence was enhanced because of the slower pace of the class and peer support that they could get.

There was some hesitation about it, and they have considered taking it away a number of times, but generally these kids do better because of this class, they tend to do a little better on tests, and just gain confidence easily, and we have also done surveys, and typically these kids say the social studies is one of the hardest classes and here they usually don’t say that, because of the peer support, because of the pace, and things like that. (Interview 1)

Karen found that compared with an all-ESL environment, her ELL students would benefit more from the opportunities to interact with native English speakers while still getting accommodations that they needed in her sheltered class.

I don’t know how sheltered classes work, but I like the fact that this isn’t necessarily a sheltered class. I like the fact that Katie [pseudonym] turns around, helps those girls and talks to them, and they are picking up language just through that, and they are gaining confidence on themselves and in the language, and making friends, so there is a lot more going on here than just world history. (Interview 3)

When the current study was being conducted, there were 19 students in the sheltered class, and 15 of them were ELL students. The nationalities and English proficiency levels of these students were listed in Table 39. As can be seen, Japanese students, most of whom were children of engineers from the local automobile plant, outnumbered students from other countries. However, student demographics have shifted to some degree in the past couple of years. The dominance of Japanese students has been gradually reduced by the increasing number of refugee students from middle-eastern/Arabic-speaking countries. As Karen said, the demographic changes have created “a new persona” of ELL students in the building.
Table 39

Students in Karen’s Sheltered Class

<table>
<thead>
<tr>
<th>Language</th>
<th>Japanese</th>
<th>Middle Eastern</th>
<th>Hispanic</th>
<th>Bengali</th>
<th>Chinese</th>
<th>Somali</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pre-functional/Beginner</td>
<td>6</td>
<td>4</td>
<td>2</td>
<td>1</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>Intermediate</td>
<td>6</td>
<td>6</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Advanced</td>
<td>3</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Karen has a bachelor’s degree in history education and a master’s degree in global education. However her teaching career has been marked by her pursuit of ESL-related training. Karen told me that she was initially motivated by a realization that she was not meeting the needs of her ELL students during the first couple of years of teaching at JMS because her undergraduate training did not prepare her to teach these students.

I think sometimes none of us know the best approach like how to really help ESL students, and that’s why I’ve started working on it a little bit in my graduate program, because I feel like there is no undergrad training. If you don't get an ESL degree, no one even tells you about this. For me personally to take the training a lot of it has to do with I felt like I wasn’t meeting the kids’ needs. I wasn’t helping them as much as I love social studies. I want the kids to love it and you cannot love it if you don’t understand any of it, so I wanted to figure out how to help them understand. (Interview 5)

Karen took two TESOL courses (one TESOL method class and one field experience class) during her graduate study. The coursework provided her knowledge about and confidence in working with ELLs, and the idea of teaching more ELLs in her classes began to evolve into her later proposal to the school administrators to set up a sheltered class, as previously mentioned.

When asked about her motivation to take part in the ECTC program in spite of her previous ESL-related coursework and rich experience with teaching ELLs, Karen
remarked that she wanted to figure out whether her own “creations” were supported by theory and what “the best practices” were for teaching ELL students. In spite of all the training and experience that she had acquired over the years, Karen still felt humbled by the need to constantly change to meet the needs of different types of students.

Even if I’ve been teaching this for 10 years, I still have so many things that I feel like I still need to modify, I need to modify more, I need to change for different types of kids. (Interview 5)

Karen used the words “engaging” and “interactive” to describe her teaching style. She also portrayed herself as being “pretty animated” in class, and by doing so, she hoped to help students (particularly students with low English proficiency) pick up on what was going on from her facial expressions or body language. Karen believed that history could be a boring subject, especially for ELLs, so “if it is not interactive, then we kind of lose them.” One technique to make her lessons engaging was to provide “experiential learning through hands-on activities.” Karen found that this type of activity could make students really identify with what they were learning and become involved in her lessons.

My first impression of Karen was that she was a patient and easy-going teacher. She was apparently one of her students’ favorite teachers, which could be seen from how attentive and at ease they appeared in her class and the fact that they never refrained from asking her questions, because Karen always answered their questions with great patience. During breaks, I saw Karen’s (past and current) students stop by and say hello or send her cards or small gifts for holidays. These occasions were Karen’s happiest moments of the day.
Research Question 1:

What Did Karen Learn About Teaching ELLs Through the ECTC Program?

Karen described her participation in the ECTC program as going through “an exciting learning process” during which she had “reflected upon my current teaching practices and planned and made adaptations and modifications to better serve the ELL population in my schools.” Her nine months of hard work culminated in “a thick notebook” that she kept for ideas and a summer vacation spent in “making a lot of things that I feel like would help me next year.”

Reflection, Action, and Changes

Karen’s learning journey with the ECTC program was characterized by both reflection and action. “Change” (or “changes”) was a high-frequency word in her course reflections, and Karen felt excited about not only the changes that had been (or would be) made in her classroom, but also changes that could happen in her building and in the classrooms of other teachers if they could take and use the strategies for the benefit of their ELLs.

As I think about the changes I’ve made in my classroom, I’m excited about the possibility of the changes that can be made in my building. I believe that any teacher could take any one of these strategies and/or material adaptations and use them in their own classrooms tomorrow. None of the changes would be too demanding on our often over-worked staff, but all of them could be incredibly beneficial to our ELL population. (640, reflection journal 4)

Changes (or modifications) that Karen had tried to implement involved “planning and delivery of class activities and assessments” by incorporating “the ECTC strategies.” Table 47 (Appendix C) briefly summarizes the strategies that Karen mentioned in her reflection journals and online discussions. As can be seen, most of the strategies had
been implemented in her classroom. The following quote is an example of how she actively tried out one of the strategies (using visuals) in her classroom:

Over the past few weeks, I’ve spent countless hours finding pictures that can support what the students are learning. Once I find good pictures, I print them, label the key elements, write brief captions and laminate them to be used in class. I have been able to utilize the pictures in several ways: during discussions, as writing prompts, to reinforce content material and as a reference tool. During my most recent unit, about the Punic Wars, I had pictures of elephants, the Alps, Rome, the Mediterranean Sea, Roman and Carthaginian soldiers, a phalanx, Roman generals, and Hannibal of Carthage. (640, reflection journal 2)

Karen believed that as an educator, she should not only be aware of these ELL-friendly strategies but “share them with colleagues, utilize them in their classrooms, and watch the students grow.”

**Integrating the Four Language Skills**

Compared with an expanded repertoire of strategies, the biggest change came through Karen’s realization that she needed to make more effort to address the four language skills. In her course reflections, Karen admitted that one “huge area of weakness” in her teaching was language instruction. She realized that she did not spend enough time focusing on “language-focused goals, learning, and growth,” and a new modification that she was going to make was to make sure that each of the class activities “at one point or another” would address the four language domains.

The post-program interview data further indicated that Karen’s major takeaway from the ECTC program was the importance of providing opportunities to listen, speak, read, and write in her class every day, and the learning came about with a realization that outside of class the opportunities for ELL students to practice these four language skills were very limited.
One thing that I go back to a lot that we used to talk about in one of our classes was that outside of class these kids typically have very little opportunity to speak in English, to read in English, to write in English, and to listen to English, so that really hit home for me. I felt like, “ok every day I have to give those kids those four opportunities,” so it is important, and it should be a goal of ours. (Interview 2)

Karen also reported a more nuanced understanding about the “connection” among the four language skills and the necessity to create for the ELL students a language environment where the four language processes were integrated.

Attitude Change

In addition to the importance of integrating the four language skills, Karen recognized an attitude change that was brought about by her awareness of the difference between how much ELL students could communicate orally and socially (BICS) and how much they actually understood the academic content (CALP). She learned not to assume but to really find out where the student is in terms of his/her language proficiency level.

Like back to Jamil [pseudonym], I think a lot of people could be fooled by him because his oral language is pretty strong, but that does not mean that he understands much of what we are doing, and so taking the time to really figure out where he is rather than just assuming. I think that’s an attitude change, like trying not to assume so much and trying to get to know them a little better to know where they really are academically not just socially. (Interview 4)

Another change in mentality was shared when Karen talked about how she firmly believed now that “all kids can learn in a content area class as long as they are given the modification that they need to support them and make them be able to reach what they are capable of.” In the following quote, Karen reflects on the trajectory of this mentality change over the years and how the ECTC training had finally helped her abandon the idea that “ELL students would be better suited in an all-ESL program all day.”

Obviously I believe now that, and I did a little bit before too, but even more now that all kids can learn in a content area class as long as they are given the
modification that they need to support them and make them be able to reach what they are capable of. It definitely has grown stronger. Before I still felt that way because I’ve done this ESL thing for a while and been a big believer in it. But still in the back of my mind I kind of felt like those kids would be better suited in an all ESL program all day. I never feel that way now. (Interview 3)

Research Question 2:

How Did Karen’s Learning From the ECTC Program Facilitate Changes in Her Teaching Practices?

Central to the impact of the ECTC program on Karen’s teaching practice was improvement in the implementation of the SIOP model and how she carried over some of her ECTC learning, like integrating the four language skills, into her already developed repertoire of teaching practices.

Implementation of the SIOP Model

Karen’s survey responses indicated that the ECTC influence on her teaching practices was mainly manifested in her implementation of the SIOP strategies. Improvement was reported in the frequency of using eight SIOP features that belonged to five SIOP components: lesson preparation, building background, comprehensible input, interaction, and practice and application.

During the interviews, Karen highlighted “emphasizing key vocabulary” as an example of changes in her vocabulary instruction. The planned change during the ECTC program to “frontload” ELL students with key vocabulary words had been implemented before teaching each new unit. Further, Karen found herself really focusing on these words throughout the unit by incorporating them into class activities and students’ study guides and assessments, as well as connecting them to “what students already knew about
the concept,” while she usually did not give vocabulary so much emphasis in her other classes. In addition, doing vocabulary review as a warm-up for the lesson was also a form of differentiation to address the needs of beginner ELL students (more will be discussed in a later section).

The hard part is the language in social studies is so cumbersome. There’re a million words, and so which words do you pick to focus on. So I just try to pick the same words that I want everybody to learn, it’s just key concepts. So I think I do that differently, like really trying to focus on key vocabulary. Before unit starts, I give each of the kids four vocabulary words, and they have to write the definition, and make a big colored picture, so it’s kind of frontloading what we were learning a little bit, and then I try to refer to those words throughout the whole unit. Those are the same words that the beginners do on the warm up each day, and they are also the same words on their study guides, the same words on their tests. So although I don’t focus on every single thing, because there are so much, I try to pick, I guess that’s another thing I have changed after the ECTC, 10 to 15 words a unit that I really want them to know and focus on. Only my ESL class does those, my other classes do primary and secondary source reading. (Interview 3)

Observations conducted using the SIOP protocol basically confirmed Karen’s self-reports via the survey and the interviews. However, some discrepancies still existed. With regard to the overall implementation level (Table 40), the total scores (percentages) of the six lessons were: 65%, 58.3%, 4.2%, 71.7%, 60%, and 57.5%; and the average percentage was 61.1%. Yet, it can be seen that her total scores were negatively influenced by her failure to implement the two features related to posting and delivering lessons based on language objectives and the feature on providing opportunities for using learning strategies.
Table 40

Karen’s SIOP Scores

<table>
<thead>
<tr>
<th>Lesson Preparation</th>
<th>Obs1</th>
<th>Obs2</th>
<th>Obs3</th>
<th>Obs4</th>
<th>Obs5</th>
<th>Obs6</th>
<th>Avg</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Content objectives clearly defined, displayed, and reviewed with students</td>
<td>2(^{23})</td>
<td>0</td>
<td>0</td>
<td>2</td>
<td>0</td>
<td>2</td>
<td>1</td>
</tr>
<tr>
<td>2. Language objectives clearly defined, displayed, and reviewed with students</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>3. Content concepts appropriate for age and educational background level of student</td>
<td>4</td>
<td>4</td>
<td>4</td>
<td>4</td>
<td>4</td>
<td>4</td>
<td>4</td>
</tr>
<tr>
<td>4. Supplementary materials used to a high degree</td>
<td>3</td>
<td>3</td>
<td>3</td>
<td>4</td>
<td>4</td>
<td>2</td>
<td>3.17</td>
</tr>
<tr>
<td>5. Adaptation of content to all levels of student proficiency</td>
<td>2</td>
<td>2</td>
<td>4</td>
<td>2</td>
<td>4</td>
<td>4</td>
<td>3</td>
</tr>
<tr>
<td>6. Meaningful activities that integrate lesson concepts with language practice opportunities for reading, writing, listening, and/or speaking</td>
<td>3</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>3</td>
<td>3</td>
<td>3</td>
</tr>
</tbody>
</table>

**Building Background**

<p>| | | | | | | | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>7. Concepts explicitly linked to students’ background experiences</td>
<td>3</td>
<td>3</td>
<td>3</td>
<td>4</td>
<td>1</td>
<td>1</td>
<td>2.5</td>
</tr>
<tr>
<td>8. Links explicitly made between past learning and new concepts</td>
<td>2</td>
<td>2</td>
<td>3</td>
<td>2</td>
<td>2</td>
<td>3</td>
<td>2.33</td>
</tr>
<tr>
<td>9. Key vocabulary emphasized</td>
<td>4</td>
<td>4</td>
<td>3</td>
<td>4</td>
<td>3</td>
<td>2</td>
<td>3.33</td>
</tr>
</tbody>
</table>

**Comprehensible Input**

<p>| | | | | | | | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>10. Speech appropriate for students’ proficiency levels</td>
<td>4</td>
<td>4</td>
<td>4</td>
<td>4</td>
<td>4</td>
<td>4</td>
<td>4</td>
</tr>
<tr>
<td>11. Clear explanation of academic tasks</td>
<td>3</td>
<td>3</td>
<td>3</td>
<td>4</td>
<td>4</td>
<td>3</td>
<td>3.33</td>
</tr>
<tr>
<td>12. A variety of techniques used to make content concepts clear</td>
<td>4</td>
<td>4</td>
<td>4</td>
<td>4</td>
<td>3</td>
<td>3</td>
<td>3.67</td>
</tr>
</tbody>
</table>

**Strategies**

<p>| | | | | | | | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>13. Ample opportunities provided for students to use learning strategies</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>14. Scaffolding techniques consistently used, assisting and supporting student understanding</td>
<td>2</td>
<td>2</td>
<td>2</td>
<td>3</td>
<td>2</td>
<td>2</td>
<td>2.17</td>
</tr>
<tr>
<td>15. A variety of questions or tasks that promote higher order thinking skills</td>
<td>3</td>
<td>2</td>
<td>2</td>
<td>3</td>
<td>3</td>
<td>3</td>
<td>2.67</td>
</tr>
</tbody>
</table>

\(^{23}\) 0= Not evident, 1= Barely evident, 2= Somewhat evident, 3= Evident, 4= Highly evident

(Continued)
Table 40 (continued)

<table>
<thead>
<tr>
<th>Interaction</th>
<th>Obs1</th>
<th>Obs2</th>
<th>Obs3</th>
<th>Obs4</th>
<th>Obs5</th>
<th>Obs6</th>
<th>Avg</th>
</tr>
</thead>
<tbody>
<tr>
<td>16. Frequent opportunities for interaction and discussion</td>
<td>3</td>
<td>2</td>
<td>2</td>
<td>3</td>
<td>2</td>
<td>2</td>
<td>2.33</td>
</tr>
<tr>
<td>17. Grouping configurations support language and content objectives of the lesson</td>
<td>2</td>
<td>0</td>
<td>0</td>
<td>2</td>
<td>0</td>
<td>0</td>
<td>0.67</td>
</tr>
<tr>
<td>18. Sufficient wait time for student responses consistently provided</td>
<td>4</td>
<td>4</td>
<td>4</td>
<td>4</td>
<td>4</td>
<td>4</td>
<td>4</td>
</tr>
<tr>
<td>19. Ample opportunities for students to clarify key concepts in L1</td>
<td>0</td>
<td>4</td>
<td>0</td>
<td>2</td>
<td>0</td>
<td>0</td>
<td>1</td>
</tr>
</tbody>
</table>

Practice & Application

<table>
<thead>
<tr>
<th></th>
<th>Obs1</th>
<th>Obs2</th>
<th>Obs3</th>
<th>Obs4</th>
<th>Obs5</th>
<th>Obs6</th>
<th>Avg</th>
</tr>
</thead>
<tbody>
<tr>
<td>20. Hands-on materials and/or manipulatives provided for students to practice using new content knowledge</td>
<td>2</td>
<td>1</td>
<td>2</td>
<td>4</td>
<td>3</td>
<td>1</td>
<td>2.17</td>
</tr>
<tr>
<td>21. Activities provided for student to apply content and language knowledge</td>
<td>1</td>
<td>0</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>0</td>
<td>0.67</td>
</tr>
<tr>
<td>22. Activities integrate all language skills</td>
<td>3</td>
<td>3</td>
<td>3</td>
<td>3</td>
<td>3</td>
<td>3</td>
<td>3</td>
</tr>
</tbody>
</table>

Lesson Delivery

<table>
<thead>
<tr>
<th></th>
<th>Obs1</th>
<th>Obs2</th>
<th>Obs3</th>
<th>Obs4</th>
<th>Obs5</th>
<th>Obs6</th>
<th>Avg</th>
</tr>
</thead>
<tbody>
<tr>
<td>23. Content objectives clearly supported by lesson delivery</td>
<td>4</td>
<td>4</td>
<td>4</td>
<td>4</td>
<td>4</td>
<td>4</td>
<td>4</td>
</tr>
<tr>
<td>24. Language objectives clearly supported by lesson delivery</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>25. Students engaged approximately 90% to 100% of the period</td>
<td>4</td>
<td>4</td>
<td>4</td>
<td>4</td>
<td>4</td>
<td>4</td>
<td>4</td>
</tr>
<tr>
<td>26. Pacing of the lesson appropriate to students’ ability levels</td>
<td>4</td>
<td>4</td>
<td>3</td>
<td>4</td>
<td>3</td>
<td>4</td>
<td>3.67</td>
</tr>
</tbody>
</table>

Review & Assessment

<table>
<thead>
<tr>
<th></th>
<th>Obs1</th>
<th>Obs2</th>
<th>Obs3</th>
<th>Obs4</th>
<th>Obs5</th>
<th>Obs6</th>
<th>Avg</th>
</tr>
</thead>
<tbody>
<tr>
<td>27. Comprehensive review of key vocabulary</td>
<td>3</td>
<td>2</td>
<td>1</td>
<td>3</td>
<td>2</td>
<td>3</td>
<td>2.33</td>
</tr>
<tr>
<td>28. Comprehensive review of key content concepts</td>
<td>3</td>
<td>2</td>
<td>1</td>
<td>3</td>
<td>3</td>
<td>3</td>
<td>2.67</td>
</tr>
<tr>
<td>29. Regular feedback provided to students on their output</td>
<td>3</td>
<td>3</td>
<td>2</td>
<td>3</td>
<td>3</td>
<td>3</td>
<td>2.83</td>
</tr>
<tr>
<td>30. Assessment of student comprehension and learning of all lesson objectives throughout the lesson</td>
<td>3</td>
<td>2</td>
<td>1</td>
<td>2</td>
<td>2</td>
<td>2</td>
<td>2</td>
</tr>
</tbody>
</table>

| Total score:                                                    | 78/120 | 70/120 | 65/120 | 86/120 | 72/120 | 69/120 |
| Percentage:                                                    | 65% | 58.3% | 54.2% | 71.7% | 60% | 57.5% | 61.1% |
As can be seen in Table 41, 17 SIOP features (56.7%) were implemented at the “evident” (8) or “highly evident” (9) level; six features (20%) were “somewhat evident” in Karen’s lessons; and seven features (20%) were implemented at the “barely evident” or the “not evident” level. Her overall implementation of the SIOP model was at a moderate level. These findings did not seem to support Karen’s responses to the survey that indicated she “frequently” or “always” implemented 28 SIOP features (93.3%).

Particularly, two SIOP features were not evident over six observations but were self-rated by Karen as being implemented “frequently” in the survey: “grouping configurations support language and content objectives of the lesson” and “activities provided for students to apply content and language objectives.”

Table 41

*Frequency Counts of Features at Each “Evident” Level (Karen)*

<table>
<thead>
<tr>
<th></th>
<th>Highly evident features</th>
<th>Evident features</th>
<th>Somewhat evident features</th>
<th>Barely evident features</th>
<th>Not evident features</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lesson 1</td>
<td>8</td>
<td>11</td>
<td>6</td>
<td>1</td>
<td>4</td>
</tr>
<tr>
<td>Lesson 2</td>
<td>9</td>
<td>5</td>
<td>9</td>
<td>1</td>
<td>6</td>
</tr>
<tr>
<td>Lesson 3</td>
<td>7</td>
<td>8</td>
<td>5</td>
<td>3</td>
<td>7</td>
</tr>
<tr>
<td>Lesson 4</td>
<td>13</td>
<td>7</td>
<td>6</td>
<td>1</td>
<td>3</td>
</tr>
<tr>
<td>Lesson 5</td>
<td>8</td>
<td>9</td>
<td>6</td>
<td>1</td>
<td>6</td>
</tr>
<tr>
<td>Lesson 6</td>
<td>7</td>
<td>9</td>
<td>6</td>
<td>2</td>
<td>6</td>
</tr>
<tr>
<td>Average</td>
<td>9</td>
<td>8</td>
<td>6</td>
<td>2</td>
<td>7</td>
</tr>
</tbody>
</table>
Despite the discrepancies, the observation data indicated that “emphasizing key vocabulary,” the SIOP strategy that Karen highlighted during the interview, was implemented at an evident level, as indicated by the average score of 3.33.

Karen chose to teach explicitly a number of key vocabulary words in each of her lessons by providing definitions (e.g., *fertile*, *mummify*, *hierarchy*) and examples (e.g., *crescent*), building on students’ background knowledge (e.g., *lunar calendar*, *social pyramid*), telling a story (e.g., *exodus*), sounding out the word (e.g., *cuneiform*, *cartouche*), and/or analyzing the word parts (e.g., *exodus*, *geologist*, *monopoly*, *monotheist*, *polytheist*, *reincarnation*). These words were displayed on the board or the overhead or underlined in the study guides for the students to see. Table 42 lists the words that Karen explicitly taught over the six lessons.

