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Integrating Digital Technologies in the German Language Classroom: A Critical Study of the Technology-Integration Experiences of Three Secondary German Teachers

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INTEGRATING DIGITAL TECHNOLOGIES IN THE GERMAN LANGUAGE CLASSROOM: A CRITICAL STUDY OF THE TECHNOLOGY-INTEGRATION EXPERIENCES OF THREE SECONDARY GERMAN TEACHERS

by

Stephen Van Orden

A dissertation submitted in partial fulfillment of the requirements for the degree of DOCTOR OF EDUCATION in Education (Curriculum and Instruction)

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Logan, Utah

2010
ABSTRACT

Integrating Digital Technologies in the German Language Classroom:
A Critical Study of the Technology-Integration Experiences
of Three Secondary German Teachers

by

Stephen Van Orden, Doctor of Education
Utah State University, 2010

Major Professor: Dr. Steven Camicia
Department: Teacher Education and Leadership

German language teachers are gaining increased access to smart classrooms and
digital technologies that offer teachers and students greater access to authentic cultural
and language materials and enable more student target language communication.
Teaching with technology changes the teaching and learning environment in many ways.
Little is known about how integrating technology into the daily German-language-
teaching curriculum changes the implicit power structures embedded in all classroom
interactions. Because of the central, decision-making role of the teacher, this study uses a
critical theory of technology lens to examine the daily technology integration experiences
of three secondary German language teachers. This study employed a holistic, multiple
case study design with a mixed purposive sampling strategy. One classroom observation
and two interviews were conducted with each informant. The three secondary German
language teachers’ descriptions of their decision-making process as they integrate digital technologies into their daily curriculum provide a deeper, more contextualized understanding of their perceptions of their technology integrations. The interpretation of the interview data produced several conclusions. First, digital technology integration is a process that happens over time for the three informants. Second, the informants’ decisions about their classroom technology integrations are influenced by their second language acquisition (SLA) beliefs. Third, the informants’ classroom technology integrations are influenced by the implicit power relations embedded in the normalized classroom discourse. Fourth, the informants’ perception of their own identity and their students’ identities influences their classroom technology integrations.

(253 pages)
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Stephen Van Orden
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CHAPTER I
INTRODUCTION, CONTEXT, AND RESEARCH QUESTIONS

Introduction

The school technology specialist notifies Frau Wagner, a successful veteran high school German teacher, that her classroom will be turned into a smart classroom in preparation for the coming school year. Her classroom will be outfitted with a multimedia digital projec

or, a laptop computer with wireless internet access, a document camera, a scanner, a printer, a sound system, and two student computer stations. In addition to the smart classroom technologies, Frau Wagner will still have access to the school’s computer lab for individual and group student projects. Frau Wagner is naturally excited about the opportunities that will become available to her and her students with increased classroom access to digital technologies. She is also concerned because she has never taught in a smart classroom, and she is not sure how her teaching contexts and her students’ learning contexts will change. She believes that her students will greet the changes with enthusiasm. She senses that access to these new technologies will affect every aspect of her classroom. She anticipates that the new technologies will affect her relationship with her students and the classroom discourse. Frau Wagner is excited, but she is also apprehensive. She is just not sure how the implicit power relationships in her classroom will be affected when she integrates digital technologies into her daily lessons. As digital technologies become increasingly prevalent in secondary schools, more and more second language teachers find themselves in this same situation.
Critical Study of Digital Technology Integration

This study critically examines the perspectives of secondary second language teachers who are integrating technology in their daily teaching. Integrating technology into daily second language curriculum reconstitutes the classroom environment and, therefore, changes the interactions that take place in the classroom. Over time within this reconstituted classroom environment, a discourse develops through regular interaction that normalizes teacher and student beliefs about what is appropriate and inappropriate classroom behavior (Foucault, 1984). This discourse is formed through interactions characterized by implicit power relationships between students and the teacher and between students and other students. When I refer to implicit power, I am referring to the interpersonal and interactive struggle to normalize appropriate and inappropriate behavior within the classroom discourse. Within this classroom discourse, digital technologies have the potential to enable more authentic second-language communication where students participate in realistic communicative tasks embedded in actual target-language contexts (Erben & Sarieva, 2008). Conversely, integrating technology into the daily curriculum could also result in a greater teacher focus on technology processes rather than second language acquisition (SLA) processes (Chapelle, 1998)—even if that is not the intent of the teacher. In addition, some teachers who teach in a smart classroom choose not to emphasize the technology despite the increased access to it. When teachers teach in smart classrooms, they make decision about how they will use or not use the technology that they have access to. Based on the way a teacher designs technology integrations, a second language classroom could become to varying degrees either more
democratic or more hierarchical (Feenberg, 2005).

Chapter Structure

Chapter I sets the stage for and contextualizes this study. I begin with a vignette that illustrates the current teaching context of many secondary German teachers. I then introduce the critical nature of my study of digital technology integration. After this brief introduction, I communicate the structure of this dissertation by introducing and outlining each chapter. Chapter I continues with an introduction to Feenberg’s (1991) critical theory of technology lens that I use to critically examine the perspectives that secondary German teachers have of their technology integrations. I then define what I mean by “smart classroom” and “digital technologies” before describing how these technologies change teaching and learning contexts. I follow this description of changed teaching and learning contexts with the assertion that interest in and access to digital technologies in smart classrooms is increasing among secondary language teachers. At this point, I briefly introduce the computer-assisted language learning (CALL) research field and define important terminology that I use throughout this research study. Chapter I concludes with the Problem Statement, Significance Statement, and Research Questions.

In Chapter II, I present my Literature Review, which contextualizes and gives a brief historical overview of CALL research, establishes the appropriateness of qualitative CALL research, asserts the need to study the perspectives of second language teachers on their digital technology integrations, and reviews the previous CALL studies of teacher perspectives. I then build my conceptual framework by articulating the critical theory of technology lens; expounding my focus on the concepts of power, discourse,
normalization, and identity; and situating my use of the critical theory of technology lens in an education setting. The Conceptual Framework section builds on the introduction to the critical theory of technology lens presented in Chapter I. Chapter II ends with a discussion of my Positionality. In the Positionality section, I explain the role that my lived experiences and socially constructed identities play in this research project, I describe how my own experiences integrating technology into my daily SLA curriculum have led me to this project, and I outline my insider status within the German teacher community.

Chapter III details the research methods of this study. I discuss my use of the holistic, multiple case study design (Yin, 2003) and my application of a mixed purposive sampling strategy that combines criterion sampling, convenience sampling, typical case sampling, and homogenous sampling (Patton, 1990). I then describe my data collection procedures including the classroom observations where I collect both descriptive and reflective field notes (Cresswell, 2005) and the multiple interviews using an emergent design (Yin, 2003). Next, I outline my procedures for analyzing and interpreting the observation and interview data. Finally, I explain how I validate my data analysis through a colleague and informant check of the codes and themes that have emerged from the process (Cresswell, 2005; Glesne, 2006).

Chapter IV reports my analysis of the interview data with my three informants. In this chapter, I present the data for each informant separately. I first report my process for analyzing the interviews with my first informant, Julia. I then introduce in table format the 11 codes I used to code my interviews with Julia and the three main themes and the
subthemes or aspects of the main themes that emerged out of the data analysis process. I then present the main themes and subthemes or aspects of the main themes using numerous text segments from the interviews. After reporting my analysis of the interviews with Julia, I move on to my second informant, Jens. As with Julia, I first recount my data analysis process for the interviews with Jens. I then list in table format the 12 codes I used to code his interviews and the three main themes and the subthemes or aspects that support the main themes that emerged from my data analysis. I then present the main themes and subthemes or aspects of the main themes using numerous text segments from the interviews. Chapter IV concludes with my presentation of the interview data for my third informant, Markus. As with my first two informants, I begin this section by describing my data analysis process for the interviews with Markus. I list in table format the 10 codes I used to code his interviews and the three main themes and the subthemes or aspects that support the main themes that emerged from my data analysis. I then present the main themes and subthemes or aspects of the main themes using numerous text segments from the interviews. The analysis of the interview data in Chapter IV sets up my interpretation of the data in Chapter V.

In Chapter V, I reflect back on themes from my literature review and my conceptual framework. I begin by comparing what my informants expressed in their interviews with the research that I cited in Chapter II and draw my own conclusions. I then continue to interpret my interview data by viewing what my informants said in their interviews through the lens of my conceptual framework and draw my own conclusions. As I refer back to the interviews with my informants, I report what my informants say in
broad and synthesized terms. I report my overall impressions and interpretations of what my informants express in the interviews based on my analysis of the interview data that I presented in Chapter IV. After my reflections on themes from my literature review and my conceptual framework, I add a Conclusion section that revisits my two research questions. Chapter V ends with my suggestions for future research.

In Chapter V, I report my conclusions that emerged out of this study. In my reflections on themes from my literature review, I illustrate how my informants’ SLA beliefs influence their digital technology integrations; I report my informants’ perceptions of their experiences as they engage in the process of integrating technology into their daily curriculum; I synthesize my informants’ perceptions about their roles, their student expectations, and their infrastructure needs; and I describe my informants’ hesitancy to connect their technology integrations with specific learning outcomes.

In my reflections on themes from my conceptual framework, I compare my informants’ view of technology with Feenberg’s (1991, 2002) critical theory of technology and suggest how my informants’ view of technology influences their daily technology integrations; I describe the implicit power relations embedded in my informants’ classroom interactions (Foucault, 1980a, 1980b, 1990; Gore, 1995; Levitt, 2008) and interpret the role that these implicit power relations have on their technology integrations; I explore my informants’ descriptions of their classroom discourse (Ball, 1990; Foucault, 1971, 1984, 1990) and suggest how this discourse shapes their daily technology integrations; I look at the technologies that have become normalized (Ball, 1990; Bax, 2003) in my informants’ classrooms and connect classroom discourse to the
normalization of technology integrations; and I compare my informants’ perceptions of their students’ identities to Menard-Warwick’s (2005) assertion that students’ ability to take on new identities in SLA communicative activities enables them to position themselves in new ways in the classroom.

In my Conclusion section, I reflect back on my two research questions and offer broad answers that have emerged to these questions through the process of this study. I begin by looking at the broad answers to my first research question that emerged from the process. I assert that digital technology integration is a process that happens over time for my informants, I describe what this process looks like for my informants, and I stress that my informants are actively working on integrating their digital technologies into their daily curriculum. I conclude that my informants’ descriptions of their process provide a deeper, more contextualized understanding of teachers’ perceptions of their technology integrations. Next, I focus on my second research question by revisiting the concept of power relations in my informants’ classrooms. I describe the normalized classroom discourses that my informants depict in their interviews, and I interpret how those discourses affect the technology integrations of my informants.

Chapter V ends with my suggestions for future research. Rather than focusing on cause-and-effect relationships, I encourage future researchers to design descriptive studies that will provide them with rich descriptions of teacher and student perceptions of technology integrations. I suggest that future researchers use the critical theory of technology lens to study the technology integrations of the teacher and the students in one classroom. I suggest that the study include interviews with the teacher, interviews with
some of the students, and multiple observations of the class that enable the researcher to observe the classroom discourse rather than just hear descriptions of the discourse in the interviews.

**Introduction to the Critical Theory of Technology**

Feenberg (1991) outlined a critical theory of technology, which I will use as the theoretical lens for this study. Feenberg’s critical theory of technology advances the idea that each individual piece of technology is co-constructed by the interaction between its design and how it is implemented, used, or integrated by its users. According to this lens, any technology integration in SLA should be seen as a socially constructed, contextualized event that is shaped by the characteristics of the technology itself, the kind of language activities the technology is used for, and the beliefs, actions, personalities, backgrounds, and so forth, of the teacher and students involved in the integration. Interpreting SLA technology integrations with this lens focuses attention on the implicit power that exists as meanings are negotiated and co-constructed during any technology integration. The discourse of the classroom that constitutes and is constituted by the implicit power present in the classroom normalizes over time what is accepted as appropriate or inappropriate behavior as teachers integrate technology into their daily teaching (Foucault, 1984). A detailed explanation of the critical theory of technology lens is in the Conceptual Framework section of Chapter II.
Context of Digital Technologies in Smart Classrooms

Smart Classrooms and Digital Technology

Before I go any further, I will define the terms smart classroom and digital technology. There is not one standard definition for a smart classroom. The definition that I find most useful and applicable for secondary, second language classrooms comes from Domermuth (2005). He described how he constructed an inexpensive smart classroom at Appalachian State University that included three basic components: a home theater combo, a tablet PC, and a multimedia digital projector. He also included a podium as the teacher-control center. Based on Domermuth’s configuration, I define the most basic smart classroom as a classroom that has a teacher computer station with internet access that is connected to a multi-media digital projector and has some form of enhanced sound capabilities for the computer (even the most basic computer speakers). Other digital technologies can be added to this configuration based on the specific needs of the educational context.

There is no standardized list of digital equipment for smart classrooms. When I use the term digital technologies, I am referencing technologies such as document cameras, digital cameras, scanners, digital voice recorders, iPods or Mp3 players, interactive white boards, DVD players, PDAs, smart phones, Tablet PCs, touch-screen computers, laptops, desktop student computer stations, any software that can be used to create digital media, or digital media that can be accessed with a computer through the internet or otherwise. These technologies can all have educational utility and can be integrated into a smart classroom. Secondary teachers often have access to some of these
digital technologies outside of their classroom through the school media center or a school computer lab. I use the term *digital* to differentiate from older analog technologies like televisions, VCRs, overhead projectors and other technologies that have been prevalent in second-language classrooms for decades.

**Digital Technologies Change Teaching and Learning Contexts**

The digital technologies available in smart classrooms and from school media centers or computer labs change the access that teachers and students have to authentic language and cultural materials (Erben & Sarieva, 2008). Erben, Ban, Jin, Summers, and Eisenhower (2008) explained that “with unlimited and fast access to authentic materials from the target culture through the internet, foreign language teachers are now able to create meaningful tasks and communicative settings in which learners have an authentic goal and audience” (p. 15). Access to the wide array of authentic cultural and linguistic materials readily available on the internet or in other digital formats allows teachers to digitally recreate the sights, sounds, and activities of the target language and culture in the classroom. This access to authentic language and cultural materials changes the context in which meanings are co-constructed and negotiated within the web of implicit power that is embedded within all classroom communicative language acquisition activities.

In addition to the increased access to authentic materials, digital technologies change pedagogical and methodological contexts for teachers and learners. Digital technologies offer teachers and learners new modes of curriculum delivery, new forms of
communicative interaction, and greater opportunities for immediate feedback. Chapelle (1998) explained that digital technologies allow teachers new possibilities to (a) make key linguistic characteristics salient, (b) offer modifications of linguistic output, (c) provide opportunities for comprehensible input, (d) provide opportunities to notice errors, (e) provide opportunities for linguistic output, (f) support modified interaction in the target language, and (g) allow learners to act as participants in second language tasks (pp. 23-28). For example, teachers could use tablet PCs, interactive whiteboards, or touch screen computers to deliver curriculum in more interactive and flexible ways. Teachers could also use computers with internet access to enable their students to interact in blogs, podcasts, wikis, chat rooms, or Skype conferences with other students. They could use video or audio authoring software to provide new presentational opportunities for their students, or they could use digital cameras or digital voice recorders to create new ways to give students immediate feedback. These examples show how digital technologies in smart classrooms and computer labs create possibilities for conveying new information through teacher comprehensible input (Krashen, 1981), organize and expand opportunities for student authentic target-language communication (Swain, 2005), and offer new venues for teacher-student and student-student feedback. When teachers integrate digital technologies into their daily curriculum in these ways, they reconstitute all classroom contexts and the implicit power that affect the co-construction and negotiation of meanings that takes place in all communicative SLA interactions.

**Increasing Access and Interest**

Access to and interest in digital technologies in second language classrooms is
increasing, and growing numbers of language teachers are employing new digital
technologies in their daily instruction. This is evidenced by the American Council on the
Teaching of Foreign Languages (ACTFL, n.d.) 2009 convention preview. The preview
stated:

You will not be disappointed with the array of technology sessions at this year’s
Convention. Whatever is out there to engage our digital natives from Web 2.0
connections to other emerging technologies, you will be able to find a number of
sessions in each time slot devoted to integrating these technologies into your daily
instruction. (ACTFL, n.d., p. 5)

The 2009 ACTFL convention was held in San Diego in November 2009 and was
attended by thousands of second-language teachers from around the country. Further
evidence of increased teacher access to and interest in digital technologies can also be
seen in the 2009 program for the regional South West Conference on Language Teaching
(SWCOLT). The program for the conference, held in Oklahoma in April 2009, is full of
session titles dealing with technology integration. For example, “PodText: Using iPod as
an Audiobook,” “Free Student Audio Blogs in Beginning Spanish Classes,” “Finding,
Using, and Incorporating Authentic Digital Content for Language Learning,” or

**Computer-Assisted Language Learning Research**

Academic research on second language acquisition (SLA) using technology has a
rich history. Computer-assisted language learning (CALL) has been a productive field of
research for decades. *Calico, Language Learning and Technology, Computer Assisted
Language Learning, CALL, ReCALL,* and *IALLT Journal* are all refereed academic
journals that are specifically dedicated to the role of technology in SLA. Other academic journals such as *Foreign Language Annals*, *Modern Language Journal*, or *Applied Linguistics* regularly publish research and scholarly articles dealing with technology and SLA. Even the German-language-specific journal *Die Unterrichtspraxis* published by the American Association of Teachers of German (AATG) has a section entitled “Technology Corner” in each issue dedicated to technology (Technology Corner). In addition, the *Language Learning and Technology* journal maintains a list of recent CALL-related dissertations and theses. Over the last 5 years, dozens of dissertations have been published on subjects related to technology and language learning (CALL Theses). A search of the ERIC database using the term *computer-assisted language learning* yields 671 results. Using the search terms *second language instruction* and *technology* yields 1,668 results. CALL is an established international and interdisciplinary research field.

**Language Terminology**

Because CALL research is both international and interdisciplinary, CALL researchers use acronyms and terms from several different research fields. CALL researchers use *SLA* (second language acquisition) to refer to both the SLA research field and the process of acquiring another language. CALL researchers use the specific term *foreign language* to refer to a second language taught in a country where that language is not the dominant language. The term *second language* is used as a more general term. Many CALL researchers come from the *EFL* (English as a foreign language) and *ESL* (English as a second language) fields and commonly use the acronyms *TESL* (teaching
English as a second language), **TEFL** (teaching English as a foreign language), and **TESOL** (teaching English to speakers of other languages) in their writing. In this proposal, I will use second language as a general term when I refer to learning or teaching a second language.

**Needs for Further Research in CALL**

Although much research in this field has already been conducted, there are still significant gaps in some areas. In the conclusion section of his literature review and meta-analysis of CALL research between 1997 and 2001, Zhao (2003) asserted that more “research about appropriate ways and contexts of technology use is much needed” (p. 22). He also suggested that “in the future, what is needed is the development of full curricula that are supported by available technologies instead of individual tools that are only used infrequently or as a supplement to a primarily print-material-based curriculum” (p. 22). Finally, Zhao remarked,

> The finding that none of the studies found in the major language education and technology journals is about technology use in K-12 classrooms is shocking because studies of technology applications in other subject areas (e.g., mathematics, science, social studies, and language arts) have taken place in mainly K-12 classrooms. (p. 22).

Although Zhao focused his meta-analysis on quantitative research, his findings supported a conclusion that more critical research focusing on secondary teaching contexts where digital technologies are fully integrated into the curriculum is needed.

In his article identifying and discussing key issues arising from recent CALL literature, Kern (2006) asserted the following:

> Broad semiotic perspective puts the accent on learners’ agency and teacher
responsibility rather than on the effect of technology itself. Questions of overall effectiveness limit us to yes-no-maybe answers that are sometimes hard to interpret without thick description of the context, content, people, and procedures involved. (p. 189)

He concluded, “The complexity of the issues involved in technology and language learning is pushing us to look beyond gross decontextualized measures of effectiveness to understand effectiveness in terms of the specifics of what people do with computers, how they do it, and what it means to them” (p. 189). Kern explained that an “emphasis on use highlights the central importance of pedagogy and the teacher.” He further asserted that successful technology integration “has been repeatedly shown to depend largely on teachers’ efforts in coordinating learners’ activities” (p. 200). Kern’s conclusions supported a call for descriptive study of individual second language teachers and their experiences integrating technology.

Warschauer (1999) suggested that there has been far too little qualitative research on technology-enhanced language learning. He asserted that qualitative research is an appropriate method for asking the kinds of questions that will help researchers and practitioners more fully understand the complex, contextualized interactions that take place when digital technologies are integrated into the daily curriculum. Warschauer placed emphasis on the complex and power-laden interactions that are part of any technology integration. Teacher perspectives on and experiences during these complex and power-laden interactions are clearly very important for researchers to understand because the decisions of individual classroom teachers are a prime determining factor in the construction of any technology integration.
Conclusion

New digital technologies create possibilities as well as challenges for both students and teachers. Many language teachers are excitedly employing new digital technologies in their classroom as they gain access to them. Others wait for training, colleague modeling, or supporting research before they begin to integrate new technologies. Still others resist using any new technologies at all. Whether a teacher is excited or reticent, the continually developing and changing teaching landscape definitely involves new digital technologies. CALL research lacks a critical study of the experiences of secondary second language teachers who are integrating technology in their daily teaching.

Problem Statement

A large body of CALL research exists that deals with SLA and technology. Little is known, however, about how integrating technology into the daily SLA curriculum changes the implicit power embedded in all classroom interactions.

Significance Statement

This study critically examined secondary German language teachers’ descriptions of their experiences as they integrate digital technologies into their daily curriculum. Because of the central, decision-making role of the teacher, CALL research will benefit from a critical study of the technology integration experiences of secondary second language teachers. A deeper, more contextualized understanding of teachers’ perceptions
of their technology integration will aid CALL researchers as they continue to study SLA and technology.

**Research Questions**

How do secondary German language teachers describe the changes to teaching and learning contexts in their classroom that result from integrating digital technologies into their daily curriculum?

What are the resulting changes to the implicit power embedded in their classroom interactions as they integrate digital technologies into their daily curriculum?

**Chapter Summary**

Secondary language teachers are increasingly teaching in smart classrooms and have access to a variety of digital technologies. Integrating digital technologies into the daily curriculum changes the classroom discourse formed through interactions characterized by implicit power relationships. Within this classroom discourse, digital technologies have the potential to enable more second language communication, result in a greater focus on technology processes rather than second language acquisition, or remain underutilized by teachers despite the increased access. Feenberg’s (1991) critical theory of technology offers a productive lens for examining teacher perspectives on their digital technology integrations because it focuses attention on the socially constructed nature of those integrations. This lens allows me to investigate the implicit power embedded within technology integrations. There is a large body of research (CALL) that
deals with SLA and technology. CALL research, however, lacks a critical study of the experiences of secondary second language teachers who are integrating technology in their daily teaching. Because of the decision-making role of the classroom teacher, it is important to study the perspectives that secondary language teachers have on their daily digital technology integrations.
CHAPTER II
LITERATURE REVIEW, CONCEPTUAL FRAMEWORK, AND POSITIONALITY

Literature Review

Introduction
This literature review will briefly contextualize CALL practice and research, note current trends in CALL research, establish the appropriateness of qualitative CALL research, assert the need to examine the role of secondary classroom teachers in technology integration, define the critical theory of technology lens, and situate my study within the other qualitative studies that have examined teacher experiences. I located the dissertations, studies, and articles used in this review through a search of the ERIC education database, the WilsonWeb database, and the ProQuest dissertations database. I searched the terms smart classroom, second language acquisition and technology, computer-assisted language learning, and qualitative research. I also searched the references pages of the pertinent studies I found. I limited my search to dissertations, studies, and articles published after 1990.

