THE PENNSYLVANIA STATE UNIVERSITY
The Graduate School
College of Education

AN EXPLORATORY STUDY OF L2 TEACHERS’ PEDAGOGICAL DECISIONS ON TECHNOLOGY ACTIVITIES

A Dissertation in
Instructional Systems
by
Wen-Min Hsieh

© 2012 Wen-Min Hsieh

Submitted in Partial Fulfillment
of the Requirements
for the Degree of

Doctor of Philosophy

December 2012
The dissertation of Wen-Min Hsieh was reviewed and approved* by the following:

Priya Sharma  
Associate Professor of Instructional Systems  
Dissertation Advisor, Chair of Committee

Susan M. Land  
Associate Professor of Instructional Systems

Orrin T. Murray  
Assistant Professor of Instructional Systems

Karen E. Johnson  
Kirby Professor in Language Learning and Applied Linguistics

Simon Hooper  
Associate Professor of Instructional Systems  
Chair of Instructional Systems

*Signatures are on file in the Graduate School.
Abstract

As information communication technologies (ICTs) evolve at a rapid speed, language teachers in the 21st century are facing a new challenge in their teaching: integration of technology into their classroom. Researchers approach the question concerning second language (L2) teachers’ technology integration from two paths, computer-assisted language learning (CALL) teacher education and (L2) teachers’ current teaching practice with technology. However, as Stockwell (2007) suggested, questions remain regarding how technologies have been used to achieve learning objectives. By focusing on technology-using L2 teachers’ pedagogical design of technology activities, this study aimed to explore those teachers’ pedagogical decision on technology activities in their respective classroom contexts.

Specifically, this study sought to answer the question of how technology-using L2 teachers utilize web-base computer technologies and resources to achieve learning objectives supporting English language learners’ language/literacy development with three sub research questions: 1a) How do technology-using L2 teachers integrate and design their technology activities?; 1b) What types of student engagement are triggered by these L2 teachers’ technology learning activities in classroom or virtual space?; 1c) How do technology-using L2 teachers approach modifying technology activities based on their perceived activities’ outcomes?

Multiple-case embedded research design was used to address the proposed
research questions. The current study provided description of technology integration in three listening/speaking language classrooms. Data was collected from multiple sources in order to provide a rich depiction of the case, including: two or more in-depth interviews and after class chats with teachers, classroom observations, teacher logs, teacher- and student- created artifacts, and department-created documents related to technology use. Grounded theory analysis (Charmaz, 2006) was employed to analyze teachers’ interview transcripts, teacher logs, and field notes from classroom observation to address the proposed research questions.

Analysis of the three cases showed the importance of context in affecting and understanding those teachers’ technology use, and that the path to actual technology use in the classroom lies in teachers working with “what they have”. In addition, the three teachers’ technology integration revealed three common themes in their technology integration: alignment of chosen technology with learning objectives, Internet for authentic language input, and flexibility with technology. Finally, the three teachers’ pedagogical decisions on technology activities were captured in a technology integration quadrant in an attempt to uncover potential paths and ideas to technology integration for teachers.

It was hoped that by presenting a rich account of technology-using L2 teachers’ pedagogical decisions of technology activities in context, this exploratory investigation would help to break down the concept of technology integration into practical ideas and strategies, and to provide ideas for teacher educators and teachers about technology integration in language classroom. Case studies do not permit generalization in the quantitative sense, rather, readers of
this study will determine to what extent that the results of this study could be transferred to their own settings.
Table of Contents

List of Figures x
List of Tables xi
Acknowledgments xii

Chapter 1 Introduction 1
1.1 Introduction ................................................. 1
1.2 The need for the study ....................................... 4
1.3 Purpose of the Study ....................................... 6
1.4 Research Questions ....................................... 7
1.5 Significance of the Study ................................. 7
1.6 Definition of Terms ....................................... 8

Chapter 2 Literature Review 11
2.1 CALL, CALL Teacher Education, and CALL Integration as Research Fields ............................................. 11
2.2 Teach with Technology or Teach Technology ............. 15
  2.2.1 Practice-based curriculum for teacher preparation .... 16
2.3 L2 Teachers and Technology Courses ...................... 17
  2.3.1 Impact of CALL Courses on L2 Teachers’ Teaching Practice ............................... 22
2.4 L2 Teachers’ Use of Computer Technology in the Classroom ....................................... 27
  2.4.1 Technology-using L2 Teachers’ Perception of Technology ....................................... 28
  2.4.2 Survey Study on Technology-using L2 Teachers’ Teaching Practice ....................................... 28
  2.4.3 Technology-using L2 Teachers’ Pedagogy ....................................... 31
  2.4.4 Summary ....................................... 32
2.5 Chapter Conclusion ....................................... 35

Chapter 3 Methods 39
3.1 Site and Participant Selection ............................... 40
3.2 Data Collection and Procedure ............................... 42
3.3 Data Analysis ....................................... 45
  3.3.1 Analysis of documents .................................. 45
  3.3.2 Analysis of observation data ............................. 46
  3.3.3 Analysis of verbal data .................................. 47
Chapter 4 Results

4.1 Lia and her Listening/Speaking Class
- Background
  - The teacher.
  - Lia’s belief about how ESL should be taught.
  - How Lia started to incorporate technology in her classroom.
  - The learners.
  - The Classroom.
  - The activities.
    - Youtube video listening warm up activity.
    - The impromptu use of online dictionary for pronunciation.
- Analysis of the case.
- Student engagement triggered by technology activities.
  - Motivator.
  - Textbook material supplement.
  - Topic response prompt.
- Modification of technology activities based on perceived activity outcome.

4.2 Jamie and her American Oral English for Academic Purposes Class
- Background
  - The teacher.
  - Technology training.
  - How Jamie started to incorporate technology in her classroom.
  - The Learners.
  - The classroom.
  - The activities.
    - Class Blog.
    - Multiply.com.
    - Screencast-o-matic.com.
    - Podcast.
- Analysis of the Case.
- Student Engagement Triggered by Technology Activities.
4.2.4 Modification of technology activities based on perceived activity outcome ........................................ 98
4.3 David and his American Oral English for International Teaching Assistants Class .................................. 100
   4.3.1 Background ................................................................. 100
      4.3.1.1 The teacher ............................................................. 101
      4.3.1.2 Technology training .................................................. 102
      4.3.1.3 How David started to incorporate technology in his classroom .................................................. 103
      4.3.1.4 The learner .............................................................. 104
      4.3.1.5 The classroom ........................................................... 105
      4.3.1.6 The activities .......................................................... 106
         4.3.1.6.1 Best speaker activity .......................................... 107
         4.3.1.6.2 Michigan Corpus of Academic Spoken English (MICASE). .................................................. 110
         4.3.1.6.3 Multiply.com ....................................................... 111
         4.3.1.6.4 Screencast-o-matic.com ...................................... 111
         4.3.1.6.5 University of Minnesota Center for Teaching and Learning .................................................. 112
         4.3.1.6.6 Youtube .............................................................. 113
         4.3.1.6.7 iPad ................................................................. 114
   4.3.2 Analysis of the case ....................................................... 115
   4.3.3 Student engagement triggered by technology activities ................................................................. 118
      4.3.3.1 Best speaker activity .............................................. 118
      4.3.3.2 Websites ............................................................... 120
   4.3.4 Modification of technology activities based on perceived activity outcome ...................................... 120
      4.3.4.1 Best speaker activity .............................................. 120
      4.3.4.2 Multiply.com ......................................................... 121

Chapter 5 Discussion and Conclusions .................................................................................. 123
   5.1 Discussion ........................................................................ 123
      5.1.1 Situating technology integration in context ......................... 124
      5.1.2 Emerging themes from the three teachers' technology integration .................................................. 126
         5.1.2.1 Alignment of chosen technology with learning objectives .................................................. 127
         5.1.2.2 Internet for authentic language input ............................... 130
         5.1.2.3 Flexibility with technology ....................................... 133
      5.1.3 Technology integration quadrant .................................................. 135
5.1.4 Modification of technology activities. ......................... 140
5.2 Implications ...................................................... 142
5.3 Future Research .................................................. 145
5.4 Conclusions ...................................................... 147
5.5 Limitations ....................................................... 149

Appendix A Teacher Background Questionnaire 151
Appendix B Question Guideline for Entrance Teacher Interview 153
Appendix C Question Guideline for Exit Teacher Interview 155
Appendix D Teaching Log Prompts 156
Appendix E Observation Field Notes Example 157
Appendix F The Chaos Poem 160
Bibliography 165
List of Figures

2.1 A spherical model for L2 teachers’ integration of CALL technology into the classroom by Hong (2010). \(^1\) ............................................. 25

4.1 IEP level 3 listening/speaking classroom ........................................... 61
4.2 Lia’s instructional design process for Youtube video activities. .............. 69
4.3 American oral English for academic purposes classroom ...................... 79
4.4 American oral English for academic pruposes computer lab ............... 80
4.5 Ethnolinguistics Investigation: Verbing Noun ................................. 84
4.6 Vocabulary from Cosmetic Surgery Discussion ................................. 85
4.7 Multiply.com screenshot ..................................................................... 86
4.8 Screencast-o-matic.com feedback ..................................................... 87
4.9 Pronunciation recording using Screencast-o-matic.com ....................... 89
4.10 Podcast tutorial on class blog ......................................................... 90
4.11 Jamie’s pedagogical decisions on technology activities in her oral communication class ................................................................. 92
4.12 Discussion Topic on American Image .............................................. 94
4.13 level 3 ITA classroom ..................................................................... 106
4.14 MICASE ......................................................................................... 110
4.15 David’s use of Screencast-o-matic.com .......................................... 112
4.16 The University of Minnesota Center for Teaching and Learning .......... 113
4.17 David’s pedagogical decision on technology activity for level 3 ITA class ......................................................................................... 116

5.1 Quadrant of technology integration ..................................................... 136
# List of Tables

<table>
<thead>
<tr>
<th>Table</th>
<th>Title</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>2.1</td>
<td><em>Selected literature of CALL course</em></td>
<td>20</td>
</tr>
<tr>
<td>3.1</td>
<td><em>Immersion scope</em></td>
<td>43</td>
</tr>
<tr>
<td>3.2</td>
<td><em>Data Matrix</em></td>
<td>46</td>
</tr>
<tr>
<td>3.3</td>
<td><em>Grounded theory analysis examples</em></td>
<td>49</td>
</tr>
<tr>
<td>4.1</td>
<td><em>Profile of the participants</em></td>
<td>55</td>
</tr>
<tr>
<td>4.2</td>
<td><em>Classroom activities 0221</em></td>
<td>63</td>
</tr>
<tr>
<td>4.3</td>
<td><em>Class topics</em></td>
<td>82</td>
</tr>
<tr>
<td>4.4</td>
<td><em>Student podcast topics</em></td>
<td>96</td>
</tr>
<tr>
<td>4.5</td>
<td><em>Level 3 ITA Tasks and Assignments</em></td>
<td>107</td>
</tr>
<tr>
<td>4.6</td>
<td><em>Class activities</em></td>
<td>108</td>
</tr>
<tr>
<td>4.7</td>
<td><em>Technology activities and resources in level 3 ITA class</em></td>
<td>109</td>
</tr>
</tbody>
</table>
Acknowledgments

This dissertation would not have been possible to complete without the assistance and support of numerous individuals.

First and foremost, I would like to thank my advisor, Dr. Priya Sharma, for her guidance and support during my Ph.D. study. I am extremely grateful for all the helpful comments and constructive feedbacks she provided on my dissertation work.

I would like to acknowledge my dissertation committee members — Dr. Susan Land, Dr. Orrin Murray, and Dr. Karen Johnson. I appreciate you taking the time to serve on my committee and your valuable comments and insights that made this dissertation study complete.

The acknowledgement also goes to the wonderful teachers Lydia Shen, Matthew Jadlocki, and Rebecca Zoshak, who volunteered to participate in this study. Thank you for giving me this opportunity to learn from you. I enjoyed the time spent in your classrooms.

I am grateful to the INSYSers Pao-Nan Chou and Hsiu-Wei Hsieh, who came to Penn State in the same year and with whom I have been through the challenging Ph.D. courses together.

To my friends in State College. My life here would be dull without all those great moments we shared. Your accompany dispelled my homesickness. I am blessed to have known all of you.

Special thanks goes to my roommate—the ultimate professional driver. Thank you for always making me laugh, and for the everyday discoveries you shared with me. Life is never boring with you around.

I want to thank my parents and my brother for their love, caring, and unfailing support for every decision I made.
This dissertation is dedicated to my deceased grandmother.
Chapter 1

Introduction

1.1 Introduction

Technology has gradually become an integral part in every aspect of our lives, be it working, learning, or entertaining. The rapid changes in technology also affect how teachers teach and how students learn. In the recent decade, we have witnessed the emergence of Web 2.0 technologies, social networking websites, virtual worlds, and personal hand held devices, just to name a few new technologies, being used by educators around the globe. With newer technologies come new possibilities and new challenges for teachers. In the field of Computer-Assisted Language Learning (CALL), the central focus is no longer on whether computers help language learners to learn but on how computer technology should be used in language classrooms (Beatty, 2003). Hubbard (2008) argues that the future of CALL lies in the hands of language teachers as language teachers are the key player in selecting the tools and applications to support their teaching. No matter how computer technology evolves, L2 teachers are the ones who are going to incorporate computer technology into their teaching practice. Levy and Stockwell (2006) note that L2 teachers need to “understand the empowering and limiting features of any technology, and what technology can achieve in relation to the language skills and areas in order to make informed choices about how to implement a CALL component” (p. 190). Language teachers thus play a vital role in successful integration of technology into classrooms. In the area of second/foreign language learning, when technology
is integrated appropriately, it contributes to experiential learning, motivation, enhanced student achievement, authentic materials for study, greater interaction, individualization, and independence from a single source of information (Lee, 2000). The ability to integrate computer technology in teaching therefore is an important addition into language teachers’ knowledge base in the 21st century.

Of specific interest to the area of CALL integration is the question of how language teachers are keeping up with this change. And if language teachers are already using technologies in their classroom, how are they using technology in their language classrooms to achieve their learning objectives? Researchers approach the question concerning L2 teachers’ technology use from two perspectives, CALL teacher education and L2 teachers’ current teaching practice with technology.

To better prepare pre-service and in-service language teachers to take on this challenge, many of the language teacher education programs and professional development workshops have started to offer technology-related courses as a way to equip language teachers with knowledge of applying computer technology in educational setting. The content of the these technology courses ranges from basic computer literacy skills such as word processing, and web surfing to the application of new web 2.0 tools in language teaching such as blogs and wikis in language instruction (e.g., Ebsworth, Kim, & Klein, 2010; Hegelheimer, 2006; Hegelheimer et al., 2004; Hoven, 2007; Luke & Britten, 2007; Olesova & Meloni, 2006; van Olphen, 2007b). Other educators have tried to create learning experiences with technology by integrating specific functions (e.g. message boards, CMC) from course management systems to demonstrate the potentials of technology tools to language teachers (e.g., Altun, 2005; Doering & Beach, 2002; Kamhi-Stein & Kamhi-Stein, 2000; van Olphen, 2007a).
Those courses, overall, have a positive impact on teachers’ attitudes and confidence in using computer technology and increase their competence/knowledge in using computer technology.

By completing various technology course(s) and professional training/development programs, language teachers are expected to make informed decisions and effectively integrate technology into their classrooms. However, changes in technology competence do not equal actual classroom technology integration. Researchers have also identified other factors that affect L2 teachers’ technology use in the classroom. Factors such as teachers’ attitude (e.g., Lam, 2000; Wong & Benson, 2006), lack of time, administrative or curricular restrictions, or lack of resources (e.g., Egbert, Paulus, & Nakamichi, 2002; Meskill, Anthony, Hilliker-Vanstrander, Tseng, & You, 2006) all directly or indirectly influence L2 teachers’ integration of computer technology. Language teachers’ integration of technology might therefore best be understood using a holistic and contextualized perspective perhaps could help us gain fresh insights for L2 teachers’ integration of computer technology.

Another line of research in CALL integration investigated L2 teachers’ technology use in their classroom to try to answer this question: what do L2 teachers do when L2 teachers use computer technology in their classrooms? Until now, a few studies have attempted to examine aspects of L2 teachers’ use of technology in the classroom (e.g., Chen, 2008; Gray, Pilkington, Hagger-Vaughan, & Tomkins, 2007; Meskill et al., 2006; Schmid, 2010; Yunus, 2007; Zhong & Shen, 2002). Of the seven studies, four surveyed L2 teachers’ practice (Chen, 2008; Li & Ni, 2011a; Meskill et al., 2006; Yunus, 2007), while others focused on L2 teachers’ pedagogical changes and
developmental path as they start integrating technology (Gray et al., 2007; Schmid, 2010; Zhong & Shen, 2002).

The studies mentioned above contribute to our knowledge about language teachers’ perception of technology, impact of technology courses, teacher’s confidence about CALL use, barriers to technology integration, and L2 teachers’ current CALL practice. We learn that L2 teachers’ personal beliefs and attitude, knowledge of available computer technologies, knowledge of how to use those computer technologies, and context that teachers will be in, all have a role to play when it comes to integrating technology into classrooms. And yet, one area rarely addressed is how L2 teachers make pedagogical decisions on designing and integrating technology activities to create learning opportunities for learners and to achieve learning objectives.

1.2 The need for the study

The future of CALL, as Hubbard (2008) argues, lies in the hands of language teachers as they are ultimately the key players in selecting the tools and applications to support their teaching. Levy and Stockwell (2006) contend that the practice of CALL is complex and that successful use of CALL depends heavily on language teachers. Language teachers who use CALL in the classroom, for example, need to have a clear idea of what they want to achieve, the technological options available to them and the pedagogical implications of those options, and also the backgrounds and goals of the learners. Language teachers are also expected to make informed decisions when it comes to integrating technology into their classroom. Previous studies in CALL have contributed to our understanding of how language learning technologies have
been investigated; for instance, CALL as an academic discipline (Debski, 2003), development in technology and CALL research (Zhao, 2003), CALL effectiveness (Felix, 2005), and subject characteristics in CALL research (Hubbard, 2005). However, as Stockwell (2007) suggests, the question regarding how technologies have been used to achieve learning objectives remains.

There have also been calls for studies on the actual use of CALL resources in the sociocultural context in addition to the ideal use of CALL resources (Warschauer & Kern, 2000; Warschauer, Shetzer, & Meloni, 2000). More recently, in addressing the research concerns in CALL literature, Egbert, Huff, McNeil, Preuss, and Sellen (2009) claim that “the pedagogical focus and the role of the teacher have been overlooked in research process (p. 755)”, and suggest that researchers need to find ways to incorporate more teacher perspectives into the field of CALL.

A deeper look into technology-using L2 teachers’ practice could serve to fill this gap in the literature, and to bring L2 teachers’ pedagogical decision in designing and integrating computer technology to the foreground. Exploring technology-using L2 teachers’ pedagogical decision on technology activities not only allows us to see how those L2 teachers approach the multiple factors that might potentially influence their use of technology but also serves as a way to look at these factors in context, and by so doing help us to understand technology integration in its entirety. Studying technology-using L2 teacher’s teaching practice in depth and in context would help us to gain better understanding of how they make use of technology to enrich language learners’ learning experience.
1.3 Purpose of the Study

Given that language teachers play a crucial role in the integration of CALL yet little is known about L2 teachers’ pedagogical decision for designing and integrating computer technologies and their contextualized use of CALL resources, it is important to address this area in order to understand how CALL is being used by L2 teachers to achieve learning objectives in their classrooms. The intent of this study is to look at integrated technology activities designed by language teachers utilizing web-based technology/resources to support English language learners’ learning throughout the course. Language is a tool; it is a tool that allows us to express our ideas, to communicate with each other, to help us to learn new things, to pursue our career goals, and to explore the world. Computer technology is also a tool. It helps to break down temporal and spatial barriers, it helps us to do things that were otherwise impossible to achieve. Learning a language is about knowing how to use the language, and computer technology, when integrated appropriately in language classrooms, has the potential to provide more venues for learners to use language. Therefore, this study aims to explore technology-using L2 teachers’ pedagogical decision on technology activities in their respective classroom contexts. By studying the “actors” who design technology activities to support English language learners’ learning, this study attempts to investigate technology-using L2 teachers’ pedagogical decisions on designing and integrating technology activities to explore the learning opportunities created and afforded by teacher’s technology use, the participation triggered by those technology activities, and how in turn does this engagement serve as feedback for those L2 teachers.
1.4 Research Questions

L2 teachers’ decisions on technology activities are best understood within their own context. Therefore, this study will use multiple-case research design to explore the following research questions.

1. How do L2 teachers use web-based technology/resources to achieve learning objectives to support English language learners’ language/literacy development?

A. How do technology-using L2 teachers integrate, design, and implement their technology activities?

B. What types of student engagement are triggered by these L2 teachers’ technology learning activities in classrooms or virtual spaces?

C. How do technology-using L2 teachers approach modifying technology activities based on their perceived activities’ outcomes?

1.5 Significance of the Study

Because of the rapid changes and development in information computer technology (ICT), language teachers nowadays need to add one more aspect into their knowledge base—teaching with technology. Specifically, what do language teachers need to know and be able to do to best integrate technology into language classroom for their own context? Researchers have addressed this topic from CALL teacher education and L2 teachers’ use of CALL in their classroom. This study approaches the question from a different angle by looking at CALL teachers’ pedagogical decision on designing CALL activities. It is hoped that by presenting a rich account of technology-using L2 teachers’ pedagogical design of
technology activities and the kind of student engagement produced by those activities, we can not only picture the landscape of technology integration in language classrooms but also gain insights on how to better prepare our future/in-service teachers to take on the challenge of teaching digital students in this digital age.

1.6 Definition of Terms

Frequently used terms and acronyms in this document are listed alphabetically below.

1. **Computer Assisted Language Learning (CALL)**. Although specifically phrased as computer assisted language learning, CALL has evolved to be more than just self-contained, programmed applications (e.g. tutorials, drills, simulations instructional games, tests) (*Warschauer & Kern, 2000*). This study adopts Egbert (2005) definition in the discussion of the use of technology in supporting language learning. Egbert (2005) defined CALL as “learners learning language in any context with, through, and around computer technologies” (Egbert, 2005, p. 4). Note that in this study, CALL is used interchangeably with computer technology, technology, and information communication technology (ICT).

2. **English as a second language (ESL)**. The ESL context is where English is used in English speaking countries (i.e., English used by immigrants and their children) or in countries where English is used as an official language (i.e., English used in former British colonies). In an ESL context, learners will need to use English in every aspect of their daily lives.
3. **English as a foreign language (EFL).** In the EFL context, English is used in non-English speaking countries where it has no special status, and people learn the language for curriculum requirements or for personal career progression. Learners rarely have the chance to use English in their daily lives.

4. **Information Communication Technology (ICT).** ICT in education refers to “diverse set of technological tools and resources used to communicate, and to create, disseminate, store, and manage information” (Blurton, 1999).

5. **L2.** L2 stands for second language, the language being learned in addition to the learner’s mother tongue.

6. **Teaching English to Speakers of Other Languages (TESOL).** Teachers of English to Speakers of Other Languages, Inc. is a global association for English language teaching professionals.

7. **Technology.** In this study, technology refers to “electronic or digital products or systems” (American Heritage Dictionary, 2000) that include but are not limited to computers, computer applications, the Internet, CD-ROM, video, hand held devices, and other emerging technologies.

8. **Technology integration.** This study adopts the definition of technology integration from the non-profit Edutopia website (www.edutopia.org) as follows: “Technology integration is the use of technology resources – computers, digital cameras, CD-ROMs, software applications, the Internet, etc. – in daily classroom practices, and in the management of a school. Technology integration is achieved when the use of technology is routine and transparent. Technology integration is achieved when a child or a teacher
doesn’t stop to think that he or she is using a computer or researching via the Internet.” (What is Technology Integration? 2005).
Chapter 2

Literature Review

2.1 CALL, CALL Teacher Education, and CALL Integration as Research Fields

Computer assisted language learning (CALL) has established itself as a swiftly growing research field. A number of researchers have attempted to identify the trends, characteristics, and limitations of the field in its current state through meta-analysis and review of selected CALL literature. For instance, in an attempt to sketch out the state of CALL as a research discipline, Debski (2003) reviewed 91 research articles published from 1980-2000 in seven English Language journals focusing on CALL research output and theoretical foundations, methods of evidence gathering, and reporting standards. Results of the analysis suggested that CALL is a quickly-developing research area that draws on diverse theories and methods from a number of disciplines. Over the years, data-gathering methods have become more diverse; however, this diversity is not matched by proper attention to research credibility issues.

Zhao (2003) conducted a review of ICT effectiveness in language education to (a) assess the overall effectiveness of uses of technology in language education through meta-analysis, (b) explore patterns of recent efforts in using technology to improve language learning, and (c) identify effective ways to use technology in language education. Using keywords “computer assisted language learning” and “second language” on ERIC through FirstSearch, Zhao located 156 peer-reviewed journal articles from 1997-2001. Zhao’s review shows that the number of
well-designed experimental studies was very limited, that the studies were limited to college students, that the languages studied were almost exclusively French, Spanish, English, German and Arabic, and that most studies looked at single applications rather than integrated systems.

On the other hand, researchers have also tried to single out the characteristics of CALL research. Hubbard (2005) investigated subject (student participants) characteristics in CALL literature. Based on a review of 78 articles from four CALL-oriented journals from 2000 to 2003, Hubbard concluded that CALL researchers commonly leave out or fail to gather relevant data about subjects. In addition, most of what we know about CALL is likely to be based on studies of untrained, novice users. Felix (2005) conducted literature review of 53 studies from 2000-2004 to examine CALL effectiveness research studies. The common problems that Felix found are misleading titles, poor description of research design, failure to investigate previous research, poor choice of variables to be investigated, and over-ambitious reporting of results.

Stockwell (2007) reviewed 206 empirical articles from four major English language journals in the field of CALL from 2001-2005 to examine the technology choice for teaching language skills and areas in CALL literature in an attempt to explore how technologies have been used to achieve learning objectives. Stockwell's analysis showed that grammar was the most commonly investigated area followed by vocabulary, pronunciation, reading, writing, listening, and speaking. The technologies used to teach language skills and areas were very broad. A small portion of the studies does not have clear reasoning for their choice of technology or technologies and does not use the feature specific to the technology being used. The aforementioned studies have showed different aspects of CALL research which broaden our understanding of CALL as a research field.
summarizing research results and pointing out some of the gaps and concerns shared in the field. Although CALL as a research field as continuously draws researchers’ attention, there is a general feeling that CALL in language classrooms is not being used to its fullest potential, if it is being used at all.

Beatty (2003) contends that CALL research focus has changed from the effects of computer technology in L2 education to “how computers should be used [and] for what purposes” (p. 14). How to best integrate technology into classrooms so that both teachers and students can benefit is now an important topic that attracts researcher’s attention. However, L2 teachers’ task of CALL integration in language classroom is not an easy one. As Levy and Stockwell (2006) note, L2 teachers need to “understand the empowering and limiting features of any technology, and what technology can achieve in relation to the language skills and areas in order to make informed choices about how to implement a CALL component” (p. 190).