Table 42

<table>
<thead>
<tr>
<th>Vocabulary Words Explicitly Taught Over Six Lessons (Karen)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Lesson 1</strong></td>
</tr>
<tr>
<td>fertile, crescent, cuneiform, lunar calendar, monopoly, bibliography</td>
</tr>
</tbody>
</table>

The following excerpt, for example, shows how Karen explained the word “monopoly” by teaching word parts and providing definitions for another two key vocabulary words (*monotheist*, *polytheist*).
Karen: What does the word monopoly mean? (writing the word on the board)
S: It’s a type of game.
Karen: It is a type of game. But what does the word mean?
Ss: (murmuring)
Karen: How do you know you win Monopoly? Mono-poly, one owning many (writing the words down on the board). Remember “mono” always means “one,” “poly” always means “many” (circling the two parts). So monotheist means one god, polytheist means many gods.

In another situation, Karen explained how the lunar calendar was invented and worked. As can be seen from this 3-minute-long excerpt, Karen built on students’ knowledge about phases of the moon and the solar calendar to explain the new concept.

Karen: Mesopotamians invented the first 12-month calendar based on the cycles of the moon. What kind of calendar is that, that is based on the moon, not on the sun? Our calendar is based on the sun.
S: Lunar calendar?
Karen: Lunar calendar. What’s wrong with the lunar calendar? Anybody knows? The lunar calendar does not work very well some times. Any guesses?
S: Because summer the day goes longer.
Karen: Oh, that’s a good guess. But not quite. Let me explain what the lunar calendar is. When you look at the sky, do you notice that the moon is always different?
Ss: Yeah!
Karen: (drawing the phases of the moon on the board) Sometimes it’s a full moon, sometimes just part of it is missing, and then it becomes a half moon. Then it becomes a crescent moon, then it’s even smaller. Then it starts to get bigger again. And then it goes the way back to a full moon. Does anybody know how long it takes to get from one full moon to another full moon?
S: About a month.
Karen: How many days?
S: Twenty …?
Karen: Twenty eight. So it takes 28 days to get from one full moon to the next. Now, how many days are in each month?
S: Thirty.
Karen: Right. We have 30 to 31 days in a month, except for …
Ss: February
Karen: So when you add all these up, and times 12. How many days are in a year?
Ss: 365.
Karen: 365 days. Their problem is when you take 28 times 12, basically this is about to
equal 330 days. What were they missing?
S: 35 days.
Karen: They are missing 35 days.
Ss: That’s a lot.
Karen: That’s a whole month that they are missing. So that would like us celebrating Halloween in November instead of October. We would be one whole month off. (Students laughed.) That would be like us getting on our swimming suit going swimming in April. Is that a good idea?
Ss: No.
Karen: Why?
Ss: Because it’s cold.
Karen: Right. Because you freeze. Now the problem is after 3 years, you are about 3 months off. So when the Mesopotamians should have been planting seeds, they were harvesting seeds. Nothing was growing, because it wasn’t the right season. So the lunar calendar was kind of wrong. But they were smart people. How do they figure it out? Anybody knows?
S: Well, I don't know that, but why did not they do a 30-day calendar, like we do.
Karen: That’s a good question. They could have done that. But what they did instead was that they added these things called “holy days.” What do we call that?
Ss: Holiday!
Karen: Holidays! But they added holy days to the end of each month. So they would have 28 days plus 2 holy days.
Ss: So smart.
Karen: They were so smart. So those days would be dedicated to different gods. The river god, the sun god whatever. ……

In addition, Karen usually conducted a review of the concept and vocabulary words that were covered in previous lessons at the beginning of a lesson (in the form of the warm-up of the day). For instance, the warm-up activity for Lesson 6 was to compare the similarities and differences between Buddhism and Hinduism. Karen had the students review the key concepts from the previous lessons by having them brainstorm the five beliefs of Hinduism. By effectively using a graphic organizer (comparison chart), she helped students build connections between the two key concepts (Buddhism and Hinduism). In the following excerpt from this warm-up activity, Karen provided
definitions for each of the five beliefs as she engaged students in recalling and practicing saying the words.

Karen: … Let me give you a little help. Let’s think of the five main beliefs of Hinduism, really quick. What are the five main beliefs? Tell me one of them. S: Dharma.
Karen: Dharma, doing your duty. Tell me another of the five main beliefs. S: Karma.
Karen: Karma. Good. What goes around comes around. What’s another? (a student’s name), do you remember? S: …
Karen: What’s when your soul was reborn? S: Reincarnation
Karen: Reincarnation or Samsara. What’s the name of the main God? S: Brahman.
……
Karen: The other thing that isn’t up here is Hindus follow this thing we talked about the other day (drawing a layered triangle on the board) What’s this called? People at the bottom, people at the top? S: Cast system.
Karen: Exactly. According to Hinduism, only Brahmans can make it to Nirvana, which is kind of our idea of heaven…

The observation data also suggested that Karen’s vocabulary (as well as key concepts) instruction was further enhanced by the variety of techniques that she used to make her content more comprehensible for the ELLs, which was another improved SIOP feature that Karen attributed to her ECTC training (survey). In addition to graphic organizers (as indicated by the “Hinduism” example), pictures (e.g., mummy), real objects (e.g., papyrus), and teacher drawings (e.g., crescent, exodus) were also frequently used by Karen to help students build background and comprehend the history content.
In accordance with her self-rating of the SIOP feature for using hands-on materials and/or manipulatives (Feature 20), Karen incorporated into her lessons various hands-on activities (e.g., building a paper model of a social pyramid, writing one’s own name in hieroglyphics) and simulation games to give students hands-on and vicarious experiences with history concepts. The following class vignette describes a simulation game in Lesson 4 that helped students to understand “social pyramid” and “social mobility” in ancient Egypt.

Karen distributed some M&Ms to each student and reminded them to save the candies for the game. After briefly explaining the Egyptian social pyramid and introducing the concept of “social mobility,” Karen gave out another sheet of paper for the simulation game. The paper was taken from a supplemental book titled “Ancient History Simulations.” On the front page was a four-paragraph introduction of the background of the simulation. Karen asked four students to read out the background and summarize the content of each paragraph.

Karen then assigned roles for the simulation game by passing out cards, so that one student would play the role of pharaoh, one would be the government official, one would be the noble, and one would be a priest. The other students would be the peasants and slaves. Each student got a card with his or her role written on it. Karen asked the four “VIPs” to sit in the front. The pharaoh sat at the tallest seat and wore a crown. All the other students were asked to stand up, bow, and say their words of loyalty to the VIPs. Karen then gave the first order on behalf of pharaoh and asked the peasants and slaves to turn in their candies in the colors of green and brown. For the rest of the game, the peasants and slaves turned in their candies of other colors to the other three VIPs until all their candies were gone. Throughout the game, the students were all very excited, and they groaned and complained loudly when they had to turn in their candies.

However, like Ann, Karen was selective in what words to explicitly teach. Also, the texts for the read-alouds consisted of many words that the ELLs did not know (this could be seen from their difficulty in sounding out the words). However, none of these words were pre-taught to prepare students for the reading. Karen elucidated why she
made this choice during the interview. When asked why she did not teach “aristocratic,” a word that the students had a difficult time pronouncing when they did the read-aloud, Karen explained that even though she knew there were many difficult words in the reading, she had to make a decision between “spending half an hour talking about the vocabulary” or “glossing over” some of these words because she wanted to focus on the key words.

That’s a great example of comprehensible input, me slowing down to explain every word in that paragraph versus getting to the follow-up because there were so many words in that reading that were difficult, and I could spend half an hour on that, talking about the vocabulary and things like that, it’s just comes down to a judgment call, like can I get to that later, so that we can get through the game and get to the wrap-up or the follow up questions. Words like “aristocratic.” we will study those when we study government, and Greece particularly, so kind of as it’s happening. I’m making those calls, like “ok I will teach that later.” I really have to try to focus on a few things to teach them. Sometimes I just gloss over some of the other words, I just try to pick out key words to focus on. (Interview 2)

Teaching the Four Language Skills

As an important indicator of the ECTC influence, Karen believed that “the biggest change” that she had made was trying to focus on the four language skills every day. As she said during our first interview,

I would say the biggest change that I’ve made is that I really try to focus on those four skills, and I try to make sure they are doing it every day. … But for me that’s been the biggest thing that every day I try to focus on those four things in one way or another. Maybe it’s just reading guided notes, maybe it’s just taking notes, filling in guided notes, listening to what I’m saying, talking to their neighbors about it, offering answers, things like that. But surprisingly I did not focus on it before, like really trying to make sure it happened every day. That’s what I do now. I really try to make sure that they are exposed to all four every day. (Interview 3)
My observation data indicated that Karen’s implementation of “teaching the four language skills” was mainly represented/instantiated in her classroom teaching as providing students with plenty of opportunities for reading aloud.

**Teaching reading.** Compared with the other two case study teachers, Karen had her students read the most in class. A good portion of the class time was spent on students reading aloud from different types of texts, and this was done by either one student being nominated to read aloud (Lessons 3 & 5), students reading in unison by teams (e.g., boys vs. girls) (Lesson 3), or the whole class doing choral reading (Lesson 6). The observation data indicated that three of the six observed lessons (Lessons 3, 5, 6) were organized with reading as a central activity where students read aloud, followed by the teacher providing explanations and/or telling anecdotal stories and using the abridged texts (summaries of the texts for the read-aloud) on the study guides to help students further comprehend the content. The reading activities also provided opportunities for writing through copying notes and labeling maps.

The following are (1) an excerpt of Karen’s talk after a student read a paragraph aloud from the textbook and (2) the paragraph taken from the abridged text on the study guide.

T: So this paragraph tells us why they chose to live in Egypt. First of all, it’s frost free. It’s always warm there, you can grow crops there all year there. Also they have nature protection because of the Sahara Desert, the Red sea and the Mediterranean Sea. Also they have really good building material, granite, sandstone, limestone. Those are wonderful things to build out of. (As she talked, she also referred to the paragraph on the overhead and on the students’ study guide that summarized what the student just read from the textbook.)

<table>
<thead>
<tr>
<th>T: So this paragraph tells us why they chose to live in Egypt. First of all, it’s frost free. It’s always warm there, you can grow crops there all year there. Also they have nature protection because of the Sahara Desert, the Red sea and the Mediterranean Sea. Also they have really good building material, granite, sandstone, limestone. Those are wonderful things to build out of. (As she talked, she also referred to the paragraph on the overhead and on the students’ study guide that summarized what the student just read from the textbook.)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Besides leaving fertile soil, the Nile also supplied granite, sandstone, and limestone for building. The Nile’s location also serve as a natural protection against invaders and it’s frost-free climate made it easy to grow many kinds of crops.</td>
</tr>
</tbody>
</table>
As can be seen, Karen first used a sentence to summarize what the student just read, saying, “So this paragraph tells us why they chose to live in Egypt,” and then provided more explanations about the natural conditions of ancient Egypt. She used the paragraph on the study guide to help students extract key information. The key words were underlined within the text to draw students’ attention, though these words were left blank on the students’ study guide so that they got an opportunity to practice writing them.

According to my observation data, Karen also adapted the grade-level content for her ELLs by using teacher-prepared study guides to a high degree. The study guides took two forms: (1) brief summaries of the assigned texts made up of cloze-format paragraphs (as previously mentioned) and (2) short-response questions to focus students’ attention on key concepts, such as “on what continent is Egypt located?” or “why did the pharaoh have so many possessions buried with him/her?” The latter type served the function of a “preview” for a topic or a unit, and it was usually assigned for students to work on outside of class to get prepared for the new topic or unit. Karen would have students share their answers in class and thus turned the writing exercise into an opportunity for students to practice speaking.

Compared with the modifications made to the study guides, the reading texts, which were written at the grade’s reading level, were beyond the comprehension of the pre-functional and beginner students. Karen seemed to be aware of the fact that “there are kids that don’t understand any of that text” and had doubts about whether read-aloud was the most appropriate reading activity for students with nearly “zero” proficiency in English.
Now I go back and forth a little bit about what does reading really mean. Does it mean you are reading aloud? Does it mean you are reading to yourself? Does it mean you are following along? Like Mari [pseudonym] is not going to read aloud in this class. She barely knows any English, and she has no confidence. (Interview 1)

However, she believed that she was able to balance between language and content by focusing on the key vocabulary and providing students opportunities to listen, speak, read, and write in class. As she said in the following quote,

I think a great example is if we are reading a text, there are kids that don’t understand any of that text, and even intermediate kids don’t understand half of it. I could spend one hour going over one page of a text with an ESL class, but I just cannot do that, so there does have to be balance between language and content. But I feel like I am a social studies teacher, I have to focus on the content, but it’s embedded with language, so if they are able to pick up 15 social studies vocabulary words and learn what those mean, and it’s related to my content, I feel like I’ve done both things, language and content. And then also by focusing on giving them the opportunity to read, write, speak and listen every day, I feel like I’m hitting some of that language. So I really do try to balance them, but content comes first. (Interview 5)

**Limited opportunities for speaking.** With regard to providing more opportunities for students to speak in class, Karen’s efforts were mainly seen in how she engaged students in teacher-led question-and-answer exchanges (as the excerpt on pages 221-222 indicates) and encouraged students to ask questions and add their comments. The fact that Karen always nominated students to answer questions (rather than having only volunteers answer) or had students answer questions in seat order made sure that all students got opportunities to talk. In addition, in Lesson 1, I observed Karen using a speaking activity (called “expert panel”) that she learned from the ECTC program to help students review for the next day’s quiz.
The expert panel. For this activity, Karen nominated three ELL students to sit at the front the class. She said, “So our test is tomorrow. I think you guys are pretty well-prepared. I’m going to have some people to come up here and show us how much they know. They are going to be answering some questions for us. They are our class experts today.” (Some students who were not nominated asked if they could get their chair the next time.) Then Karen gave each student a new handout where the questions for the next day’s test were listed. The students began to take turns to ask the “experts” the listed questions. After each question was answered, Kristen would write down the answer on the board.

However, in Karen’s class, whole-class teaching prevailed. Her lecture style of teaching caused limited opportunities for students to practice using academic English through partner or group work. Over the six lessons, I observed only one occurrence of partner work, when Karen asked the students to discuss with their desk-mates the “social structure” of their school by using a social pyramid chart and a word bank. However, the students were given only one minute before they were brought back to whole class discussion. The following excerpt is an example of the ratio of teacher and student talk in Karen’s class.
Karen: Now in ancient Egypt, if your mom and dad were slaves, could you become priest?
S: No/Yes.
Karen: No. Not in Egypt. That is called social mobility. No social mobility. In ancient Egypt, if you were born in a certain role, you were that role for ever. You were always a peasant or a slave. It did not matter how hard you worked. If you were the best peasant, maybe you worked every day so hard, and you even studied and became smart, you could never become an artisan, you could never become a priest. You would always be stuck there. Do we have social mobility in the United States?
Ss: Yes.
Karen: Yeah! Ok! It does not matter what your parents are. You can be whatever you want. Right?
Ss: Yes.
Karen: You can work towards it. You have social mobility. I’m a great example of that. My dad did not even graduate high school, because he could not, he had to work for his family, and because of that, because how hard I saw my dad worked his whole life, I decided where I was very little, I don’t want that happen to me, I’m going to work really hard, I’m going to college. And I knew when I was very little I wanted to be a teacher. And so that is what I became. That’s social mobility. I don’t have to do what my dad did. Are there people whose parents are doctors or lawyers who don’t ever get to be doctors or lawyers?
Ss: Yeah.
Karen: Yeah. So social mobility can go both directions. Right?
Ss: Yeah.

In this two-minute long excerpt, Karen explained the concept “social mobility” by providing easy-to-understand explanations and using her own life experience as an example. Karen talked for almost the entire two minutes, and the students responded to her prompts only with “yes” or “no.” In addition, although Karen asked good questions, such as “do we have social mobility in the United States?” which would promote students’ higher-order thinking skills, she answered the questions herself, without turning them into an opportunity for student discussion and sharing.

In addition, simulation games, as Karen’s favorite hands-on activity, were implemented in a way that actually limited students’ opportunities to talk. One instance was the “social pyramid” game (as introduced on page 251). Throughout the activity, the
students were just acting out what the teacher instructed them to do and pantomiming their assigned roles. There were no interactions or follow-up discussions.

**Instruction Differentiation**

Differentiation was always a key component of Karen’s instruction in her sheltered class. Several forms of differentiation were mentioned during the interviews, and the ECTC influence could be seen in the changes that Karen made to cater more to the needs of beginner students. There were three versions of a test that were designed for ELL students at different language proficiency levels, as will be discussed below. In addition, daily warm-up was differentiated for the pre-functional and beginner students. While students with a higher level of English proficiency and the native speakers would answer a question that helped them review what they had learned the previous day or preview the current day’s concept, the pre-functional and beginner students would have their individual warm-up to do: define the word of the day. Karen told me that although she started to differentiate the warm-up task for beginner students a couple of years ago, some modifications were made this year inspired by her ECTC learning, like allowing students to write in their L1 or draw a picture instead of writing to show their understanding of the word.

Finally, homework assignments were modified and differentiated so that the students at different language proficiency levels could demonstrate their knowledge. During the interview, Karen mentioned using a teacher’s resource titled “World History Shorts” for students’ homework assignments. The way in which she differentiated assignments for the beginner students was to have them do the vocabulary exercise on the worksheet (based on one page of reading) with the support of a word bank, while the
other students did all the exercises (short response questions, essays, etc.) that required more advanced language skills.

In the following quote, Karen introduces a homework assignment (called “dialogue homework”) that she usually assigned every one to two weeks for the students to report what they had learned. As can be seen, her expectations for how much the students could write were flexible depending on the students’ language proficiency levels. Karen also involved the parents in evaluating the level of their children’s learning by filling out a “feedback note” either in English or in their L1. The feedback note (the parents’ feedback) thus opened up a channel of communication between the teacher and the parents.

This homework here, I love and I use it for all my kids, but I modified it. So like a regular ed. kid, a native speaker would write five facts that they’ve learned in social studies for the last week or two, and I expect them to write a lot, whereas an intermediate ELL would just write something like “Siddhārtha Gautama became the Buddha,” and a beginner ELL could just write “Buddha.” And then what they have to do is they have to go home and teach their parents what they’ve been learning in class, and their parents circle what their knowledge level is, and then a parent has to write a note. Their note can be “my child is doing great,” or “my child is so lost, please help them.” And a lot of parents write to me in Japanese or whatever, and I take it to our aide, and I just say “tell me what this says?” So this is a pretty good homework assignment. Again it’s just feedback from parents, and let me know what’s going on. (Interview 3)

Interestingly, a new twist that Karen added to this homework assignment was an idea that she learned from the ECTC. For a pre-functional student who may find the above-mentioned learning reflection too demanding, Karen designed a “growth and goal chart” for the student to fill out each week. The chart focused on the four language domains, and the students could utilize the chart to track their growth in each of the four domains.
Assessment Modifications

As Karen noted, the ECTC program “factored in a lot” when she started to make modified tests for the new school year (the year after the ECTC). Although she always modified and differentiated tests for her ELL students, she incorporated some new modifications to make the test more reader-friendly, especially for the beginner ELL students. During our interviews, Karen showed me three versions of the same test that she made for students at different language proficiency levels: regular education students (including advanced ELL students), high-functioning beginners to intermediate ELL students, and beginner ELL students. The format of the test remained consistent for the advanced ELL students and for the intermediate ELL students and included matching, multiple choice, true/false, fill in the blanks, short-answer questions, and map-labeling. Some ELL-friendly modifications were apparent:

- The number of questions was reduced by half (e.g., instead of 10 matching questions that were required of the advanced students, the intermediate students would do only five).
- The number of choices (of multiple choice questions) was reduced to three.
- The key words were put in bold.
- Wording of some of the questions was modified so that the syntax and vocabulary was less complex.
- A word bank was provided to aid the students in filling in the blanks.

The test for the beginners was even further modified to accommodate their low reading and writing abilities and included white spaces and pictures for the matching and the multiple choice sections. The following is an example of a matching question:
Unit Reflection

The end of unit reflection represented another important change brought about by the ECTC program. Karen shared that she “stole” the idea from one of the summer classes (Selecting and Developing Second Language Materials) and adapted it so that it became a good opportunity for the students to reflect on their learning. The unit reflection, in the form of a six-question questionnaire, was first assigned to the students as homework immediately after they took the unit test. The six questions were:

1. Which element of this unit will stick with you forever?

2. Which assignment (or part of the test) did you do the best on? Why?
3. Which assignment (or part of the test) did you struggle with? Why?
4. How do you think you did on the test? What makes you think that?
5. How can you improve on the next unit?
6. How has your knowledge changed since the last test or the beginning of the year?
   Give two examples.

One day was set aside for the teacher-student conferences. Karen would meet with each student for 3 to 4 minutes and talk about the progress that they had made and struggles that they still had about learning the unit content. For Karen, the conference was as important as reading the students’ unit reflection because it provided opportunities for the students to communicate personally with the teacher, and she found that even the pre-functional students were “more opened-up” on this occasion.

**Providing Professional Training**

As Karen had planned during the ECTC program to bring about changes in her building, she did not stop at just making the modifications to benefit ELL students within her classroom. The year after the ECTC was marked by her effort to get more teachers on board to learn about the “quick and simple things” that they could do for the ELLs. By collaborating with another ECTC teacher (Jenny) in the building, Karen provided training first for teachers in her building and then at the district-wide summer academy.

As Karen told me, although their original plan was just to give a presentation at the summer academy, they changed their mind after a couple of sixth grade teachers approached them for help and quick ideas. Very quickly they put together a presentation by using “specific ECTC strategies and ideas.” To avoid overwhelming the teachers, they focused on “instructional strategies that are quick and easy to implement.” The
presentation was given to the teachers in each grade (6–8) in small groups. Karen and Jenny used the hour in the morning before school to conduct three small group meetings.