Larger Context of CALL Practice and Research
Since the invention of computers, language teachers have been interested in the potential effects that computers can have on language learning and acquisition, and CALL research is a natural outgrowth from CALL practice. Several CALL researchers
have attempted to provide an historical organization of CALL practice and research. Kern (2006) organized CALL practice and research by dividing computer SLA functions into three roles: the roles of “tutor,” “tool,” and “medium.” He explaind that computers used in the tutor role “can provide instruction, feedback, and testing in grammar, vocabulary, writing, pronunciation, and other dimensions of language and culture learning” (p. 191). Computers used in the tool role “provide ready access to written, audio, and visual materials relevant to the language and culture being studied.” They also “provide reference tools such as online dictionaries, grammar and style checkers, and concordances for corpus analyses” (p. 191-192). Computers used in the medium role “provide sites for interpersonal communication, multimedia publication, distance learning, community participation, and identity formation” (p. 192). Kern asserted that historically CALL research focused on tutorial applications, but in the last 10 years has focused more on medium roles.

In another description of CALL practice and research, Warschauer and Healey (1998) divided the history of CALL research into three paradigms or phases that are loosely linked with specific decades. They name their phases “behavioristic,” “communicative,” and “integrative.” They linked their behavioristic phase of CALL to the 1970s-1980s. This phase focuses on structural language learning through drill and practice on a computer. Their communicative phase is linked to the 1980s-1990s. This phase focuses on language fluency acquired through communicative activities engaged in on a computer. Warschauer and Healey posited that language teachers of the 21st century are moving into an integrative phase of CALL. This phase is characterized by interactive,
communicative multimedia and internet uses of computer technology that produce authentic discourse and foster student agency.

Bax (2003) contended with Warschauer and Healey and offers three alternative approaches to CALL practice and research. Bax chose the terms “restricted CALL,” “open CALL,” and “integrated CALL.” Bax described restricted CALL activities as closed drills and quizzes that provide minimal interaction with other students, take place in a separate computer lab, and are not integrated into the syllabus but are seen as optional or extra. He described open CALL activities as flexible simulations, games, or computer mediated communication (CMC) where students interact with the computer and sometimes other students in a separate language lab. Open CALL activities are still not fully integrated into the syllabus but instead are seen as a neat toy. He described integrated CALL activities as CMC, word processing, email, or other activities where students interact frequently with other students in the normal classroom setting and computer activities are fully integrated into the syllabus. Bax linked his approaches to historical CALL development.

In general, my three approaches do coincide with general historical periods—Restricted CALL dominated from the 1960s until about 1980; Open CALL has lasted from the 1980s until today, with some Restricted CALL manifestations still observable and still valuable in their place (e.g., in grammar revision and checking). Integrated CALL exists in a few places and a few dimensions only, but is far from common. (p. 22)

Bax (2003) argued that the future of CALL is normalization which he defines as “the stage when a technology is invisible, hardly even recognized as a technology, taken for granted in everyday life” (p. 23). He described the use of computers in a normalized CALL state.
Computers...are used every day by language students and teachers as an integral part of every lesson, like a pen or a book. Teachers and students will use them without fear or inhibition, and equally without an exaggerated respect for what they can do. They will not be the centre of any lesson, but they will play a part in almost all. They will be completely integrated into all other aspects of classroom life, alongside course books, teachers and notepads. They will go almost unnoticed. (p. 23)

Bax called for research that would lead CALL practice into this normalized state.

**Current Trends in CALL Research**

Regardless of whether one chooses to name the current CALL historical period integrative or integrated CALL, or chooses to focus instead on the tool or medium role of the computer, the current trends in CALL research are toward interactive, communicative, computer-mediated activities that are becoming embedded in the full curriculum. In his review of current literature, Kern (2006) listed CMC, electronic literacies, and telecollaboration as focal points of CALL research. In her review of the “hot” topics in CALL research journals, Chun (2007) listed CMC and web-based instruction as the two most published topics. She also listed CMC and telecollaboration as the topics that receive the most internet hits on the online version of the CALL journals she reviewed. Describing the research methods used in CALL in their review of literature from 1990-2000, Liu, Moore, Graham and Lee (2002) reported that they found five qualitative studies and 65 nonqualitative studies. Felix (2005) reported that her review of CALL research between 2000 and 2004 found 3 studies that employed a preexperimental design, 13 that employed a quasi-experimental design, 11 that employed an experimental design, and 26 that employed a nonexperimental design. Based on these literature reviews, the trend in CALL research is moving toward nonexperimental
research designs that deal with technologies that empower student communication and interaction.

**Appropriateness of Qualitative CALL Research**

Qualitative research represents a significant percentage of overall SLA research. In their ten-year survey of articles published in ten major SLA journals, Benson, Chik, Gao, Huang and Wang (2009) found that 22% of all articles published were qualitative. This finding suggests that qualitative research plays an established role in SLA research. Qualitative research plays an expanding role in CALL, and several leading voices in the CALL community advocate rigorous qualitative research (Bax, 2000; Chambers & Bax, 2006; Felix 2005; Kern, 2006; Lee, 2003; Warschauer, 1998a).

In her review of CALL research, Felix (2005) explained that it is increasingly difficult to study the effectiveness of information computer technology (ICT) in CALL because “technologies, settings and teaching methods have not only become more complex but inextricably linked and outcomes therefore even more difficult to measure” (p. 16). She continued, “The ever pursued question of the impact of ICT on learning remains unanswerable in a clear cause and effect sense” (p. 16). Echoing Felix, Kern (2006) explained, “Whereas early CALL research generally sought out relatively simple cause-effect relationships between human-computer interaction and learning, current research seeks to understand complex relationships among learners, teachers, content, and technology within particular social and cultural contexts” (p. 201). Warschauer (1998a) asserted that in-depth qualitative study “facilitates the examination of crucial but
often hidden factors, such as underlying power relations in the classroom and community” (p. 760). For example, Warschauer (1998b) found in his ethnographic study of the effects of technology on Hawaiian language revitalization that university-level Hawaiian language learners develop a stronger connection to their cultural identity as they learn Hawaiian in an online setting despite the potential of a Western technology like the Internet to marginalize or destroy native culture. Warschauer (1998a) concluded that the best way to understand the complex interrelationship between technology and language learning is if “researchers expand their research paradigms to engage in critical qualitative research that attempts to take into account broad sociocultural factors as well as questions of human agency, identity, and meaning” (p. 760). Focusing on their goal of normalization in CALL, Chambers and Bax (2006) explained that “in the majority of contexts the most important and problematic factors preventing normalization are probably social and human” (p. 466). Because social and human factors play such an important role in technology integration, Chambers and Bax argued that “in-depth qualitative” research that provides “broad and balanced analysis of the various factors and their interaction” and that “should include attention to the sociocultural dimension” is appropriate and necessary (p. 467).

CALL needs both rigorous qualitative and quantitative research that inform each other. In the implications for future research section of their review of literature from 1990-2000, Liu and colleagues (2003) summarized the need for both quantitative and qualitative CALL studies. They explained,

Studies employing both quantitative and qualitative measures are needed to explain the complex interaction of social, cultural, and individual factors that
shape the language learning process in a computer-assisted environment. In-depth studies that address contextual factors such as types of learning tasks and teacher’s beliefs about language learning (Warschauer, 2000) could provide valuable information for implementing technology and further enrich our knowledge of the language learning process in this unique environment. (p. 264)

I assert that before researchers can conduct more well-designed quantitative studies establishing the effectiveness (or lack thereof) of ICT and CMC in CALL, more descriptive, qualitative research into the complex contexts of technology integration in SLA contexts is needed. This kind of descriptive, qualitative research will build a foundation of understanding that will allow future researchers to ask better questions and design better experiments.

Need to Study Teachers

As CALL practice moves toward a state of normalization where technology is no longer seen as out-of-the-ordinary but is instead a regular, every-day part of the classroom environment, the role of technology in SLA is moving from the lab setting to the classroom setting. Based on this shift, Bush (2008) suggested that “finding the ideal mix of teacher and technology is crucial” (p. 455). He continued, “Specifically, no clear picture yet exists of exactly how language instruction should proceed in a systematic, systemically oriented fashion in situations where technology plays a significant role” (p. 455). Bush concluded that the result of future successful CALL research “will be to devise profiles for instruction such that the teacher and the technology work together, making contributions according to the comparative advantage each holds over the other” (p. 465).

As CALL research moves into an era of fully integrated, computer-as-medium
SLA instruction, the role of the teacher as the designer of appropriate communicative, interactive classroom activities becomes increasingly important. Burston (2003) suggested future researchers study “changes in teacher beliefs about their roles, what they expect of students, what they require in the way of professional development and IT support infrastructure” (p. 225). Chapelle (1997) invited CALL researchers to ground their research in SLA pedagogy. She explained, “In order to apply L2 classroom research to the study of CALL activities, it is useful to view CALL through the lens of the classroom researcher who studies the discourse constructed through the linguistic and non-linguistic moves of participants” (p. 22). Because the role of teacher as decision maker and designer is so important, it is appropriate to study the technology integration experiences of second language teachers.

**Qualitative CALL Studies of Teacher Perspectives**

My search of the literature found nine qualitative or mixed method dissertations and one master’s thesis that looked in some way at teacher perceptions of classroom technology integration. I will briefly describe each study in chronological order. Chernow (1997) examined the obstacles to elementary teacher use of computers. During his regular classroom visits to four first-grade classes at two different elementary schools over a 3-month period of time, he videotaped student interactions with each other and with the technology as they used the WiggleWorks software. He also conducted interviews with other teachers at the two elementary schools who used WiggleWorks. He found three major obstacles: (a) a sense of teacher discomfort with technology, (b) a lack of training
opportunities, and (c) minimal peer and district support.

In a multiple case study, Almozaini (1998) explored how three college-level ESL teachers actually taught in contexts of computer-assisted writing instruction (CAWI). He conducted group and individual interviews, video recorded class sessions, observed live classes, and collected documents. Among his findings Almozaini, reported that the ESL teachers used the same pedagogical strategies with CAWI as they did with pen and paper activities and that teacher beliefs influenced their teaching.

In a multi-site case study, Peterson (1998) examined faculty and administrator attitudes toward the strategies of technology integration employed at two universities. Employing an emergent design with purposeful sampling, she collected documents and conducted interviews with a select sample of faculty and administrators. She concluded that centers of technology appeared to be a common strategy, that technology integration was viewed by faculty as a top-down initiative, that faculty and administrators believed technology integration improved the teaching and learning process, and that administrators could more effectively institute change if they recognize the culture of their institution.

In an observational case study, Kim (2003) explored the role of three ESL teachers in CALL integration in college-level classrooms. Kim collected data through participant observation, formal interviews, and a review of relevant documents. Kim concluded that the teachers’ beliefs about computers were context-bound and interaction-focused, teachers’ use of computers did not necessarily yield a constructivist teaching approach, teachers’ knowledge of computers did not seem to correlate with their
frequency and amount of computer use, and more attention to teacher technology training is needed.

Lee (2003) looked specifically at the experiences of one university-level ESL teacher and the students in his three classes as they participated in computer-assisted classroom discussion (CACD). He administered surveys, completed classroom observations, conducted interviews, and had the teacher keep a reflection journal. His results indicated that complex and interwoven contextual factors shape both student and teacher beliefs about the CACD experience.

In a master’s thesis, Braul (2006) explored ESL teachers’ perceptions and attitudes toward CALL. Employing convenience sampling, he first administered a CALL survey with all 17 ESL teachers in one university program. He then followed up on the surveys with interviews with three of the teachers. His study found that ESL teachers generally see CALL as potentially valuable, but there are also barriers including changing teacher roles and teacher training that discourage effective and widespread use of CALL.

Chen (2006) collected descriptions of how Taiwanese EFL teachers integrated the internet into their instruction. Chen’s study used mixed methods and employed a concurrent triangulation strategy. He administered 311 surveys and conducted 22 interviews with randomly selected teachers from northern Taiwan. Chen found that teacher training, classroom pedagogy, and perceived ability had a direct effect on internet use while institutional support, constructivist thinking, attitudes and beliefs had an indirect effect on internet use. Using multivariate statistics, Chen concluded that these seven variables accounted for 58.6% of the teacher variance in internet use.
Using a descriptive phenomenological methodology, Garcia (2006) studied expert CALL teachers’ evaluations of 10 novice K-6 teachers’ classroom CALL projects in their Spanish language instruction. He both surveyed and interviewed his experts who were chosen based on previous CALL experience. He also surveyed K-6 students about their views of CALL. His study gave voice to experts, practicing teachers, and students. His interpretivist CALL evaluation concluded that effective CALL depended more on how teachers developed activities and how students participated in activities than on the resource itself. Garcia recommended that more attention be paid to the complex realities and contexts of the interactions between teachers and students in technology integrations.

Hsu (2006) used phenomenology of instrumentation as a theoretical framework to examine the practice of technology integration in a university Chinese program. Using a case study methodology, she interviewed 15 students, 4 teachers, and 1 administrator. She found that technology integration is both transformative and reflexive in that it both transformed teaching and learning and reshaped participants’ perceptions of teaching and learning. Hsu asserted that future research should attend to participants’ perceptions of the nature of technology and their experiences integrating it.

Lazo-Wilson (2007) completed a multiple case study in which she interviewed and observed four university lower-division graduate student Spanish instructors who taught their courses in a smart classroom. She highlighted the challenges and profiled the changes that these instructors made throughout a semester as they conceptualized and re-conceptualized their technology integrations. Based on her analysis of the data, Lazo-Wilson suggested implications for teachers including better modeling of expected
behavior and having a plan B for the times when technology does not work. Her implications for language programs included more teacher training and more opportunities for teacher collaboration. Lazo-Wilson called for more qualitative study of the experiences of foreign language teachers of all levels.

Results from the literature search also identified one quantitative study (Zhao, 2006), with a research purpose that is closely aligned with that of this proposed study. Zhao explored university faculty attitudes toward smart classroom technology in order to predict their level of technology integration. Zhao found among other things that faculty age, institutional support and training, and faculty perceptions of the effectiveness of smart classroom technologies affect faculty integration of technology. In his recommendations for future research, Zhao stated:

Further research is needed to identify faculty and learner perceptions of smart classrooms to better understand the impact of those perceptions on both faculty and learners. Learner and faculty perceptions of smart classrooms need to be identified and related to understand how to best use smart classroom technologies. (p. 80)

Zhao called for more study of student and teacher perceptions of the new contexts that exist in a smart classroom.

My search of the ERIC database also led me to three qualitative or mixed methods studies of teacher perceptions of technology integration. Subramaniam (2007) used the Vygotskian construct of a zone of proximal development as a lens to examine secondary science teacher’s integration of computer technology for teaching. She specifically asked the question: “What are the teacher’s psychological insights that serve to mediate student learning?” (p. 1056). Her analysis revealed four themes that framed her participants’
psychological insights: mediation as a journey, mediation as adopting roles, mediation as mutual investment, and mediation as liberating and/or domesticating. Kim (2008) interviewed ten ESL/EFL teachers enrolled in a teacher education program and advanced certificate of educational technology program. He used a grounded theory method to understand teachers’ perception and expectation of computers in their classrooms. His analysis revealed that the teachers he interviewed favored using computers as instructional tools rather than as student learning tools and that teacher perceptions of CALL were still teacher centered rather than student centered. Using a mixed methods design, Murday, Ushida, and Chenoweth (2008) studied student and instructor satisfaction with university language online courses. Recurring student themes in their study centered on reactions to reduced schedule of classes and the technology used in course delivery. Recurring instructor themes were the need for training, control of course materials, and connection with students.

Conclusion

CALL research is moving into an era where researchers are asking questions about the complex interactions involved in technology integration into the daily curriculum. We still do not understand enough about the changes to teaching and learning contexts that occur when teachers integrate emerging technologies into their daily teaching. Although the attitudes and perceptions of university faculty, ESL/EFL teachers, and elementary teachers have been studied, no study has focused on secondary, second language teachers. In addition, few studies have employed a critical theory of technology lens. Interpreting second language teachers’ perceptions of how their teaching contexts
change through this lens will yield new insights into the cocreated, negotiated implicit power structures embedded in the complex interactions that take place in any SLA technology integration. When I refer to implicit power, I am referring to the interpersonal and interactive struggle to normalize appropriate and inappropriate behavior within the classroom discourse.

**Conceptual Framework**

**Critical Theory of Technology**

The philosopher, Feenberg (1991, 2002), articulated his critical theory of technology in his two books on the subject. In these books, he contrasts his critical theory of technology with two other established views of technology: “instrumentalism” and “determinism.” The instrumental view asserts that technology is merely a neutral tool that is “indifferent to the variety of ends it can be employed to achieve” (Feenberg, 1991, p. 5). The determinist perspective of technology posits that technology use “constitutes a new type of cultural system that restructures the entire social world as an object of control” (Feenberg, 1991, p. 7). This new cultural system created by the technology shapes the whole of life. “The instrumentalization of society is thus a destiny from which there is no escape other than retreat” (Feenberg, 1991, p. 7). Feenberg (1991) rejected these two perspectives on technology and outlines the basis of his critical theory of technology.

Critical theory argues that technology is not a thing in the ordinary sense of the term, but an “ambivalent” process of the development suspended between different possibilities. This “ambivalence” of technology is distinguished from neutrality by the role it attributes to social values in the design, and not merely the
use, of technical systems. On this view, technology is not a destiny but a scene of struggle. It is a social battlefield, or perhaps a better metaphor would be a *parliament of things* on which civilizational alternatives are debated and decided. (p. 14)

No classroom technology integration takes place in a vacuum. Each integration is fully embedded in and contextualized by the co-constructed and negotiated meanings of the participants in the integration. A smart SLA classroom is a complex microcosm of the larger society that Feenberg described. Teachers and students bring their lived experiences and identities with them into the classroom. The same kinds of interactions that take place in the larger society play out in the classroom environment as teachers and students interact with each other and co-construct and negotiate the classroom discourse. All of the human actors involved in the interaction co-determine the nature of every technology integration.

**Power**

Implicit power embedded in classroom interactions affects all technology integrations. Drawing on the works of Foucault, I will define what I mean by implicit power. Foucault (1990) asserted that “power is not an institution, and it is not a structure; neither is it a certain strength we are endowed with; it is the name that one attributes to a complex strategical situation in a particular society” (p. 93). He further explained, “Power is everywhere; not because it embraces everything, but because it comes from everywhere” (p. 93). Foucault (1980a) described a “disciplinary power” that is pervasive and invisible within modern institutions. Gore (1995) outlined the key features of Foucault’s disciplinary power by explaining that disciplinary power is “productive and
not solely repressive,” it “circulates rather than being possessed,” it “exists in action,” it “functions at the level of the body,” and often “operates through technologies of the self” (p. 99). Power operates on the most micro levels of human interaction. Foucault (1980a) extrapolates,

In thinking of mechanisms of power, I am thinking rather of its capillary form of existence, the point where power reaches into the very grain of individuals, touches their bodies and inserts itself into their action and attitudes, their discourse, learning processes and everyday lives. (p. 39)

Power on this level is “a machine in which everyone is caught, those who exercise power just as much as those over whom it is exercised” (Foucault, 1980b, p. 156). Using the context of Foucault’s writings, Levitt (2008) asserted that “power is not possessed, but is distributed throughout complex social networks.” It “operates through a net-like organization and individuals are the agents of power” (p. 51). Power in this sense is part of every classroom interaction. Both students and teachers are agents of power as they interact. The researcher who studies the relationships is also an agent of power. Teachers, students, and researchers are not fully aware of the web of power that they are embedded in. As a researcher, I enter this web of power that I am not fully aware of. As I engage in the research act, I become a strand in this web, and I am not completely aware of all of the ways that I am part of this web. This causes a tension because I am studying something that I have become a part of, and my actions as a researcher are experienced by my informants as an exercise of power. For these reasons, I describe the power as implicit.
Discourse

This net-like organization or web of power in which individuals are embedded constitutes and is constituted by the discourse of the group. Ball (1990) defined discourse in a Foucauldian sense.

Discourses are about what can be said and thought, but also about who can speak, when, and with what authority. Discourses embody meaning and social relationships, they constitute both subjectivity and power relations. Discourses are ‘practices that systematically form the objects of which they speak. . . . Discourses are not about objects; they do not identify objects, they constitute them and in practice of doing so conceal their own invention’ (Foucault 1974: 49). Thus the possibilities for meaning and for definition are preempted through the social and institutional position held by those who use them. Meanings thus arise not from language but from institutional practices, from power relations. (p. 2)

Foucault (1984) saw discourse as regulatory practice conducted through language. He states “Discourse is not simply that which translates struggles or systems of domination, but it is the thing for which and by which there is struggle, discourse is the power which is to be seized” (p. 110). Foucault (1990) explained how discourse is a process that both reinforces and challenges existing power.

We must make allowance for the complex and unstable process whereby discourse can be both an instrument and an effect of power, but also a hindrance, a stumbling-block, a point of resistance, and a starting point for an opposing strategy. Discourse transmits and produces power; reinforces it; but also undermines and exposes it, renders it fragile and makes it possible to thwart it. (p. 101)

In the classroom, teachers and students engage in discourse that reproduces existing power while undermining it at the same time. This discourse leads to a normalization of classroom practices.
Normalization

Over time as students and teachers participate in discourse, certain behaviors, activities, and rules become accepted or normalized in the classroom. Ball (1990) defined normalization according to Foucault: “By normalization Foucault means the establishment of measurements, hierarchy, and regulations around the idea of a distributionary statistical norm within a given population—the idea of a judgment on what is normal and thus what is abnormal” (p. 2). Often it is the normalization of practices, behaviors, and rules that obscures the implicit power mechanisms that are embedded in all classroom interactions. The normalization of technology-integration practices constitutes and is constituted by the discourse of the classroom.

Identity

Teachers and students bring many identities with them into the classroom: adult, child, male, female, race, ethnicity, class, English-speaking, English-learning, disability, ability, and so forth. These identities affect the classroom discourse and the learning process. The subject of identity is even more complicated in SLA because students try on new identities as they engage in the language acquisition process. Menard-Warwick (2005) viewed “language learning not as an isolated act of cognition, but as a way of positioning oneself in society” (p. 260). She cited many studies that suggest that “different identities are salient in different contexts, and that particular identities in particular contexts can enhance or detract from language learning” (p. 261). She posited that “language learning can only be successful to the extent that it is congruent with the learners’ sense of their gender roles, societal positions, class backgrounds, and ethnic
histories” She continued that studies also “indicate that in some circumstances, learner subjectivities can shift, and that through this process language learning can be enhanced” (p. 262). SLA students bring identities with them into the classroom, but they also try on new identities as they engage in language acquisition. Trying on these identities in a second language context (in the country where the target language is spoken) is different than trying them on in a foreign language context (in the country of where the target language is not spoken). For students who speak the language of the predominant culture, trying on new identities in the classroom does not depend in the same way on the students’ access to political and cultural power, assimilation/adaptation/navigation strategies because they already possess the identity of being part of the predominant culture. The classroom discourse that normalizes classroom practice is shaped by the identity that teachers and students posses before they enter the classroom discourse and the identities that they try on as they engage in language acquisition. Because identity plays such an important role in discourse, it is impossible to analyze implicit power embedded in classroom technology integrations without including identity in the analysis.

**Critical Theory of Technology in Education**

Feenberg (2005) applied his theory to an educational setting. Drawing attention to the implicit power, he explained that designers of online classes can either employ a “technocratic model of control” that restricts student initiative or a “democratic model of communication” that enlarges initiative (p. 62). In this sense, the critical theory of technology situates any technology integration in the context of its potentialities within the struggle for meaning between the participants in the technology integration. The
focus is not only on how technology is used but also on what meanings are co-constructed by its use and what other possible meanings could be co-constructed if technology were used differently. Users of technology in a classroom setting may concentrate their attention on the technology itself and not realize the social, cultural, and pedagogical implications of their technology use. The critical theory of technology allows the researcher to look at implicit meanings beneath the literal surface of a classroom technology integration.