To better prepare our future and current L2 teachers to take on this challenge, researchers and teacher educators have been adding the computer technology element into L2 teacher education programs and in-service teacher professional development. The element of computer technology has been present in teacher education program in the form of single CALL course (e.g., Desjardins & Peters, 2007; Peters, 2006), the technology infusing approach (e.g., Hegelheimer, 2006; Luke & Britten, 2007), and the field experience/situated approach (e.g., Chao, 2006; Debski, 2006; Egbert, 2006). Overall, computer technology courses have a positive impact on teachers’ attitudes and confidence in using computer technology (Kamhi-Stein & Kamhi-Stein, 2000; Peters, 2006; van Olphen, 2007a), and increase their competence/knowledge in using computer technology (e.g., Desjardins & Peters, 2007; Doering & Beach, 2002;
Ebsworth et al., 2010; Hegelheimer, 2006; Hegelheimer et al., 2004; Luke & Britten, 2007; Olesova & Meloni, 2006; van Olphen, 2007b). However, changes in attitudes, confidence, and competence with technology do not translate into actual classroom practice. The technology related coursework that L2 teachers have taken is not the only predictor of integrating technology into actual classroom. Researchers have also identified other factors that affect L2 teachers’ technology use in the classroom. Factors such as teachers' attitudes (e.g., Lam, 2000; Wong & Benson, 2006), lack of time, administrative or curricular restrictions, or lack of resources (Egbert et al., 2002; Meskill et al., 2006) all directly or indirectly influence L2 teachers’ integration of computer technology. Technology integration in language learning involves more than just one single factor. A useful concept that can help to see L2 teachers’ integration of computer technology in its entirety is systems thinking. Levy (1997) argued for the value of the systems concept in CALL in that the “elements of the system can only be conceptualized meaningfully if they are viewed as part of the whole” (p. 66). Taking a holistic and contextualized perspective perhaps can help us gain fresh insights for L2 teachers’ integration of computer technology.

To date, research that has examined L2 teachers’ technology use has been relatively limited and the research topics addressed are concerned with the impact of technology coursework (e.g., Dooly, 2009; Egbert et al., 2002), the type of computer technology is being used (e.g., Chen, 2008), or the reason computer technology is being used (e.g., Lam, 2000). Little is known about the way computer technology is being used to achieve learning objectives. Therefore, exploring technology activities designed by technology-using L2 teachers could further contribute to our understanding of how computer technologies are being used to support language learners’ learning.
L2 teachers are some of the key factors in integrating computer technology into language classroom. To explore L2 teachers’ technology integration, this literature review section begins with a review of CALL teacher education followed by the impact and efficacy of CALL teacher education to get a glimpse of how language teachers are prepared to teach with technology. Current research concerning L2 teachers’ CALL integration in the classroom is also reviewed in an attempt to sketch out L2 teachers’ use of computer technology in language classrooms. Potential gaps in this line of research are then identified.

2.2 Teach with Technology or Teach Technology

To better prepare pre-service and in-service language teachers to assume the challenge of teaching with technology, many language teacher education programs and professional development workshops have begun to offer technology-related courses as a way to equip language teachers with knowledge and application of computer technology in educational settings. The assumption behind those technology courses is that by completing technology course(s) and professional training/development programs, language teachers will have the ability to make informed decision and effectively integrate technology into their classrooms. However, one important question we need to ask of those CALL courses is: what is being taught in those courses to help L2 teachers to do what they are expected to do in the classrooms? Are CALL courses helping L2 teachers to teach language with technology or are they aiming at teaching technology to L2 teachers? A look into the practice-based curriculum in general teacher education literature might be able to help us to answer this question and to understand its theoretical underpinnings.
2.2.1 Practice-based curriculum for teacher preparation

As our view of how people learn changes, we recognize the importance of other factors that were not considered before, namely, the environment where learners are situated and the social aspect of learning. Putnam and Borko (2000) used the situative perspective (that cognition is situative, social, and distributed) to consider teacher learning, and they raised an important difference through the notion of “authentic activity” in classrooms. Putnam & Borko distinguished between two different views of authentic activity proposed by J. S. Brown, Collins, and Guguid (1989) and A. Brown et al. (1993). The difference lies in the goal of the authentic activity. While J. S. Brown et al. (1989) argued that knowledge and skills learned in authentic activity should be able to transfer to the work-place, A. Brown et al. (1993) argued for learning-capacity-building from authentic activity to prepare students to be lifelong intentional learners. A. Brown et al. (1993) approached the concept of authentic activities with the goal of education in mind, and that authentic activities should serve the goal of education to prepare lifelong learners. Putnam and Borko’s discussion of authentic activities for teacher learning adopted a position similar to that of A. Brown et al. (1993) in that the key criterion of authenticity is the kind of thinking and problem solving skills fostered by the activity.

In a similar vein, researchers in the field of general teacher education have been calling for a practiced-focused curriculum for teacher preparation. For example, Ball and Cohen (1999) and Ball and Forzani (2009) have proposed a practice-based curriculum in teacher education to help teacher candidates build their capacity to navigate through the complexity of the teaching profession. Teaching is unnatural and intricate work, as Ball and Forzani (2009) suggested,
but in the meantime Ball and Forzani argued that the work of teaching can be taught through practice-focused curriculum by making teaching practice visible and learnable to novices. The work of teaching refers to the “core tasks that teachers must execute to help pupils learn” (p. 497). Practice-focused curriculum would help teachers learn to do those core tasks to help pupils learn.

The question of teaching with technology or teaching technology is similar to whether we as teacher educators want build up our teacher candidates’ capacity to be able to navigate through the complex work of teaching, or if we want our teacher candidates to be able to transfer what they learn to the work-place. The rapid progress of technology further complicates the status of technology courses as they stand in teacher preparation programs. For instance, at what stage should technology courses be introduced in teacher preparation programs? What issues might arise around the life cycle of technology and the typical process of teacher preparation? How should CALL courses be structured so that we can make sure that we are preparing effective teachers for this profession?

In the next section of this literature review, I turn to existing literature on CALL courses to explore how the L2 teacher education profession is preparing L2 teachers to teach with technology.

2.3 L2 Teachers and Technology Courses

Many language teacher education programs have started to offer technology-related courses in order to better prepare future language teachers for their teaching. Gillingham and Topper (1999) presented four different ways of preparing teachers to use technology in the classrooms: the single course approach, the technology infusion approach, the student performance approach,
and the case-based teacher education program. The single course approach includes one course on technology within a teacher preparation program, while the technology infusion approach places aspects of technology within each course in a teacher education program. In the student performance approach, students are responsible for their own development of technology knowledge and skills. Students choose what their performances will be from a number of categories and achieve those performances during their stay in the teacher education program.

In the case-based teacher education program pre-service teachers study and reflect on cases where teachers incorporated technology into their classroom. Over the years, there have been mainly three types of CALL course in language teacher education program being reported: single CALL course (e.g., Desjardins & Peters, 2007; Peters, 2006), the technology infusing approach (e.g., Hegelheimer, 2006; Luke & Britten, 2007), and the field experience/situated approach (e.g., Chao, 2006; Debski, 2006; Egbert, 2006).

Field experience/situated approach is not among of the original four approaches proposed by Gillingham and Topper (1999). Unlike reflecting on the cases of teachers who incorporated technology into their classroom practice, the field experience/situated approach requires L2 teachers taking CALL classes to develop lessons incorporating CALL, implement the CALL lessons in L2 classrooms, and reporting back to the class about their reflections on implementing the CALL lessons. Regardless of the different program structures described above, research indicates that after taking technology-related coursework, pre-service teachers understand technology more, have a positive attitude towards technology and indicate willingness to use technology in their future teaching.

In the following section of literature review, I sampled recent literature on
CALL courses. Although the review of recent literature on CALL courses is not exhaustive, it provides us with some insights into the types of CALL courses teacher education/professional development programs offer. From the sampled CALL literature, CALL courses that aim to teach technology and courses that teach with technology both exist. Table 2.1 summarizes 12 recent studies regarding the content of CALL courses and the impact and efficacy of CALL courses in their various formats aimed at preparing L2 teachers to teach with technology. In terms of teaching technology, the content of the technology courses reviewed in the table ranges from basic computer literacy skills such as word processing and web surfing, to the application of new web 2.0 tools in language teaching, such as blogs and wikis. In addition to courses focused specifically on computer technologies, other courses (e.g., Altun, 2005; Doering & Beach, 2002; Kamhi-Stein & Kamhi-Stein, 2000; Olesova & Meloni, 2006; van Olphen, 2007a) have tried to create learning experiences with technology by integrating specific functions (e.g., asynchronous computer mediated communication (CMC) message boards) from the course management systems (WebCT) to demonstrate the potentials of technology tools to language teachers.

It is difficult, however, to categorize the L2 studies according to their course structure except for Desjardins and Peters (2007) and Peters (2006) (which fall under the single CALL course group), and Hegelheimer (2006) and Luke and Britten (2007) (which fall under the technology infusing approach). Other studies do not specifically mention the kind of course structure in their studies. The major purpose of the reviewed technology courses is to equip language teachers with knowledge of available computer technologies and knowledge of how to use those computer technologies. Overall, computer technology courses have a positive impact on teachers’ attitudes and confidence in using computer
Table 2.1.  
*Selected literature of CALL course*

<table>
<thead>
<tr>
<th>Authors</th>
<th>Technology used/taught</th>
<th>Major impact of the CALL course</th>
</tr>
</thead>
<tbody>
<tr>
<td>Altun (2005)</td>
<td>CMC (message boards)</td>
<td>students developed positive attitudes toward using asynchronous communication tools, and have positive reflections about the use of CMC tools and their integration into teaching. However, no attitudinal changes were found in their attitudes toward CMC.</td>
</tr>
<tr>
<td>Doering &amp; Beach (2002)</td>
<td>• CMC (WebCT) • Hypermedia projects</td>
<td>The hypermedia productions projects with middle school students helped the pre-service teachers learn how to model the literacy practices of making intertextual or hypertextual links.</td>
</tr>
<tr>
<td>Ebsworth et. al. (2010)</td>
<td>• basic word processing/presentation skills • web-surfing strategies, and website/software evaluation skills • email • video/audio recording</td>
<td>Most participants perceived a dramatic increases in Technology-Enhanced Language learning (TELL) knowledge after the course.</td>
</tr>
<tr>
<td>Hegelheimer et. al. (2004)</td>
<td>• introductory computer literacy • CALL theory/pedagogy</td>
<td>Students reported that their knowledge of creating and using web-based materials increased significantly (as demonstrated in a project in which the skills acquired throughout the semester were successfully integrated).</td>
</tr>
<tr>
<td>Hoven (2007)</td>
<td>• blogs • wiki site • discussion forum • WebQuests • Hot Potatoes</td>
<td>Experimental modeling approach was adopted to immerse students in the use of the technologies while at the same time providing them with the experience of practical application of the theory in their own learning.</td>
</tr>
<tr>
<td>Author(s) and Year</td>
<td>Topics</td>
<td>Findings</td>
</tr>
<tr>
<td>--------------------</td>
<td>--------</td>
<td>----------</td>
</tr>
<tr>
<td>Kamhi-Stein &amp; Kamhi-Stein (2000)</td>
<td>CMC</td>
<td>The course helped future ESOL teachers develop knowledge through collaboration while giving them experience in learning through technology.</td>
</tr>
<tr>
<td>Olesova &amp; Meloni (2006)</td>
<td>Basic computer skill development, CMC, Internet applications</td>
<td>The course changed teachers’ perceptions of the usefulness of Internet projects in the EFL classroom. Teachers also increased confidence in their ability to use computer technology for Internet projects.</td>
</tr>
<tr>
<td>Peters (2006)</td>
<td>Computer integration competencies, Technological competency</td>
<td>Although students felt their overall competencies had developed during the course, concerns about using technology in the language classroom exists.</td>
</tr>
<tr>
<td>Van Olphen (2007a)</td>
<td>Course management system (WebCT)</td>
<td>Students felt that these tools greatly enhance their experiences by providing (a) greater interactivity and connectivity between the instructor and students as well as among the students themselves and (b) more opportunities for academic exchanges.</td>
</tr>
<tr>
<td>Van Olphen (2007b)</td>
<td>Digital portfolio</td>
<td>Developing digital portfolios gave pre-service teachers a meaningful context in which to learn how to integrate technology.</td>
</tr>
</tbody>
</table>

...technology (Kamhi-Stein & Kamhi-Stein, 2000; Peters, 2006; van Olphen, 2007a), and increase their competence/knowledge in using computer technology (Desjardins & Peters, 2007; Doering & Beach, 2002; Ebsworth et al., 2010; Hegelheimer, 2006; Hegelheimer et al., 2004; Hoven, 2007; Luke & Britten, 2007; Olesova & Meloni, 2006; van Olphen, 2007b).
One important point to note is that these CALL courses focused predominantly on knowledge building, and opportunities for practice was limited if available at all. The common assumption behind the technology courses seems to be that by equipping L2 teachers with the knowledge and experience of teaching and learning with computer technology L2 teachers can then successfully transfer what they learn into their classroom. However, when researchers further examine the relationship between CALL courses and L2 teachers’ technology integration in the classroom, they found that there are other factors affecting L2 teachers’ technology use in the classroom. Egbert et al. (2002) and Dooly (2009) further looked into the long term impact of CALL training on L2 teachers’ subsequent teaching practice.

### 2.3.1 Impact of CALL Courses on L2 Teachers’ Teaching Practice.

Egbert et al. (2002) examined how language teachers apply the practical content learned from computer assisted language learning coursework to their classrooms. The researchers surveyed and conducted follow-up interviews with 20 English as a second language and foreign language teachers who had completed the same graduate-level CALL course within 4 years and who were currently teaching. The results of the study suggested that teacher’s previous experience might be a good predictor of CALL use. Colleagues and Web resources appeared to be the primary sources to learn about CALL activities outside formal coursework. Rather than the lack of confidence or interest in CALL, factors that influenced language teachers’ use of CALL were lack of time, administrative or curricular restrictions, or lack of resources. Egbert et al. concluded that the technology courses need to have more contextualized instruction that directly
relates to the environment in which the language teachers will be teaching.

More recently, Dooly (2009) conducted a follow-up study to explore the impact of a long-term teacher training project on EFL teachers’ current practice and perspectives. The teacher training course integrated a variety of projects focusing on ICT use in language teaching, and emphasized on “hands-on” experience and exchange of knowledge between teachers. Analysis was based on questionnaires, semi-structured e-mail interviews, field notes, and observation of participants’ current teaching environments. The data indicated that a gap is still present between “awareness of the need for and realization of effective integration of technology in teaching practice” (p.363) despite the training program’s focus on ICT in teaching and the EFL teachers’ concern for quality in education.

Egbert et al. (2002) and Dooly (2009)’s study suggested, knowledge and confidence gained from CALL courses does not necessarily equal later practice in the classrooms. Egbert (2006) expressed the concern that most language teacher education programs operate on the premise that “teachers can learn what they need to in order to teach well, with limited opportunities for practice along the way, and then apply it in classroom upon completion of their programs of study” (p. 167). In addition, as far as the course structure is concerned, the majority of CALL courses in language teacher education programs “occur within fairly isolated confines of the teacher education program” (p. 167). It appears that more practice-oriented and fully integrated CALL courses throughout language teacher education program would better serve L2 teacher candidates to be able to integrate technology in their teaching. In general teacher education literature, Mehlinger and Powers (2002) presented six options for preparing teacher education students to use technology in their classroom. Among those six options, technology fully integrated throughout the program is recommended to
be the best approach for technology instruction in teacher education. Mehlinger and Powers (2002)’s idea about full integration and Gillingham and Topper (1999)’s technology infusion approach are based on the same idea: that placing aspects of technology within each course in a teacher education program. Mehlinger and Powers (2002) further stated that “technology should transform the way the course is taught, the manner in which the instructor and students interact, the work the students complete, and the way the students are assessed” (p. 104).

From Egbert et al. (2002) and Dooly (2009), we learn that the relationship between formal CALL education and the use of technology in language classroom is not always positively correlated. Even if L2 teachers have formal CALL training, there are other factors influencing L2 teachers’ use of computer technology in their classroom. Gleaned from previous studies, Hong (2010) proposes a spherical model for L2 teachers’ integration of CALL technology into the classroom, as illustrated in Figure 2.1. According to Hong (2010), when placing L2 teachers’ integration of CALL technology in the center, three orbital factors influence L2 teachers’ integration of CALL technology: CALL teacher education, individual teacher factors and contextual factors. As illustrated in Figure 2.1, CALL teacher education orbits around the equator indicating the relative importance to L2 teachers’ integration of CALL technology as compared to individual teacher factors and contextual factors. Furthermore, the proximity of the other two orbits (individual teacher factors and contextual factors) to CALL teacher education represents their relevance to CALL teacher education. The closer the two orbits are, the greater the chance that CALL teacher education could influence the other orbital factor. Hong (2010) contends that contextual factors are independent of CALL teacher education in that lack of
computers and support from the L2 teachers’ school has nothing to do with CALL teacher education.

![Diagram of L2 teachers' integration of CALL technology into the classroom]

Figure 2.1. A spherical model for L2 teachers’ integration of CALL technology into the classroom by Hong (2010).¹

Through Hong (2010)’s spherical model we can assume that several factors come into play for L2 teachers’ integration of CALL technology into the classroom. In addition, Hong (2010)’s model places the utmost importance on CALL teacher education as a factor that influences L2 teachers’ integration of CALL technology into the classroom (by placing it orbiting around the equator). Ideally, through CALL teacher education we can equip L2 teachers with the knowledge and experience to integrate CALL technology. Yet in reality, L2 teachers’ use of computer technology oftentimes is confounded by the contextual factors: the school and the classroom, where their teaching practice takes place.

¹From “CALL teacher education as an impetus for l2 teachers in integrating technology,” by K.W. Hong (2010), ReCALL, 22(1), p. 61.
Lam (2000) explored L2 teachers’ use of technology in their classroom. Besides her main finding that L2 teachers’ personal beliefs about computer are one of the main factors impacting technology use, she also found several contextual factors. Accessibility to computers, resources, and administrator’s attitudes were found to be some of the factors that influenced L2 teachers’ use of technology. In another study by Egbert et al. (2002), lack of time, administrative and curricular restrictions, and lack of resources are found to be the main aspects that influence language teachers’ use of CALL. Similarly, Olesova and Meloni (2006) discussed the potential impact that low level technology infrastructure has on English as a foreign language (EFL) teachers’ integration of technology in Siberia. More recently, Chen (2008) in her survey of EFL teachers’ Internet use in language instruction, found that time, inadequate institutional support, lack of cooperation or team-work, and lack of planning for technology integration into the classroom within the institution are the major contextual factors that affect those teachers’ use of the Internet. There’s no denying that L2 teachers’ integration of CALL technology into the classroom is heavily context dependent (e.g., Chen, 2008; Egbert et al., 2002; Lam, 2000; Olesova & Meloni, 2006). CALL teacher education is crucial when it comes to L2 technology integration; however, from the aforementioned studies we can also infer that how L2 teachers cope with the “given” in their own local context for technology integration should also be given more (if not equal) importance. Hong (2010)’s spherical model does not account for this.

Perhaps what we need to do is to look at the issue of L2 teachers’ technology integration from another perspective—a situated perspective. Studying CALL teachers’ teaching practice in their own context might contribute to our overall
understanding of technology integration in language classrooms. As Levy and Stockwell (2006) note, “the question of integration really relates to the ways in which the various elements influencing the use of new technology in language learning are brought together and managed in order to create a successful CALL environment” (p. 228). Exploring CALL teachers’ pedagogical design of technology activities not only allows us to see how technology-using L2 teachers approach the multiple factors in their use of technology but also serves as a way to look at these factors in context, and by so doing helping us to understand technology integration in its entirety.

2.4 L2 Teachers’ Use of Computer Technology in the Classroom

Some of the L2 researchers and teacher educators have investigated L2 teachers’ technology use in their classroom to try to answer this question: what do L2 teachers do when L2 teachers do use computer technology in their classrooms? Up until now, a few studies have attempted to examine aspects of L2 teachers’ use of technology in the classroom (e.g., Chen, 2008; Gray et al., 2007; Lam, 2000; Meskill et al., 2006; Meskill, Mossop, DiAngelo, & Pasquale, 2002; Schmid, 2010; Yunus, 2007; Zhong & Shen, 2002). Of the nine studies, two focused on L2 teachers’ perceptions and concepts of technology (Lam, 2000; Meskill et al., 2002), four on surveying L2 teachers’ practice (Chen, 2008; Li & Ni, 2011a; Meskill et al., 2006; Yunus, 2007), and three on L2 teachers’ pedagogical changes and developmental path as they start integrating technology (Gray et al., 2007; Schmid, 2010; Zhong & Shen, 2002).
2.4.1 Technology-using L2 Teachers’ Perception of Technology.

Perception-wise, Lam (2000) explored why L2 teachers do or do not use technology in their classrooms and found that the main reason for teachers’ decisions regarding technology depends on teachers’ personal beliefs about technology’s benefits. On the other hand, Meskill et al. (2002) compared and contrasted the “technology talk” of novice and expert L2 teachers. Findings of Meskill et al. (2002)’s study are presented in a set of four continua: locus (machine vs. learners), focus (self vs. student learning), practice (managing students vs empowering students), and emphasis (product vs. process). With the set of four continua, Meskill et al. (2002) were able to demonstrate salient conceptual, and corresponding practical differences between novice, and expert technology-using L2 teachers. Expert technology-using L2 teachers tend to think learners as the locus of learning, focus more on student learning, believe technology is a tool to empower students, and place emphasis on the learning process.

2.4.2 Survey Study on Technology-using L2 Teachers’ Teaching Practice.

Four studies surveyed L2 teachers’ use of computer technology, and factors that influence the use of computer technology in the classrooms. Yunus (2007) investigated the use of ICT among ESL technical school teachers in Malaysia, and particularly factors that affect the use of ICT and teachers’ perceptions of their skills. From the survey results, Yunus found that ICT was not widely used in teaching ESL. The majority of ESL teachers who participated in her study held positive a attitude towards ICT and agreed that it was useful. Unavailability or
lack of access and lack of training are the two major external factors that prevented them from using ICT. The teachers also commented that “ICT makes them need to know how to integrate ICT into teaching method” (p.88).

Similarly, Chen (2008) conducted a mixed-method study exploring Northern Taiwanese EFL teachers’ Internet use in language instruction, and factors and barriers of incorporating Internet into their instruction. The survey results from the quantitative part of the study gave a general picture of 1) prevalence of Internet use, 2) teachers’ knowledge, skills, and application of Internet tools, 3) curricular area applied, and 4) teacher training. Among the participating EFL teachers (n=311), 19.9% responded that they do not make use of the Internet in their language classroom. 60% of the participants were in the category of using Internet “25% or less of actual classroom instruction time,” 15% of the participants were in category of “between 26% and 50% of actual classroom instruction time”. Only 15 participants spent more than 50% of the class time using the Internet in their actual classroom teaching. In terms of the application of Internet tools, email, browsers, search engine, and online dictionaries were most commonly used, whereas Multi-object Orientation/Multi-user Domain (MOO/MUD), videoconferencing and webfolio/ePortfolio were least used. The curricular areas applied (from most often used to least used) were reading, listening, writing, and culture. With regard to teacher training, two-thirds (68.5%; n=213) reported to have received training regarding technology; 44 (14%) reported holding technology-related degrees. Most teachers reported that they had received formal training in workshop format ranging from a few hours to a few days to a few months. The findings from the qualitative part summarize various factors and issues or barriers that influenced those teachers’ Internet use in the classroom. Factors that influenced Northern Taiwanese EFL teachers in
the use of the Internet include: teacher training, institutional support, and seeing the Internet as good resource for authentic language input. On the other hand, issues and barriers in Internet-integration instruction include: time, feelings of uncertainty, inadequate institutional support, lack of cooperation or team-work, appropriateness of course content, professional development, and lack of planning for technology integration into classroom. Both quantitative and qualitative results show that teacher training is crucial, and that continuous professional development on technology application is imperative. More recently, in China, Li and Ni (2011b) conducted a survey study in Shanghai area to understand how technology is used by foreign language teachers in primary school, those teachers’ perception about technology, and the kind of professional development support received by those teachers. Their survey results suggested that EFL teachers hold positive attitudes towards technology. Technology is used mainly for teacher-centered purposes such as teaching preparation and instructional delivery; student-centered activities are rare. The participating primary EFL teachers also indicated the need for professional development that focuses on instructional design and technology integration.

In the United States, Meskill et al. (2006) compared the results of a statewide survey in New York on ESOL teachers’ uses of technology in 1997 and in a 2003 follow-up survey to determine how New York State ESOL professionals are using technologies for educational purposes. Overall, the comparison showed that increased access does not equal to increased amounts or quality of technology use, and that “in spite of increased access to technologies, ESOL teachers are using computers for narrower purposes than in earlier, more experimental times” (p. 446). In addition, teachers are in no rush to use newer technologies. They have developed fixed patterns of use that make sense for their specific
pedagogical purposes. The technologies are used “to maintain their practices, not to revolutionize them” (p. 448).

2.4.3 Technology-using L2 Teachers’ Pedagogy.

Studies conducted on L2 teacher’s technology-supported pedagogy focused on L2 teachers’ pedagogical changes and developmental paths. Zhong and Shen (2002) presented two case studies on multimedia secondary EFL classrooms to identify teachers’ pedagogical changes in technologically integrated classrooms. Their focus of observation was on three aspects of language pedagogy: approach, design, and procedure. Through data analysis, Zhong and Shen found that the two classrooms are essentially “technologized traditional classrooms” characterized by a teacher-centered approach. Language learning task were designed in techno-centric fashion and focused largely on low-level thinking skills (knowledge and comprehension in Bloom, Englehart, Furst, Hill, and Krathwohl (1956)’s taxonomy), and on language forms rather than on language use. In addition, classroom procedure was characterized by a linear sequence with the teacher in total control of the learning tasks. Technology in these two classrooms only transformed their physical appearance while the classroom practice remained unchanged. Zhong and Shen attributed the results to traditional Chinese notions of teaching and the didactic role of the teacher in the classroom. Zhong and Shen further argued that “substantial pedagogical innovations will not come unless there is a perceived change in the understanding of the process of teaching and learning and philosophy of language” (p.49).

Gray et al. (2007) and Schmid (2010) conducted studies specifically focused on foreign language teachers’ use of Interactive Whiteboards (IWB). Quite
different from previous studies where L2 teachers’ use of technology is voluntary, Gray et al. (2007) presented four language teachers’ voice as they began to embed IWB into their practice in order to comply with government policy. In their context, L2 teachers began to use IWB because the regular or traditional whiteboards were all withdrawn from the classroom. Influenced by different driving forces, the four L2 teachers in Gray et al. study prioritized their own concerns and thus made different choices in their focus on how to use IWB. The common theme across the four language teachers is the theme of control. Most teachers use IWB in a way to increase control of “the learning material and pupils’ behavior by means of their thorough, precise and time intensive preparation” (p.421). On the other hand, Schmid (2010) reported on an English teacher’s motivation, pedagogical needs and developmental paths as they integrate IWB technology into the curriculum in secondary schools in Germany. As the teacher implemented IWB in her classroom, she developed various pedagogical skills, competencies, and strategies. Specifically, they are: “1) the ability to design IWB-based materials which support opportunities for learner interaction with the whiteboard and with the learning content; 2) the appropriate management of interaction around IWB in a way that ensures all learners are provided with opportunities to become actively involved; and 3) the ability to find the ‘right balance’ of technology use” (p. 170).

2.4.4 Summary

Teachers’ teaching practices are oftentimes deeply rooted in their own beliefs. Lam (2000)’s study provides the answer for the “why” (the reason computer technology is being used), while Meskill et al. (2002) demonstrate the perceptual
and conceptual difference between novice and expert technology-using language teacher. Both studies analyzed L2 teachers’ talk about technology to unveil the thinking process behind technology-using teachers’ action. However, the question of “what do L2 teachers do when L2 teachers use computer technology in their classrooms?” is still not fully answered. Obtaining the picture of a technology integrated language classroom by teacher talk only fills part of this bigger puzzle.