Research Question 3:

What Were the School Organizational Factors That Either Facilitated or Hindered Changes in Teacher Practice?

This part of Karen’s story highlights two facilitating factors that were associated with “adequate support from school administration” and “supportive ESL services and teachers” (as indicated by the survey data), and three major challenges that Karen had to deal with (that were revealed by the interview data). First, the wide range of students’ language and ability levels (from pre-functional ELL students to native speakers) required extra time, effort, and resources to differentiate her instruction and to “meet everyone’s needs.” Second, time was a hindering factor that limited Karen’s effort to make modifications and to collaborate with other school professionals. More importantly, pressure to deal with changes coming from outside of the classroom was increasingly felt by Karen over the three years after the ECTC program.

Meeting Everybody’s Needs

The interview data revealed that the factor that posed the biggest challenge, which was also reported by Karen in the survey, was “meeting everybody’s needs.” Having students at different language proficiency levels “from native speakers to pre-functional students” put a strain on her time and resources to “to modify everything, to modify all of the notes, all of the activities, all of tests.” She also felt frustrated by the fact that she could not make her input comprehensible for a couple of “truly pre-functional students” to the extent that they were sometimes totally lost in her class.
I feel like that something that does not work out very well is my comprehensible input sometimes, because I looked out at Maki [pseudonym], she is clearly lost, and obviously she understands very little what I’m saying because she is a truly pre-functional student, but it frustrates me. I always try to figure out how to approach it better, and I try to remember to slow down, but sometimes I don’t think about it, I’m just talking talking talking, even if I look up at the clock I’m like, we are not going to get to that, I got to get that done, so that’s frustrating for me.  (Interview 2)

Not knowing what was holding some of her pre-functional students back—whether it was a “language problem” or “learning problem”—was another challenge that Karen had to deal with every year. Although she noticed that these students were not learning at the same rate as their peers, she did not seem to get much professional help to diagnose these students correctly and offer them the help that they needed.

**Time as an Obstacle**

Karen believed that time was a factor that stood in the way of bringing her instruction to the next level. Discontent with “no time to modify,” “no time to use resources,” and “no time to collaborate” was alluded to during the interviews. In the following quote, Karen explains why teacher collaboration could only be “a great idea” that “cannot realistically happen” (because of lack of time).

One thing is collaboration with other teachers. I think that’s so important but there’s so little time to do that, let alone a common plan period. First of all, you need a common plan period which does not exist, so you have to do it before or after school, and you cannot get a lot done in a 20 minute block, you need to meet for 2 hours to really talk stuff out and work it out. So I feel like that’s a great idea, but it cannot realistically happen often. (Interview 5)

**Less Emphasis on Social Studies Education**

The second year I interviewed Karen, she spoke of a couple of new challenges (roadblocks) due to reduction in the amount of instructional time allotted to social studies (history). With an aim to “boost scores of language arts and math,” the two subjects on
which students are tested on the state achievement assessment (Ohio Achievement Assessment), the school district made the decision to cut the number of hours for science and history instruction by half. While the students used to have a 60-minute lesson every day for each of the four core subjects, they now had three lessons of 86 minutes. Language arts and math were still taught every day, but students would only have science or social studies every other month.

The impact of this change on Karen’s instruction and her morale was clearly perceptible in many ways. First, her lessons were “way off schedule” and far behind the point where she was the previous year. This was an unavoidable result of her instructional hours being reduced by half. Moreover, Karen found it difficult to “make the decision on what to cut out” in terms of curriculum content and even more challenging to strike “a delicate balance” between “keeping the content that the kids love” and providing enough time for reading and writing.

What frustrated Karen most, however, was the reduced amount of time that she had to help ELL students one-on-one and really build rapport with them. She believed that the reduction in the “time for socialization” between the teacher and the students, in combination with a lesser degree of modification that she could do, had not only affected the ELL students’ level of comfort in her classroom but had “inadvertently hurt their academic performance.” The former was manifest in the students’ unwillingness to seek help from her and the beginner students’ nonparticipation in class activities, and the latter could be seen from the slower progress that the beginner students had made in moving out of their assessment (than the previous years).
Resources Available

Karen acknowledged that “resources are available” in her school in terms of ESL teachers/experts and bilingual aides. As she reported in the survey, Karen believed that the ESL teachers did a good job in supporting her instructional needs. Their collaboration was facilitated by a bi-weekly team meeting where the ESL teacher was present to discuss with the other team members their concerns about, for example, an ELL student’s performance and behavior and ways to help and motivate the student to work towards his/her full potential.

However, Karen still felt that her instruction (and her students) would benefit more from planning together with an ESL teacher or having someone to bounce ideas off and solve problems with in her classroom. She mentioned that she used to have an ESL teacher/expert come into her classroom every other year to help her design activities and modify tests and coach her on how to make her input comprehensible for the ELLs. However, because of a staff shortage in the building, such invaluable help was no longer available.

Bilingual aides, on the other hand, were still coming to her class (for half the period) once in a while, but only on an available basis, and they were spread too thin among the school buildings to provide substantive help for each classroom.

Attitude of Other Teachers

Although Karen did not indicate in the survey that other teachers’ attitudes constituted a hindrance to the implementation and “dissemination” of her ECTC learning, she still lamented the fact during the interview that not everyone in the building was as enthusiastic as she was to work with ELLs, and because of lack of training a lot of them
were even scared of having to teach ELLs. Further, the administrators were not proactive in changing the situation.

In spite of her (and the other ECTC teacher’s) effort to provide training for teachers of all grades in the building, she failed to see much change happen. However, stronger than her disappointment was her worry that many of the teachers in the building were not prepared for the fast growing ELL population.

But after that very few people change what they are doing, some did, but some people did not. Our ESL population is growing, so people better start changing. It’s not gonna disappear, it’s not gonna leave, so you might well start working towards making it better now than waiting until it’s too late. (Interview 6)

Research Question 4:

How did Karen Perceive the Content and Design Features of the ECTC Program and the Impact of These Features on Her Learning Experience?

Compared with the other two teachers, Karen demonstrated an apparent dislike for the “theoretical” components of the courses. She believed that an ideal PD program would be one where she could learn “real strategies that I can use tomorrow to help kids.” She felt it did not need to be one year long but had to be extensive enough to provide teachers with numerous opportunities to learn ideas, put those ideas into practice, and share the results of their learning and practice. Such a program should also respect the fact that teachers generally are too “bogged down in just keeping it up every day” during a school year to develop any new lessons, so time and opportunities provided by a PD program to develop and try out new lessons would be highly preferred.

Her dislike for the first program course (which was more theory-oriented) was apparent because she commented twice during the interviews on the amount of reading
and writing that she was required to do. She stated that “reading got to the point where it was overwhelming, and we had to write huge papers,” and she believed that the time could be better spent on “practical applications” and in “making things that affect kids.” She thought that a heavy focus on theory failed to acknowledge the fact that “teachers in general want something that they can use now that will impact kids” and that they were usually burdened by having to juggle the multiple roles of a full-time teacher, a mom, and a student.

However, Karen expressed her unreserved support for the practical components of the program, particularly the online discussion board. She felt that she learned a lot from reading “people’s reaction to what we were reading” and sharing what worked and what did not work in their classrooms. She even kept a notebook of the strategies that she planned to try out in her class.

I know one thing that really stood out to me that I felt like learned a lot from was our online discussion board, where I could read people’s reaction to what we were reading. And also I’m not big on theory, I want to know real practice, “what are you doing in your classroom?”, “what works with these kids?”, and I loved that. I loved people would write “I’ve done this, it worked great.”, “I did this, it did not really work, what’s your take?”. I felt like I learned a lot from those discussion boards. I kept a notebook of ideas that I would say ok I want to try that, I want to do this. I just want as much practical use as possible, and I felt like that we got a lot of that on those discussion boards. (Interview 2)
Chapter 8: Cross-case Analysis

In this chapter, I take a final look back at the three cases through cross-case analysis and develop discussions to address the four research questions. My intent is to reflect on the combined/collective learning experiences of the teachers with the ECTC program and changes that they have enacted in their teaching practices to improve education for ELLs, as well as to shed light on how the teachers’ personal efforts are mediated by a multitude of factors at the classroom and school levels.

Revisiting the Case Study Teachers

The three case study teachers in this study represented the diverse participants of the ECTC program in terms of their prior experiences with ELL education, school building conditions, and student demographics (Table 43).
Table 43

Revisiting the Three Teachers

<table>
<thead>
<tr>
<th></th>
<th>Ann</th>
<th>Lana</th>
<th>Karen</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Subject taught</strong></td>
<td>Science</td>
<td>Science</td>
<td>History</td>
</tr>
<tr>
<td><strong>Grade level</strong></td>
<td>Middle school</td>
<td>High school</td>
<td>Middle school</td>
</tr>
<tr>
<td><strong>Years of teaching experience</strong></td>
<td>7</td>
<td>15</td>
<td>15</td>
</tr>
<tr>
<td><strong>Prior experience with ELL education</strong></td>
<td>None</td>
<td>3 years teaching a sheltered physical science class</td>
<td>7 years teaching a “semi-sheltered” social studies class</td>
</tr>
<tr>
<td><strong>School district</strong></td>
<td>A small urban area with an increasing number of ELLs</td>
<td>A large urban area with an influx of refugee immigrants</td>
<td>A large urban area with an increasing number of ELLs</td>
</tr>
<tr>
<td><strong>ELL student demographics</strong></td>
<td>Somali</td>
<td>Somali, Hispanic</td>
<td>Japanese, Middle Eastern</td>
</tr>
<tr>
<td><strong>Number of ELLs taught</strong></td>
<td>8</td>
<td>10</td>
<td>15</td>
</tr>
</tbody>
</table>

In this section, an “impressionist portrait” (tale) is presented for each teacher to highlight some of the key findings in her stories and prepare readers for the more in-depth discussions of the four research questions.

**Impressionist Portrait of Ann**

Being a novice in terms of her experience with the ELL students, Ann was on board with the ECTC program with a humble and open heart. For her, teaching science to a group of students who do not speak her language was like “playing a jigsaw puzzle game.” The ECTC program helped her “put the pieces together.” For Ann, change was almost immediate after she started the program. Each week and each month she “became more aware” and “gained some more resources,” and the changes affected not only how
she thought of her ELL students but how she taught them. Ann found that what she gained from the ECTC program went far beyond the “cool strategies” and included such virtues as “understanding, patience, and recognition.”

Through the ECTC program, Ann formed a closer relationship with the ESL teacher in her school, and the year after the ECT program they embarked on a new collaborative relationship in Ann’s science classroom. Together they implemented, through trial and error, what they learned from the ECTC program to provide a more supportive and quality instruction for their ELL students. Although their effort to disseminate their knowledge and expertise beyond the confines of their individual classrooms got “stranded” because of “a less than ideal” school environment, they still remained positive because they believed that change should start from each individual, much like it did for them, and given time and education everyone would be on board for assisting the ELLs. Having been an ECTC alumni for two years, Ann was still learning and changing and searching for a couple of pieces still missing from her puzzle, but she was more confident in meeting the challenge of helping all her students succeed.

Impressionist Portrait of Lana

Unlike Ann, Lana did not begin her one-year training with the ECTC program as a “blank sheet of paper.” Having taught sheltered science for three years at a high school with a high percentage of ELL students, Lana was SIOP-trained and had “experimented” with her “ELL-related learning” in her sheltered physical science class, which was mainly composed of Somali immigrant students and Spanish-speaking students.

For Lana, the one-year training not only added new strategies to her “ESL tool box,” but also brought a new level of awareness to her current teaching practices in terms
of why she was doing what she was doing. Particularly, what came to the forefront of her awareness was the importance of teaching the four language skills intentionally to assist in ELL students’ language acquisition.

Lana described her year after the ECTC as “a combination of applying new tools and making adjustments and adaptations both from last year and along the road this year.” It was also a year when she began to make teaching literacy a well-designed and intentional part of her daily teaching, or as she said, making teaching literacy “on purpose” and “with purpose.”

Accompanying the changes in her instructional practices were the multiple roles that Lana began to assume in the building due to the various trainings that she had taken. She became a trainer, expert, go-to person, and resource person, to name just a few. Her strong commitment to the ELL students and the SIOP/ESL expert roles had in a sense “transformed” Lana’s teacher identity from that of science teacher to a hybrid sheltered/science/ESL teacher.

**Impressionist Portrait of Karen**

Karen was a seven-year veteran of teaching ELLs before she joined the ECTC program. Different from many of the content teachers who were resistant or even scared of teaching this special group of students, Karen embraced them from the beginning with great enthusiasm and sense of responsibility: she initiated the first (and the only) “sheltered” class in her school out of her own concern for the ELL students. Consistent pursuit of ELL-related training was an important component of her PD experiences because she was always motivated by “the need to change” to better meet the needs of her students.
Karen portrayed her experience with the ECTC program as “an old dog learning new tricks.” Through reflecting upon her teaching practices and making modifications by using the “new tricks” that she learned from the ECTC program, Karen felt that she was more capable of meeting the language development needs of her ELL students (while still teaching them the content knowledge) by providing them with an abundance of opportunities to listen, speak, read, and write in her class.

The years after the ECTC witnessed Karen’s effort to share the ELL-friendly strategies “with colleagues, utilize them in the classroom, and watch the students grow.” Particularly, in collaboration with another ECTC alumni teacher, Karen made her first step towards “having more teachers on board for ELLs” by offering training to teachers of all grades in her building, as well as at the school district’s summer academy.

Although change was an eternal theme in Karen’s classroom, making changes was not always fueled by internal drives. Over the years, Karen had increasingly felt that “what is going on outside my classroom” could force her to respond to unwanted changes and challenges. The school’s recent decision to reduce the hours of instructional time allocated for social studies had a profound impact on her instruction and created new challenges that she had to address: estranged relationships with her students, decreased student performance, and pressure to pace lessons and select teaching content to meet the new schedules. The situation was made even more complicated by the imminent curriculum changes that were scheduled to occur next year in her school district.

With commitment to ELLs and an open mind to learning about and trying out new “tools of the trade,” Karen was always ready and prepared to meet all types of challenges that came from within and outside of her classroom.
Research Question 1:
What Did the ECTC Participants Learn About Teaching ELLs Through the Program?

The impact of the ECTC program is first examined in the personal domain, which consists of teachers’ knowledge, skills, beliefs, and attitudes. (see Chapter 1 for definition of these terms.) Cross-case analysis revealed common trends/commonalities and differences across the three teachers in terms of what they had learned from the ECTC program. Table 44 summarizes some key themes of learning that ran across the three cases.

Table 44

*Key Themes of Learnings*

<table>
<thead>
<tr>
<th>Knowledge</th>
<th>Ann</th>
<th>Lana</th>
<th>Karen</th>
</tr>
</thead>
<tbody>
<tr>
<td>SLA theories</td>
<td>comprehensible input, BICS &amp; CALP, process and stages of SLA</td>
<td>comprehensible input, BICS &amp; CALP, process &amp; stages of SLA, the relationships b/w L1 &amp; L2 language &amp; literacy development</td>
<td>comprehensible input &amp; output, BICS &amp; CALP, process and stages of SLA, the relationships b/w L1 &amp; L2 language &amp; literacy development</td>
</tr>
<tr>
<td>Ohio ELP standards</td>
<td>somewhat improvement</td>
<td>brought her understanding of teaching the four language skills to a new level</td>
<td>much improvement</td>
</tr>
<tr>
<td>Assessment</td>
<td>OTELA, test accommodations for ELLs</td>
<td>concept of test validity, assessment terminology &amp; concepts</td>
<td>OTELA, language assessment terminology &amp; concepts</td>
</tr>
</tbody>
</table>

(Continued)

24 The summary includes some themes from the survey results that were not included in the case report.
Table 44 (continued)

<table>
<thead>
<tr>
<th>Facts and information about the ELL population</th>
<th>Ann</th>
<th>Lana</th>
<th>Karen</th>
</tr>
</thead>
<tbody>
<tr>
<td>much improvement(^{25})</td>
<td>much improvement</td>
<td>very much improvement</td>
<td></td>
</tr>
</tbody>
</table>

**Beliefs & Attitudes**

<table>
<thead>
<tr>
<th>Benefits of integrating language and content instruction</th>
<th>Ann</th>
<th>Lana</th>
<th>Karen</th>
</tr>
</thead>
<tbody>
<tr>
<td>much improvement</td>
<td>very much improvement</td>
<td>very much improvement</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Challenges facing ELL students in American schools</th>
<th>Ann</th>
<th>Lana</th>
<th>Karen</th>
</tr>
</thead>
<tbody>
<tr>
<td>ELLs have to do “double the work,” challenges associated with learning academic English, the four language skills, and science</td>
<td>much improvement</td>
<td>very much improvement</td>
<td>very much improvement</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Sociolinguistics &amp; cultural awareness</th>
<th>Ann</th>
<th>Lana</th>
<th>Karen</th>
</tr>
</thead>
<tbody>
<tr>
<td>interpreting students’ behaviors from a cultural perspective</td>
<td>connection b/w language, culture, and identity; the culturally different classroom patterns &amp; literacy approaches; enhanced cultural sensitivity</td>
<td>connection b/w language, culture, and identity; the culturally different classroom patterns &amp; literacy approaches</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Importance of teaching the four language skills</th>
<th>Ann</th>
<th>Lana</th>
<th>Karen</th>
</tr>
</thead>
<tbody>
<tr>
<td>------</td>
<td>Teaching literacy has to be intentional.</td>
<td>language focused goals, learning, and growth</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Assessment</th>
<th>Ann</th>
<th>Lana</th>
<th>Karen</th>
</tr>
</thead>
<tbody>
<tr>
<td>problems with standardized tests for ELLs</td>
<td>necessity to assess in all four language domains and by using both formal and informal means</td>
<td>Assessment must be varied to meet individual needs.</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Other mentality changes</th>
<th>Ann</th>
<th>Lana</th>
<th>Karen</th>
</tr>
</thead>
<tbody>
<tr>
<td>benefits of collaborating with the ESL teacher</td>
<td>heightened awareness with regards to “why” behind using the strategies and students’ needs</td>
<td>ELLs can learn in a non-ESL class as long as they are provided with the necessary accommodations.</td>
<td></td>
</tr>
</tbody>
</table>

**Skills**

<table>
<thead>
<tr>
<th>Material adaptations</th>
<th>Ann</th>
<th>Lana</th>
<th>Karen</th>
</tr>
</thead>
<tbody>
<tr>
<td>much improvement</td>
<td>very much improvement</td>
<td>somewhat improvement</td>
<td></td>
</tr>
</tbody>
</table>

\(^{25}\) The survey rating scale includes: no improvement, little improvement, somewhat improvement, much improvement, and very much improvement.
The following section recapitulates how these themes of learning were reflected in the three teachers’ data.

<table>
<thead>
<tr>
<th></th>
<th>Ann</th>
<th>Lana</th>
<th>Karen</th>
</tr>
</thead>
<tbody>
<tr>
<td>Assessment techniques</td>
<td>ways to modify a test, incorporating the four language processes into assessment</td>
<td>alternative assessments, assessment modifications</td>
<td>somewhat improvement in how to modify assessments and assignments, approaches to assessing the four language skills,</td>
</tr>
<tr>
<td>The SIOP strategies</td>
<td>scaffolding strategies, building background, using visuals, monitoring speech, establishing group activities to promote classroom interaction</td>
<td>instruction differentiation, integrating content instruction with the four language processes</td>
<td>instruction differentiation</td>
</tr>
<tr>
<td>TESOL strategies</td>
<td>vocabulary instruction</td>
<td>approaches to developing students’ reading &amp; writing skills, approaches to developing students’ oral proficiencies, vocabulary instruction</td>
<td>approaches to developing students’ reading &amp; writing skills, vocabulary instruction</td>
</tr>
<tr>
<td>Collaborating with and serving as a professional resource for other teachers</td>
<td>much improvement</td>
<td>very much improvement</td>
<td>very much improvement</td>
</tr>
<tr>
<td>Culturally responsive teaching</td>
<td>creating a socially supportive classroom for ELLs</td>
<td>creating a socially supportive classroom for ELLs; incorporating students’ cultures into curriculum; learning, valuing, and celebrating linguistic and cultural diversity in and out of class</td>
<td>------</td>
</tr>
</tbody>
</table>
Knowledge

Four themes of learning were reported by the three teachers in terms of their growth in knowledge. These four themes were: second language theories, the Ohio English Language Proficiency (ELP) Standards, assessment-related knowledge, and facts and information about the ELL population. The first theme included several key concepts that were emphasized by the ECTC classes, including Krashen’s Comprehensible Input Hypothesis, his theorization (conceptualization) about the difference between Basic Interpersonal Communicative Skills (BICS) and Cognitive Academic Language Proficiency (CALP), the process and stages of SLA, and the relationships between L1 and L2 language and literacy development. Ann reported learning about the factors that affect SLA, particularly in terms of affective factors and how this learning affected her belief about creating a supportive classroom environment for ELLs. Karen, on the other hand, reported knowledge about Swain’s Comprehensible Output, which made her see the importance of giving students opportunities to express their ideas through speaking and writing activities.

The Ohio ELP Standards was an important area of learning for Lana and Karen. Particularly, Lana found that the Standards were good references for her effort to promote ELL students’ development of the four language skills.

In addition, the three teachers all reported knowledge growth with regard to the Ohio Test of English Language Acquisition (OTELA), language assessment terminology and concepts, and basic theories of language assessment. In Lana’s case, test validity was a concept that made her see the problems and challenges inherent in the standardized tests for the ELL students (discussed below).
Finally, through the ECTC program, the three teachers learned some basic facts and information about the ELL population, including the heterogeneity of the ELL population in the country in terms of the different types of ELLs and their unique characteristics and needs.

**Beliefs and Attitude**

Changes have also occurred in the beliefs and attitude of the three teachers. One theme of change was the teachers’ awareness about the benefits of integrating language and content instruction. The second theme related to the teachers’ enhanced understanding about the challenges that face ELL students in American schools. These challenges are associated with the fact that ELL students have to do “double the work” (as Ann put it) for learning academic English and the subject knowledge, as they are still acquiring the four language skills.