In the same article, Feenberg (2005) offered insight into how implicit power governs technology interactions. He posits that “technology is a two-sided phenomenon: on the one hand the operator, on the other the object. Where both operator and object are human beings, technical action is an exercise of power” (p. 49). Feenberg described a sense of “operational autonomy” that operators can develop that allows them to make decisions about the implementation of technology “regardless of the views or interests of subordinate actors” (p. 53). This “enables them to reproduce the conditions of their own supremacy at each iteration of the technology they command” (p. 53). When this happens, the subordinate actors can resist the technological systems imposed upon them. The resistance of the subordinate actors comes in the form of the feedback they provide to the technical action. Because the use of the technology itself can obscure the relationship of the feedback or resistance to the technical actions of the operator, the operator may frequently be blind to the feedback or resistance. It is the interplay of an operator’s technical actions and the feedback or resistance of subordinate actors creates the “scene of struggle...on which civilizational alternatives are debated and decided”
In a second language-smart classroom, it can be unclear who is functioning as the operator and who is functioning as the object in a technical action. The teacher as the designer of learning activities is frequently the operator, and the students are the object. In many cases, however, students can function as the operator because they can possess more technological skill and understanding than the teacher. The implicit power affects the interplay of technical action and feedback/resistance that results from the interactions of operators and subordinate actors. This interplay can be very subtle and the operators and subordinate actors can themselves be unaware of it.

**Studies that Use the Critical Theory of Technology Lens**

In his study of the role of technology in the revitalization of native Hawaiian in Hawaiian schools, Warschauer (1998b) used the critical theory of technology as his lens to interpret the technology integrations he observed. Focusing on the social organization of internet use, Warschauer investigated the role that access, language, culture, and identity played in shaping the technology integrations involved in learning Hawaiian. The critical theory of technology lens focused his analysis on the “interplay of machine and social context” (p. 144). This focus allowed him to uncover the implicit power that influenced the decisions that participants in the technology integrations made.

Schmid (2006) also employed a critical theory of technology lens in his study of the use of interactive whiteboard technology (IWB) in an English language classroom. Considering the constructed nature of technology integrations, Schmid investigated the
interaction of a technology’s design and how it was appropriated by its users. His study used the critical theory of technology to examine how the inherent characteristics of the IWB, the teacher’s pedagogical beliefs, students’ understandings of the potential of the IWB, and the negotiations between students and teacher regarding how the IWB should be used influenced the nature of the technology integration. Schmid’s focus allowed him to “examine the underlying power relations that shape how technology is designed and used” (p. 51).

Conclusion

The critical theory of technology lens allows me to focus attention on the implicit power which influences the integration of technologies in a SLA classroom. Bruce (1997) pointed out that “in order to understand what technology means, we must examine how it is designed, interpreted, employed, constructed, and reconstructed through value-laden daily practices” (p. 12). Looking at a technology integration through this lens, produces an awareness of the deeper meanings of the integration. It allows me to analyze the struggle to cocreate and negotiate meanings in a reconstituted environment of a smart classroom. As I interacted through the interview process with my informants, I was also a part of this struggle to cocreate meaning. As the researcher, I was in a position of power, and this affected the negotiation of meaning with my informants throughout the study.

Positionality

My lived experiences and socially constructed identities have led me to this research study. I am a White male who speaks English as a first language. I was raised in
a middle class home by college-educated parents. I lived in a suburban neighborhood. My father was a college professor, and my mother had been trained as a secondary teacher. My mother was a full-time mother while I was growing up, but she subsequently returned to the teaching profession after I moved out of the house. My father earned a bachelor’s degree in German and was a student teacher in German at a high school just before I was born. German was the second language of choice in my family. I took 3 years of German in high school and then served a 2-year mission for the LDS Church in Germany before deciding to become a German teacher. My younger sister followed a similar path and is a German teacher at a middle school.

I teach German at a suburban high school in Utah along the Wasatch Front. I teach in a smart classroom. For the last 8 years, I have been trying to integrate a wide variety of digital technologies in my daily teaching, and I have slowly assembled the pieces of my smart classroom by any means I could (i.e., PTA grants, district grants, yearly orders, classroom budget, and a lot of personal funds). Technology integration has become an important interest for me over the last eight years. During that time, I have had a wide variety of successes, challenges, and failures. I have found that digital technologies affect my teacher comprehensible input (Krashen, 1981), change the ways my students to produce target-language output (Swain, 2005), and shape the kinds of teacher-student and student-student feedback that happen in the classroom.

Most of the time, I am the only teacher in my school who is doing the kinds of things with technology that I do. There has been no support infrastructure. Even the school technology specialist has been unable to help in most instances. I have often felt
like I was alone on an island working on my own project. As I reflect on my own changing teaching practice, I realize that not all of the changes that have come with my technology use have been good. Based on this observation, I try to weigh the possible advantages and disadvantages of any technology integration during my planning process. This is not easy. Over the last several years, I have watched as many of my world language colleagues have gained access to smart classroom technologies. I see them experiencing many of the same things that I have and do experience.

I am an insider in the German teacher community. I have held significant leadership positions in this community and am well connected regionally and nationally in this community. I am a regular attendee of state, regional, and national conference, and I have presented sessions at state and regional conferences about my experiences integrating technology in my daily teaching. I have had two articles about my digital technology integration published in the AATG practitioner’s journal *Die Unterrichtspraxis*. As an insider, I bring lived experience and cultural knowledge to this study. I have access to and possess the professional culture of the community. Sharing lived experience and cultural knowledge with my informants helped me to choose appropriate informants and conduct quality probing interviews.

Because of my status in the German teacher community and my reputation in the German teacher community for integrating digital technologies into my daily teaching, I was in a position of power when I interacted with and interviewed my informants during this study. This position of power affected the interview process and shaped the data I collected. In order to collect rich descriptions of my informants’ perspectives on and
experiences with their own technology integrations, I tried to cultivate a collegial relationship before and during the interviews. Sometimes during the interviews, my informants had a sense that I was looking for a right answer when I asked a question, and they tried to please me by giving what they believed I would consider a right answer. Whenever I perceived this happening, I tried to redirect my question and indicate to the informant that I was not looking for any specific answer but was instead hoping the informant would provide a rich description of her/his own experience and practice. Even though I tried to have a collegial relationship, I still was in a position of power throughout my interactions with my informants. This is another reason that I am a co-producer of the outcomes of this study.

My lived experiences shaped the way I conducted this research study. My position of power as a White, middle class male shaped my interests in teachers’ perspectives of their technology integrations. My lived experiences as a German teacher and learner led me to investigate other German teachers. Although the demographics of German teachers and secondary students in German classes are changing, German has historically been perceived as a White language taught by White teachers and learned by White students. The number of teachers and students of color in secondary German classrooms is increasing, but German classes still tend to be populated by mostly White, middle-class teachers and students. German is the third (behind Spanish and French) most commonly taught second language in U.S. secondary schools. German may lose this status in coming years as more students enroll in other languages such as Chinese or Arabic, as school demographics changes, or as German language programs are canceled.
due to budget cuts or shifts in educational priorities. As a result, German teachers in the US tend to be concerned with their enrollments. Many German teachers actively recruit students in order to maintain and increase their enrollments. The AATG offers German teachers a tool kit for advocating for the German language and recruiting more students into German classes (sustaining the momentum). The AATG also sponsors an Alle lernen Deutsch (Everyone learns German) committee to encourage greater diversity in German classrooms (Alle lernen Deutsch).

As a German teacher, I perceive my profession to be both demographically changing and at risk of disappearing. Many of my colleagues share this perception. Due to my perceptions of the status of the German teaching profession, I advocate for greater diversity in my German classes, and I actively recruit students including students of color to maintain enrollments. My decision to study German teachers is partially motivated by a desire to advocate for the continuance of the German teaching profession. In this study, I am a White middle class researcher studying German teachers who share a similar status to me and who are teaching in schools that are becoming increasingly diverse. Two of my informants are White, middle-class males, and the other is a White, middle-class female. The minority population at the schools where my informants teach has been growing over the last two decades. It is primarily the Latino population that is growing. One of my informants teaches at a school with a minority population of about 10%, another teaches at a school with about 25%, and the third teaches at a school with about 45%. The teachers I chose to interview, the kinds of questions I asked in the interviews, and my analysis and interpretation of the data are all greatly influenced by my
positionality. Researchers of other race, gender or status or who teach other languages may produce a very different study of teacher technology integrations in a secondary language classroom.

Assumptions

My epistemological assumption is that human knowledge and understanding are relative to local and specific cultural contexts. The realities of these contexts are negotiated and cocreated by the humans in these contexts within networks of discourses and power relations. I assume that everything is subjective and all meaning is a contextualized co-creation (Bernstein, 1983; Foucault 1971; Geertz, 1993; Lincoln, 1995; Polkinghorne, 1989; Rogoff, 2003; Rorty, 1979; Schwandt, 2000). My methodological assumption is that because meaning is negotiated and co-constructed (Denzin & Lincoln, 2005; Mischler, 1986) one way to study other people’s meanings is through an interpretive, dialectical process. The Hegelian dialectic is the process of creating new meaning through thesis, antithesis, and subsequent synthesis (Hegel, 1817). My personal interpretation of the Hegelian dialectic informs my thought process as I engaged in this research project. As a researcher, I want to qualitatively collect the thesis of my informants. I consider their thesis to be their rich and thick descriptions of their lived experiences (Denzin, 1989; Geertz, 1973). Because I believe in subjectivity, I recognize that I cannot remove myself and my lived experiences from the research paradigm. The lived experiences that I bring to the research act are the antithesis. As I analyze the collected data or thesis from the perspective of my own antithesis a synthesis of new meaning emerges. This kind of research is a hermeneutical or interpretive act. My
assumption is that all human meaning making is interpretive and dialectical. When I share the results of my research with others, this is also an interpretive and dialectical act. My research becomes a new thesis, the lived experience of those who read my research becomes an antithesis, and the resulting interpretations of the reader become the new synthesis. That synthesis becomes part of the context that shapes all subsequent meanings of the possessor (sharer) of that context.

Throughout the research process, I interact with my informant from a position of power. That position of power affects all of my interactions with the informants and the coproduced meanings that emerge out of the process. As I study the changing teaching and learning contexts that accompany the technology integrations of my informants, my decisions and my personal experiences that I bring to the study will cocreate the meanings that emerge from the study. I will be one of the participants in the struggle to negotiate and co-construct meaning within networks of discourses and power relations. I will be embedded in the implicit power structures I am studying.

My study design assumes that an open-ended interview will produce data that will be helpful in interpreting the experiences of secondary German teachers as they integrate technology. It also assumes that my pre-prepared interview questions and my on-the-spot follow-up questions will yield rich descriptions. I assume that I will be surprised by some of the things that my informants will discuss with me in the interviews. My study assumes that I will be able to find good informants who fit my purposeful sampling criteria. I also assume that the critical theory of technology lens will be useful in analyzing and interpreting the data I collect. Finally, my study assumes that my
interpretation of the analysis of my informants’ descriptions of their technology use in a smart classroom will be valuable to both researchers and practitioners.

**Constraints and Limitations**

This study is limited by the constraints of descriptive research. This study will not show any cause-and-effect relationship between technology integration and student performance. Although other practitioners and researchers will be able to learn from my findings, my interpretations of my data analysis will have limited generalizability to other contexts and settings. My data collection will include only two interviews and one classroom observation per informant. The data I collect will not represent a perfect and complete description of all of complex teaching contexts of my informants. I will have only three informants and all three will be German teachers. Finally, my interpretations of the data will be an outgrowth of the entire process, and my personal contexts will play a significant role in co-producing the outcomes of this study.

**Chapter Summary**

New digital technologies create possibilities and challenges for both students and teachers. Many language teachers are encountering these possibilities and challenges as they integrate digital technologies into their daily curriculum. CALL research lacks a critical study of the experiences of secondary second language teachers who are integrating technology in their daily teaching. In this study, the critical theory of technology lens allows me to focus attention on the implicit power that influences the integration of technologies in a SLA classroom. Looking at a technology integration
through this lens, produces an awareness of the deeper meanings of the integration. It allows me to analyze the struggle to cocreate and negotiate meanings in a reconstituted environment of a smart classroom. My lived experience as a secondary German teacher leads me to investigate the experiences of other secondary German teachers who are actively integrating digital technologies into their daily curriculum.
CHAPTER III

METHODS

Introduction

This study answers the two questions: (1) How do secondary German language teachers describe the changes to teaching and learning contexts in their classroom that result from integrating digital technologies into their daily curriculum? and (2) What are the resulting changes to the implicit power embedded in their classroom interactions as they integrate digital technologies into their daily curriculum? In this chapter, I describe my study design, refer to the pilot project that preceded this study, outline my sampling strategy, list the instruments that I used during the study, explain my data collection procedures, explain my data analysis procedures, explain my data interpretation procedures, highlight the assumptions of this study, and offer my perception of the constraints and limitations of this study.

Study Design

This study employs a holistic, multiple case study design (Yin, 2003). The study design is holistic because I focus my investigation on only one unit of analysis: the secondary German teacher. The study is a multiple case study because I chose multiple informants from multiple schools. In this study, I utilized a flexible design where I first completed a classroom observation followed by a first interview with each informant. Based on my analysis of the thick, rich descriptions (Denzin, 1989; Geertz, 1973)
collected during the first interviews, I conducted a second interview with each informant. This flexible design allowed me to adjust and redesign the study as needed and allow meanings to emerge through the process. Figure 1 diagrams my study design.

**Pilot Project**

During the Spring Semester 2008, I completed a pilot project in preparation for this study. The pilot project was a case study of the technology integrations of one secondary Spanish teacher in a smart classroom. I conducted only one interview for the pilot project. Based on my experiences with the pilot project, I added a second interview and a classroom observation to the design of this study.

*Figure 1. Study design diagram.*


**Sampling Strategy**

In order to obtain information-rich informants, I employed a mixed purposive sampling strategy that combines criterion sampling, convenience sampling, typical case sampling, and homogenous sampling (Patton, 1990). I chose informants who met the criterion of teaching in a smart classroom. To minimize travel time, the teachers were located along the Wasatch Front so that I could have convenient access to them for collecting data. I also chose teachers who integrate digital technologies into their daily teaching practice. I restricted my choice of teachers to secondary German teachers because I have access to and experience with that community. Using a replication logic rather than a sampling logic, I limited the number of informants to three because I anticipated a literal replication of the data I would collect (Yin, 2003). I anticipated that my informants would report similar experiences integrating technology that would constitute a replication of the data.

**Informants**

My first informant was Julia, a German teacher at a suburban high school that includes grades 10 through 12. Julia taught at this high school for the last 10 years. During this time, she has been active in acquiring digital technologies for her classroom. Several years ago, she served on the school technology committee which provided her with increased access to digital technologies for her classroom. Julia’s high school is predominantly White and upper middle class with a very small minority population. Julia’s school has an A/B block schedule with four classes on alternating days. Julia currently only teaches part time because she has young children at home. Julia only
teaches on A days, and she shares her classroom with another teacher. Because of her experience integrating digital technologies into her curriculum, Julia was an excellent source of information about how a secondary German language teacher experiences the implementation of new digital technologies in the second language classroom. Based on my observation of her classroom, it appeared to me that Julia taught in the German language about 75-80% of the time. Her students stay in the German language most of the time but feel free to use English to express themselves during class.

My second informant was Jens, a German teacher at a suburban junior high school that includes Grades 7 through 9. Jens has taught at this junior high for the last 11 years. Jens’ school has undergone a dramatic socioeconomic shift over the last two decades. Twenty years ago, his school was predominantly White and middle class. His school is now over 40% Latino and over 70% free and reduced school lunch. This year his school became a Title One School for the first time. From the beginning of his teaching career, Jens was very interested in integrating digital technologies into his teaching. He energetically acquires new digital technologies for his classroom, and he always has a wish list of new technologies that he is working to acquire. Jens is seen as a leader in technology integration in his school, and he regularly helps other teachers with their technology problems. Jens is a very high-energy and spontaneous teacher. His classes are fast paced and entertaining. He feels this is important for a junior high teacher. Jens is currently teaching four German classes because he was assigned to teach two sections of a computer technology class and yearbook this year. In previous years, Jens has taught six German classes and yearbook. Next year, Jens will again be able to teach
six German classes. Jens is recognized as having one of the largest junior high German programs in the region. Because of his experience and integrating digital technologies, Jens is an excellent source of information about how a secondary German language teacher experiences the implementation of new digital technologies in the second language classroom. Based on my observation of his classroom, it appears to me that Jens teaches in the German language about 85%-90% of the time. His students stay in the German language most of the time but feel free to use English to express themselves during class. Jens encourages his students regularly to stay in the German language. He tries to keep his students in German as much as possible.

My third informant was Markus, a German teacher at a suburban high school that includes Grades 9 through 12. His high school is on a seven-periods-per-day schedule. Markus’ high school is undergoing a dramatic socioeconomic shift. Twenty years ago, his school was predominantly White and middle class. The Latino population at his school is now around 15% and the minority population is around 20%. Markus has taught at his high school for the last six years, but he has been a German teacher in a wide variety of settings for over two decades. Markus is very dynamic in his classroom technology integrations. Markus has taught university German classes at several universities, and he is ABD in doctoral studies in linguistics. Markus is married to another secondary German teacher, and he is of German decent. The World Language Department at Markus’ school works as a cohesive unit and is active in acquiring new digital technologies for the teachers of the department. Markus is very analytical in his reflections about his digital technology integrations in his classroom. He is very well trained in second language
acquisition methodology, and his training guides his technology integrations. Markus currently teaches five German classes. Based on my observation of his classroom, it appeared to me that Markus taught in the German language about 85%-90% of the time. His students stay in the German language most of the time but feel free to use English to express themselves during class. Markus tried to plan activities that encourage the students to stay in the German language.

**Instruments**

During my first interview with each informant, I used a pre-prepared list of questions. The questions were an outgrowth of my own experiences, my pilot project, and my literature review. The questions were open-ended and designed to allow teachers to talk freely about the changes to the teaching and learning contexts in their classrooms resulting from technology integration and allow me to ask many follow-up questions. As I co-constructed meanings with my informants during the interviews and asked follow-up questions, I was the instrument (Lincoln & Guba, 1985). I prepared a second list of questions for the second interview with each informant based on my analysis of the first interview with Julia and a review of my Conceptual Framework. Using the critical theory of technology lens, I focused the questions for the second interview on power and identity. Just as I did during the first interview, I asked many follow-up questions during the second interview. The pre-prepared questions for both interviews are in Appendix A. In addition to the pre-prepared questions, I used Creswell’s (2005) classroom observation field notes protocol during my classroom observations (p. 213). The protocol I used is in Appendix B.
**Data Collection**

In order to prepare for the first interview, I conducted a classroom observation of my informants. During the observation, I played the role of nonparticipant observer. I collected both descriptive and reflective field notes during the observations (Cresswell, 2005). The classroom visits provided me with context that I needed to conduct the first interviews. The classroom observations helped me to dig deeper and ask pertinent follow-up questions during the interviews.

After the classroom observation, I conducted an approximately 70-minute, face-to-face first interview with each informant. Before the interview, I provided my informants with my list of pre-prepared questions so that they could prepare themselves for the interview. In addition to the pre-prepared questions, I asked follow-up questions and clarification questions in order to draw thick, rich descriptions (Denzin, 1989; Geertz, 1973) from the informants. During the interviews, I interactively shaped the interview through a dialectical process of negotiating meanings with my informant (Denzin & Lincoln, 2005). We fluidly negotiated meanings, and reciprocal understandings developed as I asked the informants follow-up and reformulated questions in addition to the questions I prepared (Mischler, 1986).

During my analysis of the first interview with Julia, I prepared for a second or follow-up interview with each informant. Based on my experiences during the first interviews with each informant, my analysis of the data from the first interview with Julia, and a thorough review of my conceptual framework, questions for the second interview began to emerge (Yin, 2003). These questions were designed to dig deeper into
the role that power and identity play in my informants’ decision-making process. I asked many follow-up questions during the second interview in order to draw out as much information as possible. The second interviews were each about 90 minutes long.

Interview Procedures

I recorded the interviews using my laptop, the free Audacity software, and a computer microphone. I placed the microphone closest to the informants so that their voices would be most audible. I sat about three feet away from the informants and made an effort to speak loudly enough that the microphone would pick up my voice well. After each interview, I used Audacity to turn the interview into an MP3 sound file. I found a transcription service on the Internet and submitted the MP3s to the service for transcription. The transcription service created a Microsoft Word text file for the interview. The transcriptionist highlighted several terms that came up in the interview which were unfamiliar or inaudible. After the Microsoft Word document was returned, I edited it by taking out the name of the informant, fixing the highlighted terms unknown to the transcriptionist, adding line numbers, and adding a document header.

Data Analysis

I analyzed my informant interviews and classroom observation field notes using a constant comparative method to scrutinize and make sense of the data throughout my analytical process (Charmaz, 2006). This allowed codes and themes to emerge throughout the process. I used the ATLAS.ti qualitative data analysis software throughout the analysis process. I analyzed the interview data for each informant separately
beginning with Julia, then Jens, then Markus. Each stage of the data analysis was influenced by the previous stages of analysis. I began to analyze the first interview of each informant by making notes in the margins of the transcribed text. Based on these notes in the margins, I made a list of possible codes. I then read and reread the text multiple times while coding the text. As I coded, I merged some codes, created some new codes, and deleted some codes altogether. I did use many of the same codes to analyze the interview data for each informant, but there were significant differences in the codes I used for each informant as well. A table with a list of the codes and an explanation of the codes I used for each set of interviews can be found in Chapter IV. Throughout the coding process, I reflected on the critical theory of technology lens (Feenberg 1991, 2002) and the concepts of power (Foucault 1971, 1980a, 1980b, 1984, 1990) and identity (Menard-Warwick, 2005). I also reflected on the Foucauldian codes used by Gore (1995). Gore’s codes helped me to settle on codes that would allow me to focus on the concepts of power and identity.

**Foucauldian Codes**

My coding of the texts was influenced by the Foucauldian codes used by Gore (1995). Gore used 12 codes based on Foucault’s writings about power relations to help her facilitate data collection and analysis. Her 12 codes were surveillance, normalization, exclusion, distribution, classification, individualization, totalization, regulation, space, time, knowledge, and self. Gore also defines her meaning for each code in a table. She defines surveillance as “supervising, closely observing, watching, threatening to watch, avoiding being watched;” normalization is “invoking, requiring, setting or conforming to
a standard, defining the normal;” exclusion is “tracing the limits that will define
difference, boundary, zone, defining the pathological;” distribution is “dividing into parts,
arranging, ranking bodies in space;” classification is “differentiating individuals and/or
groups from one another;” individualization is “giving collective character to, specifying
an individual;” totalization is “giving collective character to, specifying a collectivity/
total, will to conform;” regulation is “controlling by rule, subject to restrictions; adapt to
requirements; act of invoking a rule, including sanction, reward, punishment;” space is
“setting up enclosures, partitioning, creating functional sites;” time is “establishing
duration, requiring repetition, etc;” knowledge is “controlling, regulating, invoking
knowledge;” Self is “techniques/practices directed at the self by the researcher, teacher or
student” (p. 103). Gore used these codes to analyze data collected during classroom
observations.

My study used a different primary data source: teacher descriptions of their
perceptions of what happens when they integrate digital technology into their daily
curriculum. Although my primary data source was different than Gore’s, her 12 codes
were valuable to me as I collected and analyzed my data. Because I used constructed
grounded theory to analyze my data, I wanted my codes to emerge from the process.
Gore’s work establishing useful codes based on Foucault’s writings about power relations
informed my decision making as I worked through the analysis process.

I followed the same procedure for allowing main themes to emerge during my
analysis of the interviews for each informant. After coding the second interview, I reread
each of the text segments that were associated with each of the codes and made a list of
possible themes. I connected each possible theme to the codes that I felt supported that theme. I then pondered my list of possible themes and began to see that many of the themes were actually subthemes or aspects of another theme. This allowed me to decide on three broad themes that have multiple subthemes or aspects. The three main themes and the subthemes or aspects that support them are not identical for each informant. There are significant similarities, however. Because I analyzed Julia’s interviews, and then Jens’ interviews, and then Markus’ interviews, all previous analysis affected and influenced all subsequent analysis throughout the process. The three main themes along with the subthemes or aspects that support each theme for each informant are listed in tables in Chapter IV.