The survey studies by Chen (2008), Li and Ni (2011b), Meskill et al. (2006), and Yunus (2007) not only allow us to have a general picture of the prevalence of technology in language teaching, but also allow us some insight into the areas in which L2 teachers apply computer technology. The four studies provide the answer to the question of “what do L2 teachers do when L2 teachers use computer technology in their classrooms?” in that they enable us to know the type of computer technology is being used. Nevertheless, the four studies still fall short to provide answer for the “how” (the way computer technology is being used) question. According to Jaeger (1988), the purpose of survey study is to “describe specific characteristics of a large group of persons, objects, or institutions” (p.303). Although survey study enables the researchers to know the present conditions of L2 teachers’ technology use in the classroom, it does not provide the details about “how” L2 teachers actually implement computer technology into their classroom. That is why the survey method is usually combined with other research methods such as interviews to obtain more in-depth data from research participants. The follow-up interviews in Chen (2008) and Yunus (2007) focused on the factors, issues and barriers affecting L2 teachers’ technology use, not on L2 teachers’ application of computer technology in the classroom. Consequently, detailed information about how L2 teachers integrate computer technology (especially L2 teachers’ pedagogical decisions on
integrating computer technology into their classrooms) is still missing.

In terms of technology-supported pedagogy, Zhong and Shen (2002) and Gray et al. (2007) call our attention to L2 teachers’ teaching philosophy and their role in the classroom that teacher-centered model only produces “technologized traditional classrooms.” Although L2 teachers prioritize their own concerns and choose different focus for using the IWB in the Gray et al. (2007) study, they are still focused on “controlling” the learning materials and learners’ learning process. However, according to Meskill et al.’s (2002) finding, a more learner-centered approach is needed for effective technology use. Although the two studies took place at different times (2002 v.s. 2007) and in different spaces (China v.s. England), they both pointed to an unchanged theme: the theme of “control”. Five years in information computer technology can mean major breakthroughs, and yet in the field of L2 teaching, teachers’ pedagogy stays the same. In another IWB study, Schmid (2010) points out that L2 teachers might need to develop new pedagogical skills and competencies in order to use IWB effectively. Those studies documented L2 teachers’ pedagogical changes and developmental path when L2 teachers do use computer technology in their classroom. We learned about the fundamental issue (a teacher-centered approach vs. a learner-centered approach) and the change in pedagogy when L2 teachers start incorporating computer technology into their classroom.

Meskill et al. (2006) commented on what may be the best route to CALL integration:

“...technology is not a neutral tool with universal effects, but rather a medium with consequences that are significantly shaped by the historical, social, and cultural contexts of its use” (Light, 2001, p. 711) and no one is better poised to make complex judgments concerning such intricacies than teachers themselves in their own time, in their own classrooms, in
accord with their own pedagogical craft. Honoring these judgments and providing the time, resources, and institutional support teachers need to make such careful decisions about their practices may be the best route to CALL integration. (p.448) (Note: Emphasis added in bold italic)

At this point, instead of asking how L2 teachers integrate CALL technology into their classroom, perhaps a more accurate question we should ask is what L2 teachers’ pedagogical decisions for designing and integrating computer technology are. What are their contextualized uses of CALL resources? How is CALL being used by L2 teachers to achieve learning objectives in their classrooms?

2.5 Chapter Conclusion

Computer assisted language learning (CALL) has emerged and progressed at a rapid speed in the last three decades (Levy, 2006), and it has now become a widely studied area in language learning. Yet the future of CALL, as Hubbard (2008) argues, lies in the hands of language teachers, since language teachers are the key players in selecting the tools and applications to support their teaching. The area of CALL teacher education has drawn increasingly more attention, which is evident in the recent publication of two edited collections addressing issues in CALL teacher preparation (see Hubbard & Levy, 2006; Kassen, Lavine, Murphy-Judy, & Peters, 2007). In addition, professional organizations like the International Society for Technology in Education (ISTE), the National Council for Accreditation of Teacher Education (NCATE), and Teaching English to Speakers of Other Languages (TESOL) all produced or updated guidelines and standards for technological competence for teachers in 2008. The need for technology savvy L2 teachers is also reflected on the job market. For example, when accessing the job postings on TESOL’s Career Center, Kessler (2006) found
60% listed training or experience with CALL, online delivery or educational technology as a required or desirable attribute for L2 teacher candidates. The trend and reasons to integrate technology into language education are evident.

Teacher education and professional development programs have been offering CALL courses and workshops in various forms to prepare L2 teachers to integrate technology into their classroom. Studies reviewed in this chapter suggested that the majority of technology courses and workshops focus on knowledge building, and the opportunity for practice is very limited. There is also a general feeling that CALL is underused or not used to its fullest potential in language classrooms. Studies that looked at factors impacting L2 teachers’ CALL use have shown that L2 teachers’ training in technology courses is not the only predictor of CALL application in the classrooms. In discussing theory and practice in L2 teacher education Johnson (1996) states that “the problems that teachers face are generally caused by constraints imposed on them within the social, cultural, economic, and educational contexts in which their practice takes place, namely, the school and classroom” (p. 766). L2 teachers have various other factors that they need to consider when it comes to technology integration in their classroom. Technology use, like any other tool use, is contextual. To better understand CALL integration, researchers then turn to investigating technology-using L2 teachers’ teaching practice in an attempt to explore CALL application in classrooms. Such studies documented adaptation and adoption of computer technologies, areas of application, and change or lack of change in L2 teachers’ pedagogy.

However, one area that is relatively under researched is L2 teachers’ pedagogical decisions on their design and implementation of technology activities. CALL researchers had not started to call our attention to the role that
L2 teachers played in CALL research until recently. Stockwell (2007) points out that although previous CALL research contributed to our understanding of how language learning technologies have been investigated, the question remains as to how technologies have been used to achieve learning objectives. More recently, in addressing the research concerns in CALL literature, Egbert et al. (2009) contend that “the pedagogical focus and the role of the teacher have been overlooked in research process” (p. 755), and suggest that researchers need to find ways to incorporate more teacher perspectives into the field of CALL. Given that language teachers bear such a crucial role in the integration of CALL, and yet little is known about L2 teachers’ pedagogical decision for designing and integrating computer technology and their contextualized use of CALL resources, it is important to address this area to understand how CALL is being used by L2 teachers to achieve learning objectives in their classrooms.

While most previous studies in CALL investigated single application of certain types of computer technology, this study will focus on integrated technology activities designed by language teachers to support English language learners’ learning throughout the course. Therefore, by focusing on technology-using L2 teachers’ pedagogical design of technology activities, this study aims to explore those teachers’ pedagogical decisions on technology activities situated in their respective classroom contexts.

Multiple factors could come into play to affect language teachers’ use of technology: the complexity and dynamics between CALL teacher, the students, the tasks, and the instructional setting situated in their own context. By exploring CALL teachers’ technology activities, we are approaching the question from a holistic and contextualized angle and therefore might be better informed of what is involved in CALL integration, and ultimately break down the concept
of technology integration into practical ideas and strategies (Levy, 2006). Hence, this study seeks to address the following research questions:

1. How do L2 teachers use web-based technology/resources to achieve learning objectives to support English language learners’ language/literacy development?

   A. How do technology-using L2 teachers integrate, design, and implement their technology activities?

   B. What types of student engagement are triggered by these L2 teachers’ technology learning activities in classrooms or virtual space?

   C. How do technology-using L2 teachers approach modifying technology activities based on their perceived activities’ outcomes?
Chapter 3

Methods

The case study approach was adopted to address the following research questions:

1. How do L2 teachers use web-based technology/resources to achieve learning objectives to support English language learners’ language/literacy development?

   A. How do technology-using L2 teachers integrate, design, and implement their technology activities?

   B. What types of student engagement are triggered by these L2 teachers’ technology learning activities in classrooms or virtual spaces?

   C. How do technology-using L2 teachers approach modifying technology activities based on their perceived activities’ outcomes?

The intent of this study was to provide rich and a descriptive account of integrated technology activities designed by language teachers to support English language learners’ learning throughout the course. Case methods are appropriate when examining a setting, a single document or one particular event in detail (Stake, 1995). Furthermore, to address the proposed research question, a multiple-case embedded research design (Yin, 2009) was adopted in the current study. By studying the “actors” who designed technology activities to support English language learners’ learning, this study attempted to explore
technology-using L2 teachers’ pedagogical decisions on designing technology activities, learning opportunities that are created and afforded by teacher’s technology use, the engagement/participation triggered by those technology activities, and how in turn that engagement serves as feedback for the L2 teachers. Consequently, the two units of analysis were the practicing language teacher and the students. Technology-using L2 teacher’s pedagogical decisions on technology activities are contextual. Teachers constantly need to make complex judgments based on their learners, the learning objectives, and the instructional setting. In order to gain better understanding of the teacher’s pedagogical decisions, one also needs to take into consideration the context of the teacher and his/her students. Stake (1995) describes the case study approach to be “the study of the particularity and complexity of a single case, coming to understand its activity within important circumstances” (Stake, 1995, p. xi). This study recognizes the complexity and dynamics between technology-using L2 teacher, the students and the classroom situated in their own context; therefore, the case study approach was considered an appropriate approach to address the proposed research questions.

3.1 Site and Participant Selection

Qualitative problems are solved by purposeful sampling. Patton (2002) contends that “the logic and power of purposeful sampling lie in selecting information-rich cases for study in depth. Information-rich cases are those from which one can learn a great deal about issues of central importance to the purpose of the inquiry, thus the term purposeful sampling” (p. 230, emphasis in original). In other words, purposeful sampling focuses on selecting
information-rich cases that will illuminate the questions under study. The intent of this study was to explore integrated technology activities designed by L2 teachers utilizing web-based technology or resources to support English language learners’ learning throughout the course. Studying those L2 teachers’ pedagogical decisions on technology activities allows us to see how and why technology activities are designed and integrated as they are. The participants of this study were therefore determined by the intent of this study. To answer my research questions, my participants were technology-using L2 teachers who incorporated web-based technology/resources into their classrooms.

Participants of this study were technology-using L2 teachers who had control to design and implement web-based technology/resources into their classrooms. The English as a Second Language (ESL) program and the Intensive English Program (IEP) at a large northeastern university in the US were chosen as the research site. To recruit participants, the researcher approached the director of the ESL and IEP program and faculty members to ask for recommendation for possible candidates in Spring 2012. After a list of technology-using L2 teachers was compiled, teachers were contacted and recruited to participate in the current study.

As far as the question of sample size is concerned, “a universal concern” in Patton (2002)’s words, this study aimed to provide in-depth description of three cases. Yin (2009) notes that when considering the number of cases for multiple-case study design researchers should approach this question with the “replication” logic in mind. Cases must be selected so that they either “(a) predict similar results (a literal replication) or (b) predicts contrasting results but for anticipatable reasons (a theoretical replication)” (Yin, 2009, p.54) (Yin, 2004, p.54). Ideally, I would have three cases from the same educational setting
(university) in which the same language (English) was being taught and thus to be able to draw similar cross case conclusions from the three cases. As a result, my purpose was to try to achieve literal replications. Yin (2009) suggests researchers to settle for two or three literal replication when the issue does not demand excessive certainty. Conducting multiple-case study can also require extensive resources and time of an independent research investigator. Hence, the number “three” was considered appropriate and achievable.

A total of 30 ESL instructors were contacted in Spring 2012 and Summer 2012. Four of them volunteered to participate. However, I had to drop one teacher from the Spring 2012 cohort because she did not match the participant selection criteria. Lia from IEP, and Jamie and David from ESL program fitted the participant profile and were recruited for this study.

3.2 Data Collection and Procedure

Data were collected from multiple sources in order to provide a rich depiction of the case. Data collected for each case included: two or more in-depth interviews and after-class chats with teachers, student participation in classroom or in virtual space, teacher logs, teacher and student created artifacts. There were no school- or department-created documents related to technology use in either programs. Therefore, no program documentation was collected.

As mentioned in the previous section, conducting multiple-case study requires extensive resources and time of an independent researcher. Therefore, instead of following all three of my participants for the entire semester at the same time, I was in each participant’s classrooms for approximately one third of the semester (or session) at different times of the semester. Dedicating a period of time to
only one teacher allowed me to immerse and focus solely on the case that I was following. I spent 6 weeks in Lia and Jamie’s class, and 4 weeks in David’s summer session class. Table 3.1 lists the class sessions I attended for each teacher.

Table 3.1.
Immersion scope

<table>
<thead>
<tr>
<th>Class</th>
<th>Class Session Length</th>
<th>Class Sessions Attended</th>
<th>Hours Attended</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lia</td>
<td>75 minutes</td>
<td>15</td>
<td>18.75</td>
</tr>
<tr>
<td>Jamie</td>
<td>50 minutes</td>
<td>17</td>
<td>14.17</td>
</tr>
<tr>
<td>David</td>
<td>75 minutes</td>
<td>16</td>
<td>20</td>
</tr>
</tbody>
</table>

Prior to entering the research site, I contacted the three teachers to schedule the first teacher interview, and asked them to keep teaching logs (see Appendix D) to document their thoughts or considerations for technology use and management when the class observation started. I then negotiated a time with the participating teacher to begin classroom observation and attended every class session during the 4-6-week period for every participating teacher. Class observation included technology activity class sessions and non-technology activity class sessions. Field notes taken during classroom observation were reviewed and analyzed soon after leaving the classroom. Exit interviews were scheduled upon exiting the research site.

With regards to teacher interviews, the first teacher interview focused on personal educational philosophy and teaching styles, training and belief about technology, and typical uses of technology by teachers (see Appendix A & B). The exit teacher interview took place when exiting the research site. The exit interview focused on teachers’ reflections on technology use to achieve learning objectives, and to clarify events observed in class (See Appendix C). The interview length with each participating teacher ranged from 40 minutes to one
hour. All interviews were recorded and transcribed for analysis purposes.

A large number of studies examining technology use in schools relied on self-report data such as surveys of language teachers. For studies focusing on instructional practices such as technology use, there is need for direct observation of actual technology use in the classroom to obtain first-hand data. Given that this study focused on technology-using L2 teacher’s use of web-based technology/resources in their classroom, two types of observation data were likely to be collected: student participation in virtual space and in the face-to-face classroom. I conducted non-participant observation in participating L2 teachers’ classroom. Observation focused on the aspects of pedagogy and design mentioned during the first interview and L2 teachers’ expressed intent and goal of the technology activities. Later observation was guided by observation made in the earlier classroom observation. In addition to L2 teachers’ pre-planned technology activities, I also documented any unplanned/spontaneous use of technology in the classroom to understand how L2 teachers make use of those moments for teaching. Observation checklists from Wajnryb (1992) were adopted to help documenting the learning task, learners’ actions, and my inference of teacher’s lesson planning. Field notes were taken during classroom observation to document specific incidents, student reactions and student engagement in class (see Appendix E).

Artifacts created by teachers and students reflecting technology use such as instructional materials and students assignments were also collected to answer research questions A and B.
3.3 Data Analysis

Data collected from teacher interviews, teacher logs, teacher-created artifacts, and class observations were used to construct the background of each case, which included descriptions of the research site, L2 teacher, the learners, the classroom, and the technology activities in order to answer the proposed research questions. Once the background of each case was constructed, I moved onto answering the three sub research questions. Information collected from teacher interviews, teacher logs, and class observations formed the basis of data analysis for each case to answer research question A. In answering research question B, teachers’ reflections, my class observation and student-created artifacts helped to triangulate student engagement triggered by the three teachers’ technology learning activities. Finally, teacher interviews and teacher logs provided information regarding teachers’ modification of their technology activities. Table 3.2 illustrates the research questions and the matching data sources that answer the questions.

Three kinds of data were collected in this study: extant and elicited documents, direct observations, and interviews. Different analysis strategies were used to examine these data. The following sections describe the analysis of documents, observation data, and verbal data.

3.3.1 Analysis of documents.

Documents that were collected in this study included teacher logs, and artifacts created by teachers and students reflecting technology use. Analysis of the two elicited documents would potentially reveal the reasoning behind teachers’ decisions and concerns about the use of computer technology in the
Table 3.2.
*Data Matrix*

<table>
<thead>
<tr>
<th>Research questions</th>
<th>Data Source</th>
</tr>
</thead>
<tbody>
<tr>
<td>A. How do technology-using L2 teachers integrate, design, and implement their technology activities?</td>
<td>teacher interviews</td>
</tr>
<tr>
<td></td>
<td>teacher logs</td>
</tr>
<tr>
<td></td>
<td>class observations</td>
</tr>
<tr>
<td>B. What types of student engagement are triggered by these L2 teachers’ technology learning activities in classrooms or virtual spaces?</td>
<td>teacher interviews</td>
</tr>
<tr>
<td></td>
<td>teacher logs</td>
</tr>
<tr>
<td></td>
<td>class observations</td>
</tr>
<tr>
<td></td>
<td>student artifacts</td>
</tr>
<tr>
<td>C. How do technology-using L2 teachers approach modifying technology activities based on their perceived activities’ outcomes?</td>
<td>teacher interviews</td>
</tr>
<tr>
<td></td>
<td>teacher logs</td>
</tr>
</tbody>
</table>

classroom and the role of computer technology in the classroom. Grounded theory analysis *(Charmaz, 2006)* was employed to analyze teacher logs. Illustration of grounded theory analysis is presented in the section of verbal data analysis.

### 3.3.2 Analysis of observation data.

Classroom observational data served to triangulate with other source of data collected in this study. Analysis of observational data was guided by expressed intent of the teacher’s design. I used tables to document the learning task, learners’ actions, and my inference of teacher’s lesson planning (see Appendix E). The observation data was then compared with teacher’s teaching logs and interview for triangulation.
3.3.3 Analysis of verbal data.

Analysis associated with the development of grounded theory (Charmaz, 2006) was the mode of verbal data analysis employed in this study. It was used to analyze data gathered from the teacher such as interview transcripts, teacher logs, and field notes from classroom observations.

The constant comparative method was developed by Glaser and Strauss (1967) as the means of developing grounded theory to formulate conceptual links between categories and properties that emerge from the research data. However, it has also been adopted by many qualitative researchers for data analysis. According to Merriam (1998), “because the basic strategy of the constant comparative method is compatible with the inductive, concept-building orientation of all qualitative research, the comparative method of data analysis has been adopted by many researchers who are not seeking to build substantive theory” (p. 159). The process of exploring technology-using L2 teachers’ pedagogical decision on technology activities was a generative one. Through the teacher’s teaching practice, it was hoped that we could come to understand the relationship between the factors that influence the teacher’s decision and strategies to integrate technology into teaching. Glaser and Strauss (1967) advocate developing theories from research grounded in data, and describe that the elements of grounded theory includes “first, conceptual categories and their conceptual properties; and second, hypotheses or generalized relations among the categories and their properties” (p. 35). What I was hoping to achieve corresponds directly to the goal of grounded theory analysis. Grounded theory analysis was therefore considered to be the most appropriate analytical strategy to seek answer to the research questions proposed in this study.
Charmaz (2006) version of grounded theory analysis includes three phases: 1) initial coding, 2) focused coding, and 3) axial coding. During initial coding, the researcher should remain open to explore theoretical possibilities in the data. Charmaz’s suggestion for initial coding is to “try to see actions in each segment of data rather than applying preexisting categories to the data.” (p. 47), and that we can get a stronger sense of action of the data using gerunds instead noun forms during coding process. In vivo codes were used to in order to stay close to the data, or “preserve participants’ meaning of their views and actions in the coding itself.” (p. 55). I moved through data quickly during initial coding (another suggestion from Charmaz), and underlined actions in data. The result is a list of initial codes that are not bounded to the research question.

The second phase in Charmaz (2006)’s grounded theory analysis coding is focused coding. According to Charmaz (2006), “Focused coding means using the most significant and/or frequent earlier codes to sift through large amounts of data.” (p. 57). During the focused coding process, the researcher “makes decisions about which initial codes make the most analytic sense to categorize data” (p. 57). The initial codes were further categorized according to their properties. Judging from the initial codes alone was not sufficient to determine their properties; the context where the initials codes came from should also be taken into consideration. Table 3.3 presents examples data analysis of the two stages.

What axial coding aims to achieve in grounded theory analysis is to “relate categories to subcategories, specifies the properties and dimensions of a category” (Charmaz, 2006, p. 60). Its purpose is to “reassemble the data you have fractured during initial coding to give coherence to the emerging analysis” (p. 60). When reassembling the data, Strauss and Corbin (1998) proposed an
organizing scheme to make links between categories visible. The organizing scheme includes 1) conditions, 2) actions/interactions, and 3) consequences. In this phase, diagramming is also a useful method to illustrate the relationship between categories. After focused codes were generated, I then tried to visualize

<table>
<thead>
<tr>
<th>Data source</th>
<th>Transcripts</th>
<th>Initial codes</th>
<th>Focused codes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lia log 0217</td>
<td>The reasons why these two videos were chosen for this particular class was that they were challenging enough for the students to focus but not too challenging that they would feel like giving up and the relativity of the contents to their everyday life.</td>
<td>Challenging materials Relating to everyday life</td>
<td>Building relevance</td>
</tr>
<tr>
<td>Lia log 0323</td>
<td>The video was perfect in length, and it related to the students' international background.</td>
<td>Relating to student background</td>
<td>Building relevance</td>
</tr>
<tr>
<td>Lia log 0327</td>
<td>The video was perfect in length, and it related to some students as they are still in the process of their something new for 30 days plan.</td>
<td>Relating to student projects</td>
<td>Building relevance</td>
</tr>
<tr>
<td>Lia Interview1 [00:10:23.00]</td>
<td>Because a lot of the IECP students they don't want to do work, and they are completely not interested in the topics in textbook. But they might like real world stuff</td>
<td>Not wanting to do work Lacking interest in textbook Preferring real world stuff</td>
<td>Building relevance</td>
</tr>
<tr>
<td>Lia Interview2 [00:09:58.26]</td>
<td>They would be able to draw experiences from their daily lives, or use the vocabulary in the textbook that we learned.</td>
<td>Drawing experience Using learned vocabulary</td>
<td>Building relevance</td>
</tr>
</tbody>
</table>
their relationship using diagrams. Diagrams of each case are presented in case reports in chapter 4.

3.4 Researcher Identity

I am a non-native English speaker who takes interest in how we can best use computer technologies to support/facilitate non-native English speakers to learn English and second language learning in general. The presence of computer technologies, in and of itself, does not necessarily entail effective technology integration. It is the people who use computer technology that make technology integration effective. It is my belief that computer technologies when planned and used appropriately can enhance and support L2 teaching and learning.

We have seen the researchers in the University settings experimenting with emerging technologies in order to help with ESL/EFL learners’ English language development. Those studies help us to picture how computer technologies might be used in language classrooms. On the other hand, more and more TESOL programs now offer technology-related courses in order to better prepare language teachers to integrate technology into their practice. Despite the efforts to push for technology integration in the classroom, there is a general feeling that technology in the language classroom is underused, or not used to its potential. I was therefore intrigued by the question “How are language teachers making use of technology in their classrooms to enrich students’ learning experience and to support their own teaching?” That was also the impetus that drove me to explore technology-using L2 teachers’ pedagogical decisions about technology activities.
3.5 Trustworthiness

I followed Howe and Eisenhart (1990)’s standards as guidelines to ensure the rigor and trustworthiness of this study. Howe and Eisenhart (1990) proposed five general standards for both qualitative and quantitative educational research to serve as guidance to ensure research quality. The five standards are: 1) the fit between research questions and data collection and analysis techniques; 2) the effective application of specific data collection and analysis techniques; 3) alertness to and coherence of background assumptions; 4) overall warrant; 5) value constraints (external and internal).

One central theme for standard 1 is that the research questions should drive data collection techniques and analysis. In this study, the data collection and analysis were all centered around the proposed research questions, and thus meeting the pivotal requirement of standard 1. For standard 2, effective application of data collection and analysis techniques, Howe and Eisenhart (1990) suggested novice researchers follow established principles that guide the data collection and analysis. Doing so helps to increase credibility for low inference conclusions. These low inference conclusions are the first step to achieving more general conclusions. In this study, interview protocols were used to guide the interview process. Data analysis, as illustrated in the data analysis section followed steps and procedures in grounded theory analysis (Charmaz, 2006). By following the established guidelines and principles this study strived to achieve effective application of data collection and analysis techniques. Standard 3 states that alertness to and coherence of background assumptions should guide the research questions and methods in a coherent and consistent way. Background assumptions include assumptions derived from the literature and personal
subjectivity. As Howe and Eisenhart (1990) mentioned, “studies must be judged against a background of existent knowledge” (p. 7), and thus a comprehensive review of the relevant literature helps to situate the proposed study. The review of the literature combined with my personal subjectivity as revealed in the researcher’s identity section were the two elements that guided my research questions which in turn lead to the selection of the research approach-multiple-case study.

Standard 4, overall warrant, includes responding to and balancing of the first three standards. This can be done by a discussion of triangulation of disconfirmed theoretical explanations and disconfirming evidence to evaluate my proposed argument and research results. In addition, member check as suggested by Lincoln and Guba (1986) can also enhance the credibility of the study. Lastly, with regard to standard 5, value constraints, two kinds of value constraints were mentioned by Howe & Eisenhart: external value and internal value. External value has to do with the “so what?” questions-the significance of the study, whereas the internal value concerns with research ethics. It was hoped that by exploring technology-using L2 teachers’ pedagogical decisions about technology activities, readers of this study could gain a better picture of how computer technology is being used in language classrooms to support language learners’ learning, and perhaps to provide some evidence for current teacher education programs on how we can better prepare our future language teachers to teach with technology. To conform to research ethics, this research study followed regulation and guidance from Internal Review Boards (IRB) to protect confidentiality and privacy of the participants.

Howe & Eisenhart acknowledge that the five standards they proposed are only tentative, however, these standards nevertheless provide guidelines for
novice researchers like me to strive for research quality. Efforts were made to meet these standards to improve the quality of this case study. In addition to the five standards, I kept a research log to keep track of any decision I made during data collection for later reference, and documented important questions that I came across and decisions that were being made for this study to embody my subjectivity and interpretation for this research.
Chapter 4

Results

This section provides the description of the three cases, and the presentation of results are organized according to the research questions of this study. Readers of this study should keep in mind that the results of this study were primarily based on how the participating teachers thought about their teaching. Through teacher interviews, teachers’ teaching logs, and the researcher’s classroom observations, the researcher was able to examine the three participating teachers’ perspectives on how they thought they used technology to contribute to language/literacy development, their perspectives on what types of student engagement occurred in classrooms and virtual spaces, and their perspectives on how they would modify their technology activities based on their perceived outcomes.

Each case is organized in the following structure: 1) background, 2) analysis of the case, 3) description of student engagement, and 4) modification of technology activities. The background for each case provides descriptions of the research site, L2 teacher, the learners, the classroom, and the technology activities to help understand why teachers make certain decisions on technology integration, and how the technology activities are integrated into the curriculum. The analysis section presents analysis of how L2 teachers integrate, design, and implement their technology activities. The types of student engagement triggered by the L2 teachers’ technology activities are described in the student engagement section. Finally, the L2 teachers’ modification of their technology activities based
on their perceived activities outcome is outlined. Table 4.1 provides the profile of the three participants. All the instructors were from the same large northeastern university in the US.