Sociolinguistic and cultural awareness was another significant theme of change in the teachers’ beliefs and attitudes. In addition to Lana and Karen’s heightened awareness about the connection between language, culture, and identity, and the culturally different classroom patterns and literacy approaches, as indicated by their survey responses, Ann and Lana reported enhanced cultural sensitivity in terms of interpreting ELL students’ behavior from a cultural perspective.

For Lana and Karen, the most significant theme of learning was understanding the importance of teaching the four language skills in juxtaposition with their (above-mentioned) awareness about the challenges facing ELL students to acquire these language skills in English (i.e., listening, speaking, reading, and writing). Lana’s elevated understanding was rooted in her belief that “my responsibility is not only to
teach content, but to assist in my students’ language acquisition as well” and was more focused on making “teaching literacy” a more “on purpose” factor in her daily teaching, while Karen viewed the theme from the perspective of addressing “the language-focused goals, learning, and growth.”

Moreover, all three teachers reported belief changes with respect to language assessment. For Ann and Lana, the change was primarily represented through a realization about the problems and challenges that standardized tests posed for ELL students whose reading abilities are still developing. Lana also reported an important theme of change/learning related to alternative assessments, that is, the necessity to assess students in all the four language domains and by using both formal and informal means. Karen, on the other hand, showed an enhanced understanding about the necessity to differentiate assessment to better meet individual students’ needs.

In addition to the theme of change in beliefs and attitude that included all three teachers, each teacher reported mentality changes that were brought about by reflecting on and relating to her own teaching situation. Ann, for instance, reported a better understanding of the benefits of teacher collaboration and co-teaching due to working more closely with the ESL teacher in her building through the opportunities provided by the ECTC program. Lana’s heightened awareness about the “why” behind using the SIOP strategies was associated with her understanding about the needs and struggles of the ELL students in her sheltered class. Karen, on the other hand, demonstrated an evolving belief that “ELLs can learn in a non-ESL environment as long as they are provided with adequate support and appropriate accommodations” based on her years of experience teaching ELLs.
Skills

The ECTC program has also enriched the teachers’ repertoire of instructional strategies. These included strategies for material adaptation and assignment and assessment, as well as the SIOP and TESOL strategies.

First, all three teachers reported either “much improvement” or “very much improvement” in their ability to adapt content materials for the reading levels of ELL students. In addition, the three teachers reported acquiring a set of strategies for modifying assignments and assessments. Ann and Karen learned about the approaches to incorporating the four language processes into assessment, while Lana found her assessment techniques improved on how to use various types of alternative assessments for better evaluation of students’ learning of content.

With regard to the SIOP strategies, Ann and Lana reported increased abilities to use scaffolding strategies, build instruction on ELL students’ background knowledge, and establish group activities and collaborative learning to facilitate social and academic interactions for ELL students. Karen found her ability to differentiate instruction increased due to the ECTC program.

As for TESOL strategies, the three teachers all reported acquiring strategies for enhancing vocabulary instruction. Lana and Karen reported improvement in their ability to promote development of reading and writing skills as a result of their ECTC training.

In addition to instructional strategies, two important skill areas emerged from the three teachers’ data. One area was related to the teachers’ ability to collaborate with and serve as a professional resource for other teachers. The three teachers reported either much improvement or very much improvement in this area. Moreover, culturally
responsive instruction (teaching) was reported by Ann and Lana in terms of their increased ability to create a welcoming and socially supportive classroom for ELLs. Comparatively, Lana found herself more capable of incorporating students’ cultures into curriculum and learning about and celebrating linguistic and cultural diversity in and out of class.

Another factor in gauging the effectiveness of the ECTC program is how the teachers enacted changes in their teaching practices based on what they have learned from the ECTC program. This is what Research Question 2 focuses on.

**Research Question 2:**

**How Did the Teachers’ Learning From the ECTC Program Facilitate Changes in Their Teaching Practices?**

The three teachers reported enacting changes in their teaching practices in the following areas, as delineated in Table 45.
Table 45

**Key Themes of Changes in Teaching Practices**

<table>
<thead>
<tr>
<th>Theme and Model Implementation</th>
<th>Ann</th>
<th>Lana</th>
<th>Karen</th>
</tr>
</thead>
<tbody>
<tr>
<td>Implementation of the SIOP Model</td>
<td>reported increased frequency in implementing 12 SIOP features</td>
<td>reported increased frequency in implementing 12 SIOP features</td>
<td>reported increased frequency in implementing 8 SIOP features</td>
</tr>
<tr>
<td>Obs.</td>
<td>Lessons demonstrated a high level of SIOP implementation</td>
<td>Lessons demonstrated a moderate level of SIOP implementation</td>
<td>Lessons demonstrated a moderate level of SIOP implementation</td>
</tr>
<tr>
<td>Teaching Reading</td>
<td>increasing attention to teaching reading as a skill</td>
<td>made teaching literacy a well-planned factor in her class</td>
<td>provided students opportunities for listening, speaking, reading and writing every day in class</td>
</tr>
<tr>
<td>Obs.</td>
<td>used limited reading activities in class</td>
<td>used read-alouds to teach reading; taught “finding the topic sentence” as a reading strategy</td>
<td>used read-alouds to provide more opportunities for reading</td>
</tr>
<tr>
<td>Vocabulary instruction</td>
<td>constant focus on key vocabulary</td>
<td>no explicit/direct vocabulary instruction</td>
<td>constant focus on key vocabulary</td>
</tr>
<tr>
<td>Teaching Writing</td>
<td>used sentence starters as a form of scaffolding for writing tasks, provided rubrics</td>
<td>incorporated more creative types of writing tasks</td>
<td>------</td>
</tr>
<tr>
<td>Speaking (classroom interaction)</td>
<td>used different grouping configurations to provide opportunities for speaking and student-student interaction</td>
<td>Speaking activities included poster presentation, paired reading, and hands-on group activity.</td>
<td>Teacher-centered teaching style limited students’ opportunity to talk and interact with each other.</td>
</tr>
<tr>
<td>Assessment</td>
<td>reported using a variety of test modification techniques and alternative assessments</td>
<td>two versions of tests to differentiate for beginner ELL students</td>
<td></td>
</tr>
<tr>
<td>Instruction differentiation</td>
<td>provided leveled reading materials for students’ projects</td>
<td>used leveled readers in class</td>
<td>differentiated warm-up activities for beginner ELL students</td>
</tr>
</tbody>
</table>

(Continued)
Table 45 (continued)

<table>
<thead>
<tr>
<th></th>
<th>Ann</th>
<th>Lana</th>
<th>Karen</th>
</tr>
</thead>
<tbody>
<tr>
<td>Use of scaffolding</td>
<td>enacted the idea of scaffolding mainly</td>
<td></td>
<td>kept an open mind to ELL students’ first</td>
</tr>
<tr>
<td>strategies</td>
<td>through verbal scaffolding and</td>
<td></td>
<td>language and culture</td>
</tr>
<tr>
<td></td>
<td>instructional scaffolding</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Culturally responsive</td>
<td>attached great importance to building a</td>
<td>Dealt with students’ behavior problems</td>
<td></td>
</tr>
<tr>
<td>teaching</td>
<td>“class community”</td>
<td>with tolerance and patience</td>
<td></td>
</tr>
<tr>
<td></td>
<td>co-taught with an ESL teacher</td>
<td>increased collaboration with other ECTC</td>
<td>provided training for other teachers in</td>
</tr>
<tr>
<td></td>
<td></td>
<td>alumni teachers in the building</td>
<td>the building for teaching ELLs</td>
</tr>
<tr>
<td>Teacher collaboration</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Implementation of the SIOP Model**

According to Crawford et al. (2008), the fundamental features of sheltered instruction include introducing key vocabulary linked to content, use of visuals and supplementary materials, cooperative learning, hands-on activities, scaffolding, and content adaptation. These features were also highly recommended by the ECTC program with the prospect of inducing changes in the teachers’ classroom instruction.

In consistence with the teachers’ reported changes in their pedagogical skills related to implementing the SIOP model, the three teachers all reported increased frequency of implementing some of the SIOP features. Cross-case analysis indicated increased implementation of the following six SIOP features that were reflected in the three teachers’ survey responses and interviews:

**Lesson preparation**

- Adaptation of content to all levels of English proficiency (Feature 5)

**Building background**
• Key vocabulary emphasized (Feature 9)

Comprehensible input

• Speech appropriate for students’ proficiency levels (Feature 10)
• A variety of techniques used to make content clear (Feature 12)

Interaction

• Grouping configurations support language and content objectives of lessons
  (Feature 17)
• Sufficient wait time for student responses consistently provided (Feature 18)

These features were in congruence with the quantitative survey results and represented some fundamental components of sheltered instruction: introducing key vocabulary linked to content, use of visuals and supplementary materials to make content clear, cooperative learning, and content adaptation.

SIOP protocol ratings of classroom observations partially corroborated the teachers’ self-reports; however, my observations uncovered some discrepancies. Among the three teachers, only Ann’s lessons demonstrated a high level of SIOP implementation, though her SIOP scores were negatively influenced by her inconsistent incorporation of language objectives into her lessons. Comparatively, the other two teachers implemented the SIOP Model at a moderate level. In Karen’s case, her level of implementation was brought down by her failure to implement the several SIOP features related to posting and delivering lessons based on content and language objectives. Lana’s lessons, on the other hand, were consistently based on language and content objectives; however, she did not consistently implement several SIOP features (to a high degree) that were viewed as fundamental to sheltered instruction, and these features included two of the above
mentioned features: key vocabulary emphasized and grouping configurations support language and content objectives of lessons (which will be discussed below).

Teaching Academic Literacy Skills (Vocabulary, Reading, and Writing)

Some researchers have strongly recommended content teachers attend to the literacy needs of adolescent ELL students, who face rapidly increasing literacy demands as they move through the upper grade levels. Particularly, vocabulary and reading comprehension skills are two important components of literacy skills. According to a research synthesis conducted by the National Literacy Panel on Language Minority Children and Youth (August & Shanahan, 2006), ELLs lag significantly behind their English speaking peers at text-level skills like reading comprehension. As far as instruction for adolescent ELLs is concerned, the Panel suggested “relatively more direct and ambitious attention to comprehension” (p. 17) after the students’ decoding skills are more developed, with vocabulary and background knowledge targeted intensively throughout the process. In addition, oral proficiency in English, which is associated with English reading comprehension, should be cultivated along with reading skills. The SIOP Model also requires teachers to create many opportunities for ELLs to practice and use all four language skills in an integrated manner.

In accordance with the experts’ recommendations, teaching the four language skills was also an important component of the ECTC program. Particularly, the program emphasized (1) offering ELL students plenty of opportunities to read in class to build reading (word-recognition) fluency; (2) developing effective reading comprehension skills/strategies through pre-, during-, and post-reading activities; (3) building a large recognition vocabulary and creating a vocabulary-rich environment; and (4) teaching text
structures and discourse organization. In addition, the program stressed the importance of creating plenty of opportunities in class for producing “comprehensible output” through abundance of speaking and writing activities. These activities should be delivered in the context of partner work and collaborative group learning.

This section focuses on changes in how the three teachers approached academic literacy instruction (i.e., reading, writing, and vocabulary). The section that follows addresses how classroom interaction patterns of the teachers’ lessons reflected changes in how they promoted development of ELL students’ oracy (i.e., oral proficiency) in tandem with their reading and writing skills.

**Vocabulary instruction.** As an important facet of academic language and literacy, academic vocabulary is of critical importance in content classrooms (Echevarria et al., 2013). Research suggests that vocabulary instruction must be direct and systemic for ELLs (Rohan, 2011).

Changes in vocabulary instruction were evident in two teachers’ (Ann and Karen) classroom instruction. Particularly, Ann and Karen’s constant emphasis on key vocabulary words was well incorporated into classroom activities and supported by multiple means and instructional strategies (e.g., visuals, realia, graphic organizers, hand gestures, story-telling, hands-on activities, analyzing word parts, etc.) to scaffold and contextualize learning of academic content. Both the teachers built their instruction around key vocabulary words and created a “vocabulary-rich” environment in which the students could learn, remember, and use those words. “While these are certainly important words for English learners to know, there are additional words that they must master in order to succeed academically” (Echevarria et al., 2013, p. 69).
According to the SIOP experts, teachers need to address three aspects in terms of academic vocabulary development for English language learners: (1) content vocabulary (subject specific and technical terms), (2) general academic vocabulary (cross-curricular terms/process & function words), and (3) word parts (roots & affixes). Particularly, the fact that the academic register (e.g., science) is filled with specialized and technical terms requires that content teachers are proactive in helping ELL students build academic vocabulary through a variety of strategies and vocabulary activities (e.g., word walls, word webs, word sorts, the Frayer model, frontloading vocabulary before reading, playing word games, etc.). The observation and the interview data indicated that the two teachers did not adequately attend to the second and the third aspects of academic vocabulary despite their constant focus on the key content vocabulary (first aspect), and this limitation to some degree created difficulties for ELL students to fully comprehend the content. In Ann’s case, students’ difficulties were reflected in the fact that her instruction would sometimes be interrupted by student-initiated questions to request explanations of unfamiliar words. In Karen’s case, the texts that she used for students to do read-alouds/oral reading were “loaded” with words that many ELL students (particularly beginner ELL students) did not know and could not pronounce; however, she did not pre-teach or frontload the ELL students with some of the “difficult” words.

Lana’s lessons did not support vocabulary development as much as the other two teachers. The observation data indicated that vocabulary instruction was not purposefully planned and integrated into the instruction and practice of content concepts. Although the various class activities (e.g., read-alouds, poster presentation, doing written exercises, etc.) that she designed and implemented offered the students repeated exposure to and
practice with the content concepts, explicit vocabulary instruction to address the three aspects of academic vocabulary had yet to come to forefront of her daily instruction.

**Reading and writing.** With regard to teaching reading, all three teachers reported changes in their teaching practices due to the ECTC training. As can be seen in Table 45, changes were reflected in how the teachers used leveled readers (Ann and Lana) to accommodate different reading levels, made ELL-friendly modifications to teacher-prepared reading materials (Lana and Karen) and study guides (Ann, Lana, and Karen) to help ELL students access content, and incorporated read-alouds/oral reading (Lana and Karen) as an important instructional activity to offer students more opportunities to read (and speak) in class.

Lana was the only one among the three who explicitly taught reading strategies (i.e., finding a topic sentence, highlighting key information) through guided reading and had students do partner reading. Karen’s reading activities were characterized by engaging students in “choral” reading from the textbook followed by using study guides (i.e., abridged texts) to assist them in comprehending the content. Compared with Lana and Karen, Ann did not have students read in class a lot other than reading the overhead as they copied notes or reading the instructions before doing a hands-on activity.

A close look at the reading activities that the teachers did (particularly Lana and Karen) suggested that despite the teachers’ efforts to offer students more opportunities to read in class after the ECTC program, they did not fully support the ELL students’ development of reading comprehension skills. As Lems, Miller, and Soro (2010) noted, oral reading (including paired reading) is a good practice for oracy (i.e., oral proficiency) and reading fluency. However, development of ELLs’ reading comprehension—the
ability to construct meaning from a given text—requires the use of a repertoire of strategies before, during, and after reading. In this sense, the three teachers still fell short of addressing the literacy development needs of ELL students by fully incorporating the various strategies and activities that the ECTC program recommended for teaching and having students practice using reading comprehension strategies.

Compared with reading instruction, writing was an area in which few changes had occurred after the ECTC program. Although Lana reported incorporating more creative types of writing activities (e.g., poetry writing) into her class, the other two teachers did not enact many changes in this aspect. In Ann’s case, although she engaged students in different writing activities in and out of class, like composing lab procedures, describing a scientific concept/process in writing, or doing a science project that included a writing component, she did not attribute these activities to the ECTC impact except when she mentioned that she sometimes provided sentence starters as a form of scaffolding for ELL students and supplied more detailed instructions and/or rubrics for writing assignments. Karen, on the other hand, did not engage students in any creative writing activities other than copying notes and labeling maps. Furthermore, Ann and Karen relied on “demonstration of note-taking using an overhead” as reading and writing activities, which was a strategy found to be ineffective for ELLs (Rohan, 2011, p. 131).

As Short and Fitzsimmons (2007) noted, “the instructional methods that secondary school teachers have typically used do not facilitate … literacy instruction for ELLs” (p. 33). The three teachers’ literacy instruction practices seemed to support this observation to varying degrees.
Classroom Interaction

The impact of the ECTC training on classroom interaction was mainly seen in how the teachers (Ann, Lana, Karen) (1) modulated their rate of speech and speech patterns to make input more comprehensible for the ELL students (SIOP feature 10); (2) provided sufficient wait time for students to formulate their answers; and (3) (Ann, Lana) created opportunities for students to use academic English through teacher-student(s) interactions, partner work, and group activities. Particularly, Ann’s lessons were characterized by a variety of grouping configurations that facilitated students working with one another on academic tasks and the teacher’s attempt to group students according to their ability and language proficiency levels. Lana’s lessons included poster presentations, students’ paired reading, and group hands-on activity. However, some of her lessons were still teacher-centered, where whole-class instruction prevailed, and the students were allowed to talk only when they answered Lana’s questions or initiated a question with her. Moreover, one teacher-student interaction pattern dominant in Lana’s class, where teacher-initiated questions were answered by volunteers who “shouted out” their answers without the teacher’s prompt, further restricted some students’ opportunities to talk, because of the Somali female students’ reluctance to talk in the presence of male students.

Compared with Ann and Lana, Karen’s lessons were highly teacher-controlled and characterized by “excessive teacher talk” (Echevarria et al., 2013, p. 145) and few opportunities for discussion and interaction among students. Therefore, her classroom practices did not seem to support her goal of providing students with more opportunities to speak in class.
The observation data seemed to confirm what the SIOP experts have observed in many content classrooms, that “teachers [are] doing a significant amount of talking at students rather than providing the impetus for a discussion or sharing, then allowing students to talk to one another” (Echevarria et al., 2013, p. 145). These observations were particularly true of Lana and Karen’s lessons, which were conducted in a “sheltered” environment, where most of the students were ELLs (in Lana’s case, all her students were ELLs). Analysis of teacher-student(s) interactions in the two teachers’ classes further revealed that the teachers did, to varying degrees, encourage students’ participation by engaging students in question-and-answer exchanges and allowing for student-initiated questions. However, they tended to (1) accept any form of student comment without using recasting (rephrasing) to model correct use of English and (2) use the omnipresent “IRE” (initiation-response-evaluation) sequences without encouraging elaborated responses or providing opportunities for negotiating meaning, clarifying ideas, and giving and justifying opinions. These interaction patterns limited the students’ opportunities to fully express their thoughts and practice using academic English.

**Assessment Techniques**

Consistent with the survey results, the impact/influence of the ECTC program on the teachers’ assessment practices was noticeable. Cross-case analysis indicated that all three teachers modified their (paper-based) tests by using various techniques (e.g., simplifying language, providing word banks, reducing number of choices for multiple choice questions, using more visuals and white space, etc.) and alternative forms of assessment to gauge students’ level of understanding and learning on a daily or formative
basis, such as teacher observations, oral interviews, projects, and poster presentations, among others.

**Instruction Differentiation**

“Teachers who do not believe in using multiple books, having small-group instruction, or giving different assignments to meet individual needs shouldn’t be teaching ELL students with limited English proficiency” (Fu, 2004, p. 3). This comment made by a bilingual education expert drives home the importance of differentiating instruction for ELLs to meet their individual needs. Gottlieb (2006) defines instruction differentiation as “when instruction is organized into multiple, simultaneous, diversified activities around a central topic that allows students to work toward a variety of goals” (p. 73).

Instruction differentiation, based on using a variety of instructional strategies that are connected to different language proficiency levels and learning styles, was an important theme addressed by each of the ECTC classes: TESOL Methodology, the SIOP Model, Material Adaptation, and Second Language Assessment.

The influence of the ECTC training was seen in how the three teachers strived to reach individual ELL students by providing books and materials at their levels (Ann and Lana), allowing options for projects (Ann), and differentiating tests and assignments (Karen). However, differentiation in the three teachers’ classes was still limited in different ways. This was mainly caused by the lack of small-group instructions and one-on-one teaching and coaching (Karen) and undifferentiated teaching materials and/or activities (Ann, Lana, Karen).
Karen’s class, for instance, consisted of students with multiple proficiency levels, ranging from pre-functional ELL students to native English speakers (also including beginner and intermediate ELLs). Compared with her effort to differentiate assessments and homework assignments for the ELL students, her classroom instruction was not differentiated to a degree that would adequately meet the language development needs of students at different proficiency levels. Except for the differentiated warm-up activity for pre-functional students, Karen did not differentiate other class activities or instructional materials. Therefore whether these activities, like reading aloud from the same grade-level texts, would benefit all the students was open to question.

Use of Scaffolding Strategies

Indeed, instruction differentiation has been considered as a type of scaffolding provided for ELL students. Scaffolding, a term associated with Vygotsky’s theory of Zone of Proximal Development (ZPD), is not only one major SIOP strategy, but has been proposed as an important approach to promoting linguistic and academic development of ELLs (Gibbons, 2002; Walqui, 2006). Echevarria et al. (2013) differentiated between three types of scaffolding: verbal, procedural, and instructional. Accordingly, the ECTC program recommended that the teachers incorporate these scaffolding procedures not only into their classroom instruction but also as an indispensable part of curriculum planning (Walqui, 2006).

Cross-case analysis indicated that the teachers enacted the idea of scaffolding mainly through verbal scaffolding and instructional scaffolding. These two types of scaffolding were instantiated in the teachers’ classrooms as:

- providing contextual definitions;
- providing clear instructions;
- modeling tasks or activities (Ann and Lana);
- contextualizing abstract concepts by using visual/multimodal representations and building on students’ background knowledge and experiences;
- using guided notes and/or simplified version of texts to help students access grade-level content;
- supporting partner and group/collaborative work (Ann and Lana);
- allowing students to get help from their L1 speaking peers or bilingual aide (Lana and Karen);
- walking students through assigned reading and using think-alouds to model using reading strategies (Lana); and
- using slower, flexible pacing, among others.