Validity

After coding the two interviews and deciding on the three main themes for each informant, I had my informants check my analysis to see if they felt like it accurately reflected what they had said in the interviews (Cresswell, 2005; Glesne, 2006). In order to allow my informants to check the analysis process, I created a document that outlined my analysis process. The document included a table listing the codes used in the analysis process and tables organizing the main themes and the accompanying supporting subthemes or aspects. The document also included the text segments that I had linked to each main theme and the subthemes or aspects that support each main theme. I also included a brief summary of the main points I would make in my full write up of my data analysis in this document. After creating this document for each set of interviews, I sent it to the individual informants via email and asked them to review the codes, themes, and
text segments to see if they felt like my analysis accurately portrayed what was communicated in the interviews. Each of the informants felt like I had been accurate in my analysis of the interview data.

In addition to having each informant check my data analysis, I had a language teacher colleague check the same document that I sent to the informants in order to verify that I had created accurate codes and that appropriate themes had emerged from the analysis process (Cresswell, 2005; Glesne, 2006). This colleague reviewed the analysis document for each informant. My colleague felt like I had been accurate and fair in my analysis of the data.

**Intertextuality**

As I employed the constant comparative method to code the interview texts, my focus was guided by Fairclough’s (2003) concepts of intertextuality and assumptions. Fairclough explained that, intertextuality referred to the “relations between one text and other texts which are ‘external’ to it, outside it, yet in some way brought into it” (p. 39). Fairclough took a very broad view of intertextuality, which includes specific quotations of texts external to the text as well as subtle, not always obvious references to other texts or portions of texts. Fairclough also had a very broad view of what constitutes a text. He included “any actual instance of language” (p. 3). Texts or instances of language weave together to form discourses in which social practices are embedded. Fairclough explained that “what is ‘said’ in a text is ‘said’ against a background of what is ‘unsaid’, but taken as given. As with intertextuality, assumptions connect one text to other texts, to the world of texts” (p. 40). As my informants described their experiences integrating digital
technologies, they subtly made intertextual references based on assumptions. As I coded the text, I looked for intertextual references and assumptions. Focusing on intertextuality prepared me to interpret the data I analyzed.

**Interpretation and Reporting**

I interpreted the themes that emerged from my analysis of the data using a critical theory of technology lens (Feenberg, 1991, 2002, 2005) informed by Foucauldian concepts of power (Foucault, 1971, 1980a, 1980b, 1984, 1990). This lens allowed me to interpret the changes to the implicit power imbedded in the complex interactions that formed the technology integrations in the classrooms of my informants. For example, a complex interaction between the teacher, the students, and the technology is created when the teacher uses a multimedia PowerPoint presentation to introduce and provide comprehensible input for a student role play of ordering food at a restaurant. The critical theory of technology lens informed by Foucauldian concepts of power focuses my attention on the kinds of questions I can ask as I interpret the teacher’s description of the interaction. “Is this activity more student-centered or more teacher-centered? How does the technology change the interaction? How do the teacher and students interact with the technology? How does the use of technology affect/change the power in the classroom? How does the teacher regulate the class? How do the students resist in this regulation? How does the teacher establish time and space in the activity? How do the teacher and students invoke knowledge to shape the discourse of the role play? How does the teacher differentiate or collectivize the students in the class? How do different student identities such as gender, age, ethnicity, or socioeconomic status affect the technology
integration? How does the teacher supervise the students as they engage in the role play? Who benefits from the interaction and how? What implications does the nature of these interactions have for second language learning?” Asking these kinds of questions about the experiences described by my informants allowed me to analyze and interpret the themes that emerged throughout the study. In addition, I compared my interpretations to the findings of other related studies on teacher perceptions and technology integrations throughout my discussion of the themes.

**Assumptions**

My study design assumes that an open-ended interview would produce data that is helpful in interpreting the experiences of secondary German teachers as they integrate technology. It also assumes that my pre-prepared interview questions and my on-the-spot follow-up questions would yield rich descriptions. I assumed that I will be surprised by some of the things that my informants would share with me in the interviews. My study assumes that I was able to find good informants who fit my purposeful sampling criteria. I also assumed that the critical theory of technology lens would be useful in analyzing and interpreting the data I collected. Finally, my study assumes that my interpretation of the analysis of my informants’ descriptions of their technology use in a smart classroom will be valuable to both researchers and practitioners.

**Constraints and Limitations**

This study was limited by the constraints of descriptive research. This study did not show any cause-and-effect relationship between technology integration and student
performance. My interpretations of the data have limited generalizability to other contexts and settings. My data collection includes only two interviews and one classroom observation per informant. The data I collected does not represent a perfect and complete description of all of complex teaching contexts of my informants. I have only three informants and all three are German teachers. Finally, my interpretations of the data are an outgrowth of the entire process, and my personal contexts play a significant role as a coproducer of meaning throughout the research process.

Chapter Summary

This research study uses a holistic, multiple case study design (Yin, 2003) and applies a mixed purposive sampling strategy that combines criterion sampling, convenience sampling, typical case sampling, and homogenous sampling (Patton, 1990). I have three informants who are all secondary German language teachers. I employ an emergent design where I conduct a classroom observation (Cresswell, 2005) and two interviews with each informant (Yin, 2003). I analyze the interview data using a constant comparative method (Charmaz, 2006). I validate my data analysis through an informant check and a colleague check of the codes and themes that have emerged from the process (Cresswell, 2005; Glesne, 2006). I interpret the themes that emerge from my analysis of the data using a critical theory of technology lens (Feenberg, 1991, 2002, 2005) informed by Foucauldian concepts of power (Foucault, 1971, 1980a, 1980b, 1984, 1990).
CHAPTER IV
ANALYSIS OF THE INTERVIEWS

In this chapter, I outline my procedures for analyzing the interview data with each of my three informants, and I present the main themes and subthemes or aspects of the main themes that emerged out of this analysis process. I present my procedures and my analysis for each informant separately.

I am a coproducer of the outcomes of my analysis of the interviews with my three informants in three significant ways. First, the themes that emerged out of the process were affected by my personal context that I brought with me into the analysis process. Second, my analysis of the interviews with my first informant affected my analysis with my second and third informants. Third, my position of power as a leader in the German teacher community also affected my interactions with my informants during the interview process and thereby affected my analysis of the interviews. In these ways, I am a co-producer of the outcomes of this analysis.

Analysis of Two Interviews with Julia

Analysis Process

I analyzed the two interviews that I conducted with Julia using a constant comparative method (Charmaz, 2006). I began the data analysis by reading the first interview and adding thoughts, reactions, and other notes in the margins. Based on these notes in the margins, I made a list of possible codes. I then read and reread the text multiple times while coding the text. As I coded, I merged some codes, created some new
codes, and deleted some codes altogether. Throughout the coding process, I reflected on the critical theory of technology lens (Feenberg 1991, 2002) and the concepts of power and identity. I also reflected on the Foucauldian codes used by Gore (1995). Gore’s codes helped me to settle on codes that would allow me to focus on the concepts of power and identity.

The process of coding the first interview and my reflections on the critical theory of technology lens led me to create the set of questions for the second interview. My questions for the second interview were intended to draw out rich descriptions of Julia’s decision-making process and her perceptions of how identity and power played out in her classroom during her daily digital technology integrations. Before I started to code the second interview, I settled on a list of 11 codes. As I read, re-read, and coded the second interview, I was flexible with changing the codes. After I had coded the second interview, I created Table 1 with the 11 codes that had emerged out of the process. Table 1 lists the code names, the number of times I associated the code with a segment of text, and a short description of the code.

After coding the second interview, I reread each of the text segments that were associated with each of the codes and made a list of possible themes. I connected each possible theme to the codes that I felt supported that theme. I then pondered my list of possible themes and began to see that many of the themes were actually subthemes or aspects of another theme. This allowed me to decide on three broad themes that have multiple aspects. The three main themes, along with the subthemes or aspects that support each theme, are listed in Table 2-4.
<table>
<thead>
<tr>
<th>Code name</th>
<th>Occurrences in text</th>
<th>Code description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Access to technology</td>
<td>70</td>
<td>A reference by the informant to any digital technology that the informant or the informant’s students have access to and can be integrated into the daily curriculum.</td>
</tr>
<tr>
<td>Authenticity</td>
<td>45</td>
<td>A reference by the informant to authentic German language and cultural materials that the informant or the informant’s students can access through digital technologies.</td>
</tr>
<tr>
<td>Changes resulting from technology integration</td>
<td>59</td>
<td>A description of or reference to changes in the daily curriculum that have resulted from the informant’s technology integrations.</td>
</tr>
<tr>
<td>Curriculum control</td>
<td>45</td>
<td>A description of the informant’s perception of who controls the daily curriculum during digital technology integrations.</td>
</tr>
<tr>
<td>Decision making process</td>
<td>120</td>
<td>A description of the informant’s perception of her decision-making process when planning to integrate digital technologies.</td>
</tr>
<tr>
<td>Identity</td>
<td>52</td>
<td>A description of the informant’s perception of her own or students’ identity.</td>
</tr>
<tr>
<td>Infrastructure to support technology</td>
<td>34</td>
<td>A reference by the informant of the informant of the digital technology infrastructure that is available to support her classroom technology integrations.</td>
</tr>
<tr>
<td>Motivation</td>
<td>104</td>
<td>A description of the informant’s motivation to integrate digital technology or the informant’s perception of student motivation to learn using digital technologies.</td>
</tr>
<tr>
<td>Normalization in the classroom</td>
<td>34</td>
<td>A description by the informant of how a digital technology has become a normal, regular part of the daily curriculum and no longer has an out-of–the-ordinary status in the classroom.</td>
</tr>
<tr>
<td>Relationships</td>
<td>30</td>
<td>A description by the informant of her perception of her relationship with other teachers, administrators, or students.</td>
</tr>
<tr>
<td>SLA utility</td>
<td>79</td>
<td>A description by the informant of how a digital technology can be used to help students acquire a second language.</td>
</tr>
</tbody>
</table>
Table 2

*Julia: Theme One and the Subthemes or Aspects that Support It*

<table>
<thead>
<tr>
<th>Theme</th>
<th>Subthemes or aspects of theme one</th>
</tr>
</thead>
</table>
| Technology integrations in a smart classroom reconstitute the classroom environment. | • The accumulation of smart classroom technology is a process that happens over time.  
• Some older technologies remain useful, and some digital technologies prove less effective.  
• Some digital technologies become an expected, natural part of the classroom experience.  
• Teacher and student identities are shaped by technology integrations.  
• Students have more control over the curriculum when technology is integrated.  
• Technology integrations provide access to authentic language and cultural materials.  
• Julia believes that digital technologies improve the teaching and learning process.  
• Julia has specific ideas about what digital technologies should be part of a smart classroom in the future. |

Table 3

*Julia: Theme Two and the Subthemes or Aspects that Support It*

<table>
<thead>
<tr>
<th>Theme</th>
<th>Subthemes or aspects of theme two</th>
</tr>
</thead>
</table>
| Julia’s beliefs about SLA affect her technology integrations. | • Julia’s SLA beliefs come from her own experiences learning German.  
• The teacher’s role is the role of guide.  
• Julia does not differentiate between newer digital technologies and older technologies in her planning process.  
• Julia believes that technology is not always best.  
• Once Julia has gained access to a specific technology, she starts to have ideas on how to use it. |
Table 4

*Julia: Theme Three and the Subthemes or Aspects that Support It*

<table>
<thead>
<tr>
<th>Theme</th>
<th>Subthemes or aspects of theme three</th>
</tr>
</thead>
<tbody>
<tr>
<td>Julia’s technology integrations are affected by non-SLA-related issues</td>
<td>• Technology integrations happen within a context of access to technology and infrastructure to support technology.</td>
</tr>
<tr>
<td></td>
<td>• Julia finds that problems unexpectedly arise when she integrates technology into her daily curriculum.</td>
</tr>
<tr>
<td></td>
<td>• Students have differing experience with technology and abilities with technology and frequently need to be taught how to use technology in an education setting.</td>
</tr>
<tr>
<td></td>
<td>• In Julia’s experience, lack of money or infrastructure has not been the primary hindrance to her technology integrations.</td>
</tr>
<tr>
<td></td>
<td>• Julia was not well prepared by her teacher education courses at the university. She learns to use new digital technologies by observing other teachers.</td>
</tr>
</tbody>
</table>

After coding the two interviews and deciding on the three main themes, I created a document that included Tables 1-4 as well as the text segments I had linked to each main theme and the subthemes or aspects that support the main themes. I also included a brief summary of the main points I would make in the full write-up of the data analysis. I sent this document to Julia via email and asked her to review the codes, themes, and text segments to see if she felt my analysis accurately portrayed what she had communicated in the interviews. She responded in an email, “I reviewed your initial tables and the chart.... I also read through all of the brief summary statements.... I feel accurately represented.” At this point, I proceeded with a full write-up of my data analysis for my two interviews with Julia.

**Theme 1: Technology integrations in a smart classroom reconstitute the classroom environment.** The first main theme that emerged out of my analysis of Julia’s
interviews is that her technology integrations reconstitute the classroom environment. In the interviews, Julia expressed her perceptions about how her classroom environment is reconstituted from several different angles. In this section, I will explore eight sub themes or aspects of the main theme that technology integrations reconstitute the classroom environment. I will first describe Julia’s perception that her digital technology accumulation is a process that happens over time. I will then show how she finds that some older technologies remain useful, and some digital technologies prove less effective. Next, I will illustrate that some of the digital technologies that Julia integrates become an expected, natural part of the classroom environment. Next, I will outline how Julia’s digital technology integrations shape teacher and student identities. Then, I will explain Julia’s perception that students have more control over the curriculum when she integrates digital technologies. I will then describe how digital technologies provide students with increased access to authentic language and cultural materials. I will then explain Julia’s belief that digital technologies improve the teaching and learning process. Finally, I will enumerate Julia’s specific beliefs about what digital technologies should be part of the smart classroom of the future. Each of these aspects weave together to illustrate Julia’s perception that integrating digital technologies reconstitutes her classroom environment.

**Digital technology accumulation happens over time.** The accumulation of smart classroom technology is a process that happens over time. Julia did not acquire the digital technologies in her classroom all at once. She acquired the technologies piece by piece over a period of time. Frequently, Julia even uses a time reference when she describes the
digital technologies available to her in her classroom. For example, she explained, “Two years ago I got a laptop through the District.” She added, “And then we do—we were able to get a digital camera given to us.” She continued, “I recently got us a scanner.” Julia’s description of how she acquired a digital projector and had it hung from the ceiling in her classroom illustrates particularly well how she sees her technology accumulation as a process.

And then I saw—I don’t even—I don’t know if it was a teacher who said, hey, a projector, or if I was watching somebody at some conference and it’s like, oh, isn’t that nice? You can just project that up. I don’t remember how I first—but I knew right away I wanted one, and so I actually was one of the few teachers that would check it out of the library and had it on a cart, and then they said, hey, you’re checking this out all the time, we’re going to buy you one, and so they bought me one. And then I was like, ‘the cart’s kind of in my way. Can we get one mounted? Get this mounted?’ And they’re like, ‘oh, we’ll just get you a new projector that can be more easily mounted,’ and it just kind of—I think what happens is teachers that start using it, there’s money and ways to get it.

As she engaged in the process of obtaining digital technologies, Julia has actively worked to get specific technologies for the Foreign Language Department. She explained:

In the Foreign Language Department, I’m the only person that’s really thought a lot about technology, so I was able—I was the one that ordered the universal DVD players for everybody.

Although Julia acquired much of the digital technology in her classroom through her own efforts, some of the technology was given to her without her having to specifically seek it out. When describing her classroom she states, “I have a sound system here.” She added, “I have a document camera that I can hook up to my Mac, which has been nice for just when you want to project something up and not have to use a transparency.” She continued, “We have three computer stations in here and two out here. They’re all Internet compatible.” She added, “The whole school is Wi-Fi, yeah.” Julia sees her
accumulation of digital technologies in her classroom as a process that she has engaged in over time. She sees herself as an active agent within this process. The accumulation of digital technologies over time has allowed her to process the changes that come to the classroom environment with her digital technology integrations over time.

_Older technologies remain useful and some digital technologies prove less effective._ As Julia integrated the digital technologies that she accumulates into her daily curriculum, she found that some older technologies remain useful. The overhead projector, in particular, has remained a useful tool in Julia’s classroom even though she had a document camera that would have the same and even more functionality. When asked if she preferred using her document camera or her overhead projector, Julia explained, “Right now, an overhead projector just because it’s [the document camera] still so new and the setup —my comfort level.” She explained in further detail.

You know what? I haven’t used it [the document camera] as often as I wanted to, and that comes with the challenge of sharing a classroom. Having to set it up, put it away, set it up, put it away, whereas if it was just out all of the time readily available like my overhead projector, I would use it more.

Julia shared a classroom because she currently only taught part time. In her current situation, she found it easier to use the overhead projector, but that might change next year. She explained:

I have an easy way of quickly printing an overhead. That’s like, ‘Oh, here we go,’ and we’re doing it, versus if I was in a situation where I couldn’t do that, which is maybe the situation that’s gonna happen if we change my room, then I might just force myself to become more comfortable with a document camera.

Julia was surprised that she still preferred to use her overhead projector, “With the document camera, I’m shocked that, no, I’m not using it as much as I’d hoped.”
The fact that Julia still regularly used her overhead projector even though she had a digital projector and a document camera led to an interesting hybrid activity where she used both at the same time. She had two screens at the front of her classroom. She projected on to one of the screens with her digital projector and onto the other with her overhead projector. Julia described this practice.

If we ever do any kind of song, they have the text on the screen. Although, today I showed the text on the projector, but normally if I was showing the music video, I would—I do the text first and then the video, and I would need to make an overhead so that I could have the text on one side and the video on the projector.

This side-by-side use of the digital projector and the overhead projector has developed over time because Julia did not stop using her overhead projector when she received a document camera. This example illustrates that Julia did not just scrap older classroom tools just because a new digital technology became available to her. Utility and ease of use played a significant role in the decisions that Julia made about her digital technology integrations.

Some of the digital technologies that Julia has accumulated over the years have proven less effective. Julia has tried out some digital technologies that she no longer chooses to use. She described one of these instances.

I had a set of MP3 players back a few years ago when I was really gung-ho on doing these listening stations, and the maintenance, and the keeping up, and just—it wasn’t worth it. And I found it easier if I just had CDs that they could just take out of their station folder and go put in the computer lab and just use the computer technology that was already there than maintaining anything in my classroom. I even had a set of boom boxes like that. I had MP3 players. We had it set up in the class, but it was just too much to—and it would get damaged, and it was just—I found it more than it was worth.

Julia believed that listening activities are valuable for her students, but she felt like the
boom boxes and the MP3 players were less effective than a CD in the computer lab. The boom boxes and MP3 players proved to be too hard to maintain over time. As Julia progressed in her technology integrations, she decided to use what was most useful and easy for her even when she had access to other options.

**Normalization of digital technologies in the classroom.** Julia found that certain digital technologies had become a natural, normalized part of her classroom that she uses daily. This is particularly true of her laptop and her digital projector. When I conducted the interviews, Julia had been recently substituting in another German teacher’s classroom on the days that she does not teach. This has made her aware of how valuable the digital projector has become for her. She reflected:

> Projector—I can’t—I feel my arms are tied without a projector. I have subbed at some other classes. If I’m in a classroom and all the sudden something’s going on, I’m like, oh, if I had my laptop, if I had my projector, I could—it would be such a great moment with the kids.

She added:

> Having immediate access to the internet that I can project has worked really well because there are teaching moments that just pop up, and it’s like, “oh, let’s go look that up.” It comes up all the time, and that is nice to go and just project it.

Using a laptop and a digital projector is no longer out of the ordinary in Julia’s classroom. Julia asserted, “I use it a lot. Whether it’s projecting something on the LCD thing [digital projector], or using audio, it’s always incorporated into something that I’m doing.” She continued, “but anything I can think of, I use via the projector—the LCD projector.” The combination of a laptop and a digital projector has become a normalized part of Julia’s classroom. She used them every day and they no longer have a special or out-of-the-ordinary status in Julia’s classroom, and Julia felt like her teaching would be
less effective if she no longer had this technology.

Another technology that has become normalized in Julia’s classroom with her advanced students was the webcam. She used a webcam to let her students record themselves speaking in German. She explained:

Well, the thing that I’ve used with my laptop is I put it—I have the luxury of having this other room off the side. I’ll have the students just with a web cam, because I don’t have just a Mic. I have them do some dialogs and things that then they go back and look at, but I don’t use it so much on my—I use it more on the advanced students.

Julia trained her students to use a webcam, and they used it throughout the year. She described the process.

Well, now I teach—instead of using those, I teach the kids how they can just do it on the computer, like usually the webcams. They’re there too. It’s not just voice, but they do have voice. And if I take maybe 20, 30 minutes to show kids how to do that, and then have them go back, and listen to it, and how to easily access that, then that’s a tool that they can use all year long, and I can just say, ‘Okay, we’re doing voice recordings,’ and they know what I mean. They know where to go. They know how to hook it up. They know what they’re gonna do with the file. Then they know what they’re gonna listen to the file. And I taught that once, and then it’s useful for other things later.

Julia had her students make an electronic portfolio with their webcam recordings. She explained, “So what I’ve had students do is some orals using a webcam, and then we upload them and give them a DVD that they can kind of make as an electronic portfolio.” Julia descriptions show that the webcam technology has also become normalized in her classroom. Her students have become used to using this technology, and they engage in webcam activities as a regular part of the classroom curriculum.

*Teacher and student identities are shaped by technology integrations.* As Julia engaged in the process of integrating digital technology into her daily curriculum, she has
come to perceive herself and her role as teacher in new ways. When I asked Julia if integrating technology into her daily curriculum changes her relationship with her students, she responded:

“I think so—I keep on coming back to this recent experience—subbing in this other class where they’re used to an older teacher. I think they—I think I was maybe able to personalize more with them. I don’t know if it’s because I wasn’t their regular teacher, but when they saw me doing things that they were familiar with, for example, YouTube. It’s like, ‘Oh, you know what YouTube is? Oh, you know I do that too.’ And I’m like, ‘Well, have you ever done this search?’ And so I think it enabled them to see me as somebody—I don’t wanna say different, but more of a guide to help them discover things that they’ve seen in their own. If I could reach them with something in their own world—so if I could find something that they’ve done outside of German and put a German twist on it, then I think that’s a benefit to them, and it actually connects it to their world more.

At other times in her interviews, Julia describes her role as a teacher who integrates digital technology as a “facilitator.” She explained:

Still teaching, still facilitating—I mean, I’m a language facilitator. I try to expose my students and guide them with their language learning. So if they’re using—I’m trying to think. A software or something they’re doing. All right, let’s say everyone has a smart board. Okay, they have a task they’re working on. What if they get stuck? That’s one of the biggest frustrations with technology is you get stuck. It’s like, where’s my help button? Yeah, sometimes there’s a good help button, but the teacher is still your best help button, and I don’t mean just any computer glitches and fix that, but say, you know what? I was working on this, it was talking about—like today, a couple of the students—we just started werden [will] and würde [would]. They kind of didn’t connect the activity we did with the werden and würde before, and they were like, werden and würde, what was that again? You know, having the teacher there to go back and say, you remember when we did this? I don’t think the software’s going to say, remember back two activities ago you did this? So still having the teacher connect the technology with the student—you need to have that connection.

During another part of the interview, Julia described her role as facilitator again.

Yeah, in a way it makes me more of a facilitator to help—well, definitely. I don’t know if this is what you mean by this, but I go to sites, and I teach kids where they can go because there is—it’s overwhelming. If you just sit down and try to say, ‘German sites,’ whew—or German materials—I try to narrow the search and
teach kids—give them a manageable place to go to for extra stuff, and that way they come to me and say, ‘Hey, yeah, I did check out that one site. I did do this and this.’ I’m teaching them how to be independent German learners, and they are not just always coming to me for the answers, so technology has been wonderful for that.

Julia’s role as “guide” or “facilitator” was tempered by other classroom needs. She described other aspects of her teaching role when she integrated digital technologies.