Table 4.1.
Profile of the participants

<table>
<thead>
<tr>
<th>Teacher</th>
<th>Lia*</th>
<th>Jamie*</th>
<th>David*</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Age</strong></td>
<td>20-30</td>
<td>20-30</td>
<td>20-30</td>
</tr>
<tr>
<td><strong>Gender</strong></td>
<td>F</td>
<td>F</td>
<td>F</td>
</tr>
<tr>
<td><strong>Years of teaching</strong></td>
<td>5</td>
<td>1</td>
<td>7</td>
</tr>
<tr>
<td><strong>Native English speaker</strong></td>
<td>N</td>
<td>Y</td>
<td>Y</td>
</tr>
<tr>
<td><strong>Age group taught</strong></td>
<td>Adults</td>
<td>Adults</td>
<td>Elementary Middle school High school Adults</td>
</tr>
<tr>
<td><strong>Countries taught in</strong></td>
<td>US</td>
<td>US</td>
<td>US, Japan</td>
</tr>
<tr>
<td><strong>Highest degree completed</strong></td>
<td>MA (TESOL)</td>
<td>BS (Communications)</td>
<td>BS Ed (French, Foreign language education)</td>
</tr>
<tr>
<td><strong>Degree in progress</strong></td>
<td>n/a</td>
<td>MA (TESOL)</td>
<td>PhD (Applied Linguistics)</td>
</tr>
<tr>
<td><strong>Taken educational technology course</strong></td>
<td>N</td>
<td>Y</td>
<td>Y</td>
</tr>
<tr>
<td><strong>Current teaching status</strong></td>
<td>Full-time</td>
<td>Part-time</td>
<td>Part-time</td>
</tr>
</tbody>
</table>

*Note: All teacher and student names, and any names used by teachers or students are pseudonyms that represent gender and ethnicity of speaker or target individual.

4.1 Lia and her Listening/Speaking Class

In this case, we will see how Lia, an instructor at the Intensive English Program (IEP) at a large university, incorporates Youtube videos to support her
higher-intermediate English language learners’ listening and speaking development.

4.1.1 Background

The Intensive English Program (IEP) is a language program in a large university located in the northern east part of the United States. In the IEP, students are placed into 4 levels of language skill courses according to students’ English proficiency test (listening/speaking, reading, writing, grammar) scores on arrival within the US. There are four levels for each language skill: Level 1 for advanced beginning students, Level 2 for low-intermediate students, Level 3 for advanced-intermediate students, and Level 4 for advanced students. The IEP’s program mission stated on the program website is to provide quality instruction to nonnative speakers of English with a focus on the language skills necessary for achieving academic success in American universities. That includes preparation for the Test of English as a Foreign Language (TOEFL), as achieving a required score in this test is a prerequisite for international students to enter American universities. Students are placed in small classes with an average of 8-14 students from around the world. Every full-time student is required to take four courses in each semester, one from each language skill respectively. Two classes were scheduled every day Monday through Friday. Each class met for two hours.

IEP class schedules rotated on odd and even weeks. For instance, if a student has a reading class on Monday, Wednesday, and Friday in week 1, the reading class will be on Tuesday and Thursday in Week 2, and then in week 3 the schedule rotates back to Monday, Wednesday, and Friday.
4.1.1.1 The teacher. Lia obtained her masters degree in Teaching English as a Second Language (TESL) in Spring 2008. She has been teaching in IEP for five years. Lia started teaching part-time for one year in IEP when she was working toward her masters degree. She is now a full time instructor at IEP and the only non-native English speaker instructor in IEP at the time of this study.

I found Lia to be very understanding, empathetic, and practically-oriented. She is understanding in the sense that she constantly thinks from her students’ perspective; she is empathetic because being an English language learner herself she knows exactly the frustration of learning a new language; and she is practically-oriented in that she always looks for things that are practical and useful for her students.

There was an incident about learning language that made Lia become a very understanding teacher. Lia’s father had to relocate every three years because of his work. Lia had therefore spent part of her childhood abroad in Malaysia and Vietnam. This incident happened when Lia was in 9th grade in an American School in Vietnam.

I was in an introductory French class. The teacher was teaching us “boys” and “girls”. So he said, “boys raise their hands”, and then the boys raised their hands; “girls raise their hands”, and then my classmate raised her hand. But I could not understand a word in French at that time, so I did nothing but looking at the teacher. The teacher then said something in French, the whole class laughed at his words. I was hurt by that. After that incident, I did not dare to speak in my French class. (Interview 0: [00:12:48.20])

That particular instance had left an inerasable trace in Lia’s memory, which is also the reason why she tries to be as understanding as possible as a teacher. It is also from her own experience as a language learner that she developed a great
sense of empathy. In fact, one of the reasons that she wants to become an ESL teacher is because she knew exactly what frustration feels like.

...When you have been through all these, you will want to help. Because I know how it feels like when you are in a new environment and you know nothing about that environment. You will feel uncomfortable... frustrated. And then if you met a not very understanding teacher... like some American teacher, they already speak the language, so they don’t really understand the parts that students are struggling with. They might just tell you that “that’s the way it is”, and do not guide you through the process... So I really want to help students who are in the same situation like I did.

(Interview 0: [00:22:24.20])

Lia’s teaching philosophy is practically-oriented. While she was still in her masters program, all her class projects could be directly applied to classroom settings. She constantly looked for materials that she could use in her classroom. Her ideas about language are practical as well. When Lia talked about her foreign language learning experience in college, she mentioned that her goal of learning Japanese was to understand the daily conversation, not to memorize Japanese grammar markers.

4.1.1.2 Lia’s belief about how ESL should be taught. Because of her experience being a language learner, Lia’s belief about how ESL should be taught centers around one keyword: emotion.

A second language should be taught with lots of love, because you need to be very patient, and you need to have empathy for students. Materials only constitute 30% of your teaching, and you have to fill in the rest of the 70%. You need to first build a comfortable environment for students... An environment in which students can say what they want to say, ask what they want to ask. I strive to create that kind of environment every semester.

(Interview1: [00:05:33.14])

Due to her past language learning experience and her empathic mind set, Lia also indicated her preference in teaching lower level students.
I don’t like teaching Level 4, because I think Level 4 students still prefer being taught by American teachers. Lower level students need teachers like me. Like Ted, if he teaches lower level students... He cannot understand their needs and just give them very difficult stuff. And he might not be able to explain some things. So I prefer teaching level 1, 2, and 3. (Interview 1: [00:01:28.15])

4.1.1.3 How Lia started to incorporate technology in her classroom. Lia had never taken educational technology courses or computer courses before. However, she is comfortable with the tools that she is currently using: word processing, PowerPoint, email, and web surfing. Her ideas of available technology resources came from IEP in-service programs and language teaching conferences. IEP instructors sometimes shared some online resources during their in-service programs. She reported that she began incorporating technology in her class when she first started teaching at the IEP. At the time of the study Lia integrated technology in her listening/speaking class regularly. Lia started to incorporate technology in her class as a way to cope with some of the IEP students’ low learning motivation to raise interest in class and to supplement textbook materials.

I was constantly thinking about how to engage my students in class. Because a lot of the IEP students... they are completely not interested in the things in textbook but they like real world stuff. So I thought if that’s what they like, that’s what they’ll get... This is my third consecutive semester teaching listening/speaking. I didn’t use any technology in my first semester. In my second semester, I started to incorporate some Youtube videos. And I found out that whenever I played Youtube videos, their uleyes were wide open. They started to look forward to new things in class... This semester I’m using it regularly in every class. I have some students who are entering college or grad school after this semester. They are harder to please in a way. So I want to challenge them with new things. (Interview 1: [00:10:23.00])
To Lia, integrating technology in class was important because it provided a way to supplement the textbook with real world materials and also served to motivate her students.

4.1.1.4 The learners. Lia taught four courses during the time of this study: two classes in level 3 listening/speaking (3A and 3B), level 1 writing, and level 2 reading. The class I observed was 3B listening/speaking. 3B met from 3:45 pm to 5:30 pm right after 3A. 9 international students were enrolled in 3B with 8 from East Asia, and 1 from the Middle East. Of those 9 students, some hoped to enter the undergraduate program of the university whereas others took this opportunity for personal development and planned to go back to their home country after IEP courses ended.

The class that I observed (3B listening/speaking), according to Lia, was “friendly and responsive” when compared to the other listening/speaking class 3A. As a result, when planning her lessons for level 3 listening/speaking, Lia always “thinks about the 3As”.

...if the 3As are happy, the 3Bs are happy. So I have to, I always envision what the 3As would do. The 3As, you never seen them but they are like, yeah what can you teach us today, what are you gonna say, what are you gonna say that’s so important...I need for it to be something that I think students can join me. So if I don’t think the 3As are going to enjoy...I abandon plan...(Interview 2: [00:20:31.19])

As will be mentioned in the subsequent activities section, Lia used Youtube videos as a listening warm up activity in the beginning of the class. Although 3A was not the class that I observed, 3A surely affected how Lia planned her level 3 listening/speaking class.
4.1.1.5 The Classroom. Figure 4.1 illustrates the physical environment of the classroom. None of the IEP classrooms are equipped with computers so Lia has to bring her laptop to the classroom every class, and then connected to Ethernet and projector using the cables from the Tech cabinet (see Figure 4.1). There was a wireless network in the building although Lia reported that the wireless network in the building is not stable and had given her problems before (as a note, I have never had a problem connecting to the wireless with my laptop during the time of the study). One thing to note is that Lia only sat in front of her desk when she plays Youtube videos. When Lia is not using her laptop, she either stands in the center of the classroom or circles around the classroom to help with student group work when class is in session.

Figure 4.1. IEP level 3 listening/speaking classroom
4.1.1.6 The activities. Lia has established a routine for her listening/speaking class. There were fixed elements in her class: 5-minute quiz, class agenda, listening warm up, speaking warm up, topic response, and textbook content. Table 4.2 is one example of how those elements were put together in Lia’s class. 3B listening/speaking usually started with a 5-minute quiz on five things they learned in previous class followed by agenda for the day. Youtube videos were used as listening warm up activity or as topic response prompt. In the speaking warm up activity, the class recited one stanza of a poem (about English pronunciation) Lia found on the Internet (See Appendix F). Lia had mentioned that for the listening/speaking class, she didn’t have to finish teaching the whole textbook as opposed to grammar class where she needed to make sure the important grammatical points are covered. As a result, that gives her more freedom to design her classes.

Since the focus of this study is on L2 teacher’s use of web-based technology/resources, we now zoom in to Lia’s listening warm-up activity-her use of Youtube videos. Youtube videos are used to serve different purpose that Lia has in mind for her class. Lia uses Youtube videos to 1) raise students’ interest on the topic, 2) introduce the day’s class, or 3) as a prompt for topic prompt response.

4.1.1.6.1 Youtube video listening warm up activity. As mentioned previously, Lia started to incorporate technology in her class as a way to cope with some of the IEP students’ low learning motivation, to raise their interest in class, and to bring authentic materials into the classroom. Different video presents different effects; they could be for entertaining, educational, or simply pure listening exercises. Tens of thousands of video clips on Youtube became sources of her inspiration for designing engaging and interesting activities.
Table 4.2.
*Classroom activities 0221*

<table>
<thead>
<tr>
<th>Time</th>
<th>Minutes</th>
<th>Activity</th>
<th>Material</th>
</tr>
</thead>
<tbody>
<tr>
<td>3:45-3:50</td>
<td>5</td>
<td>5-minute quiz</td>
<td>Quiz worksheet</td>
</tr>
<tr>
<td>3:52-3:54</td>
<td>2</td>
<td>Calling on Ss to answer 5 min quiz</td>
<td>Powerpoint</td>
</tr>
<tr>
<td>3:54-3:55</td>
<td>1</td>
<td>Housekeeping: agenda for today</td>
<td>Powerpoint</td>
</tr>
<tr>
<td>3:55-4:00</td>
<td>5</td>
<td>Listening Warm up activity: TED talk – Why I’m a weekday vegetarian</td>
<td>Youtube video</td>
</tr>
<tr>
<td>4:00-4:09</td>
<td>9</td>
<td>TED talk comprehension Qs as a whole class</td>
<td>Powerpoint</td>
</tr>
<tr>
<td>4:09-4:15</td>
<td>6</td>
<td>Speaking warm up activity: poem</td>
<td>Handout</td>
</tr>
<tr>
<td>4:15-4:17</td>
<td>2</td>
<td>Topic response: 30-45</td>
<td>Powerpoint</td>
</tr>
<tr>
<td>4:17-4:37</td>
<td>20</td>
<td>Textbook Unit 4 Globalization: check homework, voc list, CD listening, comprehension Qs</td>
<td>Textbook, textbook CD</td>
</tr>
<tr>
<td>4:37-4:47</td>
<td>10</td>
<td>Homework reading: T walks through the voc with Ss</td>
<td>Homework reading handout</td>
</tr>
<tr>
<td>4:47-5:00</td>
<td>13</td>
<td>Pepsi commercials around the world</td>
<td>Youtube video</td>
</tr>
<tr>
<td>5:08-5:45</td>
<td>27</td>
<td>Textbook listening test</td>
<td></td>
</tr>
<tr>
<td>5:45</td>
<td></td>
<td>Class ends</td>
<td></td>
</tr>
</tbody>
</table>

The process of designing her listening/speaking class started with the videos she found. The length, topic, complexity, and the language level of the video were the factors that Lia took into consideration when looking for appropriate videos. Here again, we see “interest” played a crucial role not only for the student, but also for the teacher.

So first of all, it has to interest me. Second of all, it has to generate some ideas for me. I have to be able to envision ok should I use this as a topic prompt response, a prompt. Or should I use it as a pure listening exercise, or should I use it as a discussion prompt. If none of the above is good enough, I go onto the next video. And then you know, I have to watch it to see if there’s any swearing or inappropriate language. (Interview 2: [00:18:35.00])

I need for it to be something that I think students can join me. It’s a warm up. If you killed the atmosphere in the room in the beginning, for the rest of the class, you’re going to be staring at a bunch of bare heads. You killed it. So it has to be like boom! And then [catch their attention?], yeah. If not, at least you didn’t kill their attention. (Interview 2: [00:20:31.19])
Once Lia made her decision on a video, she then worked on the details of the activity. She had to come up with concrete comprehension check questions, or discussion questions, something that’s worthy of discussion and also of interest to the students. Lia often had a mental picture of what would happen in her class if she “did a good job” developing the activity.

...if I did a good job, I should be able to say, ok start, and then they would start talking. They wouldn’t be a moment of um...I don’t really know what to say about the video, I don’t really care. So in my mental picture, it would be something like, this is what you’re going to talk about, start! And then they would be able to say, oh in the video this happened, and I think that...it’s good, it’s bad or you know why or why not. They would be able to draw experiences from their daily lives, or use the vocabulary in the textbook that we learned. (Interview 2: [00:09:58.26])

For Lia, relevance was the key in developing the activity. Lia also tried to envision students’ response from their point of view, and used that as a way to modify the questions she came up with.

So the discussion questions, I often have to think, ok if ull was being asked this question, would I be able to come up with an answer. If not, I should probably need to narrow it down or widen it. (Interview 2: [00:11:10.19])

After students watched the Youtube clip, they were expected to answer either the comprehension check questions or to participate in the discussion questions. Lia would throw the question and then waited to see if students wanted to jump in to answer the question. If no one wanted to answer the question, Lia then called on students to answer the question. The rule of thumb when the discussion was in action was “no cold calling”, because Lia sees these questions/discussions not only as a way to see how much students understand the content but also as a way to build up students’ confidence.

I don’t want to cold call on someone. . . . I would have them discuss in pairs and I would say ok you guys are doing 1, 2. Then I know who to call. If I
didn’t do that, but I still call on someone is because when they’re watching, I sort of observe their reactions too. If someone’s like blank, obviously I wouldn’t call on them. I usually have a pretty good idea who can answer it and who can’t. . . . like Chun Hei. You don’t want to cold call on her, because if it’s something that she doesn’t know then you’re just embarrassing her. . . . I think it’s a process of building student confidence as well. So if I know that Meiling, she’s young, she tries very much. So if I think there’s a question that she can answer, I call on her. (Interview 2: [00:31:09.23])

Because those warm-up videos served as supplemental materials, Lia specifically told her class that she was not grading them on those video warm-up activities. She stressed “it only matters how much you can understand”, and thus encouraged students to study not for the grades but for their own growth in knowledge and became a lifelong learner. As a result, Lia evaluated students’ performance through formative informal evaluation. An important premise for this formative informal evaluation was that the teacher needed to know his or her students well. Lia put it this way “If you don’t know them then there’s a problem. You need to know your students.” It was this understanding of her students that allowed Lia to know how much students learn and understand. I have some ideas about every student’s listening ability, and I can tell whether they are improving or not. . . . So I guess I am using these kinds of informal assessment to know how much they learned and understand. (Chat1: [00:03:41.17])

Her students’ progress in their listening ability reassured Lia that the endless hours she spent on finding interesting and appropriate videos and developing discussion questions were well worth the time.

When I first begin this, when I throw out a question, everybody just stared at me. But now I found out that whenever I throw out a question, the students will answer it immediately. (Chat1: [00:03:41.17])

Right now it’s like do you guys need a second watch? And they’re like “nope, we’re good”. (Interview 2: [00:03:49.26])
4.1.1.7 The impromptu use of online dictionary for pronunciation. Other than the pre-planned *YouTube* video listening warm-up activities, another use of web-based technology/resources was her impromptu use of online dictionary. Lia used this impromptu strategy a few times during my observation. As mentioned in the activities section, one of the fixed routines in Lia’s class was the recitation of a poem she found on the Internet. Lia would lead the class to recite two stanzas (four lines) of the poem every class. The Chao was a poem about the irregularity of English pronunciation written by Dr. Gerard Nolst Trenite (1870-1946). The complete poem can be found in Appendix H. Below is a snippet of the poem where Lia looked up and played the pronunciation of the second line.

Billet does not end like ballet;
Bouquet, wallet, mallet, chalet;

Blood and flood are not like food,
Nor is mould like should and would.

The poem was written with some low frequency words that are seldom used in daily life. Lia had looked up the pronunciation of every word just to make sure she pronounced them correctly and she tried her best to pronounce them. Lia did not really plan to look up and play online dictionary pronunciation in class. On that day, Lia originally pronounced the “ou” in bouquet as /o/, but a student had a question about the pronunciation of “bouquet”. Lia replied that she had heard both /o/ and /u/ when people pronounce it. But she then turned and went to her laptop to look up “bouquet” in Merriam Webster online dictionary. Merriam Webster online dictionary pronounced the word with /o/, and then the class resumed practicing bouquet with /o/. She then continued looking up the three following words “wallet, mallet, chalet” on Merriam Webster online
dictionary and played the pronunciation audio file on the website.

Lia in her teaching log mentioned that playing the pronunciation audio file on the website helped the students to be reassured about what they were listening to. “When they are practicing, it is helpful to play the sounds of the words so that they can follow”. I asked Lia why she chose to play the pronunciation audio file on the website. Lia attributed the use of it to her being a non-native speaker and thus sometimes being questioned by some of her students in class, and her concern about pronunciation change due to tone change.

...it comes back to the 3As. A lot of skeptical students ... They are very critical... And when you’re trying to correct their pronunciation... They get offended, they don’t change easily. A lot of times, they are older than I am. You know, they give me this like who are you to me to change my pronunciation. I mean, granted, I have some words that I...but you know native teachers do this too. But I can’t really break down in the middle of the class and say “well native speakers do this too, they don’t pronounce everything it supposed to be and there’re different accents”! But you can’t use that, because you’re not native teachers (whispering). So later on I just figured it’s easier if there’s a word that we’re not sure of I just play it. I don’t even spare the awkwardness just...I just play it. But in some cases, I do feel like...cuz I worried that every time I pronounce the word, it’s a little bit different. (Interview 2: [00:24:50.03])

Playing the pronunciation audio file thus becomes a way for Lia to reconcile with the skeptical students she has in class.

4.1.2 Analysis of the case.

Lia seemed to be using her Youtube video activities as a medium to scaffold students’ emotions to promote learning goals. Meyer & Turner (2007) defines emotional scaffolding as “temporary but reliable teacher-initiated interactions that support students’ positive emotional experiences to achieve a variety of classroom goals” (p. 244). In Lia’s case, various strategies were built into the
Youtube activity to help sustain and enhance students’ motivation, participation, understanding of the materials, and emotional well-being. This, in turn, supports students’ development of their listening/speaking competency, and encourages them to become autonomous learners.

Web-based technology/resources helped Lia to find solutions to cope with some of her students’ learning attitudes. While those students are indifferent to textbook materials (according to Lia), they were interested in the various Youtube videos they could watch every class. Youtube videos in this case helped Lia to solve her immediate instructional problem by bringing in authentic materials to her classroom. Lia’s use of Youtube video as the warm-up activity in her class, highlights an underlying theme that drives her use of this technology activity—emotions in learning (See Figure 4.2). This special attention to students’ emotions in learning might be related to her own past learning experience. Most of the pedagogical decisions Lia made were based on enhancing student motivation, sustaining student interest, empathizing with students, and building student confidence.

Lia started to incorporate Youtube because she wanted to motivate and engage her students. It was being used as a motivator and a tool of practice on listening and note-taking skills. By bringing in real world materials, Lia used it to catch students’ attention and to increase students’ motivation in learning. Different Youtube video can be used for different purposes Lia had in mind for her students. Lia constantly alternated among using Youtube video clips as motivator, textbook supplement material, and topic prompt response to bring in some level of variety to the class so that students would not feel bored or tired of the same routine.

In order to continue sustain students’ interest, perspective taking and
relevance building were two crucial points when working on the details of the activity. In a speaking class like this, the activity had to be relevant to students’ prior knowledge or daily life so that students could easily apply and practice what they learned or knew. Lia also constantly put herself into student’s shoes by asking herself if she could answer the questions she came up with if she were the student. The two factors taken together helped to avoid the situation of “I don’t know what to talk about” or “I don’t really care” to engage every student in the class. After viewing the video and during discussion, Lia tried to avoid cold calling by observing students’ reaction when she played the Youtube clip or assigning students to answer particular question in advance. This way, question-and-answer and discussion became a time to build student confidence. In terms of evaluating her students’ understanding of the listening material, Lia
assessed how much her students learn and understand through constant informal formative evaluation. Because the Youtube activities were warm-up activities that were not graded, Lia tried use that to instill in her students that “it is how much they learn that counts”. By learning for themselves and not simply for grades, Lia also encouraged her students to become lifelong learners.

4.1.3 Student engagement triggered by technology activities.

Because the Youtube video activities were used as ungraded listening warm-up activities, the “products” for the Youtube activities were in class question-and-answer and student discussion. No tangible artifacts were being produced by the activity. Therefore, student engagement in this section will be description of the activity based on my observation. Lia used video clips for mainly three purposes: as 1) motivator, as 2) introduction to textbook material, and as 3) topic response prompt. I selected one class for each category and describe it below.

4.1.3.1 Motivator. When video clips were used as motivator in Lia’s class, it usually meant inspiring light-hearted videos for creating positive atmosphere in class. In one class, Lia played a TED talk video “weird or just different” by Derek Sivers (http://www.ted.com/talks/derek_sivers_weird_or_just_different.html, video length 2:42, 0323) on “there’s a flip side to everything”. In the video, one of the examples the speaker used was the concept of street name and block in the US and Japan. In the US, blocks have no name, but in Japan they do. There was a Japanese student in Lia’s class, and when the video ended, he became a cultural representative of his own country. There were several exchanges between students
because the class was intrigued by that idea and asked him questions. Lia then had other students who were interested in being the representatives of their own country speak as well. Although it was just a short discussion, in this incident, instead of Lia calling on students to answer question, students themselves took ownership of the discussion because they were all interested on this topic.

4.1.3.2 Textbook material supplement. Prior to moving onto a textbook unit on big brother and surveillance society, Lia used a Spark Notes video that summarized George Orwell’s 1984 (http://www.sparknotes.com/sparknotes/video/1984, video length: 7:36, 0404) to provide students with background information of the term “Big Brother” in their textbook. Spark Notes provides literature study guides on numerous literature works on their website. Lia had developed questions sheets for students to answer as guidelines so that they can follow along the video. That was the second last class I observed which was also near the end of the semester. In that class, one of the female students who had been on the quieter side of the spectrum during the time of my observation took the initiative to answer a few of Lia’s questions. The change in the students’ behavior was not sudden but a gradual one. In the exit interview, Lia also commented on that student. She also noticed that the student spoke a lot more in the latter part of the semester than in the beginning and her test scores were improving.

What does it take for a student who had generally been on the quieter side of the spectrum to be willing to take the initiative to provide answer to teacher’s question that was not graded? First and foremost, the student has to feel comfortable talking in front of the class. Secondly, student has to have confidence in herself to answer the teacher’s questions correctly. It is from these aspects that
we have a glimpse of the possible effect of Lia’s use of the various online video clips with her class (building a comfortable environment, building student confidence, and supporting language skill development).

4.1.3.3 Topic response prompt. Topic response was an activity designed to mimic the oral English test of TOEFL ibt test where students need to provide immediate oral response to a variety of topic being presented to them. In topic response activity, Lia usually paired students in a group of two. Within the group, one person would be designated as the one to speak first and the other person would be the listener. The speaker needed to speak for 60 seconds and the listener then needed to summarize what s/he heard in 30 seconds. Students then exchanged roles to repeat the activity again.

Lia used TED talk videos to bring in different perspectives of thinking and as food for thought in her class. A TED talk by Renny Gleeson on the topic of antisocial phone tricks was used as a topic response prompt in one class (http://www.ted.com/talks/lang/en/renny_gleeson_on_antisocial_phone_tricks.html, video length 3:50, 0315). The main idea of the talk was about technology’s impact on the culture of availability and on our social world where the shared experience we are having with people around us right now is less interesting than what we will facebook or tweet about it later. Almost every student in Lia’s class has a smart-phone, and one of the students in the class was known for checking cell phone when class was in session. During my observation, there was one time Lia even needed to warn the student that she would take his phone away to stop him from checking messages in class. Therefore, this video clip spoke directly to the students’ experience as smart phone holders. When Lia used the clip as a topic response
prompt for the topic “impact of cell phones,” students were all able to start to speak immediately with meaningful content because it related directly to each student’s life experience. This is also an example of how Lia tried to build in relevancy into the video activity.

4.1.4 Modification of technology activities based on perceived activity outcome.

In Lia’s teaching logs, she perceived almost every Youtube activity to meet her goals in class (whether the Youtube videos were used as motivator, supplement textbook material or topic response prompt), and thus consider the activity successful based on the activity outcome (question-and-answer, discussion, topic-response). Although Lia’s instructional goals were met in terms of activity outcome, she reflected on the things that she would do to make her activity better. Lia’s reflection seemed to center on the logistics of the activity such as introducing the video, playing the video twice, and leading class discussion.

...I wish I had thought through more about introducing the topic and leading the discussions. This is the problem with being a teacher for too long. When prepping for classes, I usually will stop at just knowing the plans for the class, but I should really spend more time on designing the “between — bridge from activities to activities.” I hate that awkwardness of silence even if it’s just a second for me to think what I have planned next. (Log 0404)

Lia seemed to put much of her attention and focus on students when designing the Youtube activities that she did not put as much attention on the logistics of the activity. Although it did not really affect the activities themselves, from Lia’s point of view, spending more time on the logistics of the activity would have made the activity transitions smoother and helped avoid the awkwardness in
between.

4.2 Jamie and her American Oral English for Academic Purposes Class

In this case, we will see how Jamie, a part-time instructor at the English as a Second (ESL) program at a large university, integrates web-based technology/resources to assist classroom activities, bring in multi-modal learning, and get students more engaged in her American oral English for academic purposes class.