Moreover, some of Ann’s and Lana’s lessons reflected their use of procedural scaffolding and included explicit teaching, modeling, and guided and independent practice opportunities with peers (Echevarria et al., 2013).

However, the three teachers’ enactment of scaffolding was still inadequate to varying degrees. One common problem was that the scaffolding that the three teachers provided did not always lead to learners’ independence and autonomy (Walqui, 2006). Van de Pol, Volman, and Beishuizen (2010) noted that effective scaffolding is characterized not only by its contingency (i.e., moment-to-moment support), but also by its “fading” and “transfer of responsibility” to students (p. 275). This requires that the teacher’s support “fade” over time, with the learner taking more and more control over his/her learning. In this sense, the three teachers’ classroom practices did not consistently
support students assuming more responsibility for the learning tasks at hand. Lana, for instance, admitted during the interview that she assigned much less independent work for her sheltered class because she was “intimidated” by the possibility that the students would get lost and stop working. Karen’s instruction was highly teacher-controlled, and the students had few (or zero, at times) opportunities to apply what they had learned through guided and independent practice. Moreover, as previously mentioned, Ann and Karen relied heavily on guided notes and having students copy notes. Although copying notes can be a good form of scaffolding for beginner ELLs (Cloud, Genesee, & Hamayan, 2009), more advanced students may need opportunities to practice independent study skills and use of learning strategies, such as active noting taking and outlining (Echevarria et al., 2013).

In addition to the problem of “overscaffolding,” another problem that was more obvious in Lana’s and Karen’s lessons was the lack of scaffolding for some activities. In Lana’s case, she did not scaffold the process of writing (e.g., by providing models or sentence frames) when the students were composing their poems/songs (Lesson 2). This created difficulty for the ELL students who were less confident with and less proficient in English. The two Somali girls’ refusal to fulfill the task was an indication of their frustration or feelings of intimidation. Karen, on the other hand, failed to scaffold the choral reading activity by frontloading vocabulary, building background, using graphic organizers to make text structures clear, or using other pre-, during, and post-reading activities suggested by literacy experts to scaffold reading comprehension. Moreover, as previously discussed, the three teachers, to varying degrees, fell short of scaffolding
students’ talk through their own talk, especially through their questioning (McIntyre, Kyle, Chen, Kraemer, & Parr, 2009).

**Culturally Responsive Teaching**

Culturally responsive teaching was an important component of the ECTC training, which recommended that teachers learn about students’ backgrounds and lives, support student learning by helping them build bridges between what they already know about a topic and what they need to learn, and give students access to the curriculum content by drawing upon the students’ native language resources (Villegas & Lucas, 2007). The reported changes in the teachers’ cultural awareness and sensitivity were translated into their teaching practices in various manifestations.

Ann tried to address cultural differences in teaching by “jumping” to the opportunity of discussing with the students the differences between Celsius and Fahrenheit and other examples of differences between U.S. measurement systems and those used in other countries (Lesson 1). She also attached great importance to building a “class community” where ELL students felt safe and comfortable and were able to freely “share ideas, insights, real-life connections, and questions without any negative regard or comments from peers.”

Lana’s cultural sensitivity regarding viewing students’ behaviors as reflections of cultural norms (Weinstein, Curran, & Tomlinson-Clarke, 2003) was translated into her tolerant attitudes towards students with problem behaviors and her use of “incentives” to establish/encourage appropriate classroom behaviors, as well as actively incorporating the bilingual aides as “resources” to “meet each student where they are academically and at their language proficiency level.” As Weinstein et al. (2003) noted, culturally
responsive teachers establish clear expectations for norms of behavior and deal with “problematic” behaviors in a “calm and nondefensive” (p. 274) way. Lana’s classroom management practices in a sense proved herself to be a “culturally responsive classroom manager” (p. 274). In addition, Lana was explicit in voicing her high expectations for her ELL students and reassuring them that she was willing to help them whenever they were asked to do a challenging task. In the following quote, for instance, Lana told the students that the reading material for the lesson (Lesson 45) was “challenging,” but she believed in the class’s potential to work on something at that difficulty level.

… I want you to know before we start this is going to be challenging for you. So I’m going to apply all my study skills that I know to use, and I’m going to pay special attention. I’m going to tell you something: I’ve never taught this to another one of my sheltered classes before because I think that this class has the potential to do it, and I want to see how we do with it. So this is new for me to teach it to you. But that also means we are all going to have to work together, and I am here to help you to reach that potential.

Karen kept an open mind to ELL students’ first language and culture. This was evident in how she encouraged students to clarify words and concepts in their L1 with each other and showed great interest in the students’ L1 and culture. She was observed inviting students to teach her words in their first language out of class and asking students to share whether they had a female leader or president in their home country. In addition, involving parents in providing feedback on their children’s learning was an indicator of Karen’s effort to build relationships with the families of ELL students.

The three teachers had also assumed the role of advocates for the ELL students by working closely with the ESL teacher and other school professionals to provide quality instruction for the ELL students and contributing their input to the school or school district regarding professional development activities (Lana and Karen).
In spite of all these positive changes, the three teachers still struggled with incorporating students’ cultures and native language as resources into the curriculum and instruction to achieve culturally responsive instruction in a real sense. Ann’s comments well represented this struggle:

Culture is a weakness of mine. We do feel very close, we do know people from different communities, and we have even brought up “how would you say this vocabulary word in your language,” so we do share that some time. But it’s not an everyday occurrence. Encouraging the culture more, learning even about more each of the cultures is a big thing that I should do more of. …I also struggled with how to make instruction and the materials that I use more relevant to the students’ backgrounds and culture. (Interview 1)

Teacher Collaboration

Teacher collaboration was an important theme of change that represented the impact of the collaborative format of the ECTC program. For Ann, a big change in her classroom after the ECTC program was co-teaching with the ESL teacher (as described in her impressionist portrait). Lana worked more closely with the other ECTC alumni teachers in the building, and collaboratively they “staged” the professional development plan that they created for the ECTC program at the district-wide SIOP workshop. Karen, on the other hand, made her debut as an “ESL trainer” after the ECTC program. By collaborating with another ECTC alumni teacher, she shared her learning and expertise with all the content teachers in the building.
Research Question 3:

What Were the School Organizational Factors That Either Facilitated or Hindered Changes in Teacher Practice?

This study was built upon the assumption that teacher learning and change is mediated by school organizational factors. Cross-case analysis indicated that the three teachers enacted changes in widely different contexts that were characterized by factors that either facilitated or posed as obstacles and challenges for teacher change and practice.

Facilitating Factor(s)

Across the three cases, ESL teachers and/or services were identified as a facilitating factor that supported the teachers’ instructional needs. Ann found the modifications that she made for the ESLL students were facilitated by her collaboration with the ESL teacher (Ms. D), even though she was not satisfied with the fact that the school’s ESL department was run by a special education coordinator. Lana was the one among the three who was blessed with the most support and resources from the ESL teacher in the building and the ESL coordinator in the school district. Karen, on the other hand, found that her instructional needs were supported by bi-weekly meetings with the ESL teacher to discuss her concerns about ELL students’ performance and ways to motivate them towards their full potential.

Obstacles and Challenges

Students. Student-induced obstacles and challenges were mainly caused by the wide range of students’ ability and language proficiency levels. For Lana, the most major challenges were related to a unique sector of the ELL population in her building—the Somali students—who tended to be more susceptible to misbehavior, absenteeism, and
gang influence due to various sociocultural reasons. For Karen, “meeting everybody’s needs” put a strain on her time and resources to “to modify everything, to modify all of the notes, all of the activities, all of the tests.” Moreover, placement of ELL students with learning disabilities added another layer of challenge for both Lana and Karen.

**Other obstacles.** This category included factors that were reported by all three teachers as being obstacles in their survey responses: “pressure to cover all the content standards;” “pressure to prepare students for state tests;” and “it is difficult to connect with parents, inform them of the standards, expectations, and ways to help because of language barriers and lack of school-provided venues and opportunities.”

Particularly, communicating with ELL students’ parents, as a challenge, was alluded to by all three teachers during the interviews. Ann found that despite all her good intentions, “communicating with those parents on a better level” was still a major challenge or weakness that she had to resolve. Lana acknowledged that “the lack of communication with the ELL parents is my biggest frustration.” Karen found that opportunities to meet with the parents were reduced to “problem-solving” conferences when the parents were called in to discuss their child’s “problem” (academic or behavior), and these meetings, according to Karen, were negative experiences that contributed little to a positive school-parent relationship.

**Factors That Could be Either Assistance or Obstacles**

Cross-case analysis suggested that depending on the school, “school administration” could be either a facilitating factor or an obstacle. For Ann, school administration as an “obstacle” was reflected in every aspect that contributed to a “less than ideal school environment:” financial difficulty, shortage of ESL resources and staff,
and lack of knowledge and training on the side of school administrators as well as other teachers.

Lana, on the other hand, believed that her work (with the ELL students) was conducted within a supportive school environment in terms of professional development opportunities, time and structure provided for the teachers to collaborate and make modifications for the ELL students, and resources and services available for the ELLs and their teachers. Although she aspired for more priority to be given to ELL-related teacher training in her building and more non-sheltered teachers on board for the best benefit of her ELL students, she did not feel much (if any) hindrance from the school (or school administration) in implementing her ECTC learning and extending its influence beyond the confines of her classroom.

Karen, despite her overall positive evaluation of the school administration, still found that going along with the school’s decision to reduce the amount of time spent on social studies education and the implementation of Ohio’s new learning standards for social studies were new “battles” that she had to fight in her eleven years of teaching ELLs.

The decreased emphasis on (or even marginalization of) social studies is also a reflection of the “trickle-down effect” of NCLB. “By requiring states to measure student achievement in language arts and mathematics and tying school performance reports and financial incentives to testing results, NCLB resulted in the diversion of both funding and class-time away from social studies and other non-tested subjects” (“Social studies in the era,” n.d., para. 2). Karen’s frustration with all the adjustments that she had to make
further illustrated how educational policy affected what was happening inside the classroom.

**Research Question 4:**

**How Did the Teachers Perceive the Content and Design Features of the ECTC Program and the Impact of These Features on Their Learning Experience?**

The three teachers agreed on the positive impact of the various content and design features of the ECTC program on their learning experience, as indicated by their survey responses. A theme that reverberated across the three teachers’ data was their “commendation” of the opportunities to collaborate with other teachers facilitated by the collaborative format of the ECTC program. Ann raved about the opportunities to “bounce off ideas” through different venues (online discussions, workshops, and in-class meetings), even though she preferred face-to-face meetings over online discussions. Karen preferred the opportunities to share strategies with other social studies teachers through the online discussions. Lana highlighted two features that were influential for her learning experience with the ECTC, the first being the opportunities facilitated by the online discussions to reflect upon and discuss the course materials with other science teachers and relate the course content to her own teaching context. In addition, she especially appreciated the three workshops and the opportunities that were provided for networking, information/resource sharing, and collaboration.

**Summary**

In this chapter, I analyzed data across the three cases in order to identify similarities and differences related to the four research questions that I seek to answer. Cross-case analysis revealed “themes of learning” in terms of growth in the teachers’
knowledge, beliefs and skills, and “themes of change” with regard to changes in the teachers’ teaching practices. Moreover, analysis across the cases identified school organizational factors and the features of the ECTC program that affected teacher learning and change.
Chapter 9: Discussions and Implications

In this study, I investigated four primary questions related to the impact of the ECTC program on teacher change through a mixed-methods approach that combined data collected via an online survey and case studies with three teachers. The four research questions were:

1. What did the ECTC participants learn about teaching ELLs through the program?
2. How did the teachers’ learning from the ECTC program facilitate changes in their teaching practices?
3. What were the school organizational factors that either fostered or hindered changes in teacher practice?
4. How did the teachers perceive the content and design features of the ECTC program and the impact of these features on their learning experience?

In this chapter, I first present discussions of and conclusions to the research questions, revisiting some significant themes and tying them into the extant literature. This is followed by a discussion of the pedagogical implications of the research regarding how PD programs for teachers of ELLs could be improved to address the suggestions made by the experts, and then I delineate the limitations of the present study and make suggestions for a future research agenda.
Discussions and Conclusions

Discussions that merge the quantitative and qualitative findings are centered on the following themes (topics): effectiveness of the ECTC program and factors that influence teacher learning and change. I also revisit the theoretical model that I proposed in Chapter 2 and discuss how my research findings shed light upon the major components of the model.

Effectiveness of the ECTC Program (Research Questions 1 & 2)

Both the quantitative and qualitative findings indicated the effectiveness of the ECTC program in bringing about changes in teacher knowledge (including skills, beliefs, and attitudes) and instructional practices for the education of ELLs.

Themes of learning. First, teachers reported considerable improvement in their knowledge, beliefs, and skills with regard to TESOL methods and strategies, culturally responsive teaching, concepts and issues in sociolinguistics related to TESOL, the SIOP Model, selection and development of second language instructional materials, and second language assessment. The themes of learning (i.e., what did the teachers learn from the ECTC program?) were in high congruence with the content covered by the four ECTC classes. The following themes of learning that were derived from both the quantitative data and the case study data attested to the positive effects of the ECTC program on the teachers’ knowledge growth:

1. Knowledge

   - SLA theories (including BICS & CALP, comprehensible input, stages and processes of SLA, relationships between L1 and L2 language and literacy development, factors that affect SLA)
1. Background Information

- The Ohio ELP Standards
- OTELA, language assessment terminology and theories, test accommodations provided for ELL students
- Facts and information about the ELL population

2. Beliefs and Attitudes

- Benefits of integrating language and content instruction
- Challenges facing ELL students for having to learning subject content and academic English in the four language domains
- Sociolinguistic and cultural awareness (connection between language, culture, and identity; the culturally different classroom patterns and literacy approaches; benefits of bilingualism and bilingual education; the importance of learning about students’ cultures and backgrounds)

3. Skills

- Sheltered instruction strategies (strategies for making content comprehensible, building instruction on students’ background knowledge, facilitating student interaction through group work and collaborative learning, adaptation of teaching materials, instruction differentiation)
- TESOL strategies (strategies for vocabulary instruction, strategies for developing students’ reading and writing skills)
- Assignment and assessment (strategies for modifying assignments and assessments, alternative assessments)
- Culturally responsive instruction (creating a risk-free and socially supportive classroom environment for ELLs)
From knowledge to practice: Application of learning. The extent to which the teachers applied their ECTC learning to their teaching practices was the focus of this study and another indication of the effectiveness of the ECTC training. The quantitative results indicated that a majority of teachers believed that “the ECTC program has affected the way I instruct my ELL students,” and application of the teachers’ learning to their classroom practices primarily occurred in the following three areas: implementation of the SIOP Model, modifications made to assessments and assignment, and teacher collaboration. However, instructional changes related to teaching literacy skills and culturally responsive instruction did not occur to the anticipated degree. The qualitative findings further revealed specific changes that the teachers made to provide more effective instruction for their ELL students and where they fell short. In this section, I focus on four aspects of teacher change: implementation of the SIOP Model, teaching academic literacy skills, culturally responsive teaching, and teacher collaboration.

Implementation of the SIOP Model. Application of the teachers’ sheltered instruction skills to their classroom instruction was evidenced by how much more frequently they incorporated the SIOP features into their lessons after the ECTC program. The quantitative findings indicated that instructional changes primarily occurred related to eleven SIOP features that constituted some fundamental features of sheltered instruction (Crawford et al., 2008; Honigsfeld & Cohan, 2006).

These findings were partially consistent with previous studies of the effects of professional development on teachers’ incorporation of sheltered instruction techniques (Batt, 2010; Crawford, 2009; Friend et al., 2011; Honigsfeld & Cohan, 2006; McIntyre et al., 2011). Particularly, this study concurred with previous studies on the use of such
strategies as incorporating visual aids (Batt, 2010; Crawford, 2009; Friend et al., 2011), emphasizing key vocabulary (Crawford, 2009; Friend et al., 2011; Honigsfeld & Cohan, 2006), use of supplementary materials (McIntyre et al., 2011), pacing of lessons (Crawford, 2009; Friend et al., 2011), repetition, and wait time for student responses (Batt, 2010). Moreover, some features that were not covered by previous studies were indicated by the participants of this study. These features included, but were not limited to: slower speech and clear enunciation, monitoring speech patterns, adaptation of materials, allowing alternative forms for expressing understanding of information, and modeling correct pronunciation and language use.

However, consistent focus on language objectives, the SIOP feature that indicated effects of PD on instructional changes in some of the previous studies (Batt, 2010; Crawford, 2006; Friend et al., 2011; McIntyre et al., 2011), was not implemented to a high degree by the teachers in this study. This was evidenced by an average self-rating of 3 (occasionally/sometimes) for this feature by the 69 survey respondents, and less than half of the respondents reported increased implementation of the feature. Interestingly, compared with the non-significant improvement in the “language objectives” feature, a majority of teachers reported increased incorporation of the SIOP feature related to activities that integrate all language skills (listening, speaking, reading, and writing).

The case study data further revealed some discrepancies between the teachers’ self-ratings and my observations with regard to their implementation of such essential SIOP features as instruction differentiation, greater student-student interactions facilitated by various grouping configurations, teacher questioning for promoting extended output
and higher-thinking skills, and opportunities provided for students to use learning strategies.

It is worth noting here that the PD program/SIOP training in this study (ECTC) differed from those reported in previous studies in terms of instructional context and the format of training. The teachers received training through a ten-week strategies course delivered online, where they learned and read about one component of the SIOP Model each week, watched and commented on SIOP lesson video clips, and reflected upon their SIOP implementation through online discussions and self-assessments (twice in ten weeks) using an adapted SIOP protocol. They were also observed once by an ESL mentor who followed a “conference-observation cycle” that consisted of a pre-observation planning conference, observation, and post-observation reflection conference. In addition, the teachers were provided with an opportunity to relate their instructional practices to student performance and growth by doing a case study on an ELL student.

Although this format of training, which combined lectures, teacher reflections, coaching, and classroom action research, was proven effective by the teachers’ self-reports in this study, it fell a bit short in terms of actual classroom implementation. The teachers’ instruction was, to different degrees, “problematic” in my interpretation. This was partially indicated by the “moderate” level of (SIOP) implementation of two case study teachers (Lana, Karen). What was lacking in the program design was an intensive coaching and mentoring component featured in some of the previous studies (Batt, 2011; Crawford, 2006). One coaching visit by the ESL mentors does not seem to fully support the teachers’ instructional needs.
**Teaching academic literacy skills.** Compared with the instructional changes related to implementing the SIOP strategies and modifications made to assessments and assignments, reported improvement in the skills for the development of ELL students’ literacy skills did not seem to induce much change in classroom instruction. The survey results highlighted improvement in only one teaching practice related to using strategies to help students build academic vocabulary.

The case study data further revealed the inadequate amount and quality of literacy instruction in the teachers’ classroom. Particularly, with regard to reading instruction, the three case study teachers either did not provide many opportunities for the students to read in class (Ann), or relied on a limited scope of reading activities, like read-aloud or choral reading (Lana, Karen) that did not incorporate teaching and practice of reading comprehension skills and strategies. Furthermore, the recommended practices of integrating literacy instruction with development of students’ oracy (i.e., oral proficiency) were not implemented or only partially implemented in the three teachers’ classes.

The underlying reasons the teachers did not implement much of what they learned about literacy instruction in their classroom practice were many and included teacher-specific factors (McIntyre et al., 2010), factors related to the structure of the PD training (McIntyre et al., 2010), and school organization factors (to be discussed later).

As far as the teacher factors were concerned, statistically, the number/percentage of language arts teachers (31.9%) may “obscure” the impact of the ECTC training on the literacy instruction practices of math, science, and social studies teachers.

As for the three case study teachers, they differed in terms of their “entering level of teaching effectiveness and their repertoire of teaching strategies” (McIntyre et al.,
2010, p. 346). Ann, for instance, entered the ECTC program with low self-efficacy in regard to teaching ELLs. In spite of her big growth as a “SIOP implementer,” she did not seem to fully take on the role of both a language teacher and a science teacher (Dong, 2002). For her, teaching the content was always her priority. All the class activities, despite their integrated manner (integrating all the language processes), should serve to facilitate the implementation of her science curriculum, and the strategies that she employed represented her effort to scaffold her instruction and make the science content more comprehensible and engaging for her students. However, she was not purposeful in planning lessons to enhance the development of reading and writing skills. The fact that she tried to minimize students’ attention to the language objectives and her final “abandonment” of this SIOP feature was another indication that she had yet to step into the role of a teacher of literacy skills.

Karen, on the other hand, came in with a rich repertoire of strategies accumulated over seven years of teaching ELL students. A key piece of knowledge she gained from the ECTC program was the importance of addressing “the language-focused goals, learning, and growth,” and she interpreted this to mean providing students with opportunities to listen, speak, read, and write in class. Although she avidly tried out many new strategies for teaching the four language skills during the ECTC program, what she continued to use two years after the ECTC program were those that would fit well into her current system that had been proven effective over the years. It was discussed before that Karen’s teaching style was very traditional and teacher-centered. This may explain why she incorporated choral reading as a major reading and speaking activity, which was still a whole-class, teacher-controlled activity. It seemed that her
understanding and enactment of teaching the four language skills was still at the surface level. This was further indicated by her reluctance to plan her lessons based on concrete language objectives. Although she tried to balance language and content, her belief about “content still comes first” seemed to be the basis for the decisions that she made when content and language were “in conflict.”

Lana’s prior experience with the SIOP Model equipped her with an awareness of the importance of addressing the students’ language needs through content instruction. Compared with the other two teachers, Lana demonstrated a more active attitude toward teaching literacy skills and applied what she learned about the benefits of teaching reading/learning strategies to her teaching. However, her repertoire of strategies for teaching literacy skills was still limited, as evidenced by her reliance on read-aloud as the major reading activity and incorporating only a few reading strategies (e.g., finding the topic sentence and highlighting key information), as previously discussed.