I definitely believe I’m a guide. I like to entertain. I think as an elective class, the class does need to have an element of entertainment. Policeman, I do feel very policeman when the kids are in the lab, but I like our lab in such that I can sit in the back and see what screen’s everybody’s on because we have the large LCD screens.

Julia believed that her teaching role changed and developed over time. When asked if her role had changed, she responded:

I think so, just as an earlier teacher trying to figure out the classroom management stuff, and then once I became more comfortable [with technology], I mean, that’s an ongoing issue, but once I became more comfortable with that, I could have them branch out a little bit with me.

Julia’s sense of her role as a teacher was shaped by her technology integrations over time, and she came to perceive herself as a “guide” or a “facilitator” and sometimes as an “entertainer” or a “policeman.”

Julia’s technology integrations not only shaped her perceptions of her role as a teacher, they also changed her relationship with her students. She offered the example of Amy, one of her reluctant classroom participators. Julia described an experience with Amy.

I think I want my students to not see me as the German expert or the German know all, but help them find places where they can go and have access. I find that my best students are students who do—like Amy. She’s not your paper and pencil type student, but her German is really good because she’s found a love for German music, and she goes out, and she goes and listens to—she goes and finds.
So if I have a German student that is being exposed to German outside of my classroom, that’s huge. So using technology to help my students be more independent learners and find their own German stuff away from me has been a great benefit of showing them how to use technology.

Julia continued with her description of her experiences with Amy:

Well, I mean, for, like, Amy, the fact that she’s excited about certain German groups—she’s opened up to me. The only oral participation point she’s had all week was talking about music. She didn’t have any other oral participation points. So, yeah, I guess it gives me some more—a reason to connect with other students that I might not have otherwise connected with. And it gives me a way to have the students—if they can go online and look up—and do things, then maybe if they decide they’re not going to take German next year because they can’t fit it in their schedule for whatever reason, they can still on their off time, for fun, look things up on the Internet and still have some language exposure.

Julia knew that technology impacts her ability to connect with her students, and she wants her students to see her as a teacher who uses technology. She asserted:

I think it’s important for them to know that I know some things, and at the same time, they know my limitations. I mean, I’m sure they know—they know which teachers use technology and which teachers don’t, or when I’ve subbed at another school for a teacher that has no technology at all, I got—the students almost seem to want to soak it up. “Show us this. Show us that. Where can I find this? Where can I find that?”

Julia integrated digital technologies so that she could connect in a different way with her students. It also allowed her to empower her students to become independent German learners who were not just reliant upon the classroom experience for their German language progress. Empowering her students in this way also changed the relationship that she had with them.

Julia also found that her technology integrations affected her student’s classroom identities. She observed that some students behave differently when she integrated technology into her lessons. Some students engaged more deeply with the material, and
others took on new roles in the classroom. Julia’s description above of her student, Amy, is a fine example of this. Amy usually played the role of nonparticipant in the classroom, but when Julia used digital technology to teach about popular German music, Amy transformed into an active participator. Julia told a similar story of a Latino student who became more interested because of technology integration.

I’m thinking of a classroom situation. I was subbing a class, and there was definitely a marginalized student in that classroom in terms of just—was kind of... he was Hispanic, but in that particular classroom there were several other Hispanics, which were different from my school environment. But yeah, he was just kind of off in his own little world in a way. And we actually did some music activities, and of course that involved technology. And he was able to win the prize with the activity, and that just immediately drew him into what it was. And subsequent music activities, he was definitely more interested.

This technology integration allowed this Latino to shift from an unengaged student to a more active participant in the learning process. Julia found that her technology integrations allowed her to empower students to express otherwise hidden aspects of their identities. She explained:

In order to respond for it, I’ve got to think of some specific situations. I think in terms of identity, yeah, taking on different identities—I almost think we take on different identities that are parts of our own identities. So okay, let’s say I have this identity and different circumstances let me highlight those different aspects of my identity. And I think in that way technology enables me in different ways to highlight or bring out certain parts of different kid’s identities or their personalities.

These examples show that Julia believed that her technology integrations affected the identities that her students took on in her class.

**Students have more control over the curriculum.** In my interviews with her, Julia expressed two conflicting ideas. She stated that she had more control over the curriculum when she integrated digital technologies, and she also stated that her students had more
control over the curriculum when she integrated digital technologies. Even though Julia expressed these two opposite perceptions of her classroom, when I asked her follow-up questions, it became clear that she believed that her students have a greater ability to
direct activities and make curricular decisions when she integrates technology. Julia said:

Probably a little bit more. I’m thinking back on the students like, “Okay, we’ve got the technology up.” If we were doing it in the textbook—so let’s say we were in a textbook, and the textbook was exposing us to—I’m trying to remember a music group or something. I think we were doing music that day. The music’s there. It’s already in the book. The students haven’t really picked which groups they’re looking at, it’s already been predetermined. Whereas if we’re using a technology forum where it gives us access to something outside of that, then we can choose which groups we look at, and the students can say which ones they wanna do more.

Julia likes to be flexible during her lessons and she encourages students to influence the
direction of a lesson. Students are more able to do this when Julia integrates technology
because the almost instant access to authentic cultural and language materials allows her
to follow up on student questions or look into specific student interests during any lesson.

Julia explained her thought process.

I don’t know if I’d say regularly, but yeah, with music and certain things that just pop up, yeah. Sometimes you’re like, well, you know, let’s check that out and just see where that—what’s there. So I am comfortable, and sometimes I have the students sit at the computer and say, you know what? Find that for us. There are a lot of sports fans in that last class, and they’ll frequently say, hey, you know, can we see the little highlight of this, and this, and this, and I’ll let them look it up and share that, and I think that’s good.

Julia did not always follow-up on student questions or interests, however.

It depends on what we’re talking about, if it fits in what we’re talking about, and if I want to go that direction. Because if I don’t want to go that direction, then we don’t; I cut them off.

One reason that Julia was not always comfortable allowing an activity to be student
driven is that she was not sure what she might find while accessing authentic cultural and language materials. Julia described her feelings.

I’ve always—I’m always hesitant about things like that because that has happened—not, like, blatant moments, but sometimes even just clicking from one thing to another and accidentally clicking something, or having something come up. Yeah. It’s like, oh, never mind. So that’s scary, but I’ve never had anything come back to bite me, thank heavens. But I think I’m careful enough that that won’t be an issue, but it could.

Although Julia wanted to give her students the ability to affect an activity, she saw herself as the decision maker. She expressed her feelings about whether students had more or less control of the curriculum when she integrated technology.

I don’t think the technology determines that. I think I still determine that. Whether it was a student raising their hand that they wanted to look at something, like go in a little direction with the music, or whether the technology wasn’t there, and then I was giving them that opportunity anyway. They always have—I always try to give them that opportunity for a say and make them feel like they’re involved in what’s going on, but I still make the decision, so I guess maybe it’s a semantic of that. I’m still deciding. And the designer, I’m not sure in terms of designing the lesson or designing….

Julia was a little conflicted in her feelings about control of classroom activities. She wanted to communicate that she was in control of the class. She also wanted her students to be able to direct activities and she encouraged this to happen, but she did this within the boundaries of what she felt was appropriate.

As the conversation continued, Julia expressed a very interesting idea. She explained that she thought that she allowed her students to take more control of activities when she was integrating a new technology or when she was doing something for the first time. She explained:

If I’m trying something new, I think I’m more swayed to take it—like let the kids take control of it. I’m thinking of like online things. I think the first times I tried
online I was like, “Okay, go to these sites and have fun,” type thing. Whereas now I’m like, “Okay, you’re gonna go here. You’re gonna do this and this and this, and then you’re gonna go here and do this and this and this.” So I have structured it more to make the student more on task and involved and focused, and I think that makes the activity itself more productive.

She continued, “And even nontechnology things I see that there’s less structure upfront, and then I become more structured as I realize how to be a better guide—a better teacher.” She felt that this was a general pattern for her as a teacher. She became more structured and allowed less student control as she discovered the pitfalls of an activity through her experiences.

Julia offered several specific examples of how technology integration can allow her students to have more influence over the daily curriculum. One example of how Julia’s students had more control of the curriculum when she integrated technology is when she used learning stations. This allowed her students to be able to self-direct and make individual choices about what they would learn. Julia explained:

Well, by letting students—with the stations, where they could go faster, or slow, or pick whatever topic they wanted to listen to, or what story they wanted to listen to, or activity they want to do, that was very much to make it more student-centered activity. So, yeah, I think technology can be more student centered depending on the activity and how you structure it.

Julia also provided her students with the opportunity to make curricular choices when they worked on a project in the computer lab. She described this opportunity.

If anything, I think it allows me—I’m thinking specifically in individualized student work in a lab and access to a lab. The students are able to go where they need to go at the speed they need to—I mean with direction and with guidelines, and I’m freed up and I don’t have to be standing over them, and that gives them some freedom, so I think it frees me up sometimes. I think technology often frees me a little bit from that controlling, micromanaging—not that I’m a micromanager, I’m not that, but it frees me up.
Another way that students could control the curriculum of Julia’s German class was for them to become more independent German learners and access more authentic cultural and language materials on the internet at home. Julia encouraged her students to do this.

So if I have a German student that is being exposed to German outside of my classroom, that’s huge. So using technology to help my students be more independent learners and find their own German stuff away from me has been a great benefit of showing them how to use technology.

In fact, Julia modeled this kind of independent learning for her students in class.

I go to sites, and I teach kids where they can go because there is—it’s overwhelming. If you just sit down and try to say, ‘German sites,’ whew—or German materials—I try to narrow the search and teach kids—give them a manageable place to go to for extra stuff, and that way they come to me and say, ‘Hey, yeah, I did check out that one site. I did do this and this.’ I’m teaching them how to be independent German learners, and not just always coming to me for the answers, so technology has been wonderful for that.

Julia wanted her students to be more independent learners, and she provided them with opportunities to direct their own learning process.

Not every activity that Julia planned offered her students more control over the daily curriculum. She reflected on her planning.

It depends on the day. I don’t know if I know how to explain those as well, but I know there are certain things I do that I cognizantly do because I know they’re student-centered activities and I want them to be more in charge of it. At other times, I do things that I know are more teacher centered because I think that’s what they need for that particular thing. So to answer your question, I don’t know percentage-wise, are we doing more teacher centered versus student centered? I don’t know.

Julia concluded, “Maybe the technology gave me a medium by which to create activities that are more student-centered.” When asked if she believed that having more control over the daily curriculum was good for students, Julia responded:

I think it depends. It could be good or bad. If the teacher doesn’t filter or doesn’t
keep the goals in mind, it can be a negative. But as long as it continues to go into the direction and the goals the teacher has, it’s a good thing because it’s connecting to what the students want. So letting them have input and letting them think they’re making decisions, when really the teacher knows we’re still going into that same direction the teacher wanted to go, it’s positive.

She saw a positive and a negative side to giving her students more control of the daily curriculum. She recognized that integrating digital technologies affects the opportunities she provides her students to control the daily curriculum.

Access to authentic language and cultural materials. Julia believed that students acquire a second language best when they have access to and interact regularly with authentic language and cultural materials. Julia learned German as a high school exchange student in Germany. Because of her own experiences, she had very strong convictions about using authentic cultural and language materials in her class. She saw technology as a vehicle to provide increased access to authentic materials. When asked to describe the ideal classroom, Julia said, “In Germany. It would be in Germany.” Julia explained how digital technologies helped her to provide more access.

Having immediate access to the internet that I can project has worked really well because there are teaching moments that just pop up and it’s like, oh, let’s go look that up. It comes up all the time, and that is nice to go and just project it.

When asked what motivated her to integrate technology into her curriculum, Julia explained, “Give them more quality, more exposure to German, yeah.” She went on to explain in greater detail.

Why do I use technology? Well, I’m thinking of, like, stories. I like doing little stories. Technology allows me to have everybody looking at the book instead of me just holding the book up, everybody can see it. So I use it so that I can expose the students to more of the visual stuff. I have found that students love knowing about German music. Every year we put together a mix CD that has—like this year I think 17 songs, and so each song is by a different group to get to know
more of the German culture, of what the students are interested in. I don’t pick the songs. The exchange students or the students themselves pick the songs, so the tech—that enables me to just get more stuff that the kids are interested in. And I want to say it sounds silly, but getting a mixed CD makes my German club enrollment really high because only club members get one.

Julia offered another example of how she provided her students access to authentic learning materials.

I show a lot of little video clips. German—interviews in Germany going around. I’m thinking of this one guy, the Wurst [sausage] guy going around talking about different types of Wurst. Wiener schnitzel [breadcrued veal cutlet]—everybody thinks Wiener schnitzel is a hot dog because, you know, Der Wiener schnitzel they sell hot dogs. So if I can get pictures of actual plates of Wiener schnitzel and talk about, oh, this is—it’s from Wien [Vienna] and those kind of things, so I think a lot of what I show are places and people and things in Germany, and then also a lot of music. I almost always show them the music video with the song unless it’s just really not appropriate, or if you notice I take out some of the words in the text and I didn’t want them to be able to see.

Julia wanted to provide access to a wide variety of authentic materials.

Visuals to show them what things look like, people look like. Going on talk shows, just letting them listen to things going on in Germany so they don’t think Germany is just ich habe ein Buch [I have a book], mein Buch ist blau [my book is blue]—that they can get more out of it.

She does not want her class to be based on textbook learning. She described her ideal curriculum, “It’s not just this textbook stuff. It’s a language that’s alive in another place.” Integrating digital technologies allowed Julia to provide her students with access to authentic cultural and language materials that make the German language come alive in her classroom.

Julia strongly believed that learning German was more fun when she integrated authentic cultural and language materials into her daily teaching. She explained:

Well, my favorite things to do are to find things on YouTube, or show the students actual Germans talking or doing weird things. Did you ever watch the
clip from *Die Wurst*? [the sausage] It’s through *Deutsche Welle*? [German international news broadcaster]...It’s hilarious. This guy goes around German streets and does these talking about different types of *Wurst* and does this little *Wurst* game. But very authentic, very just great, and it’s hilarious. And I like showing things that are funny to the students to say, “Hey, you know what, German can be fun.” That’s my fun, favorite thing to do.

Julia also believed that students want to learn German by having increased access to authentic materials. She offered her experience as a substitute teacher as proof.

Or when I’ve subbed at another school for a teacher that has no technology at all, I got—the students almost seem to want to soak it up. Show us this. Show us that. Where can I find this? Where can I find that? Because they’ve never been exposed to anything at all in the computer/Internet world of German.

Julia not only believed that students learned better when they were exposed to authentic materials. She also believed that students want to learn in this way.

Julia also believed that authentic materials can fill in gaps in her own teacher comprehensible target language input. She sometimes felt self-conscious about the quality of her German language skills. She believed that when she provided her students with access to authentic cultural and language materials, that those materials provided her students with the language input that they might otherwise lack if they only had her input.

She explained:

No, that’s definitely where I’ve got this access to other authentic German materials other than just me drawing a picture, or me holding up one of my pictures from my trips, or me talking about my experience. If we’re talking about a traveling experience, okay, I could talk about mine, but then we can go to somebody else’s experience, and have that be a part, so yeah, definitely. It helps me create less; otherwise I’d be sitting around creating more.

Julia felt like authentic materials filled in any gaps and made up any deficiencies that her own input to the students might have had.

*Digital technologies improve the teaching and learning process.* When directly
asked if she believed that integrating digital technologies improved the teaching and learning process in her classroom, Julia answered that she was not sure. She believed that she was a better teacher when she used digital technology, and she believed that her students had more access to authentic materials, which she believed ultimately lead to effective language acquisition, but she had no specific data and was, therefore, hesitant to unequivocally state that her students learned more when she integrated digital technologies in her lessons. Julia explained her belief that access to authentic materials improved the learning environment for students.

I feel—I mean, as a teacher, I feel—mean, I go back to food because I—we just did foods with my German One students doing some food stuff, and them seeing restaurants in Germany and seeing what a menu looks like in Germany, and those kinds of actual things, I know that that’s helping them visualize because they’re not there in Germany. Can I say that they’re better German speakers because of that or—they’re more interested in it—I guess that helps. I definitely say that technology has increased their interest. It’s not just this textbook stuff. It’s a language that’s alive in another place. I know that that’s increased for them.

Julia believed that she was a better teacher when using digital technologies. She offered one example.

I know that I’m a better teacher if I use it, because I know how important that visual aspect is of learning, and if I’m teaching in a variety of ways, I’m getting to more students, and it makes me a better teacher. So that respect, yes, that helps.

Julia offered another example.

I think it improves. In terms of thinking of visual—it’s much easier for me to stay in the target language, and talk, and have it comprehensible to students, and at the same time, they are seeing what I’m talking about. Because if they can see that image, and they see maybe that progression or whatever I’m talking about, then it’s easier for me to stay in the target language because they’re following along more easily.

In order to illustrate the improvements that she believed she had made in her curriculum
through her technology integrations, Julia drew a comparison between her own classroom and a classroom that she had recently subbed in.

I spent 3 weeks the last month subbing in a classroom that wasn’t mine. I got there and the teacher’s retiring, and she’s very old-school type teacher; does everything in her paper book, and transfers grades over to the computer once a week, turns on her computer that once a week. That kind of—just very not into it. She did use the overhead a lot, but she had an LCD projector in her classroom mounted to the ceiling, and when I got there I was like, “Great, let’s do this and this. Do you guys know how she connects it?” She had never once turned on that projector, and so once I turned that on—I did a little thing with—was it adjective endings or was it verb endings? I don’t remember. I was doing something grammar oriented using PowerPoint, just the way—little figurines were showing different changing. And I had maybe three or four students come up and say, “I’m in German 3, and that’s the first time I understood that.” Why, because I’m a better teacher? No, I don’t think I’m a more experienced teacher. I don’t think I speak German any better than she does. In fact, my German drastically needs help. But I showed the students in a different way through a different medium that grasped them. So technology just gives us another way to explain things to students who see it differently.

When asked to sum up whether her teaching is better or worse because she integrated technology, Julia stated:

Only better. Yeah, only better. Yes, I still have to make my own choices, and sometimes it’s a little overwhelming. It’s like, ‘Ahh, I can do this. I can do this. I can do this. Ahh, there’s a lot out there.’ Which is a learning process trying to filter what’s out there to what I can use and what I want to use what fits what I want to do, but even that process makes me better. The process of learning those things and then deciding what I wanna use.

Julia believed that she had made improvements to her teaching as she has integrated technology into her daily curriculum.

Julia also believed that her students were more engaged in the learning process when she integrated technology. When she compared her teaching when she first started out with her teaching now, she asserted, “I think my students are a lot more active than they were when I first started teaching.” She explained in more depth:
I think student/technology interactions, like where they’re engaged to what’s going on. I’m silently just watching them either view or—I like a lot—for grammar things I love different games where the students would be on their own on a computer in the lab. Where they’re going—and I think they get a lot more out of 10 minutes of adjective ending practice doing that, then 20 minutes or 30 minutes of me lecturing about it, or them doing paper and pencil type activities with it. So they’re interacting with the technology.

Julia felt like integrating technology helped her to get her students more interested in and engaged in classroom activities.

Although she felt like her students were more engaged, Julia was not willing to say that they produced more language or were better speakers of German. Julia stated, “I would not say that they’re better speakers now because of it, no.” When directly asked if she thought that her students ended up using more target language in the classroom when she was using technology or less target language, she answered:

No, I think they don’t produce any more. I think if anything—if anything they’re producing less because they’re more talking to their friend about what they’re doing, and so they revert back obviously to their native language because it’s easier to say, “Hey, look what this is doing,” or, “Hey, what do you think of this?” And so in a way I don’t know if it helps them produce more. I think I’m giving them a lot of input, but that is something that I don’t think they’re producing more.

Julia believed that she could provide her students with more authentic language input and that her students were more engaged in the learning process. She also felt like her students were also producing less German language during the course of classroom activities. This is an interesting self—assessment.

**Smart classroom of the future.** Julia saw more and more technology being integrated in her curriculum in the future. In particular, Julia would like her students to each have an individual computer tablet or smart board. She explained:
So maybe if I had all the money in the world, I would want a smart board. No, I want every student to have smart boards. Don’t they have, like, little smart boards—I heard something talking about…. Tablets, like elementary kids. They’d put smart boards in the elementary schools, but now they’re thinking it’s better just to get every kid a little tablet. That’s what I would do. Little smart board tablets. No more stinky dry erase marker smell. That’s what I’d buy.

As this quote reflects, Julia envisioned a future with increased technology integration, but she did not believe in just integrating technology for technology sake. She thought that a teacher should “have a purpose in mind that is based in good practice” before integrating a technology. She described her beliefs about acquiring new technology.

One thing at a time, and they have a purpose for it. Don’t just say, oh, I want to get a document camera. Have a thing in mind that you can do with it. That way it’s not as overwhelming because you’re so—okay, I’m going to do this, and there’s all these things you can do with it. It gets overwhelming. If you have one thing in mind, say, you know what? This is what I want to teach, this would be an ideal activity using a document camera, let’s just say.

She offered another illustration that expressed her view.

Yeah. I mean, if I can’t—like seriously, just like, “Okay, everybody has an iPad.” Well, I’d have to really come up with some serious language benefits for it, not just, “Oh, I have this iPad.” Because my goal is that they learn German, speak German, read German, understand German, do some German production, and if that’s not happening, then it doesn’t matter if they have an iPad.

Although Julia was very forward thinking and wanted to integrate technology in ways that support SLA goals, she would also like to be trained on how to use technology when she gained access to it. She described her feelings.

I would if somebody would show me. So if I’m a first adopter, I would anticipate somebody coming in and saying, “Okay, you’re the first adopter. This is how this could be used in this, and this could be how you use this, and this could be how you use this,” and then I’m willing to try new things out. And then I would modify it.

Julia wanted to include emerging technologies in her future teaching, she wanted to use
those technologies in ways that supported her SLA goals for her students, and she expected to be trained in how to use the new technologies that she acquired.

**Theme 2: Julia’s beliefs about how SLA affected her technology integrations.**

A second main theme that emerged from my analysis of the interviews with Julia is that her beliefs about second language acquisition (SLA) affect her technology integrations. In the interviews, Julia talked about her SLA beliefs in several different ways. In this section, I will present five subthemes or aspects of this main theme. First I will explain how Julia’s SLA beliefs are rooted in her own experiences in learning German as a high school foreign exchange student. I will then describe how she believes that the proper role of a teacher is the role of facilitator or guide. Next, I will illustrate how Julia does not differentiate between digital technologies and older technologies when she is planning an activity for her students. Next, I will present Julia’s belief that using technology is always best. Finally, I will show how Julia tends to grow into her technology integrations and has ideas over time about how she can use the technology in effective ways to help her students learn. Each of these aspects paints a picture of Julia as a reflective teacher who bases her classroom technology integrations in her SLA beliefs.

*Julia’s SLA beliefs come from her own experiences learning German.* Julia learned German as a high school exchange student in Germany. Because she learned in an immersion environment, she highly values access to authentic materials for her students. She integrated technology so that she could provide her students with more access to authentic language and cultural materials. Julia summed up her views about language acquisition in this way.
My true belief about language acquisition could be summed up in just exposure to the language. I personally feel that I’ve reached my levels of language ability from being in the country. I have this strong belief that if you really, really want to learn the language, you have to go to the country. You have to—and the reason to go to the country is just have it exposure, exposure, exposure. And I’ve met people who’ve never been abroad, especially third world countries that are teaching English. I’ve talked to people who speak English wonderfully, and they’ve never been in an English speaking country. They’ve only learned it in their native country, and all of it has to do with exposure and dedication to the language. So language acquisition—the more exposure you can get to it, the better. In the classroom with teenagers—that is sometimes my biggest frustration. Knowing what is the right way, and actually dealing with all the stuff around making that happen. Technology—and when I say technology, I don’t just mean internet-looking. Obviously, going to the internet, I could bring the language—those authentic situations in, but even just showing kids the language in the moment. I love—if I can show kids with a document camera or something, something that’s just right there, and I show them, and project it up, and get them—I’m even gonna say even a verb chart. If I can walk through—or adjective endings—walk through—manipulate things so that they can see the endings moving, I’m exposing them to the language. So technology gives—I mean, all types of technology give me ways of helping the students see language differently, or a different context, or more vocabulary—that kinda thing.