4.2.1 Background

The ESL courses were offered by the Department of Applied Linguistics at the university where Jamie was pursuing her master’s degree at the time of the study. The department offered four ESL courses for enrolled undergraduate and graduate students who wished to improve their academic skills. Two levels of composition courses were offered to undergraduate students. For graduate students, the department offered one course in academic writing and one course in American oral English for academic purposes. The course Jamie taught was the American oral English for academic purposes class. It was an elective course with no prerequisites. The intended audience of this course was graduate students who were non-native speakers of English who wanted to develop and improve their oral communication skills for effective interaction in social, as well as academic settings in English-speaking environments.

According to Jamie, there was a required textbook for the course last year, however, the new supervisor who oversaw the program decided that the textbook
did not suit the purpose of the oral communication course and thus removed the
textbook from the curriculum. As a result, the course was without a textbook
and Jamie and her supervisor had complete freedom on how they wanted to
formulate the course. The class was a three credit course that met for 50 minutes
from 10:10-11:00 every Monday, Wednesday, and Friday.

4.2.1.1 The teacher. Jamie held a bachelor degree in communications
majoring in radio, television, and film. She worked in Hollywood for several years
before starting to tutor in ESL as a volunteer. Her students were mostly adult
illiterates in their fifties, who were relatively new to the country with very limited
knowledge of English, usually knowing just the alphabet. As a result her lessons
were fairly introductory, which she characterized as “survival English,” as
opposed to academic English. That tutoring experience sparked her interests in
thinking about how languages are taught and learned. She thus decided to switch
careers to turn the volunteering tutoring into a full time job. To pursue that
goal, she came back to school in 2010 to work on her TESOL master’s degree.

Jamie started teaching part-time from her second semester in the master’s
program. For her second and third semester, she taught undergraduate
composition courses. The time of the study (her fourth semester), was the first
opportunity she had had to teach a graduate-level course and an oral
communication class.

4.2.1.2 Technology training. Generally speaking, Jamie feels
comfortable with computer technology. She learned to use technology formally
from courses and workshops, and informally from her own exploration and from
peers. She had taken several computer courses in C++ programming, web design,
and web technology during her undergraduate studies. Jamie sees the Internet as a great resource for learning and finding information.

I think with technology, there are so many resources online that if you are unsure of how to do something, you can find with one click you can find 100 people telling you how to do it. I’m generally fond of searching and learning how to do something that I don’t know and then teaching it to myself. (Interview 1: [00:09:41.10]

While pursuing her master’s degree, in her spare time she also took advantage of the free educational technology workshops offered by the Information Technology Training Services for her professional development, even though she did not have any plans to incorporate the things she learned immediately.

...what’s a great resource that the ITS thing is that we’re learning the things that exists. I wouldn’t have known that wikispaces existed except that I clicked on register for tutorials and then they bring up the whole list of them. So it’s a nice repository of information I think. (Interview 1: [00:17:19.03])

Peers and colleagues are another source from whom she learns new information about educational technology. They also serve as an immediate support if Jamie needs assistance.

Generally, it’s a, oh you should check this out. And then you go, you know, take their online tutorial or read the website a bit, and then if you have questions you know there are people in the department who had used it. So you can always email them if you have trouble I think which is helpful. (Interview 1: [00:17:19.03])

4.2.1.3 How Jamie started to incorporate technology in her classroom. Jamie has only been teaching for one year, but she started using computer technology the first semester she taught. The first thing she tried was ANGEL, a course management system used by the university. Her ideas of how
to use ANGEL came from her learning experience as a student; namely, how the professors use ANGEL. From the perspective of a student, she knew what was helpful or not helpful to her. She, in turn, applied those ideas when she started teaching. Her use of ANGEL seems to change as she gains more experience in teaching. Jamie used ANGEL as an organizational system in her first semester of teaching, and then used it to assist classroom activity in her second semester of teaching.

... when I started here as a student the first semester, I wasn’t teaching. I was only a student, and that really helped getting use to the idea of how different professor use ANGEL differently, which is really helpful. So that when I started teaching in my second semester, I had a lot of ideas of this was not helpful to me, this was helpful to me. (Interview 1: [00:21:42.01])

For her oral communication class, Jamie’s third semester teaching, she started to bring in other forms of technology to the classroom as she became more comfortable with the “basics of teaching” which allowed her to see legitimate opportunities for incorporating technology.

... in a way that I wasn’t ready to do it in my first semester. And if I had try to do more, it would’ve just been more for more sake. It wouldn’t have been more for any benefits. So I think as I become more comfortable with “basics of teaching”, you know just being in front of the class and preparing activities. That allowed me to see legitimate opportunities of where technology would work as opposed to just pushing it in. (Interview 1: [00:26:45.15])

Jamie saw technology as “eye-opening”. She used technology as a way to bring in other sources of media to the classroom to promote students’ interest level, and by doing so she hoped to encourage student to think about “school work” as being less narrow and static.

So for me as a language teacher, really like to use technology to bring in other sources of media to the classroom. For the most part, I think students
see written text as being so static . . . regardless of what the topic is, it can be we thought of as boring . . . because it’s black text on a white piece of paper. And that on some degree shuts some students down. . . . And when homework becomes watch this Youtube clip, or when homework become go to this website that’s bright in color or animated... It can kinda of push them to think and to realize that the things we are discussion aren’t static. They’re not just these textbook answers. It’s more global than that. . . . technology is eye-opening. I hope that it kind of encourages people to think about “school work” as being less narrow. (Interview 1: [00:39:13.15])

4.2.1.4 The Learners. There were 18 registered students and 1 auditing student in Jamie’s class. The majority of them were engineering students. Students come from all different places including Brazil, China, South Korea, Saudi Arabia, Egypt, Turkey, and Iran. Before teaching this oral communication class, Jamie was warned that the range of students’ proficiency level might be wide because there were not many prerequisites for this class. However, according to Jamie, for this class the proficiency levels of the students were more consistent than she anticipated and she would categorize most of her students’ speaking as advanced. Her students came into this class seeking experience and opportunity speaking a variety of topics. Since the course had no required textbook, the majority of the class time was devoted to develop discussions around topics students bring into class.

4.2.1.5 The classroom Figure 4.3 illustrates the physical environment of the classroom. Jamie’s class met in a projector-only technology classroom (according to the classroom classification of the university). The classroom was equipped with a ceiling-mounted video/data projector, plug-in capability for an instructor-supplied laptop, an audio system for multimedia presentations. There was a wireless network in the building; however, the signal strength in the
classroom according to the wireless map was only medium. Jamie described the wireless network as “touch and go,” so she couldn’t rely on the wireless network if she brought her laptop to the classroom.

Jamie tried to request a classroom change in the beginning of the semester to no avail. During our interview, Jamie specifically mentioned that she disliked having classes or teaching in the specific building in which she was assigned a classroom. Jamie tried to reserve a computer lab for her class as long as there were labs available. Although she might not be using technology every class, she said she “would like to have the option”. At the end of the semester, Jamie was able to reserve a computer lab for the last two weeks of the semester. For the last two weeks of the semester, the class moved to a computer lab, and its physical environment is shown in Figure 4.4.
4.2.1.6 The activities. Because the oral communication class was without a textbook, Jamie tried to implement the idea of “designed to the students” when designing the curriculum. However, going into class not knowing the topics and activities for the first few classes gave Jamie a certain feeling of pressure.

...everything I heard is designed to the students. But then what do you do in week 1? Because if you are designing to the students then that takes time. So what are you teaching, what activities are you leading for the first class, the first 5 classes? That’s intimidating, going in thinking oh it’ll all work out in a week, in two weeks. That makes me nervous. (Interview 1: [00:28:44.10])
Since Jamie wanted to create a comfortable environment for students to practice speaking, she spent the first week of class using games to build up the community environment. These activities also allowed her to gather information on students’ learning goals, students’ proficiency level, and to design the course accordingly. With the feedback from her students, Jamie decided on the format of the class to include student-led discussion, student formal presentation, and teacher presentation on topics related to oral language skills. In addition, students needed to turn in three audio-recording assignment, and a final group project.

Class topics can be found in Table 4.3. There are several web-based technology/resources being used in this oral communication class including blog, Multiply.com, podcast, and Youtube videos. Those technologies were being introduced to the class for three purposes: to 1) assist classroom activities, 2) bring in technology for multi-modal learning, and 3) get students more engaged. The following subsections describe how Jamie utilized those web-based technology/resources to achieve her intended purposes and to support her students’ oral communication skill development.

4.2.1.6.1 Class Blog. Given that each class period was only 50 minutes in length, Jamie needed to make sure that she and students made the best use of their class time.

...all the Internet usage has been outside the classroom. So watch this clip before you come to class. Which is beneficial too, because 50 minutes is so short that if I haven’t come in and say ok now we’re gonna watch a 5 minutes clip, I mean by the time I get it loaded and have it played and watched it, you know, a fifth of my class nearly, you know it takes 10 minutes and then a fifth of my class is gone. (Interview 1: [00:45:48.00])
As mentioned in previous subsection, the majority of the class time was devoted to developing discussions around topics students brought into class. To facilitate that process and to make best use of their class time, Jamie created a private class blog (accessible only by class members) for the discussion schedule and for students to post their topic prior to class discussion. After students led their
discussion, they were to post a one paragraph reflection on the discussion.

What happens is each day, one student is responsible for leading a discussion. So they bring in a topic that they want to discuss, and the day prior to that, they post on the blog like a link to a video or a link to a website, and a little paragraph . . . It’s been working well. Everyone’s been posting a day before. Occasionally people comment on the blog, but more often than not they come with a little bit of preparation. So that’s the main use of the blog right now. (Interview 1: [00:11:20.27])

In addition to the class/discussion topics, Jamie also created a category called “ethnolinguistic investigations!” on the blog (see Figure 4.5), where she hoped her students would become cultural linguists to bring in their observation or investigation about language use and share it with the class. However, Jamie did not see students responding to that category as she hoped they would.
these investigations which is the idea of not only are we learning the language, but we’re learning how language is used. ... And I really want them to bring these, but am having trouble getting them to bring them. And I didn’t want to require it cuz I’m already requiring the discussions but I really liked this idea ... So I really wish they would bring more of these examples. (Interview 1: [00:55:32.22])

Figure 4.5. Ethnolinguistics Investigation: Verbing Noun

The class blog started out with only two major categories (Discussions and Ethnolinguistics Investigation), but as the semester progressed, Jamie added a few more categories (Audio-Assignments, Meta-discussions, Pronunciation, and Vocabulary) to it when she saw a “legitimate opportunity” for them. Jamie used the Vocabulary category (see Figure 4.6) for an example to talked about the key with technology is to keep an open mind and being flexible with her plan with technology..

And I think the big part of it is just to keep an open mind. ... So they have an audio, not just a handout that lists the word, but they have the audio version of the words as well. And that’s something I didn’t consider doing at
the beginning of the class . . . So I think that flexibility is probably the key with technology. Because you don’t know what’s gonna work or what’s not gonna work. When new things present themselves, give them a try I guess, hopefully. (Interview 1: [00:30:52.14])

![Figure 4.6. Vocabulary from Cosmetic Surgery Discussion](image)

Figure 4.6. Vocabulary from Cosmetic Surgery Discussion

The class blog also became a way for Jamie to collect class assignments. From class topic table, we can see that there are multiple instances where Jamie asked the students to post assignments on class blog. For example, in a post teaching log, Jamie gave her reasoning below.

In order to further their exposure, I asked each student to look on iTunes or the Internet for a podcast that interests them and post it to the blog. I’m not going to use this as a way for them to e-discuss the blogs, I’m using it so that 1) I can ‘collect’ the assignments (meaning I know who completed the task and also I collect the interests that are represented) and 2) they have a deadline to stick to so that they can be sure they’ve completed the assignment before the next class. (Log 0315)
4.2.1.6.2 Multiply.com. Multiply.com is a social networking service that allows users to share media (photos, videos, blog entries) with their people network (contacts). Figure 4.7 illustrates the interface of user’s site on Multiply.com.

![Multiply.com screenshot](image)

Figure 4.7. Multiply.com screenshot

There were three audio-recording assignments for this oral communication class. In terms of collecting assignments from students, ANGEL and the class blog were less than ideal for collecting students’ audio-recording assignments for reasons such as course space limit and privacy. Jamie had previously learned from her colleagues about Multiply.com being an easy website to upload videos and thus decided to use Multiply.com to collect students’ audio-recording, while at the same time attending to students’ privacy.

So it’s really up to the student how much privacy they want which I think with the blog, I couldn’t figure out a way to post it in the blog and then block it. You know, if it is posted in the blog it will be available to the whole class regardless. So I thought about the privacy issue was something I try to
at least be sensitive to. Because this way it’s up to the students if they want peers to listen they can, and if they don’t want their peers to listen they don’t have to. (Interview 1: [00:14:07.18])

4.2.1.6.3 Screencast-o-matic.com. Screencast-o-matic.com was a website Jamie learned from her supervisor. It allowed one to record their desktop. Jamie used it to give students feedback to their audio-recording assignments. She would transcribe all or parts of student’s audio-recording that students needed to work on, and then audio record her comments. This way, students received individualized visual and audio feedback, and could practice right along with Jamie’s recording (see Figure 4.8).

![Figure 4.8. Screencast-o-matic.com feedback](image-url)
So what my plan is to do with those audio assignment is to transcribe the material and have a word document to give back to the students, and then audio record my comments saying “ok when you said this here this was the issue with this word this is how that word should sound”. So they’ll be able to see the word physically in the transcript and then also to hear my notes about it. (Interview 1: [00:14:07.18])

Figure 4.8 is an example of how Jamie used Screencast-o-matic.com to record her desktop and narrative to give student feedback on their audio-recording assignment. In the recording transcripts subsection, Jamie typed out transcripts of student audio-recording assignment, and highlighted parts that she perceived might need improvement and provided written feedback on the left. Directly below the transcripts is a subsection for pronunciation practice where Jamie listed the words/sounds that students were having problems and gave them examples to practice.

In addition to using Screencast-o-matic.com to give student feedback on their audio-recording assignment, Jamie also used it to record the vocabulary in student-led discussions and then posted them to class blog as mentioned in the class blog subsection. Jamie did the same thing to record consonants/vowels that the majority of the students have problem with, and put the recordings under the Pronunciation category on class blog (see Figure 4.9).

4.2.1.6.4 Podcast In the first audio-recording assignment, students were required to record themselves talking about their phobias, whereas in the second audio-recording assignment students were required to do a review on something (e.g. book review, movie review, or restaurant review). However, Jamie seemed to not be thrilled by the first two audio-recording assignments students handed in because most of the students’ assignment had “a vaguely defined purpose and somewhat unclear audience”. Jamie recognized that the nature of the two audio
Figure 4.9. Pronunciation recording using *Screencast-o-matic.com*

assignments was "very artificial" and mentioned "In what context do you ever have to record yourself talking about your phobias (audio assignment #1) for one other person (i.e. an instructor) to listen to?" (log 0313).

She tried to give some sort of purpose for the second assignment to make it less artificial. However, many students turned in assignments very similar to the first assignment with a vaguely defined purpose and unclear audience. Therefore, podcast was introduced to the class as the third audio-recording assignment in an attempt to make the assignment "less artificial less classroom-based" to "get the students more fully engaged with what they’re producing”.

For the third assignment, a podcast, I want to try to get the students more fully engaged with what they’re producing. Yes, this is an assignment for a class – I understand that. And, yes, some students will most likely turn in a near identical type performance to their first and second assignments. But I do think trying to analyze a genre before creating an example of that genre will require students to think more before producing. [log 0313]
To help students create their own podcast, Jamie worked in a series of podcast activities into the course schedule (see Table 4.3). Since Jamie wanted the students to analyze the genre before producing the podcast, it prompted her to create categories (content/topic, purpose, style, participants, and media) to "listen for" when listening to a podcast. She selected four podcasts then used them and the category she created as a podcast crash course to introduce the podcast assignment on March 14. She then asked the students to find podcasts of interest and post them on the blog. Lessons on pronunciation, intonation and stress of speech were then developed utilizing the podcasts students found. On March 23, Jamie took the class to a computer lab and walked them through creating mini-podcast, giving students hands-on experience in creating podcasts. Jamie also posted podcast tutorials on class blog in case students needed them (see Figure 4.10).
Before the podcast assignment was due, Jamie reserved a computer lab for four days, and made herself available for two and a half of those times to be there in case students need help with creating podcast. The students’ final product will be discussed in more detail in the student engagement subsection.

4.2.2 Analysis of the Case.

Technology in Jamie’s class was being used to assist classroom activities, bring in multi-modal learning, and get students more engaged in her American oral English for academic purposes class. Jamie’s pedagogical decisions on technology activities can be represented in Figure 4.11. Technology, along with the teacher and the students, contributes to learning goals of the class.

The oral communication class, as mentioned earlier, was without a textbook. Therefore defining students’ learning goal and consequently “what to teach” became the top priority. Jamie implemented the notion of “designing to students” in her class and worked with her students to co-construct the curriculum. Once learning goals were decided, Jamie adopted computer technologies to help to achieve those goals. For Jamie, a novice in the teaching profession, she was able to “see legitimate opportunities” of where technology would work after she became comfortable with “basics of teaching” (being in front of the class and preparing activities). The ability to “see legitimate opportunities” also came from her past experience of how she as a learner learned in class, from her teachers’ use of technology in class, and from her colleagues. Jamie was not teaching in her first semester in graduate school. The first semester where Jamie was only a student had helped her to experience how different professors used the university’s course management system differently. That experience helped her to
Figure 4.11. Jamie’s pedagogical decisions on technology activities in her oral communication class

examine what was helpful or not helpful to her as a student. Her professor’s use of the university’s course management system in turn became the model that Jamie learned from. Hearing and learning from her colleagues use of technology was one other source for Jamie to see how technology could fit into her class.

Jamie thus brought in blog and Multiply.com to assist classroom activities such as preparing of class discussion and managing students’ audio-recordings. Screencast-o-matic.com was used as a way to give student individualized multi-modal feedback with both visuals and audio. Podcast assignment was designed to engage students and to get them to actively think about genre type and their speech production. A key point with technology integration, according
to Jamie, was to be flexible with your plan with technology. “Because you don’t know what’s gonna work or what’s not gonna work. When new things present themselves, give them a try I guess, hopefully” (Interview 1: [00:30:52.14]). Jamie had not envisioned the class blog to serve purpose other than facilitating discussion, and yet the class blog had evolved to serve other purposes over the semester when opportunities came along.

To the students, computer technology then becomes yet another medium through which they could learn and use the language. Jamie had hoped that by incorporating technology into the classroom, she could encourage her students to think about school work as being less narrow and less static, and to show that it is more than just black text on a white piece of paper. Through this medium, Jamie hoped to “motivate the students, deepen the knowledge gained and to make assignment less artificial, less classroom-based” (Interview 2: [00:35:06.11]). Jamie’s role in this class then became a coordinator who sees the needs of the students and then brings in technology to help achieve their goals.

4.2.3 Student Engagement Triggered by Technology Activities.

Student engagement and participation triggered by technology activities designed by the teacher is documented in this subsection based on Jamie’s reflection, student assignment, and my observation.

4.2.3.1 Blog. Jamie started the class blog in mid-January (one week after Spring semester started) mainly to facilitate class discussion. The student who was leading the discussion was required to post discussion topics before discussion takes place in the classroom, and other students needed to check the blog so that they had an idea of the topic being discussed (see Figure 4.12. It
was basically being set up as the course reading.

...if we treat this as the reading for the class, if you come and you realized you haven’t watch the video or you haven’t read the blog post, and you can’t contribute. Then it makes that conversation less comfortable. So hopefully that would encourage people to do it. (Interview 2: [00:30:47.01])

Figure 4.12. Discussion Topic on American Image

Jamie did not expect her students to comment on the blog because she wanted the students to have the discussion in the class, but she expected her students to check it before coming into class. However, as the semester progressed, Jamie was surprised to learn that the number of students who came into the class knowing the discussion topic dwindled quickly. Although, Jamie required students to post a discussion topic and to check the class blog for discussion topics, it was not a firm requirement. In addition, most of the topics were relatively broad such that even if students did not look at the post, they could still easily talk about the topic in class.
In addition to class discussion, one of the categories Jamie set up on the class blog (Ethnolinguistic Investigators) received minimal attention from the students. Jamie originally created that category hoping her students could bring in their observation of language use, but that never happened. All the posts in that category were posted by Jamie. The class blog ended up being a repository for things Jamie and the students did in class, which Jamie considered to be beneficial to the students.

But I do think what ended up being a successful use of the blog is kind of using it as a repository for things we did. . . . having a syllabus where you can go back and see oh this is what we did this week. But instead of it just being written there, you can click on a video or you can click on a link, you know it will be able to remind you what we did and then also refresh your memory on those words are pronounced, what that topic was about. . . . It becomes like a physical manifestation of where we have been. . . . Which I think is nice for students. (Interview 2: [00:13:16.00])

4.2.3.2 Podcast. For the podcast audio-recording assignment, Jamie reported that she received a large amount of positive feedback, but “not necessarily from the learning standpoint, from like a motivation standpoint.” For the podcast assignments, students were to work in groups to produce a podcast on the topic of their choice. The content, purpose, style, participants, and media were to match their chosen topic.

The level of enthusiasm students put into the podcast assignment differed from the previous two audio-recording assignments according to Jamie. Over all, students produced podcasts in a variety of genres (see Table 4.4), and they were able to grasp the idea of different language use in different settings, which is exactly what Jamie wanted the students to do—analyzing speech genre and reproducing it. There were two exceptions that did not quite meet Jamie's
expectation of the activity. Group 3 did a job interview demonstration and yet it was not clear who their target audiences were. Group 4 somehow found a podcast script from the Internet, and then just created a podcast by reading over the script.

Table 4.4.  
Student podcast topics

<table>
<thead>
<tr>
<th>Authors</th>
<th>Podcast Topic</th>
<th>Style</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Car technology show</td>
<td>Tech news interview</td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>What do you think about (every day topics)? Music</td>
<td>Music commentary</td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>Job Interview demonstration</td>
<td>Interview</td>
<td>Target audience not clear</td>
</tr>
<tr>
<td>4</td>
<td>International travel program</td>
<td>Interview</td>
<td></td>
</tr>
<tr>
<td>5</td>
<td>Being creative radio show</td>
<td>Interview</td>
<td>Script from Internet</td>
</tr>
<tr>
<td>6</td>
<td>Marriage customs (cross cultural)</td>
<td>Conversation</td>
<td></td>
</tr>
<tr>
<td>7</td>
<td>Newscast: catastrophe at Old Main</td>
<td>Interview</td>
<td></td>
</tr>
<tr>
<td>8</td>
<td>Sports news: soccer</td>
<td>Interview</td>
<td></td>
</tr>
</tbody>
</table>

I have listened to the podcasts of the 8 groups, picked one group that produced the most impressive podcast (I do not have access to students’ previous audio-recording and thus could not do comparison of their assignments), and transcribed it below. Group 7’s podcast was a newscast reporting breaking news on a plane crashing into Old Main. The three students in the group played the role of the newscaster, the anchor, and the expert. This was also the group Jamie referred to in the exit interview.  
Group 7 podcast transcripts:

[breaking news music]
Newscaster: This is Davi. A hard find this afternoon for residence and students at state college. A giant controlled research plane crashed into the Old Main building and outdoor stadium and burst into flames. Eye-witness student said that at least 30 students are injured. Now go onto Ying on the field. Hi Ying, how things going there? Can you explain to us how did it happen?

Anchor: Hi Davi, now everything is under control but people are really scared. Although the Old Main building doesn’t look good. We have a lot of ambulance and the fireman had already controlled the fire. And now we are at the crash scene with the research leader Dr. Ahmad. So Dr. how do you explain this situation?

Dr: At first in name of my research, we are so sorry about this situation. We hoped that people who got injured get better as soon as possible. Our research team was trying to do flight test as a scheduled process of our project. We follow all the safety procedures that we had done before.

Anchor: If you follow everything as normal how it happened?

Dr: Before doing flight test in the west field, our plane took off without a problem. We did the project experiments as planned and left the blimp charring the engine batteries. The west fields were reserved for it. Should have nobody died. But apparently a bunch of kids playing Frisbee accidentally relive the blimp without enough power to start it engine.

Anchor: So the plane just fly away without control?

Dr: Yeah, exactly. We weren’t able to land the blimp properly.

Newscaster: I’m sorry to interrupt, Ying. But don’t you think it is the supervisor’s responsibility?

Anchor: Absolutely. Davi. We all agree, and the audience as well. Dr. is your team’s responsibility to make sure an accident like this won’t happen? Don’t you think?

Dr: I know that it is our research. But how could we imagine that someone will play Frisbee in a closed area with a lot of warning signs?

Anchor: was someone there watching you doing?

Dr: No.

Anchor: So it’s your fault Dr. Ahmad.

Dr: Ok I don’t want to talk anymore. Who are you to say something about my responsibilities? You are nothing!

Anchor: please be calm, this is just a report. You should accept the consequence of your act.
Dr: Shut the f*** up! Get out of here! Stop this recording! Stop it!

Anchor: Let’s go back to Davi. What do you think about this reaction?

Newscaster: Ying, I’m certain that if he continues to think like that his next disaster will be as big as Chernobyl. But I’m glad that nobody got killed this time. Ok continue of the news, the weather today is....

[end of podcast]

Students were able to mimic the intonation, speed, and style of newscast while infusing the podcast with a certain level of humor. In the exit interview, Jamie specifically commented on how Group 7 met her intentions of the activity.

I was very pleased. ... the plane crash into Old Main. ... It’s a mock newscast. And somebody was the newsman who’s sitting at the desk. And then they throw over to a reporter who’s like I’m here at the scene. And all three of them talked really really quickly but in real life they don’t speak that quickly. So they were actually putting on like characteristics of the newscast which I commented on their feedback, and they wrote back like “yeah, we practiced a lot to get to that speed because we know newscast is like this” which is nice... it was really impressive how they adopted it to make them sound more like that type of genre, which I think nothing like that really happened in the audio assignments that we’re doing on Multiply.com where it’s just you can talk into your computer. (Interview 2: [00:03:09.13])

Although Jamie found that one group of students recorded a podcast using a scripts they found on the Internet, Jamie thought that the podcast assignment worked very well not only from the motivation point of view also from a learning point of view.

4.2.4 Modification of technology activities based on perceived activity outcome.

Because Jamie perceived the podcast assignment to be successful, the major modifications she would make relate to how the class blog would be used if she
taught this course a second time. Two issues that were prominent with the blog use were: 1) as the semester proceeded, fewer and fewer students checked the class blog before coming into class, and 2) the disconnect between the activities on class blog and in classroom. Jamie thought the reason why the blog “failed” was that she did not required the students to check the blog. In addition, because of the nature of this oral communication course, many of the students feel comfortable just coming into the class and discuss on discussion topic without preparation.

It’s like here’s a way for me to collect assignments. And then of course, the second part of that is that it’s a dropbox your classmates can see. So I think that’s really where the blog...failed, I’ll say, is that I didn’t required the students to check the blog. So that it became up to them. (Interview 2: [00:13:16.00])

As mentioned in previous subsection, the “Ethnolinguistic Investigator” category on the blog never really worked as Jamie had imagined. Jamie thought about emphasizing that section a bit more, giving multiple example of what she meant, and even changing the name of the activity to promote more engagement.