The three teachers’ instructional practices with regard to academic literacy may suggest that other issues causing the inconsistencies between their knowledge and beliefs and their practices were their “incomplete or incorrect understanding of the proposed ideas” (Chen, 2008, p. 74) and lack of resourceful means and tools to put these concepts into practice (Fullan, 2001, as cited in Chen, 2008). Also, teachers' existing beliefs (about teaching, learning, and students) may function as a filter and influence them to consciously or unconsciously adapt the proposed instructional practices to fit their existing beliefs (Borko, Davinroy, Bliem, & Cumbo, 2000).

In addition to these teacher-related factors, the structure of the TESOL Methodology class, where literacy instruction was mainly addressed, may be another
reason why only limited instructional changes occurred. The class consisted of ten TESOL-related topics, which included the four language skills (speaking, listening, reading, and writing). Each language skill was covered by a one-week module, where the teachers listened to narrated PowerPoint lectures, participated in online discussions, and wrote reflections on the readings. They were also required to create a lesson plan for integrating the four skills into their instruction of content by referring to the Ohio ELP Standards and to videotape a segment of their teaching as a basis for reflection on their language teaching practices. However, compared with a few literacy-focused PD programs reported by previous studies that provided curriculum/intervention materials (Hart & Lee, 2003), a tool kit with a variety of curricular approaches to incorporating academic literacy (Olson & Land, 2007), or classroom-based support for implementation of the recommended literacy practices (Zetlin et al, 1996), the one-week modules may not have offered training of sufficient duration, depth, and/or classroom-based support to prepare teachers for taking on such a “formidable” task of teaching literacy skills. As Calderon (2006) noted, “teachers need theory, research, modeling or demonstration of instructional methods, coaching during practice, and feedback in order to integrate instructional practice into their active teaching repertoire” (p. 127).

Culturally responsive teaching. Culturally responsive instruction was another area where the ECTC impact was not highly evident. The survey results indicated that the respondents demonstrated some characteristics and behaviors of a culturally responsive teacher, which included:

- allowing ELL students to work with native-speaking peers or bilingual aides;
• trying to learn as much as possible about students’ cultures, family histories, and home lives;
• communicating high expectations for all students and holding them accountable for high-quality academic work;
• inviting ELL students to add comments or contribute their perspectives based on their own cultural backgrounds;
• being conscious of possible cultural biases in instructional materials and cultural assumptions that may be unfamiliar for ELL students; and
• acquiring from the ESL teacher(s) language-proficiency test data of the ELLs in class.

However, the number of respondents who attributed these characteristics and practices to their ECTC training was not significant enough to claim it was a result of the ECTC program. More importantly, both quantitative and qualitative analysis suggested that the ECTC training did not induce much instructional change with regard to incorporating students’ cultures and native language as resources into curriculum and instruction and engaging ELL students’ parents in the students’ learning.

The literature indicates that culturally responsive teaching has increasingly become a significant component of ELL-related training (e.g., He et al., 2011), even though it has always been a topic to pursue for teaching culturally and linguistically diverse students (Gay, 2000). The findings of this study concurred with and expanded on those of some previous studies with regard to the enriched understanding of cultural issues in ESL teaching (He et al., 2011) and increased knowledge about the ELLs’ linguistic, educational, and cultural background (Edstam & Walker, 2009; Hutchinson &
Hadjioannou, 2011). However, one problem I noticed with these studies was that making classroom instruction more culturally responsive was only paid lip service by the PD programs, which usually did not go beyond the commonplace “cultural sensitivity” training to really address instructional issues.

**Teacher Collaboration.** Teacher collaboration, as an indicator of the ECTC impact, was reflected in both the quantitative and qualitative findings. Quantitatively, a majority of teachers reported that they had shared their ECTC learning with other teachers at school. The case study analysis further revealed some positive changes, including co-teaching with the ESL teacher (Ann), working more closely with the other ECTC alumni teachers (Lana), and providing ESL-focused training based on their ECTC learning (Lana, Karen).

These results corresponded with a few previous studies that reported increased teacher collegiality (Zetlin et al., 1996), teachers assuming mentoring roles for their peers (Crawford et al., 2008), and stronger relationships between the mainstream and ESL teachers (Edstam & Walker, 2009; Pawan & Ortloff, 2011) as a result of the PD activities.

To summarize, all the findings discussed in this section expanded on previous “impact” studies of ELL-related PD, by not only revealing teacher change in knowledge and teaching practices as a result of the ECTC training, but also providing more nuanced analysis of why teacher change and the application of acquired knowledge did not occur as expected with regard to some classroom practices (like teaching reading and writing). The next section provides a more in-depth discussion of the various factors that mediated the process of teacher learning and teacher change.
Factors That Influence Teacher Learning and Change (Research Questions 3 & 4)

Teachers are individuals with different backgrounds and beliefs who work in varied school and system contexts. Therefore, teacher change is affected by individual and school organizational factors that influence how teachers provide instruction (Smith & Gillespie, 2007). Moreover, when teacher change is examined within the context of PD and for the purpose of establishing links between PD and teacher change, various PD-related factors should also be taken into consideration.

Ottoson (1997) delineated five factors that affect the application of what is learned from PD training:

- Educational factors: the characteristics of the professional development, including quality of facilitation, organization, and methods.
- Innovation: the ideas, practices, and strategies taught or suggested to teachers during the professional development.
- Predisposing factors: the characteristics of the teacher, including his/her motivation for attending, background knowledge, and preexisting attitudes.
- Enabling factors: the teacher’s skill in applying the new strategy and factors in the teacher’s school context, including resources, authority, and opportunity to apply what has been learned.
- Reinforcing factors: the factors in the teacher’s school context that support the teacher in applying knowledge, such as help from colleagues, the director, and students (as cited in Smith & Gillespie, 2007, p. 226).

These five factors, when looked at more closely, can be categorized as PD program-related factors, teacher factors, and school contextual (organizational) factors. In this
section, I focus on the PD program-related factors and school organizational factors, which are also the foci of Research Questions 3 and 4.

**Program-related factors.** The ECTC program exemplified some of the best practices of PD for teachers. Table 46 summarizes the main content and design features of the program according to the six features proposed by Garet and his colleagues (2001, 2002) to define an effective PD.
Table 46

Features of the ECTC Program

<table>
<thead>
<tr>
<th>Core &amp; structural features</th>
<th>The ECTC program</th>
</tr>
</thead>
<tbody>
<tr>
<td>Content focus</td>
<td></td>
</tr>
<tr>
<td></td>
<td>• Four courses address key issues for ELL education.</td>
</tr>
<tr>
<td></td>
<td>• Course content incorporates both theories (e.g., SLA theories) and practical instructional strategies (e.g., the SIOP Model).</td>
</tr>
<tr>
<td></td>
<td>• Design and implementation of the program was informed by the Ohio TESOL endorsement guidelines and the National Staff Development Council standards.</td>
</tr>
<tr>
<td></td>
<td>• Teachers’ feedback was collected for the courses, workshops, and program as a whole. Changes and adjustments were made each year to better meet the teachers’ needs.</td>
</tr>
<tr>
<td>Opportunities for active learning</td>
<td></td>
</tr>
<tr>
<td></td>
<td>• Opportunities for active learning were provided through a variety of means embedded in the courses and the workshops, including teacher reflection journals, teacher presentations, online discussions, having an ESL mentor observe and provide feedback on SIOP implementation, creating curriculum materials (e.g. syllabus, instructional materials, assessment plans), analyzing and critiquing textbooks, videotaping and reflecting on a segment of teaching, conducting a classroom-based case study, creating a professional development plan for disseminating ECTC learning, etc.</td>
</tr>
<tr>
<td>Coherence</td>
<td></td>
</tr>
<tr>
<td></td>
<td>• Course content was aligned with the Ohio ELP standards and content area standards.</td>
</tr>
<tr>
<td></td>
<td>• One course addressed the state English language proficiency test (OTELA).</td>
</tr>
<tr>
<td></td>
<td>• A needs assessment was conducted to gauge the PD needs of Ohio school districts for educating ELLs.</td>
</tr>
<tr>
<td></td>
<td>• Different venues were created for teachers to collaborate and form a learning community, including online discussion groups by content area, and on-site workshops that provided the opportunity for teachers to cross district lines and meet each other in person.</td>
</tr>
<tr>
<td>Form</td>
<td></td>
</tr>
<tr>
<td></td>
<td>• The program was supported by school-university partnership.</td>
</tr>
<tr>
<td></td>
<td>• Delivery of the training combined online courses, face-to-face workshops, videoconferencing with remote sites in Ohio, and traditional classroom presentations.</td>
</tr>
<tr>
<td>Duration</td>
<td></td>
</tr>
<tr>
<td></td>
<td>• The program was over nine months long.</td>
</tr>
<tr>
<td>Collaborative participation</td>
<td></td>
</tr>
<tr>
<td></td>
<td>• Cohort-based approach</td>
</tr>
<tr>
<td></td>
<td>• Collaborative participation of teachers from the same school or school district was achieved through recruiting six or seven content teachers and one ESL coach from each participating school district.</td>
</tr>
</tbody>
</table>
My findings parallel past research in regard to the key components of effective PD. As can be seen, all core and structural features of effective PD (Garet et al., 2001) were present in the design and implementation of the ECTC program and all contributed to a positive learning experience for the teachers. The effects of these features on the teachers’ learning experience and ensuing changes were further confirmed by the teachers’ perceptions (Research Question 4). Both the quantitative and qualitative findings indicated that the ECTC participants were consistently and overwhelmingly positive about the ECTC program. Particularly, they put a premium on “opportunity to learn specific instructional strategies,” “opportunity to collaborate with teachers from the same school or in the same content area,” “opportunity to collaborate with teachers in the same content area,” and “opportunity to engage in discussion of content and strategies with other teachers.” It can be seen that these three of the four “top” features represented the collaborative nature of the ECTC program.

Teacher collaboration has been recognized by both the general teacher education literature and research on PD for teachers of ELLs as an important feature of effective PD. Abdal-Haq (1995) proposed that effective PD should be collaborative and provide teachers with opportunities to interact with peers. Garet et al. (2001) identified specific advantages of implementing PD that is designed for groups of teachers at the same school. These include increased collegiality and opportunity for professional discussion and the opportunity to jointly integrate ideas from PD as a result of shared curriculum and assessment. In addition, teachers who share the same students and teach in the same context can discuss student needs across grade levels, leading to school-wide change, and changes are more likely to be sustained over time when teachers are clustered at the same
school sites. More recently, Eun (2011) argued that collaboration and communication among teachers is important for sustaining the effects of PD as teachers form learning communities to continuously reflect upon their instructional practices. This practice is especially important in the context of supporting ELL students because content teachers and ESL teachers can come together and share their respective expertise, and their collaborative teamwork can result in instructional practices that are more grounded in a comprehensive view of each individual student.

The ECTC program adopted a “collaborative” model (evidenced by its name) that placed emphasis on stakeholder knowledge and interaction. The collaborative process started with teacher recruitment; each year, the ECTC worked with district administrators and ESL teachers to create district teams of six to seven content teachers. Teacher collaboration was then supported by the ECTC courses and workshops. As part of the online courses, content teachers were grouped into one of several discussion groups according to the subject they taught. Each discussion group was supported and facilitated by ESL coaches from the six participating districts. In weekly online discussions, teachers shared their experiences and any problems they faced with ELLs in their specific content area. This practice fostered a sense of community and generated “funds of knowledge” among respective discussion groups. Collaboration continued in the third and fourth courses, which were conducted either in-person or via videoconferencing depending on the district team’s locations. Each team developed a capstone project in the form of a PD plan that was to be implemented in their respective district. The process helped teams develop strategies, materials, and methods for sharing their ECTC learning with their school or district colleagues. Three workshops interspersed throughout the
courses provided the opportunity for teachers to cross district lines and meet each other in person.

The ECTC’s collaborative model promoted a variety of collaborative efforts: collaboration between teachers of the same content areas, collaboration between teachers from the same school buildings and school districts, and collaboration between content and ESL teachers. These different types of collaboration not only created various opportunities for active learning (Table 46), but led to sustainable changes in teacher practices after the training.

Indeed, the collaborative model adopted by the ECTC program added to a variety of collaborative formats reported in the previous “impact” studies of PD for teachers of ELLs (Honigsfeld & Cohan, 2006; Friend et al., 2011; He et al., 2011; Murry & Herrera, 2010; Walker & Stone, 2011; York-Barr et al., 2007), and collectively these studies testify to the importance of teacher collaboration as an important component of effective PD and an impetus for teacher learning and change.

**School organizational factors.** In addition to program-related factors, school organizational factors also mediate teacher change by either hindering it or supporting it (Smith & Gillespie, 2007). The quantitative findings highlighted the following factors that teachers reported as obstacles or challenges for enacting changes in their teaching practices: “pressure to help students pass state tests,” “pressure to cover all the content standards,” “communicating with ELL students’ parents,” “other competing professional initiatives in school,” and “other teachers who lack the necessary knowledge and skills to
The qualitative results further revealed that student-induced challenges constituted another obstacle for teachers in their classroom.

Adding to these obstacles was the identification of a number of factors that were or could become facilitating factors for teacher learning and change. The quantitative and qualitative findings indicated that depending on different schools, “time,” “resources and support services available at school for ELLs,” and “the opportunities for ESL-focused PD” could influence the teachers’ perceptions and evaluations of whether their school conditions were favorable for ELL education. These factors pointed to the essential role of “school administration or leadership” in shaping learning opportunities and providing resources, time, and internal structures for teacher development (Desimone, 2009).

These findings bolster the low number of impact studies that have investigated organizational factors that either hinder or facilitate the implementation of new practices (Batt, 2011; Edstam & Walker, 2009; Pawan & Ortloff, 2011; Zetlin et al., 1996).

Revisiting the Model

The four research questions of this study were generated based on the theoretical model that I proposed in Chapter 2. The model also informed my design of the survey instruction and the interview questions. To wrap up my discussion, I revisit the model in this section and connect it with what I found with my research on the ECTC program.

First, my study focused on “teacher change” and provided evidence that the ECTC program helped teachers to increase their knowledge and change their instructional practices (Borko, 2004). As Putnam and Borko (2000) noted, “the process

---

26 These quoted phrases were taken from the survey items.
of integrating ideas and practices learned outside the classroom into one's ongoing instructional program is rarely simple or straightforward” (p. 6). My analysis revealed not only areas where much change in teaching practices had occurred, but also areas where little (if no) change had taken place. Discussion of the reasons was also presented with regard to the design of the program and some possible teacher-related factors (more will be discussed below).

Second, my study provided evidence that “strong professional communities” (Borko, 2004, p. 6) can foster teacher learning and instructional change. In my study, one such professional community was afforded by the ECTC program, which brought together teachers and university professors (facilitators) in PD to form a new kind of discourse community in which both sides contributed and shared their unique sets of knowledge and skills. The collaborative format of the ECTC program provided different venues (online discussion boards, on-site classes, face-to-face workshops) for the community members to “draw upon and incorporate each other's expertise to create rich conversations and new insights into teaching and learning” (Putnam & Borko, 2000, p. 8).

Third, also included in my study were school organizational factors that constituted another kind of socio-cultural context that had a more direct impact on teacher practice. All the related factors that I included in my model—school leadership, other teachers in the school, student characteristics, curriculum, resources, and the larger policy context—were confirmed by my research findings.

Fourth, although I did not study teacher learning and change as a process (to be discussed in “Limitations of the Study” below), I did not forgo my conception about the nature of teacher learning as “both a process of active individual construction and a
process of enculturation into the practices of wider society” (Borko, 2004, p. 4). The teachers who participated in the ECTC program are not just “passive receivers” of information, they actively construct and reconstruct their knowledge base for teaching ELLs by pulling together different conceptual and physical resources afforded by the program, discussing strategies with other members in the learning community, enacting the new practices in classrooms, and reflecting on their teaching practices, all with a view to “addressing the particular problems … in their own particular circumstances” (Kelly, 2006, p. 509). In the process, they are enculturated into the practice of being a culturally and linguistically responsive teacher for ELLs (Lucas & Villegas, 2011).

Fifth, I found that one element that could be added to my model is the teacher factors, which include (are but not limited to) teachers’ motivation for attending and their concerns, background knowledge, preexisting beliefs and attitudes, teaching styles, and repertoire of expertise. These factors “act as a filter as to how one views new knowledge and whether one considers and/or incorporates it into one’s practice or whether it is disregarded” (Davis, 2003, p. 5). Although my research questions did not explicitly address the teacher factors, I realized in the process of data analysis how they interacted with the “external” factors to mediate what the teachers learned and how they enacted changes in their classroom. This observation resonates with Freeman’s remark that teachers’ learning and practices are “situated in personal and institutional histories and … [are] interactive (or dialogical) with others—students, parents, community members, and fellow teachers—in the settings in which they unfolded” (Freeman, 2002, p. 12).

Finally, my study did not explicitly address “student learning” and its relation to teacher change; however, the survey results revealed the teachers’ improved self-efficacy
as it related to ELL students’ classroom engagement, comprehension level, and learning outcomes. Guskey (2000) postulated that “significant change in the beliefs and attitudes of teachers is contingent on their gaining evidence of change in the learning outcomes of their students” (p. 7). Although my study did not address the relationship between teacher beliefs and attitudes and student learning, it could be assumed that changes in teachers’ beliefs are either a precursor to or an outcome of changes in student performance.

Implications of the Study

The ECTC program seemed to have met our intent to introduce the basic theoretical underpinnings and instructional strategies that mainstream teachers must have in order to begin the process of addressing the needs of ELLs in their classrooms. However, in light of my research findings, I believe that the ECTC program or similar PD programs could be strengthened by some important additions and improvement to their content and design. In this section, I discuss the implications of my study for the content and design of future PD initiatives that are geared toward mainstream teachers of ELLs.

Content of PD

Language and literacy. The findings of my study revealed the inadequacy of academic literacy instruction in the teachers’ classrooms. The situation is especially worrisome in light of “the increasingly demanding uses of language and literacy in English” required by the Common Core State Standards (CCSS) (Bunch, 2013, p. 298).

Recent years have seen an increasing number of scholars who are calling for enhanced academic literacy instruction for ELLs to meet the expectations of standards-
based curricula (e.g., August & Shanahan, 2006; Bunch, 2013) and more PD initiatives that focus on literacy instruction informed by different theoretical perspectives. Based on the literature that I reviewed in Chapter 2, as well as the findings of this study, I believe that future PD initiatives should in one way or another prepare content teachers to meet the challenges of how to support ELLs in meeting the new academic content expectations and guide them into becoming competent readers and writers with complex literacy skills. Thus, how to approach literacy instruction for ELLs should be given significant focus and depth by PD providers. As Lachat (2004) noted, “the combined focus on standards, second language acquisition, and literacy may lead to deeper understanding about the range of issues that must be addressed for English language learners (p. 86).”

Some possible approaches to addressing academic literacy include:

1. Combining insights from systematic and functional linguistics (SFL) or genre-approach to improve discipline-specific reading and writing instruction. As Bunch noted, Halliday’s SFL has been given more attention because it in some degrees addresses the concern that “focus on ‘sheltered instruction’ and ‘comprehensible input’ … does not include enough focus on the linguistic structures that characterize academic language” (p. 310). Indeed, an emerging number of SFL-based PD programs (Achugar, Schleppegrell, & Oteiza, 2007; Aguirre-Munoz et al., 2008; Brisk & Zisselsberger, 2011; Gebhard et al., 2011) have centered on “awareness of the linguistic features of school texts, the particular ways that language is used to realize meaning in those texts (in particular disciplines), and how teachers can focus students’ attention on those features in support of students’ engagement with and production of such texts”
(Bunch, 2013, p. 312). These PD programs could serve as models for future literacy-focused PD initiatives for content teachers of ELLs.

2. Related to the first recommendation is a future PD focus on the language demands of each content area (texts and learning tasks). This calls for PD initiatives that draw on formal linguistics (in addition to SFL)—morphology, syntax, and discourse analysis, among others—to equip content teachers with the necessary linguistic tools to do language analysis and provide explicit instruction in academic language, including vocabulary (which requires knowledge about morphology), text structures, and discourse structures.

3. The third approach draws on the recommended practices that have been made for promoting mainstream adolescents’ academic literacy development across the content areas, particularly those that are made for adolescent ELL students (August & Shanahan, 2006; Francis, Rivera, Lesaux, Kieffer, & Rivera, 2006; Meltzer & Hamann; Short & Fitzsimmons, 2007; Torgesen et al., 2007). These recommendations for effective literacy instruction made by professional organizations, applied linguists, and TESOL experts include research-based principles and practices that could be combined with the SIOP Model to bring literacy instruction into clearer focus. To briefly summarize, the recommended literacy practices generally involve the following aspects:
   - teaching the components (phonemic awareness, phonics, reading fluency, vocabulary, and reading comprehension) and processes of reading and writing;
   - direct explicit reading comprehension instruction;
   - focusing on vocabulary development;
• building on students’ prior knowledge and experiences; and
• creating opportunities for speaking, listening, and viewing related to the discussion, creation, and understanding of texts.

In addition, there is an increasing number of books that offer teaching ideas and strategies for promoting reading and writing development across the curriculum (Cloud et al., 2009; Lems et al., 2010; Peregoy & Boyle, 2013; Young & Hadaway, 2006) and in specific content areas (Calderon, 2007; Fang & Schleppegrell, 2008). All these resources could become references for future PD programs that attach importance to ELLs’ reading and writing skills.

Finally, the pressure for content teachers to prepare for the CCSS leads me to suggest that PD providers adopt (one of) the above three approaches by considering at the same time “the development and use of language and literacy relevant to the challenges facing English learners (ELs) in light of the new Standards” (Bunch et al., 2013). This may entail supporting teachers in coupling standards-based instruction with the aforementioned theoretical perspectives and instructional approaches.

Although discussions among language and literacy researchers regarding the instructional implications of these challenges are just beginning (Bunch et al., 2013), I anticipate that their perspectives will be incorporated into the design of future PD programs for teachers of ELLs.