Julia believed that students learned German best when they were immersed in authentic cultural and language materials. The best immersion environment is, of course, Germany itself. Julia used digital technologies to provide her students with increased access to authentic materials. Her use of digital technologies reflected her SLA beliefs.

**The teacher’s role is the role of facilitator or guide.** Julia perceived herself as a language facilitator or guide in the classroom. She wanted to guide her students to gain access to authentic German language and cultural materials through technology integration. She described herself, “I mean, I’m a language facilitator. I try to expose my students and guide them with their language learning.” She added, “I definitely believe I’m a guide.” She did not want to be perceived as the ultimate authority figure when it came to the German language and culture. She wanted to facilitate language acquisition
by guiding her students to authentic materials. She asserted, “I think I want my students to not see me as the German expert or the German know all, but help them find places where they can go and have access.” She believed that students learned best when they could connect on an individual level with the daily curriculum.

And so I think it enabled them to see me as somebody—I don’t wanna say different, but more of a guide to help them discover things that they’ve seen on their own. If I could reach them with something in their own world—so if I could find something that they’ve done outside of German and put a German twist on it, then I think that’s a benefit to them, and it actually connects it to their world more.

Julia believed that a teacher should play the role of facilitator or guide in the classroom. This belief affected the ways the SLA activities she planned and carried out in her classroom.

*Digital technologies versus older technologies.* During our interview, Julia did not differentiate between newer technologies like a digital projector and older technologies like an overhead projector. She saw them both as important tools to accomplish her SLA goals for her students. When she planned an activity, Julia thought about all of the tools that she had available to her. She did not restrict her thinking to only digital technologies. Julia described how she thought about these tools, “So technology gives—I mean, all types of technology give me ways of helping the students see language differently, or a different context, or more vocabulary—that kinda thing.” At two separate times during the interviews, Julia reframed my use of the word technology to include an overhead projector. She asked, “And by technology, I’m meaning like the overhead projector. You consider that as technology, right?” At another point in the interviews she asked again, “Well, whether we’re talking a projector technology versus just an overhead
projector, because that’s technology too, right?” These examples show that Julia did not divide technologies into digital technologies and older technologies in her mind. She just used the tools that she had available to her to create more learning contexts for her students.

**Julia believed that technology is not always best.** Julia did not believe that using technology automatically made every activity better. She believed that teachers needed to think about methodology and the SLA value that a technology had when they plan to integrate new technologies. She stated, “Methodology, yeah. That it’s a sound, good way to teach the item, and start with that, and then just build from other things.” Julia planned her class around her SLA goals—not the technology that she has access to. She used a combination of technology and nontechnology activities. She explained:

I don’t wanna say the old way. I think sometimes it’s okay to not use—I think it just depends what I’m doing, and it depends on what the kids—how the kids are feeling. There are certain moments that you just know we have to do this one way, and there’s other times that you know what, maybe they would benefit from just quietly writing something out. Maybe we’ve seen it in an active way, and now they just need to see it in more of an on their own way. So I don’t know. Is that reverting back? Okay. I just—I’m not giving up the old because of the new. I’m not. We still do things without technology.

Julia wanted to use what she thought was most effective. She asserted:

If I try something and it’s just—I don’t think—I think there’s a better way to present it or have done it a different way, then—for example, the lyrics today. I don’t always give them a copy of the paper lyrics. Sometimes I have them just look it up on the overhead, but sometimes I want them to have it in front of them depending on how I want to work with it, but then I didn’t end up doing what I thought I was going to do with it, so it didn’t really matter that they didn’t have it in front of them.

Julia believed that teachers could focus too much on integrating technology.

And, to tell you the truth, I think there’s too—you can go the route of too much
technology. If it’s not the methodology, if it’s not the best way to teach something, maybe you don’t have to use it, but sometimes you have to play around with it a little bit to see.

Julia did not want to use technology for technology sake. She wanted to integrate digital technology when she thought it would be more effective than an activity that did not integrate the technology. She thought that technology could make a teacher’s teaching worse if “you’re overdoing it or not using it in conjunction with actual learning goals.” She made decisions based on “if it’s gonna meet the goal of what I’m trying to do for whatever that day might be.” Julia based her decisions on her SLA beliefs.

**New ideas come from continued use.** Julia did not always know exactly how she would integrate technology when she first gained access to it. She grew into her integrations as she had new ideas of how to use the technology over time. She explained:

> And once you start using it, think of more ways to use it. I think for sure when I first started using it, I used it more for projecting books. Like the scanned books things or my own personal pictures, and then I moved—as I myself learned more about different websites or different things, then I branched out from that.

She offered another example.

> Or if I could tweak how I was using it a little bit, like not just—for example, I think when I first started using the projector to project something, it was to project answer keys and show the students, oh, okay, this is how you could have filled this in type of thing, whereas then later it occurred to me, oh, if I leave my screen up and project it on the white board, I can have students actually getting their butts out of their chair, going up, and filling it in, or marking up the text. And just learning step by step, things that I can do that I think the students are getting more.

Julia’s ideas developed over time because her ideas were contextualized by her SLA beliefs. For her, this was a natural thought process. She explained, “Naturally you will grow and realize, oh, that’s a good idea based on that. Oh, and that’s not a good idea. I
won’t do that.” She added, “Sometimes I just try it out and see if it works, of if I can see it working for something that I’m doing.” She described her own process, “So starting out, you know, line upon line, little where you’re at. Get comfortable with that, and it’ll open up other rounds of things of how you could do it.” Julia had new ideas about how to integrate digital technologies into her daily curriculum as she thought about her SLA goals and as she continued to use the technologies that she had access to in her classroom.

**Theme 3: Julia’s technology integrations are affected by non-SLA-related issues.** A third main theme that emerged from the analysis of my interviews with Julia was that her digital technology integrations were affected by non-SLA-related issues. In the interviews, Julia expressed this in several ways. In this section, I will present five subthemes or aspects of this main theme. First I will describe how Julia’s technology integrations happened within a context of access to technology and infrastructure to support technology. I will then illustrate how Julia encountered unexpected problems when she integrated technology into her daily curriculum. Next, I will explain that Julia’s students had differing experience with and abilities using technology and frequently needed to be taught how to use technology in an education setting. Next, I will present Julia’s experience that lack of money or infrastructure was not the primary hindrance to her technology integrations. Finally, I will describe Julia’s perception that she was not well prepared to integrate digital technologies into her daily curriculum by her teacher education courses at the university. Each of these subthemes or aspects reflects the reality that Julia’s digital technology integrations are influenced by non-SLA-related issues.
Technology integrations happen within a non-SLA context. Although she wanted to make her decisions based on SLA methodology, Julia frequently had to make decisions based on things like access, infrastructure, time, and ease of use instead. For Julia, her decision-making process began with access to digital technologies. When asked about her thought process when integrating digital technologies, she explained:

I—what’s available to me and how I know how to use it, because if there’s something that I don’t know how to use, then I’m probably not going to use it for time. For example, I have some templates for some Power Point type games or the review type games, and they won’t work on my Macbook, so I don’t use them anymore. So if it’s not available to me, I don’t tend to use it.

The infrastructure in the school that existed to support technology integration also played a significant role for Julia. She specifically referred to training being an obstacle that stopped her from using a Smart Board.

I think it would, but going back to okay, money, no. I can use one. I can have one. But I have not—and they provided training on how to use those, but on days that I’m not here, so it comes back to my limited time outside of instruction to get it setup, to get my knowledge base, to make it work. But yeah, that would definitely be something that would be great. It just comes down to me.

When asked if she would use more technology if she had more time and training, she responded:

Yes, I would. I think I would. From what I—you never know what you don’t know. From what I think I don’t know, if it’s really what I think it might be, I think I would use it.

Time is also a significant factor for Julia. She described her thought process.

I have to look at other places, and to tell you the truth, it’s a time factor, and that’s one thing that I’m very aware of, that sometimes when I’m trying to take time, like, personal time, like, prep time to try to figure something out technology-wise, I’m maybe not doing other teacher things. Not to say that’s not teacher oriented, but I find that technology can be a time sucker. Not a time waster, because it’s
useful stuff, but I often find that learning something new is very much time involved.

Ease of use is also an important factor in Julia’s decision making process. She stated, “And of course, foremost is ease. Is it up? Is it ready?” She continued, “Having to set it up, put it away, set it up, put it away, whereas if it was just out all of the time readily available like my overhead projector, I would use it more.” She added, “I might either use more technology or less technology with them later in the day if it was less work or more work for me.” Julia wanted her decisions to be primarily based on her SLA beliefs. She described her priorities when it came to integrating technology, “Yeah, it has to have a reason and then how easily.” Her SLA beliefs were very important to Julia, but sometime it is non-SLA-related factors that shaped her technology integrations.

Problems unexpectedly arise. Although Julia was skilled at using and comfortable with technology, problems still arose that she did not see coming. She anticipated problems, but she did not always expect the specific problems that arose. The time that Julia had to spend on unexpected problems affected her decision-making process, her planning process, and her motivation. She recalled an experience that happened on the day of our first interview.

Although, today, I went to plug the music in, and since I do share a room, some of my cables were switched. One of them is gone. I don’t know why. So I just—I had a spare, so I worked it out. So that spur of the moment—to tell the truth, sometimes technology is great, and sometimes I feel like there’s a little waste of time while I’m trying to—like if something occurs to me and I’m trying to hook it up and fix it.

She described other problems that occurred.

Just random things that come up, like the cords not being there, or I had trouble with my sound card. So for, like, two weeks, I couldn’t project—I couldn’t
connect my computer to the sound system. So I pulled out the boom box which is still there because I couldn’t get the big sound system. So just little things that get quirky or not working, that’s frustrating.

Unexpected problems can even cause discipline problems.

In terms of discipline, if I know how to use the technology, and it’s working for me, and I can keep my teaching going, then it helps, but I would have discipline problems - kids getting kind of bored or off task—if I’m having to step away and deal with a technology issue. If the light bulb on the overhead goes out, and I have to go get the light bulb, and I have to go put it in. I mean, okay, granted that’s not hours of time, but those few minutes can completely change the ambiance of what I was trying to do.

When asked if she felt like technology was another ball that she had to juggle while she was teaching, Julia responded:

It depends if it’s working or not. If the technology’s not working, then no, that’s gonna all of a sudden be a ball that’s gonna drive me nuts. But if it’s working, then if anything it helps keep the discipline in the class because the students are engaged. And if they’re on task and like, ‘Well, okay,’ and ‘this and this,’ and involved, then it’s a positive.

In general, Julia believed that integrating technology into her daily curriculum was positive, but there were occasional unexpected problems that arose and caused significant problems for her in her classroom. These problems affected Julia’s planning process and her ultimate decisions about whether or not to integrate technology into a specific lesson.

*Students have differing experience and abilities with technology.* Julia found that her students displayed a wide range of abilities with using technology. Some were experts and some had very little skill. She dealt with this range of difference by always teaching students how to use the technology when she integrated technology into her curriculum. This sets up a difficult decision-making process for Julia because her job as a German teacher was to teach the German language and culture, but in order to use
technology, she also had teach students how to use the technology, and this took time away from her primary instructional goal. She explained:

Well, like, computer. You think, oh, yeah. My kid, he knows all about computers. Well, probably what the kid can do is log on and look up a couple of things, and it—to somebody who doesn’t know how to look up those things, it looks impressive. But when you ask that kid to do maybe more complex things or work with specific software or—just basic word processing type skills, or—they just don’t have the knowhow, and they still need to be taught how to use them. I think they’re—because they’re used to computers, they’re less intimidated by them. I really think there are some technology immigrants, as you say, that are very intimidated because they’re learned people and they just—there’s only so much time in a day, and they get—they have their system that works for them personally, and they just haven’t gone to that next step to learn something new, and so it’s intimidating. But I don’t think young people, per se, are automatically just—if they’re technology natives, they still need to be taught things, and I think often teachers are like ‘oh, they can do that. The kids know how to do it.’ Or using movie software—’oh, they’ll know how to make movies.’ No. They don’t all know how to make movies, and they still need to be walked through the processes.

She described the wide range of technology abilities that her students possessed.

I think there’s a lot in the middle. There’s definitely—you’re gonna have, in each class, a few that are—and I hate to stereotype, but there’s usually boys—that know, ‘Well, this, this, or try.’ Like some kids you say okay—especially in our lab, it’s a Mac, and now they have it setup that you can use a Window’s version or the regular Mac—what do you call those, formats?—Operating system? Well, and so I always tell them to go to the Mac, and I always tell them not to choose Internet Explorer because sometimes the java scripts don’t match up as much because Mac’s don’t update it as much. And I say, ‘Go to your Firefox internet browser,’ and there are—half the kids are like, ‘What? What’s a browser?’ And then there’s other kids that are like, ‘Well, the browser is blah, blah, blah.’ They’ll be like—you know, lose their patience and know what’s going on. So yeah, I think there’s a little of everything, and as a teacher we shouldn’t assume they know what it is, and we should just show them.

Julia believed that even if students knew how to use technology, they needed to be taught how to create quality content with technology. She stated:

Yeah, you still need to show them how to do the thesis statement and to write the paragraph and to do all of that, and not just assume, oh, you know how to use a
computer. Type your essay up. I mean we have to focus on the quality of what they’re doing on using technology. The quality still needs to be focused on.

She recognized that not all of her students have computer access at home. She described what she has observed.

You know, I’m surprised at how many kids don’t have—like I can’t just assume they’re gonna have access to internet. And that’s not so much a money thing; it’s often a parental thing, which I think it’s great. If kids come up to me and say, ‘No, my mom doesn’t let me do those things on the internet,’ or has restrictions times that kinda thing, I’m all for that. In terms at this school, all the kids have access to computers here at school at different times, but it still varies. There are kids that, yeah, they can go spend an hour on the computer at home looking at different German learning websites. There are other kids that they don’t have the time, or they just have other reasons that they don’t, so I can’t assume that they’re gonna have easy access and time to do things like that.

Julia did not want lack of access to a computer at home to become an excuse for students.

She asserted:

I think there’s definitely some students that have more access than others. If they use things at home, consumption things, like if they’re on the computer a lot at home, they’re definitely a little bit more savvy in the knowhow of how things work, but I don’t think not having access at home is really an excuse. Most kids have access through other medias or venues. I think maybe five years ago that was more of a concern, whereas now it’s a given. One way or another you’re going to have access to it.

Even though Julia was a German teacher, she still believed that it was her responsibility to teach her students how to use digital technologies in the context of her class. She described her role.

I think it’s my job as a teacher, period. We want our students to be lifelong learners, and if you can teach them—I think of my own life. All right, I’m a German teacher, but my—

She continued:

So if I can teach a student a tool that goes beyond language learning that they can take throughout their lives—if I can teach them about browsers, who cares if I’m
not the computer teacher. If I can show them certain things like that, great. If I can show them how to upload something to our website, then—or use an iMovie. If I can show them how to use iMovie or Movie Maker, okay, that’s a computer application, and yes it has language applications, but I don’t just see myself as, “Oh, I’m just the language teacher.” I think I can.

When asked if there was a threshold where she thought it stopped being valuable to teach students how to use technology, Julia responded:

I don’t know if I can quantify that. I think it definitely just comes into a comfort level of comfort. If I reach a point where I feel like this is turning away from a language acquisition class and more into a—well, I don’t even wanna define it. If I just feel like I’m moving too much away from the goal of what it was. I mean if the goal is to produce a strong video with language pertinent stuff, where the kids are applauding themselves for their German ability on the big screen, then that’s definitely needs to be the focus, versus the quality of the production. And that comes with self-evaluation as things go along.

Julia’s students’ varying abilities with and access to digital technologies presented Julia with a teaching dilemma of how to help all of her students succeed in her class. Julia solved this problem by always teaching students how to use whatever digital technology she was using. She tried to maintain her focus on language acquisition throughout this process.

**Lack of money or infrastructure has not been the primary problem.** One might expect money to pay for technology or infrastructure to support technology integration would be the primary hindrances that discouraged Julia from integrating technology into her daily curriculum. This was not the case for Julia. She felt that there was money for her to get the technology she wanted. She was also satisfied with the infrastructure in her school that existed to help teachers integrate technology in their lessons. Other factors like ease of use or having a specific idea of how to use a technology had a greater effect on her technology integrations. She described her situation.
You know, I—and I don’t mean to brag or say anything, but I’ve had lots of money available to me for things, and so cost has not been so much an issue. If I had known about it, I probably could’ve gotten it. It’s me knowing how to use it. If I didn’t know how to turn on a projector, or I didn’t know how to hook the projector up to my computer—if I knew how to hook it up to my computer, but I didn’t know how to get it to grab the signal, then I wouldn’t do it.

Julia felt like the infrastructure to support technology at her school is good. She explained:

No. I cannot complain. We have an on-site guy that’s just really good in Macs. This lady that was just here, she’s a technology specialist, and anything teachers need help figuring out, whether it’s on teaching software, or the school grade system, or hooking up my—having problems with my document camera, she has three class periods that she can dedicate to come help us and teach us stuff.

Julia described a teacher whose part-time responsibility was helping other teachers integrate technology into their daily curriculum and the IT department.

She’s a teacher as well, so she has three classes she teaches, and then she has three periods that she’s solely dedicated to helping teachers use—and since they’ve brought her on just to do that—she used to be a full teacher here so it’s not like they brought - she’s a new person here, but she’s dedicated to doing that. It helps a lot. And the IT people—we email any IT concerns. They go right to the iPod or iPhone—no iPhone—the iPhone of our school technology guy. And to tell you the truth, most things that I have asked about within that day, he comes on over and checks it out.

Julia concluded, “I feel like I get my answers right away and my help right away.”

Money and infrastructure were not the primary obstacles that Julia had to face as she integrated technology into her teaching.

**Preparation to use digital technologies in a teacher education program.** Julia felt like she was not well prepared to integrate technology into her daily curriculum by her teacher education courses at the university. She felt like it was other experiences that she had that had prepared her to integrate technology. She described her experiences.
No. The technology class I took was not anything remotely related to what I would’ve done in my classroom—or like using technology. It was more—I took one in my undergrad that had to do with making a program. We had this little man that we had to draw, and then that little man moved over. I mean, it was just very basic—not to date me or anything.

She added:

And then in my graduate program, I did take a computer technology thing. I don’t think it was a three credit class. I think it was a lower-credit class. And to tell you the truth, all I remember is meeting as a class in the computer lab. I don’t remember the details of it.

She described where she believed she had developed her technology skills.

No, in fact, I think my comfort level from technology comes from the fact I worked for five years in a brokerage firm. So any kind of down loadings, and softwares, and using technology came from that—like using softwares.

In an ongoing basis, Julia learned about new technologies from other teachers.

From going to other workshops or other teacher’s classrooms and seeing other people use it. I’m one of those, I have to see somebody using it, and then I can like, “Yeah, I can do that.” Whereas, if I was just looking around and saw what a doc camera was and was like, “I wanna try it.” No, that wouldn’t have happened. I was in a classroom, and I saw it working, and that’s what made me want it too.

Julia did not feel like she was adequately prepared by her teacher education program to integrate technology into her daily curriculum. She believed that she developed her skills through other work experiences. Julia learned how to use emerging technologies from other teachers.

**Conclusion**

Three main themes emerged from my analysis of my two interviews with Julia. First, Julia perceived that her digital technology integrations reconstituted her classroom environment. Second, Julia asserted that her beliefs about the SLA of her students
affected her decision-making process as she integrated digital technologies into her daily curriculum. Finally, Julia recognized that her technology integrations were influenced by non-SLA-related issues. Each of these themes reflects that Julia was actively engaged in the process of integrating digital technologies in her classroom. Some of these technologies became normalized for her and her students. She experienced problems and glitches, but she saw improvements in her own teaching and in the learning environment that she provided for her students.

**Analysis of Two Interviews with Jens**

**Analysis Process**

I analyzed the two interviews that I conducted with Jens using a constant comparative method (Charmaz, 2006). I analyzed the two interviews with Jens after I had already completed my analysis of the two interviews with Julia. As a result, my analysis of the two interviews with Jens was influenced by my analysis of the interviews with Julia. I began the data analysis of the interviews with Jens by reading the first interview and adding thoughts, reactions, and other notes in the margins. Based on these notes in the margins, I made a list of possible codes. Some of the codes were the same as the codes I had used to analyze my interviews with Julia; some were different. I then read and reread the text multiple times while coding the text. As I coded, I merged some codes, created some new codes, and deleted some codes altogether. Throughout the coding process, I reflected on the critical theory of technology lens (Feenberg 1991, 2002) and the concepts of power and identity. I also reflected on the Foucauldian codes
used by Gore (1995). Gore’s codes helped me to settle on codes that would allow me to focus on the concepts of power and identity.

I settled on a list of 14 codes before I started to code the second interview. In comparison to the codes I used to analyze Julia’s interviews, I expanded the SLA utility code into three separate codes: feedback, student language production, and teacher comprehensible input. I separated the SLA utility into three codes because Jens was more specific in his descriptions of his purposes when he integrates digital technologies into his daily teaching than Julia was. In addition to this change, I also dropped the relationships code because Jens did not make as many references to his relationships with other teachers, administrators, or students. Any references that he did make to relationships were coded using the identity or changes resulting from technology integration codes. I also added two other new codes that I had not used to code Julia’s interviews: administrative support and acquiring future technology. I added these codes based on my perception that Jens had spoken a lot about his new principal and his desire to acquire new technology during the interviews.

I used the same set of interview questions for my second interview with Jens. The follow-up questions that I asked during the interview were, of course, different and a result of the individual direction that the interview took. As I read, reread, and coded the second interview, I was flexible with changing the codes. For example, I merged administrative support with infrastructure to support technology, and i merged acquiring future technology with access to technology. After I had coded the second interview, I created Table 5 with the 12 codes that had emerged out of the process. The table lists the
Table 5

*Codes Used to Analyze My Interviews with Jens*

<table>
<thead>
<tr>
<th>Code name</th>
<th>Occurrences in text</th>
<th>Code description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Access to technology</td>
<td>35</td>
<td>A reference by the informant to any digital technology that the informant or the informant’s students have access to and can be integrated into the daily curriculum or a reference to technology that the informant would like to acquire in the future.</td>
</tr>
<tr>
<td>Authenticity</td>
<td>20</td>
<td>A reference by the informant to authentic German language and cultural materials that the informant or the informant’s students can access through digital technologies.</td>
</tr>
<tr>
<td>Changes resulting from technology integration</td>
<td>78</td>
<td>A description of or reference to changes in the daily curriculum that have resulted from the informant’s technology integrations.</td>
</tr>
<tr>
<td>Curriculum control</td>
<td>72</td>
<td>A description of the informant’s perception of who controls the daily curriculum during digital technology integrations.</td>
</tr>
<tr>
<td>Decision making process</td>
<td>59</td>
<td>A description of the informant’s perception of his decision-making process when planning to integrate digital technologies.</td>
</tr>
<tr>
<td>Feedback</td>
<td>37</td>
<td>A description of how digital technologies affect the feedback that the informant give to his students or that his students give to him.</td>
</tr>
<tr>
<td>Identity</td>
<td>100</td>
<td>A description of the informant’s perception of his own or students’ identity.</td>
</tr>
<tr>
<td>Infrastructure to support technology</td>
<td>22</td>
<td>A reference by the informant of the digital technology infrastructure that is available to support his classroom technology integrations.</td>
</tr>
<tr>
<td>Motivation</td>
<td>37</td>
<td>A description of the informant’s motivation to integrate digital technology or the informant’s perception of student motivation to learn using digital technologies.</td>
</tr>
<tr>
<td>Normalization in the classroom</td>
<td>41</td>
<td>A description by the informant of how a digital technology has become a normal, regular part of the daily curriculum and no longer has an out-of-the-ordinary status in the classroom.</td>
</tr>
<tr>
<td>Student language production</td>
<td>48</td>
<td>A description by the informant of how he uses technology to enable his students to produce German language.</td>
</tr>
<tr>
<td>Teacher comprehensible input</td>
<td>32</td>
<td>A description by the informant of how he uses digital technology to provide his students with comprehensible German language input.</td>
</tr>
</tbody>
</table>
code name, the number of times I associated the code with a segment of text, and a short description of the code.