Ultimately, Jamie would like to build mini-lessons around students’ discovery. Jamie had her revised plan below

But it’s way of collecting them and to build mini lessons on them, that didn’t happen. ...it was like do this, and report on it. So I thought that something like that could work throughout the semester. And the ideal would be for people to post those on like a Monday and then for me to choose a few and to make part of the Wednesday and Friday’s lessons based on those. (Interview 2: [00:23:11.02])

Jamie thought of approaching these two issues more from a curriculum design perspective; namely, establishing a norm of using the class blog early in the beginning of the semester to connect the blog with the classroom.
...I would flip the class. So that I would take the first half, and the second half of the semester will be student-led. ...I think in that way, I could use the blog in the first half of the first semester for theses mini-assignments. ...Then I think if we got into the habit of checking it because the discussion is depended on it. Then by the second half of the semester, hopefully the habit will be formed of using it like in more integrated way. (Interview 2: [00:13:16.00])

4.3 David and his American Oral English for International Teaching Assistants Class

In this case, we will see how David, a part-time instructor at the International Teaching Assistants (ITA) program at a large university, integrates web-based technology/resources to manage class and facilitate teaching in his level 3 American oral English for ITA class.

4.3.1 Background

The ITA courses offered by the Department of Applied Linguistics at the university were specifically for international teaching assistants who needed to improve their speaking and presentation skills. Students enrolled in ITA courses according to the results of their American English Oral Communicative Proficiency Test (AEOCPT) administered by the department. Three levels of courses were offered: level 1 for low-intermediate, level 2 for intermediate, and level 3 for advanced non-native English speakers. The course David taught was a level 3 class. The level 3 class was designed to provide English language instructional support for advanced non-native speakers of English who needed to improve their communication effectiveness in order to become teaching assistants. Following is the course description from the program website.
Through various language related activities, students will increase the intelligibility of their speech by improving their pronunciation of American English. To do this, they will develop an acute awareness of their own strengths and weaknesses as a communicator in real and simulated instructional contexts. They will also develop effective oral communication strategies necessary for interaction with individual students, small groups, and large classes. Students will learn about American cultural traits and underlying assumptions as they pertain to communication in the university-level classroom. By the end of this course, students will have improved their overall communication effectiveness to carry out their future teaching assistants responsibilities successfully.

ITA courses had a predefined curriculum: all course learning objectives, major learning tasks and assignments were predefined by the program. There is also a required textbook, *Success with Presentations: A Course Workbook for Nonnative Speakers of English*, which was geared more toward business presentations. As a result, instructors need to adapt the content to academic settings from time to time. Although ITA courses have predefined curriculum and a general outline to follow, according to David, he had freedom over how he planned and teaches his course.

...I have complete freedom. That's what I feel at least. I have to use this textbook. And this is the general outline that she would like us to follow. And we do need those microteaching tasks and the case studies. I think other than that how we plan it...I didn’t have this information [course outline] yet. So we’ve been behind a little bit. And she [the supervisor] said that it’s fine, as long as you are doing what you think as appropriate. (Interview 2: [00:05:06.23])

The class was a three credit intensive summer session course that met for 75 minutes from 9:35-10:50 every Monday, Tuesday, Thursday, and Friday for 9 weeks.

4.3.1.1 The teacher. David held a bachelor degree in foreign language education (French), and a K-12 teaching certificate in French education. David’s
language teaching experience came from teaching first language skills to American children who had trouble reading and writing in a learning center every summer during college. After graduating from college, David taught French for three years at a high school. He then went to Japan, and taught English in elementary school there for two years. David decided to go back to school after returning from Japan. He was a second year Ph.D. student in Applied Linguistics at the time of the study. David taught ESL through the department while pursuing his doctorate. He had taught two levels of ESL composition courses offered to undergraduate students, level 1 ITA course before, and a level 3 ITA course at the time of the study. Taken together, David had seven years of teaching experience since he started teaching high school French. This was his first time teaching the level 3 ITA course.

4.3.1.2 Technology training. David had never taken technology or educational technology courses when he was in college, but he reported that he began incorporating technology into his teaching when he first started teaching French at the high school. When David was in college, the state government required that all teachers have technology certification. By the time he graduated, the state government considered technology skills as embedded in his education and thus he was technology certified.

The only one formal educational course David took was a course on technology in foreign language teaching in his Ph.D. program. In addition to the formal educational technology course, David also learned new ideas informally from an online foreign language group, and from peers and colleagues. David was mainly active in the foreign language group when he was teaching French, but he still sometimes read posts in that group. He would sometimes
learn new ideas from them because people in the foreign language group were constantly asking questions and sharing. In terms of obtaining information and ideas about technology integration, David mentioned that he liked to “hear from other people what they’ve done”, to learn from others’ experiences.

...Yeah, I don’t do too much like just exploring on my own to see what there is. I like to hear from other people what they’ve done. Cuz then you know there’s a better chance of being successful that sort of thing. (Interview 1: [00:42:59.13])

4.3.1.3 How David started to incorporate technology in his classroom. Having access to technology resources is an important factor that influenced David’s technology use in his classroom. According to David, when he started teaching in high school, the school was very keen on incorporating as much technology as possible. The school had computer labs in the high school, and every classroom had a projector, TV, VCR, and a teacher computer hooked up to the Internet. David’s own personal experience with technology along with having the access to technology made technology integration seem to come naturally.

I think it started based on the resources that I had. And yes, naturally I guess. Because I went to college and I grew up with technology more so than people from previous generation. So it was very easy to use it. And because it was there I can use it when I needed it or when I wanted to use it. If my school hadn’t had a projector system in every classroom, hadn’t had it linked up with a computer, and hadn’t had Internet readily accessible, then I probably wouldn’t have sought out those kinds of technology to use. (Interview 1: [00:13:56.26])

David originally held the opinion that “one should not use technology just to use it.” However, that belief had changed to “it is good to just incorporate it whenever possible” because students needed to learn how to use it appropriately
and effectively in their academic life and hopefully later on in their work life.

And so that seems like my opinion. Originally it was very strong like why use technology unless it really supports the activity that you want to do. It’s kinda changed because it is important to just have technology there so students become use to it. ... Yeah, so I guess my opinion has slightly shifted from a very strong like why use it unless you need it to it is good to just incorporate it whenever possible. (Interview 1: [00:16:27.16])

Having access to technology and David’s belief about using technology combined together to influence his decisions on technology integration when new things present themselves. David also reported that experimenting with new technology was one way for him to see how it could be used in class.

...having the access does influence me to use it more ... I don’t have to work it’s here. And because there’s this technology iPad so it does make me think [how can I use it in my class]. So I guess in that sense it’s influencing me to consider the possibility of using that in the classroom. So as technology comes along how can they be used. (Interview 1: [00:32:40.21])

4.3.1.4 The learner. There were 7 students in David’s level 3 ITA class. The majority of the students were of engineering or science background. All of them were male students from East Asia: one from South Korea, five from China, and one from Taiwan. Students were placed into this class according to the level of their English oral language skills. Three of the students were in David’s previous level 1 ITA class.

David had mentioned that for level 3 class, it was more about “working on what they already have, refining it, supplementing a little it, and then making it into a new teacher.” Students come into his class with different language skill sets, and he is there to help them to hone the skills they already have.

...So this class is an oral class ... But also a teaching class...teaching them how to be good teachers. And also they’re advanced. So I would say it’s
actually less about specific linguistics skills and more about making the language skills they have sharper, and then making them into teaching skills. Like adapting what they already have and supplementing it so that they can turn their use of English into something enables them to be good teachers. (Interview 1: [00:11:35.21])

4.3.1.5 **The classroom.** Figure 4.13 illustrates the physical environment of the classroom. David’s class met in an instructor technology classroom (according to the classroom classification of the university). Features of the classroom included: instructor podium with either a Windows, Macintosh, or Linux computer (or combination), internet connection, plug-in capability for an instructor-supplied laptop and USB devices, a remote/wireless mouse, a ceiling-mounted video/data projector, an audio system for multimedia presentations, a VHS/DVD combo unit, an audio/video Switching System, and room lighting controls. A help phone was available in the classroom in case instructor needed immediate help with the equipments in the classroom. A wireless network was available in the building.

There was a computer lab right across the hallway from the level 3 ITA class, which was rarely used by students because there were fewer students on campus during summer. In the beginning of the summer session, David would move his class to the computer lab if there was nobody in the computer lab and if he had plans for students to use computers. However, three weeks into the summer session, a class was meeting in the computer lab at the same time of David level 3 ITA class. David could no longer move his class to the computer lab when he wanted to. When David wanted to officially reserve a computer lab for the class, he had trouble reserving one. David attributed the difficulty to the lab reserving system.
4.3.1.6 The activities. Level 3 ITA course had pre-defined curriculum with prescribed learning tasks, and assignments. For this class, students were required to complete the tasks and assignments listed in Table 4.5. Although the learning tasks/assignments were prescribed in the level 3 ITA curriculum, David had freedom as to how he planned and implemented those tasks and assignments. The class activities can be found in Table 4.6. There were several technology resources David incorporated to this level 3 ITA course to 1) manage the class and to 2) facilitate his teaching. Table 4.7 listed the technology activities and resources in David’s class. The following section provides description of the technology resources according to device, website, and activity.
Table 4.5. 
*Level 3 ITA Tasks and Assignments*

<table>
<thead>
<tr>
<th>Task/assignments</th>
<th>Description</th>
<th>note</th>
</tr>
</thead>
<tbody>
<tr>
<td>4 micro-teaching tasks</td>
<td>Monologic presentation</td>
<td>All micro-teaching tasks will be video-recorded</td>
</tr>
<tr>
<td></td>
<td>Lab role play</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Dialogic presentation</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Office hour role play</td>
<td></td>
</tr>
<tr>
<td>4 practice audio</td>
<td>Each student must practice and receive teacher feedback on his/her oral</td>
<td>Practice recording is added by David as a way to make sure students</td>
</tr>
<tr>
<td>recordings</td>
<td>production by recording the 4 micro-teaching tasks before performing them for</td>
<td>spend time working on the assigned task</td>
</tr>
<tr>
<td></td>
<td>a grade</td>
<td></td>
</tr>
<tr>
<td>Reflective journal</td>
<td>Each student will write at least 5 entries on their reflections of</td>
<td></td>
</tr>
<tr>
<td>entries</td>
<td>English daily conversations</td>
<td></td>
</tr>
<tr>
<td>2 Case studies</td>
<td>TA responsibility, ITA experience</td>
<td></td>
</tr>
<tr>
<td>Final reflective essay</td>
<td>Essay reflecting upon their progression throughout the course and their</td>
<td></td>
</tr>
<tr>
<td></td>
<td>English communication skills</td>
<td></td>
</tr>
</tbody>
</table>

4.3.1.6.1 *Best speaker activity.* The best speaker activity required students to go to *TED.com* to find a *TED* talk that interested them, reflect on what made the speech successful, identify a 1-minute excerpt that they would like to mimic, transcribe the excerpt, try to mimic the speaker by listen-pause-repeat and then synchronously with the speaker, and eventually present in class without the help of the video. This activity aimed to help bringing awareness to different aspects of speech such as intonation and stress that students might not normally have. David “stole” the best speaker activity from one of his colleagues. He had used it previously in level 1 ITA class with success, and decided to use it again for this level 3 ITA class.
<table>
<thead>
<tr>
<th>Date</th>
<th>Topic/Activities</th>
</tr>
</thead>
</table>
| 0611 Monday | - Course introduction  
- Get to know you activity  
- Impromptu speech: 2 minute speech to present yourself |
|          | Notes: Impromptu speech is recorded for diagnostics purpose                       |
| 0612 Tuesday | - Student information sheets  
- Diagnostics impromptu speech  
- Discussion: ITA editorial  
- Best speaker activity introduced |
| 0614 Thursday | - Discussion: University teacher  
- Multiply.com set up  
- Best speaker activity reminder |
|          | Notes: @ computer lab                                                            |
| 0615 Friday | - Best speaker activity: practice  
- Impromptu speech diagnostic |
|          | Notes: @ computer lab                                                            |
| 0618 Monday | - Best speaker activity presentation  
- Multiply.com account set up |
|          | Notes: Multiply.com account set up at computer lab                                |
| 0619 Tuesday | - Textbook: audience analysis  
- Genre activity  
- Introduce MiCASE |
| 0621 Thursday | - Homework: MiCASE excerpts  
- Formal vs informal speech  
- Textbook: textbook summary (ppt) |
| 0623 Friday | No class                                                                        |
| 0625 Monday | - Genre activity  
- Textbook: simplicity, clarity, short transition (textbook video)  
- Word list practice: micro-teaching task A |
| 0626 Tuesday | - Textbook: video  
- Micro-teaching task A: rehearsal video analysis  
- Textbook: rhetorical question  
- Pronunciation practice |
| 0628 Thursday | - Micro-teaching task A: presentation followed by comments |
### Table 4.7.

**Technology activities and resources in level 3 ITA class**

<table>
<thead>
<tr>
<th>Day</th>
<th>Activities</th>
</tr>
</thead>
</table>
| 0629 Friday | - Textbook: Unit 4 clear explanation  
- Impromptu presentation activity  
- Textbook: video (transition/explanatory language)  
- Pronunciation: vowel |
| 0702 Monday | - English questions  
- Textbook: video  
- Redundancy activity  
- Textbook: recovery tactics (edit recovery tactics together) |
| 0703 Tuesday | - English questions  
- Textbook: impromptu student presentation on unit 2 (ppt) and unit 5 (blackboard) |
| 0705 Thursday | - English questions  
- Discussion: active lecturing (U of Minnesota website)  
- Pronunciation practice  
- Game: impromptu speaking |
| 0706 Friday | - English questions  
- Textbook: effective visual aids  
- Teaching in the US: Youtube videos (dead poet society) |
| 0709 Monday | - English questions  
- Textbook: unit 7 understandable delivery  
- Effective fillers: (edit effective filler list together)  
- Emphasis on speech: Youtube video (JFK ask not) |

<table>
<thead>
<tr>
<th>Technology resources</th>
<th>Purpose of the technology resources</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Activity</strong></td>
<td>Best Speaker</td>
<td>practice pronunciation, intonation, and stress of speech</td>
</tr>
<tr>
<td><strong>Website</strong></td>
<td>Michigan Corpus of Academic Spoken English (MICASE)</td>
<td>develop understanding of genre</td>
</tr>
<tr>
<td></td>
<td>Multiply.com</td>
<td>manage student video recordings</td>
</tr>
<tr>
<td></td>
<td>Screencast-o-matic</td>
<td>give student feedback</td>
</tr>
<tr>
<td></td>
<td>UMN Center for Teaching and Learning</td>
<td>discuss the notion of active teaching</td>
</tr>
<tr>
<td></td>
<td>Youtube</td>
<td>use movie clips identify/abstract ideas</td>
</tr>
<tr>
<td><strong>Device</strong></td>
<td>iPad</td>
<td>record student speech for immediate access by the students</td>
</tr>
</tbody>
</table>
4.3.1.6.2 Michigan Corpus of Academic Spoken English (MICASE). The Michigan Corpus of Academic Spoken English (http://micase.elicorpora.info/) is a collection of nearly 1.8 million words of transcribed spoken speech from a variety of academic settings from the University of Michigan (see Figure 4.14). Users can perform search and browse function according to speaker attributes (academic position/role, native speaker status, first language) or transcripts attributes (speech event type, academic division, academic discipline, participant level, interactivity rating) of the speech. MICASE was used in level 3 ITA class to develop understanding and raise awareness of different types of genre.

MICASE was listed on the general course outline David received from his supervisor. During the time of my observation, David showed MICASE to students in class once and developed an activity using the transcripts on MICASE for a discussion of genre in class.

Figure 4.14. MICASE
4.3.1.6.3 Multiply.com  Multiply.com is a social networking service that allows users to share media (photos, videos, blog entries) with their people network (contacts).

The learning tasks and assignments of Level 3 ITA course produced a good amount of videos. The course management system of the University was deemed not suitable to host student videos because of the course space limit. Multiply.com was chosen by David as the site to host all video recordings as he had previously heard successful story from his friends who had used it. In addition to using Multiply.com for managing video recordings, David had also envisioned the site to be a level 3 ITA online community where students could comment on each other’s work. Although David had envisioned the site to be a community online, he had doubts about the idea since it seemed “contrived.” David tried commenting on some of the students’ work, but he did not require students to comment on each other’s work. Multiply.com eventually became a repository for uploads for this class.

4.3.1.6.4 Screencast-o-matic.com.  Like Jamie, David also used Screencast-o-matic.com to record his written and oral feedback for the students by showing transcripts of students’ speech (written), teacher feedback (oral), and practice words (written and oral). Figure 4.15 is a screen capture of David’s use of Screencast-o-matic.com. In fact, David was the person who came up with this idea and shared it with his colleagues in the department. He considered it as one of his successes incorporating technology into his teaching. David learned about this website from the technology course he took in the department. It makes feedback fast, and according to David, students appreciate the way their feedback is given.
And it actually really, it makes feedback so fast. . . . Because sometimes like I would write the feedback but there’s more that I wanted to say but it’s hard to type it out, but if...it’s easier somehow if I actually say it. So that made that nice. So then they’re getting the visual of seeing the feedback me clicking or highlighting where I’m talking about and then they can hear. (Interview 1: [00:29:39.22])

Figure 4.15. David’s use of Screencast-o-matic.com

4.3.1.6.5 University of Minnesota Center for Teaching and Learning. The University of Minnesota Center for Teaching and Learning website (http://www1.umn.edu/ohr/teachlearn/index.html) contains several self-paced tutorials on topics relating to teaching and learning. The part David used was the section for Active Lecturing: The potential of Powerpoints (http://www1.umn.edu/ohr/teachlearn/tutorials/powerpoint/lecturing/index.html). The website was listed on the general course outline David received from his supervisor. David used it as a springboard for a discussion on best practice of using Powerpoints in classrooms (Figure 4.16)
4.3.1.6.6 Youtube. David had used two Youtube video clips in his class help students identify abstract ideas that they can bring to their teaching, and to supplement textbook material. The educational cut of the movie Dead Poet Society was brought into the class when the class was having a discussion on US teaching style. When meeting with his supervisor, David’s supervisor suggested that he could have the class watched the entire movie and then had discussion on it. Instead of watching the entire movie, David found educational cuts from Youtube and then brought those segments into class because of time considerations.

The textbook for level 3 ITA course had a famous quote of President John F. Kennedy from his inaugural address (Ask not what your country can do for you...). David thought there definitely would be a recording of this speech available, so he went and found the clip and brought it in as a real demonstration of how emphasis is used in speech.
4.3.1.6.7 iPad. When I first contacted David to recruit him in this study, David volunteered and mentioned that he was actually interested in experimenting with iPads for his level 3 ITA course. David learned that the Media and Technology Support Services of the University had iPads available to check out for instruction purposes, and wanted to make use of those readily available tablets in his classroom. David’s plan for the iPad was to combine it with Multiply.com for easy upload and immediate access of student video recordings so that the students could watch their or others’ presentation and reflect on their own strengths and weaknesses. However, there was an unforeseen technical issue with iPad and Multiply.com.

So I was ideally seeing I staying in the classroom, I check out 7 iPads and then we can all sort of sitting class, they had their headphones, they can be watching the video, and then they can record themselves and upload right from the iPad, and then listen to each other and then give comments and feedback. Like that to me seems pretty cool thing to be able to do. But flash doesn’t work on iPads. So I don’t know what I’m going to do… (Interview 1: [00:21:26.11])

iPads could upload videos to Multiply.com fine; however, videos on Multiply.com were played in flash but the iPads did not support flash. Knowing that many of the websites had their own app for accessing their materials (e.g. Youtube) as a resolution, David tried to find other apps that could solve this problem, but he was unable to find any. As a result, there was no way to view the video recordings directly from the iPads. As much as David liked the idea of easy upload and immediate access, he made a decision on whether or not having in-class videos on Multiply.com was important after his first attempt to use an iPad to record students’ presentation on best speaker activity.

I can revert back to using my laptop to record the speeches which worked fine before (though a little awkward since the camera faces the direction of
the keyboard). I will need to find another system for giving students access to their own recordings. I need to decide the importance of having the in-class videos on Multiply.com. Perhaps, they don’t need to be there. Multiply.com can be for what is done outside of class. So then I just need to get video files to students quickly and easily which I already have a few tried and true ways to do. (Log 0618)

Since David decided that they did not need immediate in-class access to video recordings, later in the semester, David switched to digital video recorder to record student presentations on micro-teaching tasks. The plan he had in mind with immediate access to video recordings did not work as he envisioned.

### 4.3.2 Analysis of the case.

David’s pedagogical decisions on technology activities for his level 3 ITA class are illustrated in Figure 4.17. David brought technology into his class for two main purposes: management of class and facilitation of teaching.

For David, personal belief and experience, having access to technology resources, and other’s story about technology incorporation were the fundamental building blocks toward technology integration in his classroom (see Figure 4.17). David considered himself as having grown up with technology more so than people from previous generations; therefore, it was very easy for him to use technology. The change in David’s belief from “why use it unless you need it” to “it is good to just incorporate it whenever possible” also changed the way David incorporated technology into his classroom. David recognized that technology is important for most of the careers nowadays, and it is important that students learn how to use it appropriately and effectively for achieving academic tasks and work tasks in the future. David tried to create and model learning experiences for students basing on this belief. Having access to
Figure 4.17. David’s pedagogical decision on technology activity for level 3 ITA class

technology resources was another crucial factor in David’s technology integration; having the access influenced him to use it more than he might otherwise. David would not have brought in the two *Youtube* video clips on US teaching style and on speech emphasis if the classroom was not equipped with the necessary technology to make it happen. Students would then miss the opportunity to connect the things learned from textbook to real world examples. Other people’s stories about technology integration was one other source for David’s own technology integration. Hearing other people’s stories of what they had done in their class in a way helped David to envision and plan his version of the activity and thus might have a better chance of being successful.

The three factors illustrated in Figure 4.17 combined together provided the cornerstones for David’s technology integration. Moving upward to the planning
of the technology activity, it could start with the available technology and then consideration of the activity’s goals. The experimentation of the iPad for easy upload and immediate access of student video recordings (although it did not succeed) and Screencast-o-matic.com for feedback were the examples of David’s attitude that “we now have this technology available how can we use it in class.” When new things present themselves, it involved a certain degree of experimentation to make technology work in classroom. Or it could be another way around when planning the technology activities—having the activity’s goals first and then considering what the available resources were. Most of David’s use of technology in his level 3 ITA class falls into this category: MICASE for raising genre awareness, Multiply.com for hosting video recordings and student journal, the UMN Center for Teaching and Learning website for topic discussion, and the use of Youtube video clips for supporting/supplementing class topic. No matter which route David took, attention to logistics was the key that he considered during the process of designing, integrating, and implementing the technology activities. Logistics considerations included making sure items were cued up and making sure everything is working so that technology did not interrupt teaching or affect teaching negatively. If the teacher has to take extra five minutes to get things work right, a portion of the class time is wasted and flow of the class is interrupted. These interruptions could be avoided by attending to the logistics considerations of the technology activity.

Ultimately, technology was brought into David’s level 3 ITA class to help with managing the class and facilitating his teaching. Multiply.com and ANGEL were the course management systems for the class, providing a central backbone to the class and the teacher in terms of organizing instructional materials and student assignments. In terms of facilitation of teaching, in David’s own words, “it makes
certain aspects of teaching faster.” It essentially is about bringing in technology for tasks that are otherwise not achievable in class. For example, the best speaker activity using TED talks was a quick and easy way to bring hundreds of speakers into the classroom at the same time and then students were able to listen to a variety of speech and interact with it.

David’s technology integration was based on having access, his own experience and belief, and other’s stories. Those fundamental factors affected how he approached technology integration: from technology to instruction, or from instruction to technology. Regardless of which route he took, technology in his classroom helped him to manage his class and to facilitate his teaching.

4.3.3 Student engagement triggered by technology activities.

Students’ engagement and participation triggered by technology activities designed by David is documented in this section based on the teacher’s reflections, students’ assignments, and my observations.

4.3.3.1 Best speaker activity. The best speaker activity was introduced to student on Tuesday, the first week of class, and students were to present on the same Friday. On Thursday’s class, David checked with his students on the progress of the best speaker activity but found out that most students had not started doing the activity yet. David knew that the best speaker activity took a fair amount of time to complete, and if students had not started yet, chances were that they would not be performing at their best. After reflecting on it, David thought he might be going a little too fast with the class because the best speaker activity is normally a second week activity. It ended up on the first week because summer sessions are usually a very condensed semester.
David then decided to slow down the pace.

As a result, David made the decision to postpone the presentation. He emailed the class Thursday after class reminding them to bring in headphones to class on Friday so that everyone could practice at the same time. Subsequently, on Friday, David announced in class that the best speaker activity presentation was postponed to next Monday, and that they were to move to the computer lab across the hallway to practice. While students practiced, David circled around the class to talk to students about the result of their diagnostics speech, listened to students practicing their best speaker speech, and provided individual feedback for them. The class that day seemed to be a productive one. Not only were all the students in the computer lab with opportunities to practice, they also received individual feedback on improving their speech from David.

On the following Monday, students all presented their chosen TED talks. Only one student presented without transcripts, all other students presented with their transcripts. I had listened to students’ chosen TED talks prior to the class. Comparing students’ performance with their chosen TED talks, I came to the same conclusion as David that most students could have done better. For the best speaker activity, David was looking for students to practice intonation and really to try to match or mimic what the particular speaker was doing. Although students successfully mimicked some parts of the speech such as stress and pauses, for the most part, students intonation remained the same as would normally use.

David had used the same activity before with level 1 ITA class, and he reported to have better response from students. He had a student who wrote the entire script out and had it annotated, and did an amazing job mimicking the speaker according to David. However, for this level 3 ITA class, students did not
get to the level that David would have liked them to.

### 4.3.2 Websites

David used the materials from MICASE, UMN Center for Teaching and Learning, and Youtube to generate class discussions on topics that were aligned with the curriculum. Student participation for each discussion varied. The class had a good discussion on active lecturing (using UMC Center for Teaching and Learning) where everyone contributed to the discussion and multiple perspectives were presented; however, the class did not generate as much discussion on American teaching styles (using the Dead Poet Society video clip). The quality of discussion did not seem to be dependent on technology; instead, as David also mentioned, “sometimes it’s the topic, sometimes it’s the day, sometimes it’s just their mood or my mood or whatever.” Class discussion could be affected by various things not even related to the class. Thus, technology did not necessarily influence the quality of the class discussions.

### 4.3.4 Modification of technology activities based on perceived activity outcome.

The major modifications David would like to make were mainly on how the best speaker activity was presented to the students, and on his use of Multiply.com to handle students’ video recordings.

#### 4.3.4.1 Best speaker activity

As mentioned in the previous section, even though David had postponed the presentation to Monday of the second week of the class (students were originally to present on Friday of the first week of the class) and had the class practiced in computer lab, the outcome of the best speaker activity did not meet his expectation of the students. David attributed
this to how summer session courses were structured, and how the activity was first introduced to the students.

... Yeah but the best speaker activity could have been better but with this type of course, we’re condensing 15 weeks to 8 weeks. So you know it’s two weeks per week really and I think they need a little bit more time perhaps with it. And I think if I have done a demonstration, or a better planned demonstration of it would’ve been better. I definitely had a better response with this same activity last fall. I had a student who just wrote the entire scripts out and had it annotated, it was you know amazing. She was really able to practice the intonation. (Interview 2: [00:07:30.11])

When David introduced the activity to students, he pulled up the TED Talks website, explained what the website is and how to navigate through it to find the things they want, and moved onto explained what he wanted the students to do for this best speaker activity. When reflecting on the outcome of the best speaker activity, David thought there could be three reasons that affected the outcome of the activity: 1) he did not make it clear enough on the time students needed to practice to mimic the speech, 2) students might did not put enough effort into it, 3) a combination of both. As a result, the way David would approach modifying the activity is to have a step-by-step demonstration of the activity so that students could have a better idea of what was expected from the teacher.