**Discourse strategies and instructional conversations.** The findings about how the three case study teachers in various degrees limited the students’ opportunities to talk in class may suggest the importance of preparing content teachers to support ELL students’ practice of oral academic language through various discourse strategies. These
strategies engage students in individual, small group, and whole-class discussions that move beyond traditional initiation-response-evaluate (I-R-E) structures (Bunch, Kibler, Pimentel, & Walqui, 2013).

Some researchers (Gibbons, 2006; Verplaetse, 2008; Echevarria et al, 2013; Bunch et al., 2013), for instance, have suggested that teachers provide a more balanced linguistic exchange between themselves and their students and encourage students to produce extended oral discourse. This can be achieved by modifying the questions that teachers ask (e.g., asking “how” and “why” questions instead of yes/no questions), modifying the responses that they give to students’ input (e.g., asking students to elaborate on their answers, offering restatements to scaffold replies), and engaging students in a range of collaborative discussions (e.g., one-one-one, in groups) with diverse partners.

Another promising approach is instructional conversations (ICs). ICs, as a type of teacher-fronted model of instruction that differs from traditional I-R-E structures, have been defined as having a number of basic elements (Echevarria et al, 2013). Verplaetse (2008), for instance, expounded on the topic, saying, “during an instructional conversation, teachers take the role of facilitator, guiding through effective questioning techniques student engagement of interpretations, predictions, and jointly constructed meaning of text” (p. 169). Echevarria et al. (2013) pointed out that ICs emphasize extensive discussion and student involvement, abundant oral language practice opportunities using natural language, and promotion of higher order thinking and language use, among others.
Although ICs have been recommended as an effective approach to fostering productive classroom talk conducive to learning (Verplaetse, 2008; Echevarria et al., 2013), PD interest in ICs as a focus of training for teachers of ELLs is only just emerging now (e.g., McIntyre et al., 2010; the University of Georgia; CLASE; Teemant, 2010). In light of the importance of oral proficiency for the development of academic literacy skills, it is recommended that PD providers raise teachers’ attention to the aforementioned discourse strategies and assist them in fully implementing these strategies in their classrooms.

**Culturally responsive instruction.** Recommendations for the content of future PD for teachers of ELLs also include culturally responsive teaching (CRT). Gay’s and Lucas and Villegas’s conceptualizations about CRT (and culturally responsive teachers) are particularly relevant for this purpose. Gay (2000, 2002), for instance, defined CRT as “using the cultural characteristics, experiences, and perspectives of ethnically diverse students as conduits for teaching them more effectively” (Gay, 2002, p. 106). In her book *Culturally responsive teaching: Theory, research and practice*, Gay (2000) delineated five elements of CRT and argued for the inclusion of these five elements into teacher education programs:

- developing cultural diversity knowledge,
- designing culturally relevant curricula,
- demonstrating cultural caring and building a learning community,
- effective cross-cultural communications, and
- cultural congruity in classroom instruction.
Villegas and Lucas (2002, 2006), in their curriculum proposal for preparing “culturally responsive teachers,” identified six characteristics that define a culturally responsive teacher:

- being socioculturally conscious,
- having affirming views of students from diverse backgrounds,
- seeing themselves as responsible for and capable of bringing about change to make schools more equitable,
- understanding how learners construct knowledge and are capable of promoting knowledge construction,
- knowing about the lives of their students, and
- designing instruction that builds on what their students already know while stretching them beyond the familiar.

I believe Gay’s and Villegas and Lucas’ work could serve as theoretical frameworks for future PD initiatives that seek to equip content teachers with the knowledge and skills to make their instruction more culturally relevant and responsive for ELL students.

**Addressing the needs of Somali ELL students.** The fact that the Ohio public schools are populated with a significant number of Somali immigrant students has important implications for the curriculum of future PD programs for content teachers who have this group of ELL students in their classrooms. It is suggested that such programs include at least a “quick guide” to assist teachers in understanding more about the backgrounds of and challenges facing Somali refugee and immigrant students and teaching strategies for working with these students.
**Instructional differentiation and scaffolding strategies.** My final recommendation for the content of future PD programs for teachers of ELLs is to “tease out” and highlight the importance of using instructional differentiation and scaffolding strategies within the framework of the SIOP Model. Particularly, PD providers could draw upon some key work devoted to these instructional practices (e.g., Gibbons, 2002; Walqui, 2006; Walqui & van Lier, 2010) as supplements to the recommendations made by the SIOP experts.

**Design of PD**

Implications for the design of PD programs are proposed based on both the strengths and the weaknesses of the ECTC program. I believe that to facilitate changes in classroom practices, the following features could be incorporated into the design of a university-based PD program (like the ECTC), which is usually not conducted within school contexts.

**Coaching and on-site support.** One of the “weaknesses” of the ECTC program (and maybe many university-based PD programs) is the lack of on-site support and coaching for the teachers’ implementation of instructional techniques. The benefits of classroom-based coaching have been well-acknowledged. As Penner-Williams and Worthen (2010) remarked, “coaching increases teachers’ implementation of new learning and the reflection elicited through coaching contributes to future use of the strategies” (p. 21). However, university-based PD programs are sometimes restricted by distance and/or shortage of faculty to deliver extensive coaching or mentoring, especially if they are offered online to teachers from multiple school sites. Several of the PD models reviewed in Chapter 2 suggested some promising alternatives, like peer coaching combined with
university professor visits (Stowe, 2010) or training school administrators on coaching classroom teachers towards improving instructional practices with ELLs (Cervone, 2010). Future PD programs need to be creative in bringing professional support into classrooms to help teachers match the ELL-friendly strategies with their content and lesson objectives.

**Situated learning.** Although the collaborative format ECTC program facilitated the formation of professional learning communities (PLC), such a PLC could be strengthened by various means to situate teachers’ learning (Putnam and Borko, 2000). According to Putnam and Borko (2000), the often-cited teachers’ complaints that “learning experiences outside the classroom are too removed from the day-to-day work of teaching to have a meaningful impact” (p. 6) point to the importance of having teachers bring experiences from their classrooms to professional development activities. In light of the approaches that Putnam and Borko introduced for math teachers’ PD, I believe that future PD initiatives similar to the ECTC program could encourage teachers to use videotapes of their lessons, curricular materials, or examples of their students' work as springboards for discussion and reflection, or structure PD activities in a way that reflects a learning cycle consisting of PD providers introducing materials and activities, teachers enacting these ideas in their classrooms, and the group discussing and reflecting on their experiences in a subsequent PD session.

Another promising approach to more effectively bridge PD with classroom practice is the idea of “summer curriculum institutes” proposed by Calderon (2006) in her PD proposal for preparing teachers of ELLs to teach reading. Calderon suggested that as part of a comprehensive PD, teachers be provided two to four weeks in the summer to
“integrate new … strategies into their lessons, curriculum standards, and assessments” (p. 129) and plan for the next school year. The approach is especially beneficial and valuable for teachers who barely have time during the school year to introduce innovation into their teaching methods and materials by implementing something new like literacy instruction.

**Working closely with the school administrators.** School-university partnership is a promising mechanism for ensuring that PD activities address site/school-specific concerns. Accordingly, the ECTC program was designed and implemented within the framework of school-university partnership, where the ECTC faculty and staff worked with the ESL coordinators and coaches from each participating school and school district to recruit teacher participants and involved these ESL professionals in the PD activities (online discussions, workshops). Future PD initiatives could bring this type of school-university partnership to a higher level by involving more school administrators to create more buy-in and support from local schools and school districts. As indicated by the findings of this study, a favorable school context with school administration support as the most significant contributing factor is critical for teachers’ enactment of learning from PD programs. Thus, how to get school administrators on board for ELL education should be an integral part of the design of future PD initiatives for teachers of ELLs.

**Addressing school factors.** This study revealed a number of school factors that could become hindrances for teacher learning and change. One implication of this finding for PD providers is to help to address and, if possible, reduce institutional obstacles that limit or undermine teachers’ effort to apply the new practices. Wiske, Perkins, and Spicer (2006) proposed two general strategies for addressing the school
factors. One strategy supports teachers in working with their schools, and the other works directly with school administrators. These strategies point to possible directions that PD for teachers of ELLs could take to facilitate teacher change at school. For instance, PD providers could encourage teachers to discuss the realities of their own setting—policies, resources, schedules, relationships, to name just a few—and how they might adapt the new ideas and practices to these conditions, and vice versa. One approach to facilitate this process is to recruit a team of teachers from the same schools who can serve a source of onsite support for each other. In addition to helping teachers to adjust to the institutional forces, PD providers should strive to build a supportive context through working directly with schools and school administrators, as discussed above. Wiske et al. (2006) suggested that PD providers design an “institutional plan” individually tailored to the school that includes:

- some onsite workshops to augment the online program, direct engagement of local instructional leaders and administrators in online courses so that they know how to support teachers who take the courses, plans for participants to enroll in a coherent sequence of online courses well matched with district priorities, and a process whereby some members of early cohorts become coaches to subsequent cohorts. (p. 62)

**Addressing teacher factors.** This final recommendation entails future PD programs addressing “the emotional and motivational aspects of teachers’ work … in order for them to effectively implement what they have acquired in classrooms” (Eun, 2011, p. 328). Eun (2011) argued that a teacher’s subject knowledge and the actual instructional methods evidenced will all be influenced by their feelings, motivations,
beliefs, and values. Therefore, both researchers and PD providers should consider these teacher factors in order to answer the important questions about the relationships between PD and classroom practices. Similarly, Van Driel, Beijaard, and Verloop (2001) proposed the concept “personal practical knowledge”—“the integrated set of knowledge, conceptions, beliefs, and values” (p. 141)—and recommended that teachers’ practical knowledge be investigated at the start of PD and that changes in this knowledge be monitored throughout the PD.

Based on some successful practices of the ECTC program, I would suggest that a first step for the design of PD involve conducting a needs assessment to determine what motivates the content teachers to participate in ELL-related PD, what their major instructional concerns are in terms of teaching ELLs, and what they want to learn from the PD. Moreover, teacher concerns should be addressed throughout a PD program by regularly collecting teacher feedback or creating a venue for teachers to freely ask questions and get help whenever necessary.

In addition to PD providers learning about and attending to the teacher factors, teachers themselves need to be provided with opportunities to make explicit, examine, and even critique their existing beliefs, values, and teaching practices vis-à-vis ELLs and ways to educate these students. This could be achieved through teacher reflections or group discussions where “group members serve as critical colleagues, challenging one another to check assumptions, make connections between research/theory and their own professional practice” (Murry & Herrera, 2010, p. 39).
Limitations of the Study

Although I used a mixed method design to offset/counterbalance the weaknesses associated with quantitative and qualitative approaches, the findings of this study must be interpreted in the context of several limitations.

First, I was limited by time, resources, and access to a pool of participants. This was mostly a logistical issue, rather than a methodological problem. For instance, I did not own a car at the time of data collection, and this personal issue restricted participant recruitment to those who were accessible by public transportation and taxi. I thus missed the opportunity to study some potentially information-rich cases. Neither could I spend as much time as necessary for the prolonged engagement and persistent observation in the field” required by qualitative research. The six observations that I conducted may not have been able to capture every aspect of teacher change. This shortcoming was exacerbated by the multiple case study design, which put a huge drain on my time and finances. Furthermore, the study was conducted by a single researcher, rather than in collaboration with other researchers, and no peer-review and debriefing were conducted. All these conditions greatly restricted my ability to enhance the reliability and validity of the study, as Table 11 in Chapter 3 indicates.

Second, the research methods did not fully support the intended longitudinal investigation of the case studies. This was mainly due to the fact that the case study data were collected in a “post-hoc” manner. I failed to recruit any participants from the 2011-2012 cohort, for which the study was originally intended, to participate in a 12-month-long study (from January, 2012 to December, 2012) and instead recruited three ECTC alumni teachers who had already graduated at the time of study. Therefore, no interview
or observation data was collected before the training or when the training was underway to track the trajectories of teacher learning and change over time (though I did use the teachers’ online discussions and reflection journals to make up the gap).

Third, the study was limited in addressing how the instructional changes that the teachers enacted as a result of their participation in the ECTC program fostered increased student learning. Impact of the ECTC program on student learning and performance was only investigated through the teachers’ self-reports via the survey and the interviews. No evidence was collected from items such as student work, artifacts, classroom behaviors, or pre- and post-tests.

Lastly, the study was limited by its scope (i.e., focusing only on the case study teachers). I confined my data collection to the case study teachers and did not include such important informants as the PD providers, the students, and the school administrators, whose perspectives may enrich understandings of the cases and increase the depth and scope of case descriptions. Thus, the study was limited in representing “multiple realities” preferred by qualitative research.

**Recommendations for Future Research**

The limitations of this study shed light upon some possible directions to pursue for future research. First, future research could continue to investigate the effects of professional development on teachers’ use of sheltered instruction and other classroom practices, such as academic literacy instruction and culturally responsive teaching. Second, although not measured in this study, it is important to research the effects of professional development on the academic performance of ELLs. Third, future studies could study teacher learning and change as a process by tracking the learning and change
process throughout the PD program and then after the PD program is over. Fourth, in terms of methodology, mix-methods research is a promising research method for future impact studies of PD for teachers of ELLs. Last but not least, teacher factors could become a focus for future studies that attempt to investigate holistically how the various factors (program factors, school contextual factors, and teacher factors) interact and mediate the process of teacher learning and change.
References


Appendix A: Online Survey

1. What subject area do you teach? What grade level(s) do you teach?

2. In which school year did you attend the ECTC program?

3. How many years have you worked as a school professional (or a teacher)?

4. How many years have you instructed ELL students?

5. Are you teaching any ELL students this year? If "yes," how many ELL students do you have this year?

6. Have you taught any ELL students since you graduated from the ECTC program? If "yes," how many? (A rough estimate or a number range is fine if it is too troublesome to find out the exact number.)

7. Have you attended any professional development activities related to ELLs since you graduated from the ECTC program?

8. Please list 3 things that you've learned from the ECTC program about language development and second language acquisition.

9. Please list 3 things that you've learned from the ECTC program about TESOL methods and strategies.

10. Please list 3 things that you've learned from the ECTC program about cross-cultural communication and culturally responsive teaching.
11. Please list 3 things that you've learned from the ECTC program about second language evaluation and assessment for ELLs.

12. Please list 3 things that you've learned from the ECTC program about material selection and adaptation for ELLs.

13. Please indicate whether your knowledge and/or skills have been improved in the following areas as a result of your participation in the ECTC program.

14. Please select a value on the scale that most closely matches how much you feel that the ECTC program has improved your KNOWLEDGE about teaching ELLs.
<table>
<thead>
<tr>
<th></th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>No improvement</td>
<td>Little improvement</td>
<td>Somewhat improvement</td>
<td>Much improvement</td>
<td>Very much improvement</td>
</tr>
<tr>
<td>4.</td>
<td>Differences between BICS and CALP (including Cummin's quadrants)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>5.</td>
<td>The culturally different classroom patterns (e.g., classroom participation structures, instructional formats, expectations about teacher-student interaction, and literacy approach)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>6.</td>
<td>The benefits of using learning strategies (e.g., metacognitive strategies, cognitive strategies, memory strategies, etc.)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>7.</td>
<td>The process and stages of second language development</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>8.</td>
<td>The benefits of bilingualism and bilingual education for ELLs</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>9.</td>
<td>The relationship between L1 (first language) and L2 (second language) literacy</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>10.</td>
<td>The ways in which L1 and L2 language and literacy development are both similar and different</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>11.</td>
<td>Affective filter and second language acquisition</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>12.</td>
<td>The unique difficulties and challenges that ELLs face when learning your subject area (i.e., math, language arts, science, or social studies)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>13.</td>
<td>The specific challenges that ELLs face when learning to READ in English</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>14.</td>
<td>The specific challenges that ELLs face when learning to WRITE in English</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>15.</td>
<td>The specific challenges that ELLs face when learning to SPEAK in English</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>16.</td>
<td>The specific challenges that ELLs face when learning to LISTEN in English</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>17.</td>
<td>The social, cultural, and historical contexts of schooling and the implications for ELLs</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>18.</td>
<td>A variety of factors that determine the rate of second language acquisition</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>19.</td>
<td>The benefits of integrating explicit instruction in reading, writing, listening, and speaking across the curriculum</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>20.</td>
<td>The benefits of integrating English language teaching and academic content instruction</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>21.</td>
<td>The heterogeneity of the ELL population (including different types of ELLs and their unique characteristics and needs)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>22.</td>
<td>The social, political, and ideological aspects of language and society, with respect to discourse, identity, and power</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>23.</td>
<td>Educational policies and legislation that affect ELLs</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>24.</td>
<td>The nature and purposes of different types of programs for English language learners</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>25.</td>
<td>The ESL Standards (including proficiency level descriptors)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>26.</td>
<td>Standardized language proficiency tests (e.g., OTELA)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>27.</td>
<td>Test accommodations that are provided for ELLs in high stakes standardized tests</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>---</td>
<td>---</td>
<td>---</td>
<td>---</td>
<td>---</td>
<td>---</td>
</tr>
<tr>
<td>No improvement</td>
<td>Little improvement</td>
<td>Somewhat improvement</td>
<td>Much improvement</td>
<td>Very much improvement</td>
<td></td>
</tr>
<tr>
<td>28. Assessment tools and procedures used to identify and place ELLs eligible for services</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>29. Approaches to assessing ELLs’ listening skills</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>30. Approaches to assessing ELLs’ oral language proficiency</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>31. Approaches to assessing ELLs’ reading skills</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>32. Approaches to assessing ELLs’ writing skills</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>33. Your ELL students’ linguistic backgrounds, experiences, and proficiencies</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>34. Language policies and politics that affect schools</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>35. Language assessment terminology and concepts, as well as basic theories of language assessment (e.g., authentic assessment, reliability, validity, and holistic scoring)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

15. Please select the value on the scale that most closely matches how much you feel that the ECTC program has improved your SKILLS for teaching ELLs.

<table>
<thead>
<tr>
<th></th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
</tr>
</thead>
<tbody>
<tr>
<td>No improvement</td>
<td>Little improvement</td>
<td>Somewhat improvement</td>
<td>Much improvement</td>
<td>Very much improvement</td>
<td></td>
</tr>
<tr>
<td>Please check your degree of improvement by placing a “✓” in one of the boxes</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>1. Using various teaching techniques (e.g., scaffolding strategies) to make content instruction more comprehensible for ELLs</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2. Modifying regular assignments and/or developing parallel or alternative assignments that maintain a high level of cognitive challenge while reducing language demands</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3. Adapting instructional materials to the needs of ELLs without diminishing the content</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4. Differentiating instruction for ELLs at different language proficiency levels</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>5. Designing classroom-based tests for your ELLs by referring to both content area standards and ESL proficiency standards</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>6. Building instruction on ELLs’ prior knowledge</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>7. Incorporating cultures of ELL students into curriculum</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>8. Determining the language demands of content-area materials and tasks (vocabulary, grammatical structures, cohesive devices, etc.)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>9. Establishing group activities and cooperative learning in order to maximize social and academic interaction for ELL students</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>10. Creating a risk-free and socially supportive classroom environment for ELLs</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>---</td>
<td>---</td>
<td>---</td>
<td>---</td>
<td>---</td>
<td>---</td>
</tr>
<tr>
<td></td>
<td>No improvement</td>
<td>Little improvement</td>
<td>Somewhat improvement</td>
<td>Much improvement</td>
<td>Very much improvement</td>
</tr>
<tr>
<td>11.</td>
<td>Collaborating with and serving as a professional resource for other school professionals</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>12.</td>
<td>Promoting ELL students’ academic vocabulary development</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>13.</td>
<td>Helping ELL students develop literacy skills (reading and writing) in English</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>14.</td>
<td>Promoting ELL students’ development of oral proficiency in English</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>15.</td>
<td>Preparing ELL students for high stakes tests (e.g., OAA, OGT, OTELA)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>16.</td>
<td>Planning and delivering appropriate instruction for ELLs via your content area that is coupled with the teaching of listening, speaking, reading, and writing skills (i.e., the ability to integrate language and content instruction)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>17.</td>
<td>Learning, valuing, and celebrating linguistic and cultural diversity of ELL students</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>18.</td>
<td>Communicating and building partnerships with ELL students’ families</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>19.</td>
<td>Teaching phonological, morphological, and grammatical rules</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>20.</td>
<td>Locating resources and programs that are made available for ELLs</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>21.</td>
<td>Helping students develop critical thinking and metacognitive skills as key parts of academic literacy tasks</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>22.</td>
<td>Interpreting ELL students' behavior from the perspective of cultural differences</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

16. Please briefly talk about some changes in your teaching practices (including teacher collaboration) after the ECTC program.

17. Category 1: SIOP Strategies

Please select the value on the scale that most closely matches how frequently you use the following sheltered instruction strategies. Check "ECTC" if you believe your increased frequency of using the strategy is due to your participation in the ECTC program. Leave it unchecked if you believe your frequency of using the strategy remains unchanged after the ECTC program. For example, if you "frequently" post content objectives with students, and you believe that you use this strategy more frequently after the ECTC program, you should check both "4" and "ECTC".
<table>
<thead>
<tr>
<th></th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>ECTC</th>
</tr>
</thead>
<tbody>
<tr>
<td>Never</td>
<td>Rarely</td>
<td>Occasionally/ Sometimes</td>
<td>Frequently</td>
<td>Always</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
| Please check your frequency of implementing the following strategies by placing a “√” in one of the boxes. Check “ECTC” if you believe there is an ECTC influence.
1. I clearly define, post, and review content objectives with students.
2. I clearly define, post, and review language objectives with students.
3. I provide meaningful activities that integrate lesson concepts with language practice opportunities for reading, writing, listening, and/or speaking.
4. I provide ELL students with different types of supplemental materials that are appropriate for their English reading level.
5. I adapt dense and difficult texts for my ELL students.
6. I consciously plan and incorporate a variety of questions and tasks to promote students' higher-order thinking skills.
7. I use various strategies to activate students’ background knowledge and/or help them build necessary background information when introducing a new concept.
8. I use various strategies to help students build connections between a new lesson and the material, vocabulary, and concepts previously covered in class.
9. I emphasize key vocabulary throughout the lesson, writing them, repeating them, and highlighting them for students to hear and see.
10. I monitor my rate of speech, use pauses, and enunciate clearly while speaking.
11. I monitor my speech patterns (e.g., minimizing the use of idiomatic expressions, simplifying sentence structure, paraphrasing, explaining difficult words and ideas, etc.).
12. I provide clear and explicit instructions for assignments and activities (e.g., giving both oral and written instructions, asking students to repeat directions in their own words, etc.).
13. I provide manipulatives, realia, videos, pictures and other types of sensory experiences to make language more accessible and content more engaging.
14. I use a variety of techniques to help students understand and learn the content material, including modeling, gestures, demonstration, graphic organizers, and hands-on activities, etc.
<p>| | | | | | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td>ETC</td>
</tr>
<tr>
<td>Never</td>
<td>Rarely</td>
<td>Occasionally/Sometimes</td>
<td>Frequently</td>
<td>Always</td>
<td></td>
</tr>
</tbody>
</table>

Please check your frequency of implementing the following strategies by placing a “✓” in one of the boxes. Check “ECTC” if you believe there is an ECTC influence.