After coding my second interview with Jens, I reread each of the text segments that were associated with each of the codes and made a list of possible themes. I connected each possible theme to the codes that I felt supported that theme. I then pondered the list of possible themes and began to see that many of the themes were actually subcategories or aspects of another theme. This allowed me to decide on three broad themes that have multiple aspects. My first broad theme is the same theme that emerged from my analysis of the interviews with Julia. Not all of the subthemes or aspects that support this main theme are the same, however. Several of the subthemes or aspects that support the other main themes are the same or similar to subthemes or aspects that emerged through my analysis of the interviews with Julia. Although two of the main themes are different, when compared with the main themes that emerged from my analysis of the interviews with Julia, in reality my analysis of the interviews with Julia and Jens are very similar. They both described similar experiences, decision-making processes, and value systems. Each informant emphasized some things a little more than the other informant. My organization of the three main themes and subthemes or aspects of these themes reflects the emphasis Jens and Julia expressed in the interviews. The three main themes along with the subthemes or aspects that support each theme are listed in Tables 6-8.

After coding the two interviews and deciding on the three main themes, I created a document that included Tables 5-8 as well as all of the text segments that I had linked.
### Table 6

**Jens: Theme One and the Subthemes or Aspects that Support It**

<table>
<thead>
<tr>
<th>Theme one</th>
<th>Subthemes or aspects of theme one</th>
</tr>
</thead>
</table>
| Technology integrations in a smart classroom reconstitute the classroom environment. | - Technology accumulation is a process that happens over time.  
- Administrative support allows Jens to expand his vision for his classroom.  
- Some digital technologies become an expected, natural part of the classroom experience.  
- Technology integration changes Jens’ classroom teaching.  
- Some of the positive outcomes associated with technology integration were unexpected.  
- Problems and glitches are an expected part of the process.  
- Jens is motivated by both time and quality. |

### Table 7

**Jens: Theme Two and the Subthemes or Aspects that Support It**

<table>
<thead>
<tr>
<th>Theme two</th>
<th>Subthemes or aspects of theme two</th>
</tr>
</thead>
</table>
| Jens believes his students are more engaged and learn more when he uses technology. | - Digital technologies are not just tools, they create an environment.  
- Digital technologies change the daily curriculum.  
- Digital technologies enable teacher comprehensible input.  
- Digital technologies enable student language production.  
- Digital technologies allow for more feedback.  
- Digital technologies provide access to authentic materials.  
- Digital technologies allow Jens to connect better with students.  
- Digital technologies change student behavior. |
Table 8

**Jens: Theme Three and the Subthemes or Aspects that Support It**

<table>
<thead>
<tr>
<th>Theme three</th>
<th>Subthemes or aspects of theme three</th>
</tr>
</thead>
</table>
| Technology integration affects control over the daily curriculum. | • Jens is more spontaneous and flexible when he integrates technology.  
• Jens does not see himself as the ultimate authority in the classroom.  
• Integrating technology allows for more student control of the daily curriculum.  
• Students need to be taught how to use digital technologies.  
• Students must learn to self filter when accessing authentic materials.  
• Technology is an equalizer for students of disparate backgrounds. |

To each main theme and the subthemes or aspects that support the main themes. I also included a brief summary of the main points I would make in my full write-up of my data analysis. I sent this document to Jens via email and asked him to review the codes, themes, and text segments to see if he felt like my analysis accurately portrayed what he felt like she had communicated in the interviews. Jens responded that he felt like my analysis accurately portrayed what he wanted to communicate. At this point, I proceeded with a full write-up of my data analysis for my two interviews with Jens.

**Theme 1: Technology integrations in a smart classroom reconstitute the classroom environment.** The first main theme that emerged out of my analysis of Jens’ interviews is that his technology integrations reconstituted the classroom environment. In the interviews, Jens expressed his perceptions about how his classroom environment was reconstituted in multiple ways. In this section, I will present seven subthemes or aspects.
of the main theme that technology integrations reconstituted the classroom environment. I will first describe Jens’ perception that his digital technology accumulation is a process that happens over time. I will then show how administrative support allows Jens to expand his vision for his classroom. Next, I will illustrate that some of the digital technologies that Jens integrates become an expected, natural part of the classroom environment. Next, I will outline how digital technologies change Jens’ classroom teaching. I will then explain how Jens did not expect some of the positive outcomes associated with his technology integration. Finally, I will explain how Jens was motivated by both time and quality as he integrated digital technologies into his daily curriculum. Each of these subthemes or aspects illustrate Jens’s perception that integrating digital technologies reconstituted his classroom environment.

Digital technology accumulation happens over time. Jens did not acquire all of the technology of a smart classroom all at once. He acquired the technology piece by piece over a period of time. He described the process that led him to get a digital projector.

From the get go I was trying to integrate different technology. My first year teaching we had our Channel One TV and I bought one of those little MyView things to hook my computer up to the little channel one TV so I could do something like that. And then I bought a big screen TV, and then I finally ended up getting the projector and things like that.

Jens actively sought out specific technologies that he believed would help him teach more effectively and help his students learn more effectively. He asserted, “I acquire the things that really help the students and help me.” He explained why he was anxious to purchase an active slate for his classroom:
That’s actually gonna be changing, though, in about one week because I got one of those tablets, a little tablet promethium, active slate is what they call it, so I won’t have to write using a marker. I can just write on the tablet and it will show up.

He continued talking about the software that comes with the active slate:

The neat thing about that software, as well, is I can select a certain window or full screen, and I can make a recording, and it will save it automatic MP4 format. And so I can give my lecture, I never lecture, my discussions, my little lesson plan or whatever and have that screen capture only a certain part of that, and it will record both my voice as well as anything that it sees on the screen; automatically saves it. I can shoot that right up to my website, and my students will have anything if they miss a day or if they need to review. So I’m really excited about that one.

For Jens, the more technology tools he had, the better. For him more tools equaled more utility. He described his view of digital technologies, “No, it’s a bag of tricks, it’s a tool, means—and really it’s the more tools you have, the better, and use multiple different ones so it doesn’t get old real quick.” Jens liked to use many different digital technologies in is classroom, and he always had a wish list of technologies he would like to acquire in the future. He described his plans to buy an active slate:

I’ve always got wish lists, so this next technology would be this active slate. I’m excited about integrating that, being able to post the stuff up on my website, and that. Share—just expand my mobility around the room. I’ll be able to control my computer from anywhere in the room. I won’t have to be up at the board with my back to my kids. So I’m really excited about learning about this one.

He would also like to acquire new clickers for his classroom:

I’d like to get some clickers. They do a little bit more than mine do now. It’s rather than the A, B, C, D, these ones work with the same software as the active slate, and there’s actually a text option on there where the students can text in a certain answer. So that’s my next little wish list is something that they can actually do that can give a short answer to a question, and that will provide immediate feedback for them as well. So that’s the wish list—its only $2000 though.

Jens saw his technology acquisitions as a process. He explained that he had obtained his
classroom technologies “slowly, you know, as the money comes in or as I can write a grant or as administration will approve it—that kind of thing.” Jens offered a good description of his perception of this process when he answers the question of what he thinks his classroom might look like in 10 years:

Classroom in 10 years? Clickers where students can text in answers, rather than select A, B, C or D. It sure would be nice to have the classroom set of computers. Wow, I’ve been teaching ten years now, and thinking about where it was at the beginning—the beginning of my ten years, I had an overhead projector and a whiteboard and my laptop. That was it. So, I don’t know, possibly—I don’t know. I’ve got a lot of the technology I’ve got—we’ll see what kinds of new technological advances that come out that’ll be helpful. Ten years has brought a lot for us coming from the little MyView that I could attach my laptop to the little Channel One TV in the classroom to an LCD projector shooting stuff on the board.

Jens had been actively engaging in this process for a decade, and he had acquired many digital technologies for his classroom. His focus throughout this process was adding tools that would help his students learn.

**Administrative support.** This year Jens had a new principal who really encouraged the teachers at the school to integrate technology in their teaching. Jens explained, “We just got a brand new principal this year, and it’s very nice. He promotes the use of technology like crazy. Really willing to fund a lot more technology in the school, so that’s pretty cool.” This principal had also been very helpful in getting money for the teachers to spend on technology. Jens elaborated:

He’s actually really actively involved in using trust land money to do that [purchase technology]. And plus, we’re a title one school, this is the first year for title one, and so for all the math and English teachers he’s using trust land money there to do technology for them, and then—no, he’s using title one money for them, then trust land money he uses for everybody else, so it’s pretty cool. He’s willing to actually write some grants for it, too, to get a little bit more technology in the schools.
Jens had made good use of this opportunity, and he was expanding his plans for future technology as a result of having this supportive principal. Jens described how he got money from his principal to buy a promethean active slate:

Well, see, one of our science teachers has had one, he’s had a Promethium Board [active slate], a smart board, and some of our CTE teachers have had smart boards up in the past. He just showed me what he had; it was probably about four months ago said here, check out this new toy I got, and I coveted, I wanted one, so went and talked to my principal and said hey, I need one of these, it’s gonna help my teaching. He just gave me the money to buy it, which is cool, so about 400 bucks.

Jens also had plans to ask his principal for more money:

The next thing that I have planned for next year, and I’m gonna write a little mini-grant to my principal, see if he does it. If not, I’m gonna try and write a grant elsewhere, don’t know where yet, though. I’d like to get some clickers. They do a little bit more than mine do now.

Jens’ principal was also very supportive of Jens attending a technology in education conference. Jens described his principal’s support, “Oh, yes, yes, yes, for sure. He actually encourages us to go. He’d actually like to attend it as well, himself, which is nice. He actually paid for my sub for this year, which is nice.” Jens felt very supported by his principal in his efforts to integrate digital technologies into his daily curriculum. This support allowed Jens to expand his vision of what was possible in his classroom.

*Normalization of digital technologies in the classroom.* As Jens integrated digital technologies into his daily curriculum, several technologies became an expected, natural part of the classroom environment. Jens’s digital projector was the foundation for all of his technology integrations. He exclaimed, “Okay. The—can’t live without it, is my LCD [digital] projector—use that every day.” Jens described how the interactive slate was becoming a normal part of his classroom environment:
My interactive slate—I don’t use a whiteboard marker near as much as I used to—never use an overhead projector anymore, save a lot of paper, lots of different things like that. But it also becomes an environment where it’s just part of the way the whole class works—how we do things, so part of the whole experience, the language-learning experience for the kids.

Citing the example of a fellow teacher, Jens described how his students came to expect technology integrations:

Yeah, it’s definitely—and then noticing, there are a few teachers in our school that are the same way. And you hear comments like, “Man, I wish all my teachers did this,” or, “This is so much easier this way,” or, “I understand it so much better this way,” using the technology than others. A lot of the kids want the technology. Thinking about our science teacher—he’s gung-ho technology—anything he can use and get his hands on. The kids love it. They love it. It’s part of his culture. It’s part of his class. That’s what they’ve come to expect, and if there’s not some kind of technology in that class that day, they’re kinda disappointed in it. I’m not quite to that level yet. I don’t use specific technology or this kind of stuff every day. There are some days I don’t use any kinds of technologies in that way, more modern technology.

Jens did not feel like he used as much technology as his science teacher friend, but he did integrate technology into most of his lessons. He explained that “most of my stuff is really involving at least one form of technology in almost every lesson.” Jens’ technology integrations became normalized in his classroom, and his students expected him to use technology on a daily basis. His technology integrations were no longer seen as out-of-the-ordinary or special.

**Technology integration changes Jens’ teaching.** Integrating technology changed Jens’ classroom teaching in several ways. He felt that technology had made him a better planner. Jens explained:

Successes that I’ve seen for me, personally, it’s caused me to be a little bit more organized in planning, and more thoughtful about what I really wanna do in my lessons. I haven’t been a very good planner to begin with, but it makes me think a little bit more about how I can bring more stuff into it that they’re interested in.
He added:

I kinda let some of the technology drive and make changes along the way there. But I do have to do a little bit more specific planning than I used to. Earlier on, before I had a lot of technologies, I could shoot from the hip a lot more and I wasn’t reliant upon having some kinds of images available or a PowerPoint presentation put together or a test already assembled on the clicker system or something like that.

Jens also felt like his technology integrations had made his teaching more student-centered. He described this change:

Definitely more student centered. At the beginning of my teaching, it was more teacher centered as in I’m trying to survive and figure out what I’m doing. But now, it’s gotta be around the kids. What do they wanna learn, and how are they doing. What do I want them to learn as well is important, and what is the core. But what do they wanna be able to do with the language.

Integrating digital technology changed the kind of activities that his students participated in during class. Jens alluded to these changes.

Definitely just not doing only the overhead projector thing. Lots of different kinds of activities, lots of different kinds of games, different kinds of assessments that I believe, too, that provide a little bit different feedback—so performance as a teacher.

Jens specifically described some of these changes in classroom activities. For example, Jens found many “online resources that they can go out and do—there’s activities that they can go and do.” Even activities that would not usually have a technology component had changed in Jens’ classroom because of the digital video cameras that he used. Jens explained, “They still do group work and stuff like that, too, but we can videotape it - videotape those kinds of group activities.” Integrating digital technologies allowed Jens to get out of the textbook, which changed the activities he planned for class. He explained:
My teaching—well, I’m reliant less - much, much less - on a textbook. I don’t use a textbook anymore to have to say, ‘Here, we’re gonna do this worksheet and we’re gonna do this in this order.’ It’s kind of freed me up to teach the content that naturally comes next with the kids. I’ve found that when I’m teaching, I don’t know—my teaching style has changed a little bit—not necessarily the style, but just the methodology of doing it. Trying to find different ways to engage the students.

These examples illustrate how Jens had made significant changes to his classroom teaching due to his digital technology integrations.

**Unexpected outcomes.** Jens liked to teach with an open-ended style where he was not always sure where his lesson would end up. He did not always anticipate some of the positive outcomes that resulted from his digital technology integrations. This was particularly true of the instance where two male Latino students significantly improved their academic performance due to a technology integration. Jens told the story of the two Latino students.

I have a couple Latino boys that—they actually wrote this phenomenal story in one of our little forum areas, and other people had to actually go in and read the story and everybody then had to comment on it. Well, the comments that these boys got back from their story just boosted them, and these boys then just became—almost, in a lot of ways—the class clowns. But they’re class clowns and joking around with the language. They never spoke English in class.

Jens observed that the success of these Latino students had even spilled over into other classes.

With these two little Latino boys that I was talking about, their English teacher has mentioned to me that she noticed a change in them. Now she can’t get them to shut up because they’ll still go and they’ll speak back-and-forth in German, but their confidence is boosted, so they’ll actually be able to then transfer back into English and say—I think because of their success in my class, they were able to just really go through and see some really good successes in other classes, too—a great confidence booster.

Jens believed that technology was instrumental in producing this success.
I don’t know that I could’ve created something like that that would’ve given that response without technology in my classroom. I don’t know that it would’ve been possible for me to create that kind of situation.

This success was unplanned and unexpected.

Oh, yes. It wasn’t the plan for me to create that kind of thing. It just—that was just a natural byproduct of what happened. I didn’t go through any planning processing—today I’m going to plan this and it’s going to have this response or this reaction and outcome.

Integrating digital technologies into his daily curriculum produced unexpected successes in Jens’ classroom.

*Problems and glitches are an expected part of the process.* Jens expected glitches along the way as he integrated technology into his daily curriculum. He did not always anticipate the glitches. He elaborated:

Always. There’s always glitches, things that don’t work, things that I can’t get the stuff to work right, software to work right, the camera won’t interface really well, or batteries run out, or kids drop the stuff and break it. There’s always some kind of glitch with technology.

A result of the unanticipated problem was that “Most often, there’s a glitch or a mistake or sometimes the kids are having to wait a little bit.” Jens found that integrating technology could break his teaching rhythm. He described his experience.

And I have found times when—in the middle of a lesson, saying, ‘Hey guys,’ somebody brings up a question, so then we can kinda go from there and take off on a different tangent and pop up the internet and say, ‘Okay, now, let’s see what we can find.’ It is possible to do that, it’s just not as smooth when you have to do that which I don’t think is necessarily a bad thing for students to see that we’re not—

The unexpected problems or glitches that came up did not deter Jens. He explained:

I’m comfortable with trying out new things and flopping on my face with a new technology. Ease of use for the kids—it may take a little bit of time to teach them who to use it in the beginning, but in the long run it actually helps.
Jens was committed to the process of integrating technology into his daily curriculum even though he regularly had to deal with unplanned problems. He believed that integrating technology was worth it in the long run.

_**Jens was motivated by both time and quality.**_ Jens was motivated to integrate digital technologies into his daily curriculum because of the time it could save him, the improvements he saw in his own teaching quality, and the quality of work his students produced. Jens described how integrating digital technology improved the quality of his teaching.

Quality of instruction, definitely. It allows me—the very first, it got me out of my comfort zone to try and stretch some—trying to see how to use it, but it actually makes me think a little bit more beyond the same lesson plans every single time. Trying to see how I can actually make this a little bit more interesting. Say, this is what I’m teaching, how can I engage the students a little bit more by using some kind of technology. How can I assess what they’re learning, what they know, how well they can do. As far as how it affects the students, using technology can—well, it can do so many different things; provide immediate feedback for them as well as for me.

Jens described how integrating technology in his teaching saved him time.

Plus, it expands what I can do. I mean you can only do so much. Writing on a board, it just, for me, it really saves a lot of time, too. I can write it on the board. In the past, what I’ve done is just I’ll write notes up on the board, I’ll take my digital camera, snap a shot of it, throw that digital image up on the website, or make a printout of that so I don’t have to try and remember okay, what did I write on the board, what did I cover this day, did I cover everything like I thought I did. Time saver, engaging the students.

Time and quality were the two primary motivators for Jens to integrate digital technologies into his daily curriculum.

Jens was not only motivated by the time he could save by integrating digital technologies; his planning process was also limited by the amount of time he had to
include a technology in his lesson plan. He explained:

A lot of it depends on how much time I have, and the ease of it. If it’s gonna be easy to throw technology in, great. If I have time to do it, great. Well, for example, I’ve got teaching body parts and things like that to my kids, I’ve got a file cabinet full of magazine cutout pictures. Real easy to go and stick those, chunk those with a magnet up on the wipe board and go over, teach vocabulary that way. Takes a little bit more time to throw—get on Google, find some crazy wacked out pictures of different parts of the body, or different people, or whatever, and put those into a presentation, and then run through something like that.

He continued:

Well, depends on—really, honestly it’s my time frame. If I’ve got the time, then that’s usually one of the first things that I think about if I’ve got the time, my lessons ready, then I’ll be able to think okay, how can I spice this up, how can I spruce it up just a little bit. Some of these last couple years it’s been—I’m teaching two new different subjects that I haven’t taught before, and I’ve got yearbook, and I’ve got track, and I’ve got honor society. I’ve gotta keep my head above water and so I’ll just do what I’ve done before using some of the technology, but nothing new added to it.

Integrating technology can be a time saver, but Jens still had limited time. As a practical matter, Jens must make choices about integrating technology into his daily curriculum based on the amount of time he has available.

**Theme 2: Jens believes his students are more engaged and learn more when he integrates technology.** A second main theme that emerged from my analysis of my interviews with Jens was that he believed that his students are more engaged and that they learn more when he integrated digital technologies into his daily curriculum. Jens described his beliefs about his students’ engagement and learning in multiple ways. In this section, I will present eight subthemes or aspects of this main theme. First, I will explore how digital technologies are not just tools, they create an environment. I will then describe how digital technologies change the daily curriculum. I will then explain how
digital technologies enable Jens to offer his students more teacher comprehensible input. Next, I will illustrate how digital technologies enable Jens’s students to produce more German language in the classroom. Next, I will outline how digital technologies allow Jens to give his students more immediate and specific feedback and provide opportunities for his students to give each other feedback. Next, I will describe how digital technologies allowed Jens to provide his students with more access to authentic cultural and language materials. Then, I will explain how Jens believed that digital technologies allowed him to connect better with his students. Finally, I will explore how digital technologies change the behavior of Jens’ students.

**Digital technologies are not just tools; they create an environment.** Although Jens did think of the technologies that he integrated as tools, he also used his technology tools to create a specific learning environment. A specific example of this was how Jens used Moodle software in the computer lab. Moodle was a free, open-source e-learning software platform that Jens used to run his class. Jens explained his use of Moodle:

> We have a Moodle server set up in the school that I can use, and so I can actually access through all the activities and things that I do on Moodle through that extra computer in the back of my room if students need some change to either practice or make up or things like that, too.

He continued:

> Producing—I don’t know if I’ve talked to you about some of the other things that I can do on Moodle as far as I’m creating the language in the chat rooms and forums, discussion boards—it’s fun to open up a chat room on Moodle, and give them a prompt, post a question. The most recent one we’ve done is their *Wo wohnst du lieber, auf dem Land oder in der Stadt?* [Where would you prefer to live, out in the country or in a city?], and then they’ll have a debate in this chat room completely in German. And that’s the rule, do whatever you want, it’s gotta be school appropriate of course, but it’s gotta be a debate going back and forth. Give your arguments, make sure you come up with some good *Gegenaargumente*
[counter arguments], and you’ve gotta back it up. Use weil [because], throw in some of the grammar stuff—they’ll go back and forth. I found, though, that you have to open up about five or six different chat rooms, otherwise the chats go too quick and I can’t follow them very well.

He added:

Uh huh, yeah, this is during a classroom. As far as the chats, I only open up the chat rooms for that time, during classroom time, and I close them again so they don’t get on there after school or when I can’t monitor it. The forums, though, they can post questions to little forums. I’ll give them a prompt and then they can respond to that prompt. We did the same thing for the little debate. They tell us where they’d rather live and why, give one good reason why, and then other students, everybody’s gonna post one comment on why, and then you’ve got to find three other people to post a Gegenargument [counter argument] say yes, okay, that’s cool, but this is why you might not want to, or this is problem with that. And those I’ll leave open all the time so they can actually do that from home.

Jens used his digital technologies as tools, but he also recognized that he was creating a specific environment. He reflected, “but it also becomes an environment where it’s just part of the way the whole class works—how we do things, so part of the whole experience, the language-learning experience for the kids.” Jens used Moodle to create a communicative environment where his students could engage in a wide variety of communicative activities. This environment was different than a regular class environment because students could communicate with each other through the medium of the Moodle software and not have face-to-face interaction during the communication. This new environment allowed for increased student language production and teacher-to-student and student-to-student feedback.

Digital technologies change the daily curriculum. Integrating digital technologies did not just reconstitute the learning environment. It also changed what was taught in the daily curriculum. The technology shaped the kinds of activities that Jens
employed in his classroom. Jens alluded to the changes in his curriculum.

I’ve found that when I’m teaching, I don’t know—my teaching style has changed a little bit - not necessarily the style, but just the methodology of doing it.—trying to find different ways to engage the students.

Jens described how digital technologies changed the activities he planned for his students.

Quality of instruction, definitely. It allows me—the very first, it got me out of my comfort zone to try and stretch some—trying to see how to use it, but it actually makes me think a little bit more beyond the same lesson plans every single time. Trying to see how I can actually make this a little bit more interesting. Say, this is what I’m teaching, how can I engage the students a little bit more by using some kind of technology. How can I assess what they’re learning, what they know, how well they can do. As far as how it affects the students, using technology can—well, it can do so many different things; provide immediate feedback for them as well as for me.

Jens offered a specific example of a communicative activity that was different because he integrated a digital technology into the activity:

Today we did a video. They planned a little role play, and they videotaped it; kids at a restaurant, one was the waiter—a couple [of students] were guests. Come in, they videotaped it, real interesting to plan for next time is actually to have them—we’re gonna play them in class so we can actually review. Rather than the kids just seeing them once as the role play, they’ll be able to review. We’ll play it for everybody and say “Okay, how did they do?”