4.3.4.2 Multiply.com. Multiply.com had turned out to be only a repository of students’ video recordings. What David had envisioned about having an online community of the class did not come through because the schedule of the class made it seemed “contrived”. The level 3 ITA class was meeting four days a week and thus an online community for the class did not seem to be in order. David thought about using another website to host student video recordings if he taught this class again.
But I did hear that one of my colleagues last semester just did use *YouTube*. And so I think if I tried it again I might use *YouTube* just because I didn’t use any of the other functionalities of *Multiply.com*. I guess we did the blog posting but that could easily be done on ANGEL, especially if I not going have them comment on each other’s. So really the whole thing that I have pictured in my head for *Multiply.com* with that community and trying to create a group, didn’t really come through. So *YouTube* might be a better option in the future. (Interview 2: [00:14:54.13])

David had not used multiply.com or *YouTube* to manage student video recordings before. It was the social networking features of the website that made David choose *Multiply.com* over *YouTube*. Now that the idea of online community was no longer a goal for David, he would experiment with the other option in the future if he ever taught the course again.
Chapter 5

Discussion and Conclusions

This chapter discusses and concludes the findings of this study. Implications of this study are also presented. This chapter then closes with limitations of this study.

5.1 Discussion

The purpose of this study was to investigate the integrated technology activities designed by language teachers utilizing web-based technology/resources to support English language learners’ learning throughout the course. By exploring technology-using L2 teachers’ pedagogical decision on technology activities in their respective classroom contexts, this study hoped to provide a holistic view of technology integration in the ESL classroom.

The research questions of this study were:
1. How do L2 teachers use web-based technology/resources to achieve learning objectives to support English language learners language/literacy development?

   A. How do technology-using L2 teachers integrate, design, and implement their technology activities?

   B. What types of student engagement are triggered by these L2 teachers technology learning activities in classrooms or virtual spaces?

   C. How do technology-using L2 teachers approach modifying technology activities based on their perceived activities’ outcomes?
Chapter 4 provided descriptions and analysis of the three participating ESL teachers’ use of technology in their classrooms. In the following section, I will try to answer this overarching research question: How do L2 teachers use web-based technology/resources to achieve learning objectives to support English language learners’ language/literacy development through cross-case comparisons. It should be noted that the results of this study were primarily based on how the participating teachers thought about their teaching: their perspectives on how they thought they use technology to contribute to language/literacy development, their perspectives on what types of student engagement occurred in classrooms and virtual spaces, and their perspectives on how they would modify their technology activities based on their perceived outcomes.

In the following discussion, the role of context in the three participating teachers’ classrooms is first addressed as the pre-requisite to understanding their technology integration. Common themes found across the participating teachers’ technology integration are then presented to illustrate the characteristics of their technology integration. The three teachers’ technology integration is discussed in terms of the relationship between technology and instruction. Finally, how teachers approach modification of their technology activities is also discussed.

5.1.1 Situating technology integration in context.

When reading the three teachers’ cases, one needs to keep in mind the curriculum, teachers’ teaching philosophy and personal belief towards technology, and their access to technology, as those factors have been found to impact technology integration in previous research reviewed in literature section (e.g., Chen, 2008; Egbert et al., 2002; Lam, 2000; Yunus, 2007). The three cases
provided descriptions of three different classrooms and thus we saw technology utilized differently by the participating teachers. From these three cases we can perceive the importance of context in affecting and understanding those teachers technology use, and that the path to actual technology use in classroom lies in teachers working with “what they have.”

Lia was the only one teacher among the three who did not have formal training in educational technology or computer courses, and yet Lia was able to incorporate *Youtube* videos as a way to cope with some of her students’ learning attitudes and to motivate and engage her students. While doing so, various strategies were built in to help sustain and enhance students’ motivation, participation, understanding of the materials, and emotional well-being. Technology incorporation was therefore rooted in her established pedagogy (attention to emotion). Technology in Jamie’s class was being used to assist classroom activities, bring in multi-modal learning, and get students more engaged in her American oral English for academic purposes class where the learning goals were co-constructed by the students and Jamie. Jamie’s role in this class became that of a coordinator who saw the needs of the students and then brought in technology to help achieve their goals. Thus, technology integration in Jamie’s class was about seeing legitimate opportunities for where technology would fit. On the other hand, David’s awareness of technology’s presence in everyday life and work along with two other factors (having access, hearing others’ story) brought technology into his classroom. Although the curriculum of the class was pre-defined, he tried to create and model learning experience for students basing on the belief that “it is good to just incorporate it whenever possible.” Technology was brought into David’s class for two main purposes: management of the class and facilitation of teaching.
Lam (2000) explored why L2 teachers do or do not use technology in their classrooms and found that the main reason for teachers’s decisions regarding technology depends on teachers’ personal beliefs in technology’s benefits. This study showed that in addition to teachers’ belief toward technology, other aspects of teachers’ belief systems such as their past learning experiences, teaching philosophy, and ideas about languages also played important roles in affecting the three teachers’ instructional decisions on technology activities. According to Brody (1998), “Teachers’ beliefs may have the greatest impact on what teachers do in the classroom, the ways they conceptualize their instruction, and learn from experience” (p. 25). Technology integration thus seems to be more than equipping language classrooms with technology tools and preparing teachers to use available technology resources. Borg (2003) used the term “teacher cognition” to refer to “what teachers think, know, and believe and the relationship between these mental constructs to what teachers do in the language teaching classroom” (p. 81). The three teachers in this study integrated technology activities into their classrooms based on what they believed are important in their belief systems. Working with “what they have” thus means situating technology integration in context, making decisions about technology activities based on their personal experience and personal beliefs, their perceived priorities and their identified concerns.

5.1.2 Emerging themes from the three teachers’ technology integration.

Although the contexts the three teachers operated under and the technology activities they incorporated were not necessarily the same, three common themes
could be found in their technology integration: alignment of chosen technology with learning objectives, use of the Internet for authentic language input, and flexibility with technology. When incorporating technologies into their classrooms, the three teachers had clear ideas as to what they want to achieve with their chosen technologies, and thus were able to align it with their learning objectives. The Internet was used by the three teachers as a source for authentic language input. With the help of the Internet, the three teachers were able to bring in language produced by real people (as opposed to textbook edited language) as learning materials for their class. Being flexible is one key point with the three teachers’ technology integration. Keeping an open mind helped the three teachers not to be confined by their original plan and thus created potential opportunities to incorporate technology in ways they did not foresee.

5.1.2.1 Alignment of chosen technology with learning objectives.

All three teachers had a clear idea in mind regarding their choice of technology in relation to their learning objectives. Lia always knew “what I want out of it (the technology activity)”. Jamie tried to see the “legitimate opportunities” for technology activities that would benefit her students. Although David’s plan about the iPad for easy upload and immediate access of students’ video recordings did not come through because of technical difficulty, David’s plan was not too far off from his learning objectives. No matter which starting points the three teachers took (from technology to instruction or from instruction to technology), they had found a way to align their chosen technology with the learning objectives they had in mind. None of them tried to force-fit technology or use technology just for technology’s sake.

Lia used Youtube videos as her listening warm up activity. She generally had
three purposes in mind for the chosen video clips: 1) raising students interest on the topic, 2) introducing the day’s class, or 3) serving as prompts for topic prompt response. During the activity design stage, one of the important keys for the selection of video clips was that, as Lia put it, “it has to generate some ideas for me.” Lia would need to be able to envision what she could use it for. If the video clip interested her, but she could not envision her class interacting with the video clip (“I need it to be something that I think students can join me”), she would abandon the video. Once a video clip is chosen, she would then “design the class according to the complexity of the video”.

Like what to do. Handouts, questions, or do I want them to repeat what the video was about or do I just want to use it as a motivator, or an introduction to today’s class, or an introduction to today’s topic prompt response. (Interview 2: [00:08:41.25])

In Lia’s case, the design and development of her Youtube video listening warm-up activity were closely tied to her purposes for using the video clips. Lia, when reflecting on her use of Youtube video clips in her post-teaching log, considered every Youtube video activity that she had used as meeting the particular learning goal she had in mind.

Podcast was introduced to Jamie’s students as the third audio-recording assignment because she wanted to create a class assignment that was less artificial and less classroom-based, and also to raise her students’ awareness to the genre type and their speech production. To that end, Jamie worked a series of podcast activities into her course schedule (see Table 4.3): podcast crash course, pronunciation lesson, intonation and stress lessons developed based on podcasts, and mini-podcast hands-on experience. Jamie even used screencast-o-matics.com to record tutorials for students and posted them on their class blog in case they
needed them. Those were the legitimate opportunities Jamie identified where technology could come in and help to achieve the learning objectives on her plan. Although two groups were not able to meet Jamie’s expectation of the activity (Group 3 with vague target audience and Group 4 with a podcast script from the Internet), Jamie considered the podcast activity to be successful. Group 7, especially, did an impressive job to mimic the intonation, speed, and style of newscast. Most of the students were able to meet the intentions she had in mind for the activity: analyzing speech genre and reproducing it.

David had mentioned to me that he was interested in experimenting with iPads for his level 3 ITA course when I first contacted David to recruit him in this study. However, at that time he did not yet know how he was going to utilize iPads in his class. Later when the class started, David revealed his plan for the iPad to me during entrance interview. He had originally planned to combine the iPad with multiply.com for easy upload and immediate access of student video recordings so that the students could watch their or others’ presentation and reflect on their own strengths and weaknesses in real time in class. The plan was the result of taking into consideration the course objective (international teaching assistant to improve their speaking and presentation skills), his plan for Multiply.com (hosting student videos), and the immediacy of the iPad (instant viewing of video recordings for everyone). Although the plan did not come to fruition due to technical difficulty with iPad and David had to revert back to using a digital video recorder to record student presentations, David clearly had the chosen technology (iPad) aligned with the course objective and his plan of the other website for the course.

The three teachers aligned the learning objectives at different levels. Lia matched her Youtube video warm-up activity with smaller scale day-to-day
objective while Jamie matched her podcast activity at the class level and David aimed at matching his use of *iPad* at the curriculum level. Regardless of the objective level the teachers aligned with, their chosen technologies were well in line with the objective they had in mind.

### 5.1.2.2 Internet for authentic language input.

Chen (2008) found that the Internet is considered by language teachers as a good resource and it provides authentic materials for language teachers. The three participating teachers also saw the Internet in the same way. In the field of language teaching, however, there have been debates on what counts as authentic materials and authenticity in recent years as the field’s understanding of language deepens (e.g., Gilmore, 2007; Roberts & Cooke, 2009). Gilmore (2007) categorized the definitions of authenticity in the literature to 8 categories and found that the concept of authenticity can be placed in the text itself, in the participants, in the social or cultural situation and purposes of the communicative act, or some combination of those. In this discussion, I adopted Roberts and Cooke (2009)’s view on authentic materials, namely that “curricular materials which draw on language data collected in real-life contexts can act as an essential bridge between the classroom and the learners’ real lives” (p.625). This definition by Roberts and Cooke (2009) helps to further our understanding the three participating teachers’ pedagogical decisions on their technology activities.

*Youtube* videos in Lia’s class provided a way to supplement the textbook with real-world authentic materials and also served to motivate her students. Through Jamie’s use of blog (specifically the discussion), she wanted to change her students’ perceptions that school work is static; the topics they discussed were living things and were more than just black text on a white piece of paper.
Similarly, the podcast was used to make class assignments less artificial, less classroom-based, and to raise students’ awareness of the language they were producing. David used the best speaker activity to bring hundreds of speakers into his classroom so that his students had real people from whom they could learn. Youtube videos real life examples became a way to help students to identify abstract ideas in the textbook.

Lia incorporated Youtube videos in her class as a way to cope with some of the IEP students’ low learning motivation to raise their interest in class and to supplement textbook materials. In addition to students’ learning attitudes, Lia also mentioned that the contents in the textbook were outdated and boring. She had been trying to find a way to cope with that situation. The freely accessible TED talks covered a wide range of topic and offered speeches given by remarkable people in their fields, which became the solution to bring in events in the outside world to her classroom. Through the use of TED talks, Lia not only was able to enhance her students’ motivation, but also to supplement some of the out-dated materials to make connections between the classroom and her students’ real lives.

The problem that Lia had in her class was exactly the reason why Jamie brought technology into her classroom.

For the most part, I think students see written text as being so static that even though I can read an article and think didn’t you guys love this article, it’s so interesting about gender and language. And regardless of what the topic is, it can be we thought of as boring. And I think that so much of we thought as boring is because it’s black text on a white piece of paper. And that on some degree shuts some students down. You know, like oh it’s homework. And that means that it can’t be interesting. And when homework becomes watch this Youtube clip, or when homework become go to this website that’s bright in color or animated or whatever. It can kinda push them to think and to realize that the things we are discussion aren’t static. They’re not just these textbook answers. (Interview 1: [00:39:13.15])
Students’ discussion posts (the “reading” for class discussion) on the class blog often contained a short paragraph for the topic they would like to discuss in class and a link to a video or a link to a website. Through real-world examples, the topics they talked about were no longer static information on papers. Similarly, one of the reasons Jamie introduced podcast to her class was because she wanted the class assignment to be less artificial and less classroom-based. Producing a podcast for an imagined audience gave the assignment, to a certain degree, a meaningful purpose to analyze, produce, and practice the language they are learning.

For David, the Internet was a way to bring examples from the outside world to his class. *TED* talks in best speaker activity brought in real speakers to serve as examples for students to learn from. David’s students were set to be ITAs after passing his class. They oftentimes had to teach in front of a large undergraduate class. To prepare students to achieve that goal, one of the tasks for those students while taking the ITA course was to become a good speaker. With the best speaker activity, students could learn from their chosen *TED* talks not only about the specific linguistic features about a good speech but also the non-linguistic features such as body languages and gestures presented by the speakers that empowered them to assume the challenge of teaching in front of a large class. The Dead Poet Society educational clip on *Youtube* helped contrast two different teaching styles in action whereas President John F. Kennedy’s inaugural address served as a powerful example to demonstrate the effect of stress in speech.

The Internet helped bring in different types of authentic language inputs that the teachers needed for their class: as topic generator for current issues, as “reading” materials, as assignment with real purpose, and as real world
examples. Technology in the participating teachers’ classrooms served as the bridge to connect classroom and school work with the real world we live in.

5.1.2.3 Flexibility with technology. “Flexibility is the key with technology” according to Jamie, which she mentioned when she talked about how their class blog had started only with two categories and ended up in six major categories. The idea Jamie tried to express was the “it is not problematic to introduce something new.” Although flexibility with technology was the theme that emerged from the data, it had different manifestation in the three teachers’ technology use. For Jamie, her flexibility was more in terms of adapting her original plan for technology use when she saw a good fit of the technology with learners’ need. On the other hand, for Lia and David, flexibility with technology to them was the impromptu technology use in class. Another type of flexibility was David’s experiment with the iPad. David was open to experimenting with different technology options; if one did not go well as he envisioned, there was always another way around it.

When Jamie first started the class blog, she only had two major categories (Discussions and Ethnolinguistics Investigation). As the semester progressed, Jamie added a few more categories (Audio-Assignments, Meta-discussions, Pronunciation, and Vocabulary) to it when she saw “legitimate opportunity” for them.

And that’s something I didn’t consider doing at the beginning of the class. But then you get a couple of questions during the class is it mo.nar.ky or mo.nar.chy. I think ok this is clearly a question that people have, so I go home and I take the vocabulary and just read it. Not like that’s ground breaking, but the idea that it isn’t problematic to introduce something new. (Interview 1: [00:30:52.14])
Jamie had originally just planned to use Screencast-o-matic.com to record oral and visual feedback for her students. However, she ended up using it also to record vocabulary, pronunciation, and podcast tutorials and posted them on class blog for students whenever she saw a good fit of the technology. Although Jamie said that she did not know if anyone would listen to those screecast-o-matics.com recordings, there was at least one time during my observation that one student openly acknowledged the usefulness of those recordings by saying “it is really helpful” before class.

In my interview with Lia, she had mentioned that she was not afraid of impromptu changes in class, and that in the middle of a class discussion when something came up she had no problem saying “let’s google it.” There was one time during my observation when the class mentioned the movie Forrest Gump, and a new word “hippie” came up. Lia tried to explain it verbally to her students, but because most of the students had not seen the movie before, it was hard for them to grasp the idea. Lia then turned to her computer to google the word and show a picture of a hippie to her students, since as you know, a picture is worth a thousand words. Then there was an ah-ha moment in the class the second the students saw the picture; everyone seemed to understand the idea Lia tried to explain.

Experimenting with technology to a certain degree requires openness and flexibility. David was not afraid to introduce the technology into the classroom prior to his mastery of it. He was also flexible with technology in that when his experiment with the iPads in his class did not come through and he had to give up on his original plan to use a digital video recorder instead. This study focused on the pre-planned technology activities designed by the teachers wanting to learn the things they typically took into consideration when designing technology
activities, and yet not all the activities in class could be pre-planned. In my interview with David, he also commented on that he did not always have considerations when he is teaching and something comes up.

But I didn’t always have considerations when I’m teaching. When I’m teaching sometimes I really like to put this down for the students to have it later. Let me turn on the projector, let me open up word file, let me type this up for them. I don’t always think that sort of beforehand. It just comes up. Or as we’re talking that reminds me of that video, let’s look at that video. Oh, I used that when I was teaching this class. I had a Powerpoint, let me show you that. (Interview 2: [00:27:39.04])

Although having a plan to use technology is always good, technology activities do not have to always be pre-planned and can be adapted. Jamie’s words best summarize one important point that emerged from the three teachers about technology integration: “when opportunities present themselves, give them a try.” Flexibility with technology created more room for potential technology integration in the three cases presented in this study.

5.1.3 Technology integration quadrant.

This study explored L2 teacher technology integration using the systems concept proposed by Levy (1997) as a way to understand CALL in its entirety. Miller (1978) defined a system as “a set of interacting units with interrelationships among them” (Miller, 1978 as cited in Hutchins, 1996). In other words, systems thinking focuses on the whole, not the parts. Levy (1997) noted that in a teaching environment, the teacher, the students, and the materials function collectively rather than separately. As a result, the “the elements of a system can only be conceptualized meaningfully if they are viewed as part of the whole” (p. 66).
In the current study, the three teachers’ technology integration could be conceptualized meaningfully through situating the three participating teachers’ pedagogical decision on technology activities in context by considering the interrelating factors (the teacher, the students, the activities) at the same time. If we took the technology activities that the three participating L2 teachers designed and plot their use web-based technology/resources in terms of considerations given to technology and instruction, it yielded a quadrant of technology integration. Figure 5.1 captures the three L2 teachers’ use of technology in a technology and instruction quadrant. Note that one teacher could be placed into more than one quadrant depending on the design of their technology activity, and that the quadrant does not necessarily represent the success or failure of teachers’ technology acti

![Quadrant of technology integration](image)

**Figure 5.1.** Quadrant of technology integration

In the *solving instructional problems* quadrant (high instruction focus/low
technology focus), priority was given to the instructional problem at hand and then to the available technology options teacher had. Lia’s Youtube video activities and impromptu online dictionary check clearly were more geared toward solving the instructional problems she encountered and therefore, more instruction-oriented. The path to technology integration for Lia was starting with a problem she had and when trying to solve the problem she came across technology and used options that were available to her as solution to the problem. Youtube videos were used as a listening warm-up activity for different purpose Lia had in mind to engage students in class. Playing online dictionary vocabulary sound files in class was one way Lia came up with to cope with students’ skeptical attitude. Therefore, the technology consideration for her was only secondary.

David’s use of iPads and Screencast-o-matic.com, which were based on his idea of “we now have this technology available how can we use it in class,” fit into the experimenting with technology quadrant (high technology focus/low instruction focus). In those two examples, technology came to David’s attention first and then David tried to align it with the class’ learning objectives to find meaningful use for the new technologies he encountered. iPad in David’s plan was going to be combined with Multiply.com for easy uploading and immediate access of student video recordings. However, the plan did not come through because of unforeseen technical difficulties. Screecast-o-matic.com, on the other hand, was one of David’s successes in experimenting with technology. David used screecast-o-matic.com to record oral and visual feedback to student assignments. That idea later on was spread through words of mouth in the department, which was also how Jamie learned it and used it in her class.

Finally, in the seeing where technology fits quadrant (high instruction focus/high technology focus), the teacher works in technology components
wherever they fit the teacher’s learning objectives. Examples in this quadrant were Jamie’s use of Screencast-o-matic.com for multi-modal feedback, blog, and podcast assignment. Jamie learned from her supervisor about David’s use of screecast-o-matic.com to provide multi-modal feedback to student assignment and adopted it for her class as well since she was also teaching an oral communication class. As mentioned previously in the flexibility with technology section, Jamie later on extended the use of screecast-o-matic.com to record vocabulary and podcast tutorials and posted them on the class blog for students because there were perceived needs for it. Screencast-o-matic.com and the blog combined thus fitted Jamie’s purposes for using them. Similarly, the podcast was brought in because Jamie wanted the class assignment to be less artificial and less classroom-based, and also to raise her students’ awareness to the genre type and their speech production.

Figure 5.1 is an attempt to highlight the idea and the path for the three participating L2 teachers’ pedagogical decisions on technology integration. It is not in any way the end product or formula for technology integration. David once said in his interview that “every class has their own personality.” There is no universal formula for successful technology integration simply because every class is different. The L2 teachers in this study worked with “what they have” to find ways to incorporate technology that made sense to them and their students to achieve learning objectives and then in turn support English language learners’ language/literacy development. Trial and error is sometimes included in this process, and the result of technology integration might differ from the teachers’ original intention or might not always be successful. However, the teachers in this study all seemed to be able to reflect on their use of technology and pinpoint how they would approach modifying the activity if they were to teach the courses
again. Regardless of the reasons, be it instructional problems, pedagogical objectives, institutional decisions, personal interest, or trends and fashions (the latter four mentioned in Stockwell (2007)), and the pedagogical focus (instruction to technology or technology to instruction) for using technology, the participating L2 teachers all had clear ideas in mind on their choice of technology in relation to their learning objectives. It is only after teachers know “what they have” that they can work toward integrating technology into their classroom and aligning the use of it with their learning objectives.

The technology integration quadrant could also be used to understand the three teachers’ decisions on web-based technologies because it included teachers’ consideration of both technology and instruction. In terms of decisions on technology, specifically, the questions are whether the chosen web-based technologies matched their capabilities of the web or not, and whether the capabilities of the chosen web-based technologies were part of the three teachers’ decision making. In Lia’s Youtube video activities (categorized in the solving instructional problems quadrant), priority was given to the instructional problem at hand and then to available technology options she had. Online videos were chosen because of the capabilities they had to offer: a wide variety of topics with authentic language input that are freely accessible as long as there is Internet connection in classroom. Jamie’s technology activities were categorized in the seeing where technology fits quadrant because she worked in technology components wherever they fit her learning objectives. The capabilities of the web-based technologies were considered as part of her decision making process. For instance, Multiply.com was chosen because it allowed students to easily upload their audio-recordings and in the meantime set sharing access of their audio-recordings (considering privacy). Neither of these could be easily done
with the class blog and the university’s course management system. Finally, with David’s experiment with the iPad and Screencast-o-matic.com (categorized in the experimenting with technology quadrant), although he started technology incorporation with available technology options, the next thing he considered was “how can we use it in class” to find meaningful use for the new technologies based on their capabilities. He thus had the plan capitalizing on the iPad’s portability and immediacy (instant review of video-recording).

All three teachers had taken the capability of their chosen web-based technologies into consideration when incorporating them into their class. This, in fact, was an important part of the decisions they made when aligning the chosen technology with learning objective outlined in the previous section.

5.1.4 Modification of technology activities.

One interesting finding about the three teachers’ technology integration in terms of modification of technology activities based on students’ performance was that all the participating teachers (except for the Youtube activities in Lia’s case and the iPad in David’s case) chose to reorient what they did instead of not using the chosen technology. There were two instances where the outcome of the technology activities did not match Jamie and David’s goals and intentions: the ethnolinguistic investigations category on Jamie’s class blog, and the best speaker activity in David’s level 3 ITA class.

For the ethnolinguistic investigation on Jamie’s class blog, she originally hoped her students could bring in their observation or investigation about language use and share it with the class, but students did not respond to that category as she hoped they would. Jamie in fact had had two activities (the
small talk assignment and the conceptual metaphor/idiom assignment) similar to
the notion of ethnolinguistic investigations but with relatively more success.
Jamie at the latter part of the semester introduced “small talk” to her students
(See Table 4.3), and assigned students to conduct small talk with strangers and
report back on the class blog. For the “conceptual metaphor” assignment,
students were asked to post an idiom in their native language that used
metaphor (she later on created sub-categories for “small talk”, and “metaphor”
and place them under the ethnolinguistic investigations category). 10 people (out
of 18) reported back on the class blog with their small talk results, whereas 8
people responded to the metaphor assignment on the class blog. The relative
success of the two assignments was because Jamie was able to make connections
between what was happening in class and what was happening on the class blog.
Although, Jamie thought about stressing ethnolinguistic investigation more,
giving multiple examples of what she mean, and even changing the name of the
activity to promote more engagement, ultimately the modification of the activity
came down to a curriculum design perspective; namely, establishing a norm of
using the class blog early in the beginning of the semester to connect the blog
with the classroom.

The students’ best speaker activity performance did not meet David’s
expectation. Because David had had a more successful response with the activity
in a previous class, he attributed the reason why the best speaker activity did not
work that well to how summer session courses were structured, and how the
activity was first introduced to the students. As a result, the way David would
approach modifying the activity is to have a step-by-step demonstration of the
activity so that students could have a better idea of what was expected from the
teacher.
How teachers approached modifying their technology activity was almost exclusively in terms of activity implementation. One reason why the other two teachers chose to reorient what they did perhaps was because they perceived the technology activities as well-aligned with the learning objectives they had in mind, and they had also experienced some level of success with the activity (either with a different format or with a different group of students). That might be the explanation of why the two teachers decided improvement or revision of the activity should be at the implementation level.

5.2 Implications

Using a holistic and contextualized perspective to examine L2 teachers’ pedagogical decisions on technology activities had helped to gain fresh insights for L2 teachers’ integration of computer technology. Implications for CALL teacher preparation and professional development were able to be derived based on the results of these case studies. As the path to actual technology use in classroom lies in teachers working with “what they have,” this result has implications for changes in the format and content of CALL teacher preparation and professional development.

The single CALL course (e.g., Desjardins & Peters, 2007; Peters, 2006), the technology infusing approach (e.g., Hegelheimer, 2006; Luke & Britten, 2007), and the field experience/situated approach (e.g., Chao, 2006; Debski, 2006; Egbert, 2006) are the three major types of CALL courses in language teacher education programs being reported in the literature. Regardless of the course format, those CALL courses could be categorized into two categories: teaching technology and teaching with technology. The content of CALL courses that
aimed at teaching technology range from teaching basic computer literacy skills to the application of technology tools in language teaching, whereas those that aimed to teach with technology tried to create learning experiences with technology for teachers and teacher candidates. The results of this study suggest several areas to be included in CALL courses so that we can better prepare language teachers to incorporate technology into their classrooms. Based on the results of this study, it is important for teachers to have knowledge of context and students, along with the landscape within which one teaches, and to explore their own personal beliefs and experiences with learning and technology as those are the foundations of teachers’ actions in the classroom. The results of this study also confirmed the value of modeling the use of technology in learning.