15. I allow students alternative forms for expressing their understanding of information and concepts. (e.g., pointing, answering yes/no questions, short answers, listing, drawing, labeling, etc.).

16. I assist students in developing a variety of learning strategies (including cognitive strategies, metacognitive strategies, and language learning strategies, etc.).

17. I allow students sufficient wait time they need to process information.

18. I model correct pronunciation and language use for ELL students (e.g., by paraphrasing a student's response in other words to model correct English usage or by repeating the student's response to provide correct pronunciation, etc.).

19. I encourage students to elaborate on responses (e.g., prompting students to expand on short answers, provide more information, and give more complete responses).

20. I incorporate informal assessment opportunities into a lesson to determine the extent to which students are learning content.

21. I use "think-alouds" to model how I think and monitor my understanding.

22. I do one-on-one teaching, coaching, and modeling for my ELL students.

23. I provide models of completed assignments to give students a clear picture of their goal.

24. I structure my lessons in ways that promote interaction and discussion between teacher/student and among students so that students have ample opportunities to practice using academic English.

25. I use a variety of grouping structures (partners, triads, small groups of four or five, cooperative learning groups, etc.) to facilitate using English in ways that support the lesson's objectives and develop students' English proficiency.

26. I provide a variety of hands-on activities for students to apply content and language knowledge.

27. I use activities that integrate all language skills (speaking, listening, reading, and writing).

28. I deliver my lessons in a way that supports content and language objectives.
<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th>ECTC</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td></td>
</tr>
<tr>
<td>Never</td>
<td>Rarely</td>
<td>Occasionally/Sometimes</td>
<td>Frequently</td>
<td>Always</td>
<td></td>
</tr>
</tbody>
</table>

Please check your frequency of implementing the following strategies by placing a “√” in one of the boxes. Check “ECTC” if you believe there is an ECTC influence.

29. I try to make the pacing of my lessons appropriate to the ability levels of both native English-speaking students and ELL students.

30. I review key vocabulary and content concepts periodically during a lesson.

18. Category 2: Teaching Reading and Writing

Please select the value on the scale that most closely matches how frequently you use the following strategies to promote your ELL students’ reading and writing skills. Check "ECTC" if you believe your increased frequency of using the strategy is due to your participation in the ECTC program. Leave it unchecked if you believe your frequency of using the strategy remained the same after the ECTC program.

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th>ECTC</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td></td>
</tr>
<tr>
<td>Never</td>
<td>Rarely</td>
<td>Occasionally/Sometimes</td>
<td>Frequently</td>
<td>Always</td>
<td></td>
</tr>
</tbody>
</table>

Please check your frequency of implementing the following strategies by placing a “√” in one of the boxes. Check “ECTC” if you believe there is an ECTC influence.

1. I use a variety of strategies to help students build vocabularies (e.g., teaching word parts, teaching word learning strategies, word wall, semantic webs, personal word study notebooks, dictionaries, etc.)

2. I instruct students on how to use reading strategies (e.g., using pictures, summarizing, making predictions, decoding strategies, monitoring comprehension, etc.).

3. I model how to read a text.

4. I make available a variety of age-appropriate and reading-level-appropriate reading material for my students.

5. I teach students how to use textbooks more effectively.

6. I pre-select and pre-teach vocabulary (new content words, new usages of familiar words, synonyms, idioms, etc.) before reading.

7. I draw students’ attention to word structure, tense, parts of speech, and sentence structures when reading a text.
1. I provide different activities, tasks, and assignments for ELL students according to their English language proficiency levels.

2. I use various types of alternative (classroom) assessment to allow students to demonstrate their knowledge fully.

3. I teach test-taking strategies.

4. I use assessment information to plan and improve my instruction.

5. I modify my assessments to really gauge what the ELLs have learned about subject content.

Please check your frequency of implementing the following strategies by placing a “√” in one of the boxes. Check “ECTC” if you believe there is an ECTC influence.

<table>
<thead>
<tr>
<th></th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>ECTC</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Never</td>
<td>Rarely</td>
<td>Occasionally/Sometimes</td>
<td>Frequently</td>
<td>Always</td>
<td></td>
</tr>
</tbody>
</table>

8. I teach text structures (e.g., comparison/contrast, cause/effect, problem/solution, sequential, exemplification, description) and signal words to enhance comprehension.

9. I instruct students on the writing process (e.g., prewriting, drafting, revising, editing, and publishing).

10. I provide instruction on writing mechanics/conventions (e.g., grammar, spelling, punctuation, and capitalization).

11. When I respond to students’ writing, I respond to the message and address where the communication breaks down.

12. When I respond to students’ writing, I focus on a limited set of errors each time.

19. Category 3: Assignment and Assessment

Please select the value on the scale that most closely matches how frequently you use the following strategies to make your assignment and assessment more accessible for your ELL students. Check ”ECTC" if you believe your increased frequency of using the strategy is due to your participation in the ECTC program. Leave it unchecked if you believe your frequency of using the strategy remained the same after the ECTC program.

<table>
<thead>
<tr>
<th></th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>ECTC</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Never</td>
<td>Rarely</td>
<td>Occasionally/Sometimes</td>
<td>Frequently</td>
<td>Always</td>
<td></td>
</tr>
</tbody>
</table>

1. I provide different activities, tasks, and assignments for ELL students according to their English language proficiency levels.

2. I use various types of alternative (classroom) assessment to allow students to demonstrate their knowledge fully.

3. I teach test-taking strategies.

4. I use assessment information to plan and improve my instruction.

5. I modify my assessments to really gauge what the ELLs have learned about subject content.
20. Category 4: Culturally Responsive Teaching

Please select the value on the scale that most closely matches how frequently you use the following strategies to incorporate your ELL students’ L1 and culture into curriculum and instruction. Check "ECTC" if you believe your increased frequency of using the strategy is due to your participation in the ECTC program. Leave it unchecked if you believe your frequency of using the strategy remains the same after the ECTC program.

<table>
<thead>
<tr>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>ECTC</th>
</tr>
</thead>
<tbody>
<tr>
<td>Never</td>
<td>Rarely</td>
<td>Occasionally/Sometimes</td>
<td>Frequently</td>
<td>Always</td>
<td></td>
</tr>
</tbody>
</table>

Please check your frequency of implementing the following strategies by placing a “√” in one of the boxes. Check “ECTC” if you believe there is an ECTC influence.

1. I use multicultural materials in my classroom.

2. I provide or encourage students to locate materials and information in their native languages.

3. I allow ELL students to work with peers or bilingual aides versed in their native language.

4. I try to learn as much as possible about students’ cultures, family histories, and home lives.

5. I am explicit in voicing high expectations for all students and demonstrate willingness to help students overcome language, cultural, socioeconomic, and other barriers to high academic achievement.

6. I specifically invite ELL students to add comments or contribute their perspectives based on their own cultural backgrounds.

7. I involve parents in my classroom and curriculum activities.

8. I am conscious of possible cultural biases in instructional material and cultural assumptions that may be unfamiliar or even uncomfortable to students from other nations.

9. I know the ESL coordinator in charge of ELLs in my school and have acquired from him or her baseline language-proficiency test data for the ELLs in my classes.

21. Category 5: Teacher Collaboration

Please select the value on the scale that most closely matches how frequently you engage in collaborative practices with other school professionals. Check "ECTC" if you believe your increased frequency of using the strategy is due to your participation in the ECTC program. Leave it unchecked if you believe your frequency of using the strategy remains the same after the ECTC program.
<table>
<thead>
<tr>
<th></th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
</tr>
</thead>
<tbody>
<tr>
<td>Never</td>
<td>Rarely</td>
<td>Occasionally/Sometimes</td>
<td>Frequently</td>
<td>Always</td>
<td>ECTC</td>
</tr>
</tbody>
</table>

Please check your frequency of implementing the following strategies by placing a “√” in one of the boxes. Check “ECTC” if you believe there is an ECTC influence.

1. I consult with ESL teachers in order to better help my ELL students.
2. I co-teach ELL students with an ESL teacher.
3. I share what I learned from the ECTC program with other teachers in my school who didn't attend the ECTC program.
4. I collaborate with colleagues who are also ECTC participants.
5. I collaborate with other teachers on the team to better serve the ELL students that we share.

22. Please select the value on the scale that most closely matches how much you agree with the following statements.

<table>
<thead>
<tr>
<th></th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
</tr>
</thead>
<tbody>
<tr>
<td>Strongly disagree</td>
<td>Disagree</td>
<td>Not sure</td>
<td>Agree</td>
<td>Strongly agree</td>
<td></td>
</tr>
</tbody>
</table>

Please check your degree of agreement by placing a “√” in one of the boxes.

1. I believe that the ECTC program has affected the way that I instruct my ELL students.
2. The ECTC program has changed my beliefs and attitudes about education of ELLs.
3. Because of the ECTC program, I feel that I am more capable of providing quality instruction for ELLs and meeting their language and content-area needs.
4. Because of the ECTC program, I feel that I am a better advocate for the ELL students.
5. As a result of the ECTC program, my ELL students are more actively engaged in learning activities.
6. As a result of the ECTC program, my ELL students demonstrate enhanced learning outcomes.
7. As a result of the ECTC program, my ELL students have less difficulty in understanding what they are being taught.
8. The impact of the ECTC program has gone beyond my own classroom.

23. A variety of school factors may either enhance or hinder your effort to improve education for ELLs and apply what you learned from the ECTC program in your teaching practice. Please select the value on the scale that most closely matches how much you agree with the following statements. Feel free to leave a comment on your responses.
### Questionnaire

<table>
<thead>
<tr>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
</tr>
</thead>
<tbody>
<tr>
<td>Strongly disagree</td>
<td>Disagree</td>
<td>Not sure</td>
<td>Agree</td>
<td>Strongly agree</td>
</tr>
</tbody>
</table>

Please check your degree of agreement by placing a “√” in one of the boxes.

1. I don’t have enough time to make modifications for my ELLs.
2. I feel pressured to cover all the content standards.
3. I feel pressured to help my students pass state tests.
4. I receive adequate support from school administration when ELL students are enrolled in my class.
5. Other competing professional initiatives in school interfere with sharing ECTC learning.
6. Few of the teachers in our school care about ELL students.
7. Other teachers lack the necessary knowledge and skills to teach ELLs.
8. I feel frustrated with the range of abilities in my classroom with respect to ELL students' academic as well as English proficiency.
9. There are not enough resources and support services available in our school for ELLs.
10. There are no professional development opportunities provided by the school (or the school district) that focus on education of ELLs.
11. I don’t know how to locate resources and support services for my ELL students.
12. The school's ESL services do a good job in supporting my instruction needs.
13. It is difficult to connect with parents and inform them of the standards, expectations, and ways to help because of language barriers.
14. I feel isolated as a result of lack of communication and collaboration among teachers.

Comment:

24. Please select the value on the scale that most closely matches how much you agree with the following statements.

I believe the following features of the ECTC program have a significant impact on my learning experience and subsequent changes in my instruction of ELL students.

<table>
<thead>
<tr>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
</tr>
</thead>
<tbody>
<tr>
<td>Strongly disagree</td>
<td>Disagree</td>
<td>Not sure</td>
<td>Agree</td>
<td>Strongly agree</td>
</tr>
</tbody>
</table>

Please check your degree of agreement by placing a “√” in one of the boxes.

1. Professors’ course content
2. Lectures given by invited speakers
3. The length of the program
<table>
<thead>
<tr>
<th></th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Strongly disagree</td>
<td>Disagree</td>
<td>Not sure</td>
<td>Agree</td>
<td>Strongly agree</td>
</tr>
<tr>
<td>4.</td>
<td>Course materials/readings</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>5.</td>
<td>The online format of the courses</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>6.</td>
<td>The program is supported by a school/university partnership.</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>7.</td>
<td>The three workshops (where I got an opportunity to meet with other teachers in person)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>8.</td>
<td>Opportunity to engage in in-depth discussion of content and strategies with other teachers</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>9.</td>
<td>Opportunity to collaborate with teachers in the same content area</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>10.</td>
<td>Opportunity to collaborate with teachers from the same school or school district</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>11.</td>
<td>Opportunity to discuss and exchange ideas with ESL coaches</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>12.</td>
<td>Opportunity to be observed teaching and provided feedback</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>13.</td>
<td>Opportunity to watch and comment on videotaped lessons during the SIOP course</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>14.</td>
<td>Opportunity to reflect upon my own teaching practice (e.g., through the video reflection project or SIOP self-evaluation)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>15.</td>
<td>Opportunity to reflect upon and discuss the course materials and relate the course content (e.g., through online discussions) to my own teaching context</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>16.</td>
<td>Opportunity to work on projects/assignments that demonstrate my newly learned knowledge and skills</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>17.</td>
<td>Opportunity to do classroom-based research (e.g., a case study on an ELL student)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>18.</td>
<td>Opportunity to create curriculum materials (e.g., syllabus, instructional materials, assessment plan) that can be put into practical use</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>19.</td>
<td>Opportunity to learn specific instructional strategies</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>20.</td>
<td>Opportunity to learn concepts, terminologies, and theories (e.g., SLA theory)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Appendix B: Interview Protocols

Interview Protocol 1

1. Please briefly introduce your teaching experiences.

2. What is your general teaching philosophy?

3. How do describe yourself as a teacher?

4. Please describe your pre-service teacher education program (undergraduate, graduate). Did you take any course(s) that prepared you to teach ELLs?

5. Did you receive any training at work (in-service training) for teaching ELLs before the ECTC program (the ECTC hereafter)?

6. In retrospect, what are the most important knowledge and skills that you’ve learned from the courses and the workshops of the ECTC program about teaching ELLs?

7. How many ELL students have you taught since your participation in the ECTC? Can you introduce the ELL students you are teaching this year (their language backgrounds, experiences, and proficiencies)?

8. What about the academic performance of your students—how well do they do in your class? Do you notice any issues or challenges that they have?

9. How have you changed as a teacher since your participation in the ECTC?

10. How has the change impacted your students?

11. How do you think ECTC has influenced your instruction?

12. Did you learn things in ECTC that you hadn’t had a chance to implement in your classroom? Why not?

13. Is there anything that you are doing in your class and with your students that you didn’t do prior to the ECTC?

14. How do you achieve a balance between getting ELLs to learn the content and the language at the same time?
15. Are you implementing any SIOP features? How?
16. Are there any SIOP features that you think difficult to implement? Why?
17. How do you try to validate in your daily teaching the cultural background, first language, and previous schooling/knowledge of your ELL students?
18. Do you consciously help your ELL students develop their language skills (speaking, listening, reading, and writing)?
19. How do you try to create a language-rich environment in which your students (especially ELL students) have many varied opportunities to speak, listen, read, and write in English?
20. How do you engage your ELL students in interactions with other students, including native English speakers and other ELL students?
21. What is your understanding of scaffolding? How do you scaffold your students’ learning of language and content?
22. Do you provide explicit instruction in language (vocabulary, structures, and uses)? How?
23. What new roles have you taken on since your participation in the ECTC?
24. Do you view yourself as an agent of change for your ELL students within your classroom and in your school building? If yes, how do you perform this role?
25. How did you implement the educational program that you created in Dr. XXX’s class?
26. Are you collaborating with other teachers (the ESL teacher, other teachers in your team) for teaching ELLs? How?
27. What are some factors (personal, school, or students) that either facilitate or hinder your implementation of the ECTC strategies?
28. What challenges do you still have in teaching ELLs?
29. How well do you think the school does in addressing the needs of ELLs?
30. What ESL services are provided for ELL students in your building?
31. What kind of support do you get from the school administrators and other teachers for teaching ELLs?
32. What support structures are available at your school or in your school district to assist you in creating a more effective learning environment for your ELLs?
33. The ECTC program incorporates online professional development, distance education and on-site workshops. How do you think these features of the ECTC had an impact on your learning experience?
34. Questions will be asked about how the teacher organizes her daily teaching (curriculum, assessment, etc.)

**Interview Protocol 2 (for after-observation interviews)**

1. Tell me a little about the students (especially ELL students) in this class (proficiency level, country of origin, academic achievement).
2. What were your language objectives and content objectives today?
3. How did you assist the students in achieving the objectives?
4. How does the lesson fit into the larger unit?
5. What specific accommodations did you make for your ELL students today?
6. How did you differentiate for students at different levels?
7. Was the lesson that I just observed typical of what you normally do? What did I miss today?
8. What aspects of your lesson today were influenced by what you learned from the ECTC?
9. Could you show me some examples of students’ work or tests that represent different levels?
10. What aspects of concepts/skills do you think are challenging for the ELL students?
11. Some questions will be asked based on the teacher’s implementation of the SIOP features.
## Appendix C: Table 47

### Table 47

*Strategies Learned and Implemented by Karen During the ECTC Program*

<table>
<thead>
<tr>
<th>Strategies</th>
<th>Implemented or not</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Using visuals</strong></td>
<td></td>
</tr>
<tr>
<td>• Using photos from old textbooks for activities</td>
<td>Yes</td>
</tr>
<tr>
<td>• Interactive graphic organizer</td>
<td>Yes</td>
</tr>
<tr>
<td><strong>Vocabulary</strong></td>
<td></td>
</tr>
<tr>
<td>• Frontloading ELL students with selective content vocabulary at the beginning of each year</td>
<td>Planned</td>
</tr>
<tr>
<td>• “Word-web”</td>
<td>Yes</td>
</tr>
<tr>
<td><strong>Listening/Speaking</strong></td>
<td></td>
</tr>
<tr>
<td>• Using ELP benchmarks to design listening/speaking activities (e.g. “determine speaker attitude and point of view”)</td>
<td>Yes</td>
</tr>
<tr>
<td>• Giving choice for beginners (between speaking-focused and writing-focused assignment)</td>
<td>Yes</td>
</tr>
<tr>
<td>• Playing video without sound or using closed captioning</td>
<td>Not mentioned</td>
</tr>
<tr>
<td><strong>Reading</strong></td>
<td></td>
</tr>
<tr>
<td>• Purchasing various types and levels of reading materials that meet the needs of all learners</td>
<td>Yes</td>
</tr>
<tr>
<td>• “Book pass”</td>
<td>Yes</td>
</tr>
<tr>
<td>• “Choral reading”</td>
<td>Yes</td>
</tr>
<tr>
<td>• Teaching reading strategies combined with listening strategies</td>
<td>Yes</td>
</tr>
<tr>
<td>• “Mime a crime” (reading activity)</td>
<td>Yes</td>
</tr>
<tr>
<td>• Using poetry, rhymes and songs to teach</td>
<td>Yes</td>
</tr>
<tr>
<td>• Small group reading and sharing</td>
<td>Yes</td>
</tr>
<tr>
<td>• &quot;Fab 5&quot; (for practicing “predicting” as a reading strategy)</td>
<td>Yes</td>
</tr>
</tbody>
</table>

(Continued)
<table>
<thead>
<tr>
<th>Strategies</th>
<th>Implemented or not</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Writing</strong></td>
<td></td>
</tr>
<tr>
<td>• Using the PQE (praise-question-encourage) method to respond to students’ writing</td>
<td>Yes</td>
</tr>
<tr>
<td>• “Dialogue calendar”</td>
<td>Yes</td>
</tr>
<tr>
<td>• Rubrics for grading writing</td>
<td>Not mentioned</td>
</tr>
<tr>
<td><strong>Teaching learning strategies</strong></td>
<td></td>
</tr>
<tr>
<td>• Using think-aloud to walk students through the learning process</td>
<td>Not mentioned</td>
</tr>
<tr>
<td>• Learning style inventory</td>
<td>Not mentioned</td>
</tr>
<tr>
<td><strong>Assessments</strong></td>
<td></td>
</tr>
<tr>
<td>• Conducting a survey with ELLs about tests that they took in their L1</td>
<td>Not mentioned</td>
</tr>
<tr>
<td>• Using visuals, large prints, and white spaces for beginners</td>
<td>Yes</td>
</tr>
<tr>
<td><strong>Building a welcoming classroom</strong></td>
<td></td>
</tr>
<tr>
<td>• Learning some basic words and phrases in each of the ELL’s L1</td>
<td>Yes</td>
</tr>
<tr>
<td>• “Get-to-know-you” activity at the beginning of the year</td>
<td>Planned</td>
</tr>
<tr>
<td>• Posting daily schedule as a way to establish classroom routines</td>
<td>Yes</td>
</tr>
<tr>
<td><strong>SIOP strategies</strong></td>
<td></td>
</tr>
<tr>
<td>• Having students read out the daily objectives</td>
<td>Yes</td>
</tr>
<tr>
<td>• Using partners and small groups for academic &quot;affirmation&quot; (for promoting student interaction and checking for comprehension and understanding)</td>
<td>Not mentioned</td>
</tr>
<tr>
<td>• “Phone-a-friend” &amp; “50-50” (for giving additional wait time and increasing student interaction)</td>
<td>Yes</td>
</tr>
</tbody>
</table>