Egbert et al. (2002) when concluding their research on how language teachers apply what they learn in CALL courses to their classrooms suggested that the technology courses need to include more contextualized instruction that directly relate to the teaching environment that language teachers will be in. Along the line of contextual instruction, Egbert (2006) in a later article discussed the situated learning context for language teacher learning in CALL, and she contended that “for effective teacher understanding and growth, teacher education in CALL should happen in ways that link teachers with students and technology” (p. 167). One way to link teachers with students and technology, as the three cases examined in this study suggested, is for both pre-service and in-service teachers to reflect and explore their teaching philosophy, beliefs toward technology, and definitions of technology integration, as well as “what they have” (which includes the context, learner, curriculum and learning objectives that teachers will be working in). While in-service teachers can more concretely situate their reflection in their respective contexts, pre-service teachers do not
know the context they will be teaching in. However, pre-service teacher education can emphasize the role of context in technology integration to bring awareness to pre-service teachers. Egbert (2006) suggests using situated learning strategies and techniques such as case-based approach to provide access to expert performances and modeling of processes to help in situating pre-service teachers’ learning. Contextualized instruction might not be feasible in every teacher preparation/professional development program, but bringing the contextual factors (what teachers have) that affect technology integration to the foreground in CALL education might be a way to address Egbert et al. (2002)’s call for contextualized instruction.

One might wonder that if teachers’ beliefs have the greatest impact on what teachers do in the classroom, how it is that teacher educators might control for personal beliefs within a formal pedagogical framework. The answer to that question lies in modeling the use of technology in learning. In Jamie’s case, one of the sources of her ability to “see legitimate opportunities” came from her professors’ use of technology in class. Jamie’s first semester in graduate school during which Jamie was only a student had helped her to experience how different professors used the university’s course management system. That experience helped her to examine what was helpful or not helpful to her as a student. Her professor’s use of the university’s course management system in turn became the model that Jamie learned from. Therefore, if CALL courses could stress modeling the use of technology in learning, it could potentially create positive learning experience that teachers could draw on, learn from and then influences teachers’ beliefs.

Consistent with previous research, the three participating teachers all indicated colleagues as an informative source for technology integration (Egbert
et. al., 2002). Part of the reason why they found colleagues as informative source for technology integration could be that as David put it “there’s a better chance of being successful.” Through their colleagues’ sharing, the teachers had someone who provided ideas and modeled technology use for them. This helped them to see values in the technology activities through the colleagues’ examples and demonstrations. CALL teacher preparation and professional development programs could benefit pre-service or in-service teachers by introducing and encouraging them to participate in relevant communities of practice (email listservs and online communities) that could help them to connect with and continuously learn from fellow like-minded technology-using teachers.

Finally, the technology integration quadrant might be able to provide ideas for teachers who wish to incorporate technology into their classroom but are not sure how to proceed. Teachers could start with either one of the three quadrants: the solving instructional problems quadrant, the experimenting with technology quadrant, or the seeing where technology fits quadrant. However, teachers also need to keep in mind that no matter which path they take, alignment of the chosen technology with learning objectives is of utmost importance for technology integration.

5.3 Future Research

This study also has implications for future research. The current study investigated L2 teachers’ pedagogical decisions on integration of web-based technology/resources by situating it in context and was able to break down the idea of technology integration in classroom to three themes and provide potential path for teachers who would like to integrate technology into their classroom.
This study, however, did not examine the different levels of technology integration (e.g. technology as replacement, amplification, or transformation) achieved in the classroom. The area of technology integration would benefit from future research that further taps into the relationship between technology and teacher’s pedagogy. More specifically, future research could investigate how teachers incorporate technology to transform or maintain status quo of their instruction so that essential elements that affect different levels of technology integration could be revealed.

The three participating teachers in this study were all teaching listening/speaking language skills courses. Thus, this study only explored teachers’ use of technologies in this area. One of the participating teacher’s comments on technology integration was that listening and speaking is the most appropriate curricular area for technology integration. Chen (2008)’s survey results showed that the curricular areas applied (from most often used to least used) were reading, listening, writing, and culture. On the contrary, Stockwell (2007)’s review of CALL literature on the technology choice for teaching language skills and areas showed that grammar was the most commonly investigated, followed by vocabulary, and then pronunciation, reading, writing (each of which had the same number of articles), listening, and finally, speaking. There appears to be a mismatch between research and practice. Therefore, it would be interesting to explore the factors that influence technology integration in different curricular areas to uncover for what purposes and in what areas technology can be gainfully applied to advance student learning.
5.4 Conclusions

What do language teachers need to know and be able to do to best integrate technology into their classrooms? This question has driven scholars to conduct research in different areas relating to CALL integration. Two major lines of research in this area included CALL teacher education and L2 teachers’ current teaching practice with technology. Technology-related courses/workshops in their various formats are being offered as a way to prepare pre-service and in-service teachers to assume the challenge of teaching with technology. Teachers are expected to make informed decisions and to effectively integrate technology into their classrooms after completion of those courses/trainings. However, as Egbert et al. (2002) and Dooly (2009) suggested, there were other factors that directly or indirectly affected teachers’ technology integration into their classrooms. On the other hand, the other line of research on L2 teachers’ practice with technology explored teacher’s perceptions and concepts of technology (Lam, 2000; Meskill et al., 2002), surveyed L2 teachers’ practice (Chen, 2008; Li & Ni, 2011a; Meskill et al., 2006; Yunus, 2007), and examined L2 teachers’ pedagogical changes and developmental paths when they started integrating technology (Gray et al., 2007; Schmid, 2010; Zhong & Shen, 2002) to understand the factors that influence teachers’ technology integration. In this line of research, one area that is relatively under-researched is L2 teachers’ pedagogical decisions on their design and implementation of technology activities. Levy (1997) argued that systems thinking could be valuable in understanding L2 teacher’s integration of technology so that technology integration could be understood in its entirety. Taking a holistic and contextualized perspective perhaps can help us gain fresh insights for L2 teachers’ integration of computer technology.
By situating technology integration in its context of teaching and learning, this study tried to address the question of how L2 teachers use web-based technology/resources to achieve learning objectives to support English language learners’ language/literacy development. This study examined three cases of L2 teachers’ use of technology. Lia used Youtube video activities to scaffold students’ emotions to promote learning goals. Jamie based her decisions on the notion of designing to students, bringing in technology activities to help achieve the co-constructed learning goals. David’s belief that “it is good to just incorporate it whenever possible” along with having access and learning from others’ experiences formed the foundation of his technology integration. Although the end was technology integration, the means to get there were different.

Teachers’ pedagogical decisions about technology integration thus need to be understood within context. Technology integration needs to make sense to both the teacher and the learners. No matter what the reason for or the pedagogical focus of technology integration is, the path to actual technology use in classroom lies in teachers working with “what they have,” and then aligning their chosen technologies with their learning objectives to support learners learning needs.

Placing technology integration in context, the three cases revealed how teachers aligned their chosen technology with different level of learning objectives, how the Internet helped bring in different types of authenticity that the teachers needed for their class, and how flexibility with technology created more room for potential technology integration. The three teachers’ pedagogical decisions on technology activities combined also uncovered potential paths to and ideas about technology integration for teachers. I hope that by situating technology integration in context, this exploratory investigation helped to break down the concept of technology integration into practical ideas and strategies,
and to provide ideas for teacher educators and teachers about technology integration in language classroom.

### 5.5 Limitations

The design of this current study has two limitations. First and foremost is the selection of technology-using L2 teachers. There are other technology-using L2 teachers that were not recruited in this study. Searching for technology-using L2 teachers could be a never-ending task. I have narrowed my research focus to technology-using L2 teachers who utilize web-based technology/resources to support English language learners’ learning throughout the course. With this criterion, this study was able to explore the information-rich cases in detail.

The second limitation is the issue of generalizability. As Stake (1995) also acknowledged, case studies are not suitable for generalizing to other populations, and yet people do see applicability and generalization to their own settings in a different way.

“Single cases are not as strong a base for generalizing to a population of cases as other research designs. But people can learn much that is general from single cases. They do that partly because they are familiar with other cases and they add this one in, thus making a slightly new group from which to generalize, a new opportunity to modify old generalizations.” (p. 85)

Stake referred to this kind of generalization as naturalistic generalization by noting that “Naturalistic generalizations are conclusions arrived at through personal engagement in life’s affairs or by vicarious experience so well constructed that the person feels as if it happened to themselves” (p. 85).

The current study does not permit generalizability in the quantitative sense. However, it is hoped that by providing rich description for the particular setting and particular group of teacher and learners, readers of this study could gain
perspectives and transfer those insights to their own settings. Other L2 classrooms might not be situated in the context with the group of people described in this study, but when it comes to technology integration and teachers’ pedagogical decisions, there might be some commonalities across settings. Gleaned from their own experiences, readers of this study would determine to what extent that the results of this study can be transferred to their own settings.
Appendix A
Teacher Background Questionnaire

Name: _______________________________      Date: ______________________

1. Age:  □ 20-30 □ 31-35 □ 36-40 □ 41-45 □ 46-50 □ 50+
2. Gender:  □ Male □ Female

Teaching background
3. Years of teaching experience: ____________________________________________
4. Years of incorporating technology into teaching: _____________________________
5. Age group(s) taught:
   □ under age 6 (preschool)  □ public school  □ private school
   □ elementary (6-11)       □ extra-curricular program
   □ high school (11-13)     □ public school  □ private school
   □ extra-curricular program
   □ high school (14-18)     □ public school  □ private school
   □ extra-curricular program
   □ adult learners (19+)    □ college/university degree program
   □ continuing education    □ private language school
   □ other:

Language level(s): □ beginner □ low intermediate □ high intermediate
□ advanced □ other: ____________________________
   □ currently teaching –

<table>
<thead>
<tr>
<th>Classes</th>
<th>1</th>
<th>2</th>
<th>3</th>
</tr>
</thead>
<tbody>
<tr>
<td>age group &amp; place</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>language level</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td># of students</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Length of class</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

6. Countries taught in:
7. Language taught: □ ESL □ EFL □ ESP (English for specific purposes)
8. I am a □ full-time teacher □ part-time teacher

Educational background
9. Degree: □ none □ teaching certificate □ other
   University degree(s):
   □ B.A. in ____________________________
   □ E.Ed. in ___________________________
   □ M.A. in ____________________________
   □ M.Ed. in ___________________________
   □ Ed.D. in ___________________________
□ Ph.D. in ____________________________________
From where (country): ____________________________

10. a. Took course(s) in educational technology? □ yes □ never
    which one(s) ______________________________________

b. Took a course(s) in computers? □ yes □ never
    which one(s) ______________________________________

11. a. Have you ever learned another language? □ yes – which one(s) __________________________________
    □ no

b. Any technology used in teaching you the language? □ yes – which one(s) __________________________________
    □ no

12. a. Attend conference on L2 teaching or computer assisted language learning? □ yes □ no

b. Read journals on L2 teaching or computer assisted language learning? □ yes □ no

c. Belong to any professional teacher associations? □ yes □ no
Appendix B
Question Guideline for Teacher Interview
1st Teacher interview

General questions
1. How would you explain the word “technology” to me?
2. Would you tell me about your ESL/EFL teaching experience briefly?
3. How comfortable do you feel with technology?
4. How do you feel a second language should be taught? How would you describe the way you teach a second language?

Technology-supported language teaching
5. How did you start using technology in your language teaching? Did anyone ever talk to you about it or have you read something about it?
6. How important/unimportant do you feel it is to use technology in language teaching?
7. What role do you think technology plays in language teaching?
8. As a teacher, do you feel threatened by advancements in educational technology, or do you welcome it? How do you keep up with it?
9. What does the term “technology-based language teaching” or “technology activity” mean to you? Can you give me examples?
10. Why do you use technology in your language teaching? (main lesson, extension activity, practice?) What is most promising about using technology for language instruction? What is/are the worst shortcomings about using technology for language instruction?
11. Does using technology influence your teaching in any way?
12. What does technology mean to you in your teaching? What are your opinions about the roles technology can play in your lessons?

CALL integration
13. Can you recall your first experience using technology in your language teaching?
14. Have you experienced any difficulties using technology in language teaching? Did that affect your use of technology in any way? In what ways do you usually use technology in your language teaching?
15. Please describe any lessons incorporating technology you have carried out in your classroom. What were the objectives of the lessons? In what ways was the technology used? What were some instructional strategies used in the lessons? What were some difficulties/limitations/benefits when implementing and/or designing this lesson? How do you feel about these lessons?
16. Has there been any time that the outcome of the technology activities you designed is different from your original intention? Can you elaborate on one of those technology activities? How did you cope with it?

Contextual factors
17. What are the computer technologies you have at your disposal if you want to use integrate technology into your classroom?
18. At the institution where you teach, is there any support for teachers wishing to use
technology in language teaching? What type of support? What type of support would you like to see made available?

19. Does your institution provide incentives for teachers who use technology to teach?
20. What are the attitudes of the principal/director/chair towards technology in teaching? What about the other teacher? The students? The parents?
Appendix C
Question Guideline for Teacher Interview
Exit Teacher Interview

The exit teacher interview will take place at the end of the observation period focusing on teacher's reflection of technology use, and to clarify events observed in class or documented in teacher log. Other questions will be added during observation period and as they arise from reading teacher logs. Questions to be asked may be different from case to case.

**Strategies/pedagogy**
1. How does the use of technology this semester different/same from previous semester?
2. What are the things that you typically take into consideration when designing/develop technology-integrated lessons?
3. What are the things you typically take into consideration when implementing lessons that uses technology?
4. Select one or two instances from teacher log and ask the teacher for clarification.

**Classroom management**
5. How do you keep students actively involved (on task) when you or the students use technology?
6. Select one or two events from classroom observation and ask the teacher to reflect on the event.

**General**
7. What will be the advice you have for other language teacher who’s looking to integrate technology into their classroom?
8. What is your definition of successfully/effectively incorporating technology in your lessons?
Appendix D
Teaching Log Prompts

A lot of lesson planning happens a few days before class because we want to tailor the class for students’ needs. I am interested in learning the things you take into consideration when you integrate, design, and implement the technology activities for your class. There will be two kinds of teaching logs I would like you to keep: pre-teaching and post-teaching logs.

In your **pre-teaching** log, please document thoughts and considerations on technology use for your class. You could use the following questions to help you organize your thoughts.

- What are the learning goals for this class?
- What do you see as the role of technology in this activity?
- What issues did you consider when planning this technology activity for your class and why were they important to consider?

In your **post-teaching** log, please reflect on the following:

- What worked/did not work to meet the learning goals?
- Why did they work/not work? You can reflect on this in terms of technical issues, students’ reactions/participation, the design of technology activity, etc.
- What would you do to change/improve it?
## Appendix E
### Observation Field Notes Example

**Observation Lia 0221**

### Classroom activities

<table>
<thead>
<tr>
<th>Time</th>
<th>Minutes</th>
<th>Activity</th>
<th>Material</th>
</tr>
</thead>
<tbody>
<tr>
<td>3:45-3:50</td>
<td>5</td>
<td>5 minutes quiz</td>
<td>Quiz worksheet</td>
</tr>
<tr>
<td>3:52-3:54</td>
<td>2</td>
<td>Calling on Ss to answer 5 min quiz</td>
<td>Powerpoint</td>
</tr>
<tr>
<td>3:54-3:55</td>
<td>1</td>
<td>Housekeeping: agenda for today</td>
<td>Powerpoint</td>
</tr>
<tr>
<td>3:55-4:00</td>
<td>5</td>
<td>Warm up listening activity: TED talk</td>
<td>Youtube video</td>
</tr>
<tr>
<td>4:00-4:09</td>
<td>9</td>
<td>TED talk comprehension Qs as a whole class</td>
<td>Powerpoint</td>
</tr>
<tr>
<td>4:09-4:15</td>
<td>6</td>
<td>Warm up speaking activity: poem</td>
<td>Handout</td>
</tr>
<tr>
<td>4:15-4:17</td>
<td>2</td>
<td>Topic response: 30-45</td>
<td>Powerpoint</td>
</tr>
<tr>
<td>4:17-4:37</td>
<td>20</td>
<td>Textbook Unit 4 Globalization: check</td>
<td>Textbook, textbook CD</td>
</tr>
<tr>
<td></td>
<td></td>
<td>homework, voc list, CD listening,</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>comprehension Qs</td>
<td></td>
</tr>
<tr>
<td>4:37-4:47</td>
<td>10</td>
<td>Homework reading: T walks through the voc</td>
<td>Homework reading handout</td>
</tr>
<tr>
<td></td>
<td></td>
<td>with Ss</td>
<td></td>
</tr>
<tr>
<td>4:47-5:00</td>
<td>13</td>
<td>Pepsi commercials around the world</td>
<td>Youtube video</td>
</tr>
<tr>
<td>5:08-5:45</td>
<td>27</td>
<td>Textbook listening test</td>
<td></td>
</tr>
<tr>
<td>5:45</td>
<td></td>
<td>Class ends</td>
<td></td>
</tr>
</tbody>
</table>

### Learning Task

#### TED talk video task components

<table>
<thead>
<tr>
<th><strong>Observations</strong></th>
<th><strong>Goal</strong> = intended outcomes</th>
<th><strong>Input</strong> = data that forms the point of departure of the task</th>
<th><strong>Activity(ies)</strong> = what the learners are asked to do with the input</th>
</tr>
</thead>
<tbody>
<tr>
<td>Warm up listening activity</td>
<td>5 mins TED Talk youtube video</td>
<td>To know the main ideas of the youtube video</td>
<td></td>
</tr>
</tbody>
</table>

#### Learner role

- T: facilitator
- S: active learner

#### Setting

- Ss respond to comprehension Qs as a whole class

#### Pepsi commercials task components

<table>
<thead>
<tr>
<th><strong>Observations</strong></th>
<th><strong>Goal</strong> = intended outcomes</th>
<th><strong>Input</strong> = data that forms the point of departure of the task</th>
</tr>
</thead>
<tbody>
<tr>
<td>Supplement to textbook Unit 4 Globalization Engaging Ss in discussion</td>
<td>13 mins pepsi commercials around the world youtube video</td>
<td></td>
</tr>
<tr>
<td>Activity(ies)</td>
<td>= what the learners are asked to do with the input</td>
<td>Answer 2 Qs: Why is this advertisement successful? What are the marketing strategies?</td>
</tr>
</tbody>
</table>
| Teacher role | = the parts played in carrying out the task | T: facilitator  
S: passive learner |
| Learner role | = the social arrangements in which the task is carried out | Ss do not have much time to engage in discussion. Focus is more on playing the clips. |

### Learner as Doer

<table>
<thead>
<tr>
<th>What learners do</th>
<th>What this involves</th>
<th>Teacher’s purpose</th>
<th>Comment</th>
</tr>
</thead>
</table>
| TED talk youtube video | - Watching youtube video  
- Taking notes actively on the details they captured in the TED talk video  
- Answering comprehension questions as a whole class  
- Writing down new vocabulary | Youtube video as warm up listening activity  
- Learn new vocabulary | Cognitive |
| Pepsi youtube video | - Watching youtube video  
- Answering the 2 Qs proposed by T as a whole class (Time does not allow discussion, it seems like T wants to go through all pepsi commercials) | Supplement material for Unit 4 | Cognitive |

### Lesson Planning

<table>
<thead>
<tr>
<th>TED talk Observation</th>
<th>Inference</th>
<th>Questions</th>
</tr>
</thead>
<tbody>
<tr>
<td>T specifically asks Ss to writing vocabulary before playing TED talk video</td>
<td>There are some new voc for Ss</td>
<td>Why does T choose to focus on voc?</td>
</tr>
<tr>
<td>T turns on subtitle for TED talk video</td>
<td>Turn on subtitle help Ss understand the content</td>
<td>What influence T’s decision to turn on subtitle or not?</td>
</tr>
</tbody>
</table>
Comprehension Qs are pre-determined but are showed after video finished. The Qs are the key ideas the Ss should be able to answer after watching the video. How were the questions chosen?

T checks comprehension Qs with Ss as a whole class. With subtitle on, Ss should be able to understand the video.

Pepsi commercials
Observation
Inference
Questions

T gives Ss 2 questions. The 2 Qs requires Ss to focus on specific aspects of the commercials. How were the questions chosen?

No subtitle for globalization video
Why no subtitle?

T focuses more on playing through the video clips rather than having active discussion. Running out of time. Why does T want to play all the commercials instead of engaging in discussion?

Unplanned Technology use
In TED talk video, T asks Ss to write down voc they don’t know.
T has sustainability
Ss has emission, binary, stall, hippie

When S asks what does hippie mean, T googles hippie and show image search result for hippie. T then uses Jenny in Forrest Gump as an example. Some of the Ss do not know Forrest Gump. T uses Google image again to show movie poster for Forrest Gump.

Segments of Notes for 0221 class

15:45 class starts with 5 mins quiz 5 Qs 15:51
15:52 calling on students to answer 5 min Q 15:54 Agenda
15:55 listening warm up (write down the voc you hear) subtitle on.
   T: take notes of main idea, and write down voc you don't know 16:00 comprehension Qs

the word chosen by T
sustainability, emission, binary, stall
hippie [*show a picture of hippie using google image, and forrest gump girlfriend of forrest is a hippie]

16:09 Speaking warm up: poem
T goes through the poem with Ss to make sure they know the correct pronunciation
*google latter to play pronunciation, Ss repeat
Dearest creature in creation
Studying English pronunciation,

I will teach you in my verse
Sounds like corpse, corps, horse and worse

I will keep you, Susy, busy,
Make your head with heat grow dizzy.

Tear in eye your dress you'll tear,
So shall I! Oh, hear my prayer,

Pray, console your loving poet,
Make my coat look new, dear, sew it!

Just compare heart, beard and heard,
Dies and diet, lord and word,

Sword and sward, retain and Britain.
(Mind the latter, how it's written).

Made has not the sound of bade,
Say said, pay-paid, laid, but plaid.

Now I surely will not plague you
With such words as vague and ague,

But be careful how you speak,
Say break, steak, but bleak and streak.

Previous, precious, fuchsia, via,
Pipe, snipe, recipe and choir,

Cloven, oven, how and low,
Script, receipt, shoe, poem, toe.

Hear me say, devoid of trickery:
Daughter, laughter and Terpsichore,

Typhoid, measles, topsails, aisles.
Exiles, similes, reviles.

Wholly, holly, signal, signing.
Thames, examining, combining

Scholar, vicar, and cigar,
Solar, mica, war, and far.

From "desire": desirable--admirable from "admire."
Lumber, plumber, bier, but brier.

Chatham, brougham, renown, but known.
Knowledge, done, but gone and tone,

One, anemone. Balmoral.
Kitchen, lichen, laundry, laurel,

Gertrude, German, wind, and mind.
Scene, Melpomene, mankind,

Tortoise, turquoise, chamois-leather,
Reading, reading, heathen, heather.

This phonetic labyrinth
Gives moss, gross, brook, brooch, ninth, plinth.

Billet does not end like ballet;
Bouquet, wallet, mallet, chalet;

Blood and flood are not like food,
Nor is mould like should and would.

Banquet is not nearly parquet,
Which is said to rime with "darky."

Viscous, Viscount, load, and broad.
Toward, to forward, to reward.

And your pronunciation's O.K.,
When you say correctly: croquet.

Rounded, wounded, grieve, and sieve,
Friend and fiend, alive, and live,

Liberty, library, heave, and heaven,
Rachel, ache, moustache, eleven,
We say hallowed, but allowed,
People, leopard, towed, but vowed.

Mark the difference, moreover,
Between mover, plover, Dover,

Leeches, breeches, wise, precise,
Chalice, but police, and lice.

Camel, constable, unstable,
Principle, disciple, label,

Petal, penal, and canal,
Wait, surmise, plait, promise, pal.

Suit, suite, ruin, circuit, conduit,
Rime with "shirk it" and "beyond it."

But it is not hard to tell,
Why it's pall, mall, but Pall Mall.

Muscle, muscular, gaol, iron,
Timber, climber, bullion, lion,

Worm and storm, chaise, chaos, and chair,
Senator, spectator, mayor,

Ivy, privy, famous, clamour
And enamour rime with hammer.

Pussy, hussy, and possess,
Desert, but dessert, address.

Golf, wolf, countenance, lieutenants.
Hoist, in lieu of flags, left pennants.

River, rival, tomb, bomb, comb,
Doll and roll and some and home.

Stranger does not rime with anger.
Neither does devour with clangour.

Soul, but foul and gaunt but aunt.
Font, front, won't, want, grand, and grant.
Shoes, goes, does. Now first say: finger. 
And then: singer, ginger, linger,

Real, zeal, mauve, gauze, and gauge,
Marriage, foliage, mirage, age.

Query does not rime with very,
Nor does fury sound like bury.

Dost, lost, post; and doth, cloth, loth;
Job, Job; blossom, bosom, oath.

Though the difference seems little,
We say actual, but victual.

Seat, sweat; chaste, caste.; Leigh, eight, height;
Put, nut; granite, and unite.

Reefer does not rime with deafer,
Feoffer does, and zephyr, heifer.

Dull, bull, Geoffrey, George, ate, late,
Hint, pint, Senate, but sedate.

Scenic, Arabic, Pacific,
Science, conscience, scientific,

Tour, but our and succour, four,
Gas, alas, and Arkansas.

Sea, idea, guinea, area,
Psalm, Maria, but malaria,

Youth, south, southern, cleanse and clean,
Doctrine, turpentine, marine.

Compare alien with Italian,
Dandelion with battalion.

Sally with ally, yea, ye,
Eye, I, ay, aye, whey, key, quay.

Say aver, but ever, fever.
Neither, leisure, skein, receiver.

Never guess--it is not safe:
We say calves, valves, half, but Ralph.

Heron, granary, canary,
Crevice and device, and eyrie,

Face but preface, but efface,
Phlegm, phlegmatic, ass, glass, bass.

Large, but target, gin, give, verging,
Ought, out, joust, and scour, but scourging,

Ear but earn, and wear and bear
Do not rime with here, but ere.

Seven is right, but so is even,
Hyphen, roughen, nephew, Stephen,

Monkey, donkey, clerk, and jerk,
Asp, grasp, wasp, and cork and work.

Pronunciation--think of psyche--!
Is a paling, stout and spikey,

Won't it make you lose your wits,
Writing "groats" and saying "grits"?

It's a dark abyss or tunnel,
Strewn with stones, like rowlock, gunwale,

Islington and Isle of Wight,
Housewife, verdict, and indict!

Don't you think so, reader, rather,
Saying lather, bather, father?

Finally: which rimes with "enough"
Though, through, plough, cough, hough, or tough?

Hiccough has the sound of "cup."
My advice is--give it up!
References


CALL as an academic discipline. *ReCALL, 15*(2), 177–188.


of Teacher Education, 30(4), 407–429.


Hegelheimer, V., Reppert, K., Broberg, M., Daisy, B., Grgurovic, M., Middlebrooks, K., & Liu, S. (2004). Preparing the new generation of CALL researchers and practitioners: What nine months in an MA program can (or cannot) do. ReCALL, 16(2), 432–447.


Hsieh, Wen-Min

EDUCATION
2006–2012    Ph.D., Instructional Systems, Pennsylvania State University
2003–2006    MA, Department of Foreign Languages and Literature, National Tsing Hua University, Taiwan
1999–2003    BA, Department of Foreign Languages and Literature, National Tsing Hua University, Taiwan

WORK EXPERIENCE
2004~2006    Graduate Research Assistant
Web-based Academic English Course Design and Materials Development, National Science Council research project, Taiwan

HONORS & AWARDS
2012    Student Dissertation Research Initiative Grants, College of Education, Pennsylvania State University
2008    Graduate Student Travel Grant, College of Education, Pennsylvania State University
2007    Miriam E. Gray Scholarship, College of Education, Pennsylvania State University
2006    2006 Master Thesis Award, The Language Training & Testing Center, Taiwan

PUBLICATIONS & PRESENTATIONS
Journal Paper

Book Chapter

Conference Presentation