He offered another example:

Haven’t got the little audio—a lot of teachers have the little audio recorders and things like that, voice recorders. I haven’t had those in the past, but I do have the Moodle in the computer labs that I can do. I can post—give them a little prompt, or a picture to describe, and in the computer labs we’ve got headsets and microphones, and they can actually just post straight to an audio recorder on Moodle, it’ll post right to there. I let them create that way. So that’s basically vocal things that they can do.

The digital technologies that Jens integrated into his daily activities change the kinds of activities that Jens planned for his students. In this way, Jens’ digital technologies
changed his daily curriculum. Jens made these changes because he believed that the students were more engaged when he did.

**Digital technologies enable teacher comprehensible input.** Digital technologies enabled Jens to provide more and higher-quality comprehensible input in German to his students. Jens believed that better comprehensible input lead to better second language acquisition. He also believed that his students were more engaged when a digital technology was involved with his comprehensible input. Jens explained, “I think the use of the technology in conjunction with a teacher supplying comprehensible input and feedback and coaching and direction, it just amplifies what it can do.” He gave a specific example of how he used pictures to make his teacher input more comprehensible.

Yes—by showing—even vocabulary acquisition is a great example of that. Being able to pop up the emotions onto the screen—people with different emotions and then talking about those different emotions and just advancing to a next picture or something like that or clicking on a different thing. Where the students can hear me talking about a certain emotion, and then they see the picture of it immediately, they make a little bit better connection with it. So, I think it has a lot greater value than writing a word up on a board and saying, “This means this.” Being able to connect a picture with it helps a ton.

He offered another example of how he used a PowerPoint presentation to create teacher comprehensible input.

I’ve got this really cool Power Point with some really funny pictures of people with big heads, and big noses, and everything like that; I’ll just pull that right back and use that to help teach. And they were the little clip art pictures—my intention this year was to go out and Google image it and find some really odd pictures that’ll kinda stick in the kid’s minds that way.

Digital technologies even supported Jens’ ability to tell stories in German.

As far as my own personal instruction, just using the things that I do from the Power Points to whatever, like that, to some even just storytelling, throwing up an image and then telling a story about it. It’s actually kind of fun. You’re going
stories from my childhood, showing a picture of me, as a kid, up there, then
telling a little bit longer story completely in German, or describing the
background of it, or describing anything. It kind of expands what I can do in a lot
of ways.

Jens concluded, “I think the use of the technology in conjunction with a teacher
supplying comprehensible input and feedback and coaching and direction, it just
amplifies what it can do.” When Jens followed this pattern, he believed that “they’re
gonna be engaged.” Jens was convinced that integrating digital technologies into his daily
curriculum improved the amount and quality of the teacher comprehensible input he
provided his students. He also believed that his students were more engaged by his
comprehensible input when he employed technology.

**Digital technologies enable student language production.** Integrating digital
technologies enabled Jens to provide his students with more opportunities to produce the
German language in class. Jens wanted to use digital technologies to maximize the
amount of German language his students produced. In his class, Jens’ students produced
videos, audio recordings, and all kinds of written work using digital technologies. He
described his goal in this process, “Let them create the language either written or verbal
either as the result of a prompt or other things like that, or also, just sometimes be fun -
engage the students.” He continued:

> Taking them into the computer lab where they’re actually creating stuff and
> recording it or writing down stuff—my goals there are different because I’m
> having them share that back with me so I can assess it a little bit later.

He explained how Moodle software helped him in this process.

> Giving kids real time—I guess, real-life situations like saying, “Hey, respond to
> this question quick, now!” And then switching it up halfway through where I’m
> asking them to respond to other questions along the way, kind of like an interview
Jens liked the fact that all of his student could produce spoken language at the same time when he used technology. He reported, “But like I mentioned before, those moments where everybody’s able to work on the one thing at the same time—like a speaking thing—the other ones have less time to get off.” Not only could Jens get his students to produce more German with technology, Jens felt like his students produced better German when they integrated technology. He asserted, “I’d say they produce better.” He compared his students now with his students from 5 years ago.

My students are able to speak for a whole class period completely in German this time, now. Whereas, 5 years ago when I wasn’t involved in the technology as much, they could still speak quite a bit, but probably not the whole time.

Jens believed that his students produced more and better German when he used technology.

**Digital technologies allow for more feedback.** The digital technologies that Jens integrated into his daily teaching allowed him to provide more immediate and more specific feedback to his students. The technologies also allowed his students to give each other more feedback as well. The clickers that Jens used allowed his students to give him immediate feedback about their learning process as well. Giving and getting more and better feedback was one of Jens’ primary uses of technology. Jens described his thought process:

Say, this is what I’m teaching, how can I engage the students a little bit more by using some kind of technology. How can I assess what they’re learning, what they know, how well they can do. As far as how it affects the students, using technology can—well, it can do so many different things; provide immediate feedback for them as well as for me.
Jens explained how he gave feedback using Moodle.

Using Moodle, there’s lots of different things that you can do just as far as feedback. If they do a chat room or if they do a post to a forum or if they do a blog, I can jump in on those little chat rooms or those forums or blogs and immediately just say hey, nice job, great comment, next time remember to capitalize all nouns, or just add little things onto that.

He continued:

Yes. I’ve found that—especially on writing and their writing prompts. When they get in and do a chat-room thing or they respond to a forum, something like that, our little server that we’ve got set up—I can give them more specific feedback quickly on that, or I can even be in one of the little chats with them at the same time and give immediate feedback: ‘Hey guys, don’t forget to capitalize all nouns,’ and going through that kind of thing. Versus the other feedback that I give to the other written stuff is a little bit more time intensive for me to go and circle all the stuff on the papers and stuff like that. That still happens, but I don’t know which one is necessarily the more effective. I think they kind of both have their place for what they do. The immediate feedback—the technology is great for immediate feedback.

He recounted a situation where students gave each other feedback.

Actually, yeah. They do that all the time. When they type in their answers or when they do some of those things, like specifically what you saw the other day, you see students typing the stuff in, and I think you probably saw that a bunch of the students say no, no, no, write it like this, or no, you spelled that wrong, and so it was coming from the students, them correcting their peers, which is a little bit better than a teacher saying ‘hey, you might think about doing it this way.’ So it’s kinda neat to see somebody else saying you forgot the umlaut or you didn’t capitalize that, or it’s I-E instead of E-I.

Jens predicted how he would give his students feedback when they watched the videos of their restaurant role-play situation during the next class period.

And so they’ll be able to plug it in and say ‘okay, great, do you realize that you called the guests Du [you] informal. You spoke to them using Du instead of Sie [you formal].’ ‘Did you realize that when you were doing it?’ Well, no, they were just speaking, trying to speak fluently and fast, and things like that, but they didn’t realize the difference between the two, and so we’ll be able to point that out next time. So that actually expands more than just a regular role play. We can actually go back and review and say “how’d you do, how’d you feel when you were doing
it, were you nervous, probably a little, but you’re just trying to get through?”
Brings in a whole new side of analysis that I can do, too.

Jens outlined how his feedback was better when he used technology.

Yeah. It’s really hard to put a smiley face or a check mark, you know, or a Gut on the top of the paper. You actually go into—I go into a little bit more depth with it. As far as their written assignments—feedback when they do the videos—well, we’ve talked about this a little bit before. Feedback during a role play—you don’t really wanna break into the middle of their role play. At the very end of the role play, you can kind of remember back and say hey, you guys did a really good job here. Shortly discuss some of that feedback when you’re replaying the video when they videotaped it, you can pause it and say “Hey, good, now look how they did here.”

Jens did not only give better feedback, he also got better feedback when he used technology. Jens described how he used his clickers to get feedback from his students:

Well, depends on a couple of different ways. I’ve got a set of clickers that I wrote a grant for, just little IR clickers, set of 32. When doing little quizzes or things like that, they can automatically see their responses. I’ll throw a short little quiz up on the board, and they’ll be able to see oh, I got that right, I got that wrong.

He added:

Well, I think it’ll actually be able to help me give more immediate feedback as far as the clickers go. It’ll save me quite a bit of time, too, as far as grading. I’ll be able to immediately see how the students are doing rather than having to have them do a quiz. [Or have] Me grading while they’re doing another assignment, or [have] me to grade it at night, and then come back to them the next day. Can immediately see, assess where they’re at, and if I need to re-teach something or not. Just kind of expand what I can do and immediacy of it.

Jens managed or guided his classes and engaged his students through the feedback he gave and received. He asserted:

I think I can control a little bit more of what learning goes on based on like our comments or the feedback. I can tell exactly where my students are, exactly, yeah, generalizing that. I can tell where my students are.

The ability to give better feedback was a primary motivating factor for Jens’s technology
integrations. Feedback was by far the topic that Jens talked most about during the interviews. For Jens, everything he did with technology was related to technology.

**Digital technologies provide access to authentic materials.** Jens was able to access authentic cultural and language materials and share them with his students using the digital technologies he integrated into his daily teaching. Jens highly valued this ability, and believed that authentic materials were central to the language acquisition process. Jens explained, “Part of what we do as German teachers, you know, really helping the students to realize that they’re citizens of the world. Bringing in more technology is bringing in stuff from around the world.” He added:

> But with the technology that we have now, with the projector, with websites, with live web cams from Berlin, lots of different things, showing them that Germans are real people, that they’re not really that much different than we are. Showing the kids over there they do the same things that we do over here.

Jens continued:

> Other technology—well, it’s always helpful for them to be able to get online and actually hear authentic language spoken, too. Being able to hear it as it really is and learn it so they can understand it when it’s going full speed, not slowed down—either by me or by other—some of our textbook texts that slow things down.

Jens also saw this access to authentic materials spilling over into the out-of-school lives of his students.

> If they’re engaged in the language, they’re gonna be going home and they’re gonna be on You Tube, they’re gonna be all over the place doing stuff on their own. They’re gonna be out searching for German music. I play German music, they’re gonna like it, they’re gonna be out there searching for their own. They’re gonna find other German teachers out there on the internet teaching them more than what I would just normally teach in a classroom.

He offered a specific example of his students accessing authentic cultural and language
via technology outside of class.

We’ve talked about this a little bit already; just expanding, making our world a smaller world, letting kids in [suburban] Utah be able to communicate with kids in Germany, either real-time by a Skype or something else, or through e-mail, or other forms. A lot of my kids right now, ‘[Mr. J.], last night I was playing this video game and I was talking with this kid in Germany, I kicked his butt, it was great, you know, and talked back and forth, but our conversation playing this video game was completely in German.’ So they’re literally speaking over the internet playing these games with kids in Germany at the same time, so really making the world a smaller place, letting them communicate.

Jens also felt like using authentic materials could fill in the gaps that his own comprehensible input might have had. He explained:

So some of the input that we use, I can use actually real authentic information, authentic data, or recordings. Shoot on the internet, find real Germans speaking the language, or real videos from German teenagers on You Tube, pull that in, plug that through my system through surround sound or whatever, and actually just use that so it’s authentic information there, not some cowboy from Colorado trying to speak German.

He made a second reference to the notion that authentic cultural and language materials could make up for any deficiencies in his own teacher comprehensible input.

Love taking kids down to the computer lab and letting them actually search for authentic websites, for real stuff, just to kinda get them more connection with the real language with the people so it’s not just something that some guy from Colorado’s teaching them.

Jens is committed to using authentic materials in his class. He concluded, “Hey, let’s make this real for the kids. Let’s have them engage. Let’s have them connect with the language, with the culture, with the people.” Jake used technology to provide his students with access to authentic cultural and language materials. He believed that this engaged the students and increased their opportunities to learn German.

*Digital technologies allow Jens to connect better with students.* Jens felt like the
digital technologies he integrated in his daily teaching helped him to connect better with the students. The technologies were fun for him to use, and he felt like if it was fun for him it would be fun for the students. He played the role of entertainer and guide for his students when integrating digital technologies. He described this role, “The more time I’m into this, the more I’m learning that I need to be more of a guide to the kids rather than spoon-feeding them everything.” He added that he was an “entertainer all along the way—using the technology or not—that’s—teaching junior high, that’s survival.” Jens wanted his class to be fun. He described his philosophy:

Yeah. A large part of it is: Is this fun for me? What do I want to do? If I’m gonna have fun, chances are that 80 to 90 percent of the time, if I’m having fun, the kids are having fun, too. So, if I’m having fun doing the certain technology, the kids are gonna be able to see that and feel that and respond to it. And they have fun with it as well. They’re engaged.

Jens described how he created this atmosphere and entertained his students.

Personally, I like to play with it, too—lots of little things to make it interesting for me so it’s not the same thing every day. Using laser pointers, using all kinds of other stuff, audio—we have audio-enhancement in our classroom now, so I use that to do all kinds of fun voices and stuff like that. I don’t know. I use my personality with whatever technology I’ve got and act like a dork, a kid.

Jens did not think that the technology he used determined his personality. Instead, he made the technology conform to him.

No. I don’t think it’s changed my style at all. I’m just as much of a goofball as I was back then. It’s just integrating what the technology is into my teaching style. It conforms to—I’d say—it conforms to me or it matches in with my style. I guess I use it to be an extension of me rather than me trying to fit in with how it works.

Jens was convinced that he had a better connection to his students when he integrated technology into his daily teaching. He stated:

Yeah, it’s definitely—and then noticing, there are a few teachers in our school
that are the same way. And you hear comments like, “Man, I wish all my teachers did this,” or, “This is so much easier this way,” or, “I understand it so much better this way,” using the technology than others. A lot of the kids want the technology.

He added:

Yeah, they kinda see that you’re still with it. You’re not one of the 12:00 blinkers, flashers on your VCR. You know how to hook stuff up. You know how to use stuff. You’re kind of in with their digital generation. Yeah, I think it does give you a little bit more credibility with them versus some other teachers that are techno-phobic. The kids—they laugh about it. When we do a clicker activity, they say, “There’s no way we’d do this in this other class. She can’t even turn her computer on.” Or those kinds of things.

Jens had an interesting insight into his relationship with his students. He reported, “I guess it’s evolving. As the technology increases, my relationship increases—makes it a little bit locker [laid back], pretty easy going in the class.” Jens believed that his technology integrations played an important role in his ability to create a fun learning environment and connect with his students.

**Digital technologies change student behavior.** Jens observed that his technology integrations changed student behaviors in a variety of ways. Most of his students participated more and were more engaged unless he was too repetitive with his technology integrations. He explained:

Most often, they participate a little bit more. Well, flashing pictures and stuff up on the screen, they’re gonna be engaged. They want to know what’s going on. They are automatically more engaged. But if you’re just using the same PowerPoint over and over and over again, they become less engaged and they say, ‘I know what’s coming on. It’s predictable. I’ll zone out.’ So, as you switch up the technology use, don’t use the same thing every time, it’s definitely a lot more engaging to the kids.

Some of his shy students felt comfortable communicating in a chat room activity. Jens reported:
Some of these really, really shy kids, they’ll jump in one of these chat rooms or these forums and totally rip on some of these other kids’ ideas that they’d never say to their faces, and they’re doing it completely in German. They’d be way too shy or insecure about doing it in other ways. I guess commentary on the time, you know, welcome to this age. So as far as that for my shy kids, it definitely increases what they can do. Their performance is greatly increased. Those kids that are normally out there and boisterous and whatever anyway, they’ll just have a fun time with it and ham it up.

Jens’ technology integrations made it easier for his students to give peer-to-peer feedback, but sometimes this kind of feedback could also degenerate into hurling insults back and forth using technology. He described what could happen.

Well, I guess it depends on which kind of technology you’re using and which time. The chat, definitely self directed, it can go whichever way they want, and you always have the couple of kids that’ll just go off and just start throwing out insults at each other, and deteriorates quickly. But some of the other things—I can kinda control a little bit more of what I want. The audio recordings, here, this is a specific prompt, I want you to talk specifically about this. You have a two minute description you need to do specifically about this. It can’t be shorter than two minutes, though. And they’ll have to be pretty creative towards the end there.

Jens had also experienced that using technology could inspire his students to goof off a little: He explained:

They have toys, and if not given specific directions, and if not, in a lot of ways, babysat, they can easily become distracted and want to play with it. They’re good at it, so they’ll find out all the little nooks and crannies, loop holes on how to get around certain systems in order to go and expand. They’ll blast through an assignment real quick on Moodle just so they can go out and find solitaire and play solitaire for five minutes or whatever, so that is one little obstacle and where it can get in the way.

Jens observed that his technology integrations did affect student behavior. Sometimes the technology encouraged good learning behaviors, and sometimes it encouraged negative behaviors.

**Theme 3: Technology integration affects control of the daily curriculum.** A
third main theme that emerged from my analysis of the interviews with Jens was that his technology integrations affected control over the daily curriculum in his classroom. During the interviews, Jens alluded to control of the daily curriculum in his classes in several ways. In this section, I will present six subthemes or aspects of this main theme. First I will illustrate how Jens was more spontaneous and flexible when he integrated digital. I will then report that Jens did not see himself as the ultimate authority in the classroom. Next, I will describe how Jens’ technology integrations gave his students more student control of the daily curriculum. Next, I will outline Jens’ conviction that students needed to be taught how to use digital technologies. Then, I will present Jens’ belief that his students must learn to self-filter when accessing authentic cultural and language materials on the internet. Finally, I will explain Jens’ perception that technology was an equalizer for students of disparate backgrounds. Each of these six subthemes or aspects indicate that Jens’ technology integrations affected control over the daily curriculum in his classroom.

_A spontaneous and flexible classroom._ Jens felt that he was more flexible and spontaneous when he integrated technology. In some ways he planned more and in other ways he planned less when he integrated technology. He liked to set up an environment or an activity and then let the students have the freedom to self-direct within that environment or activity. He described his class:

Oh, right. It makes it a lot more spontaneous. I like to plan in the beginning, but there is—they’ll pull out a question, hey, can we do this, or I wonder if we can research this, what about this, certain little things that kind of opens up doors. Hey, let’s go and explore this. My last question was about culture. In the middle of a lesson, you know, about health and sickness. ‘How do you say this? I’m not sure.’ Pull over to an internet website, little dictionary, plug it in—well, ‘this is
how you can say it, and these are four different things, okay,’ so let’s kind of expand on that. It’s a lot more spontaneous.

He added:

Oh, yeah, yeah. I like to have my own general idea of where it’s gonna go, have my objectives and what I want, essential learnings or whatever outcomes that you want them to accomplish, but if they’re steering it kind of in the direction based on what they want to learn, they’ll be a lot more engaged. They’re also a lot more inclined to remember it because it means something to them.

Jens continued:

I think—well, sometimes I don’t even really plan out the activities in specific detail at all like I used to. I kinda let some of the technology drive and make changes along the way there. But I do have to do a little bit more specific planning than I used to. Earlier on, before I had a lot of technologies, I could shoot from the hip a lot more, and I wasn’t reliant upon having some kinds of images available or a PowerPoint presentation put together or a test already assembled on the clicker system or something like that.

Jens explained:

And I have found times when—in the middle of a lesson, saying, ‘Hey guys,’ somebody brings up a question, so then we can kinda go from there and take off on a different tangent and pop up the internet and say, ‘Okay, now, let’s see what we can find.’ It is possible to do that, it’s just not as smooth when you have to do that which I don’t think is necessarily a bad thing for students to see that we’re not—

Jens reflected:

I can kinda turn them loose and let them explore in the computer lab. Rather than me focus and direct everything that they’re doing, they can kinda go off on their own and take the language to the level that they want to.

There was a limit to Jens’ flexibility and spontaneity, however. He explained:

If they bring up other stuff that I hadn’t necessarily thought of that’s not gonna take us too far off-track of where the game plan is, then it’s not that big of a deal to kind of take a bit of a side-track. At the same time, like before, I do like to have a little bit of control—a lot of control—we’re not gonna go and learn all the different parts of a motor on a World War II bomber and learn how to discuss all that vocabulary as a class.
Jens wanted his teaching to be flexible and spontaneous. He believed that this was a better learning environment for his students.

**Ultimate authority in the classroom.** Jens did not feel compelled to play the role of the ultimate authority in the classroom. He wanted to see himself as an entertainer and guide. He wanted his students to know that they had other resources beyond the teacher that they can access as they learned German. He knew that he was not the only German teacher that his students had, and he wanted them to be active in learning German on their own outside of his control. Jens described his process of taking on this teacher identity in the classroom. He recounted:

Only scary in as much as sometimes I doubt my own ability, and I’m getting a lot better at really being able to say, ‘Hey, I’m okay guys. Guess what? I don’t know the answer to that question.’ In the very beginning—my first two, three years—I had to be perfect. But since then, man, I’ve gotten a lot better at saying, ‘Hey guys, I don’t know the answer to that. Let’s find out together. Let’s learn together on this.’ Realizing that really, as teachers right now with technology, if we think that we are the only source—the only professional source, the only teacher of these kids of our subject area right now—we’re kind of big-headed on the thing. We’re puffed up on it. The kids are gonna go out and they’re gonna find stuff beyond what we teach them in the classroom setting.

Jens described how he functioned as a guide or entertainer.

Really, in a lot of ways, it’s the same as when I don’t use technology. It’s still, probably more I’d say, in the designer, the guide category. Just kinda saying - I design some of the technology, some of the writing prompts, the reading prompts and the speaking prompts. I design those to kinda give them direction. But then I kinda let them go and take it from there. I guess that’s a role, as well. Entertainer all along the way—using the technology or not—that’s—teaching junior high, that’s survival.

Jens’ students even gave him significant informal feedback on his performance as a teacher. He described a classroom moment:

I laugh at myself about it really. This interactive—my Slate that I use, the little
Promethean Slate—it’s great. These kids can write on that thing better than I can. Hand-eye coordination, oh my! I write stuff up on there and try to get things to work and they’ll shout out, ‘No, you’ve gotta click on this first. You’ve gotta do this different.’ I laugh about it; they laugh about it. It’s funny. They can kind of be my coaches and my trainers in a lot of the stuff. Sometimes they’ll say, ‘What are you, some kind of old guy?’ ‘No, I’m 36. I’m not old. I can handle this.’ But it’s good for them to be able to see that I’m not thinking that I’m superior in everything and have to be better than them.

He used other similar examples.

Lots of different ones, like, “Hey, that was cool.” Lots of, “Hey this is cool. We should do this more,” to, “Dude, you need to learn a little bit better how to do that.” Or, sometimes, “Man, that stunk; do it better next time.” They’re pretty open as far as feedback and whether things are effective or not.

Jens did not see himself as the ultimate authority figure in the classroom. He would rather be a guide or an entertainer. He wanted his students to recognize that he did not represent their only access to the German language. His digital technology integrations affected Jens’ status and authority a teacher in his classroom.

**Control of the daily curriculum.** When Jens integrated technology, his students had more control over the daily curriculum. Jens wanted his students to have more control over their own learning process, and his students came to expect that level of control in his class. When asked if his student had more or less control over the daily curriculum when he integrated technology, Jens responded:

More. I think they have more. It’s a lot more open-ended, especially with the internet age. They can get out there and they can learn. Thinking about sports—I only teach them a certain amount of sports. I don’t require them to learn all these other sports, and they go on there and say, “Okay, how do you say rugby? How do you say lacrosse?” I wasn’t planning on teaching them rugby and lacrosse. But they’ll go out and they’ll expand, “Hey, I’m interested in this. How do you say tennis racket or racquetball?” Things like this that aren’t part of my regular curriculum that I had in mind.

Jens expanded on how this played out in his classroom.
No, I try to create little situations where—activities—where they can actually go on there and say, “Hey, this is our general topic. Go out there, let’s get on the internet and try to find stuff, search on your own.” That’s part of what we really want to teach in our core is that they actually get in there and they have that love for the language—that love for the culture. They want to find it on their own. Students get in there—I’ll play a little clip of music and say, “Okay, guys: iTunes. Go. This is the band,” or, “Search the internet. Find out what these lyrics mean.” But I’ll leave that up to them. And then kids will come in all the time, “Hey, I was just checking out stuff on the internet the other night, and I found out—I did all this research on all the different kinds of military airplanes in World War II in Germany.” “Great, good job.” That’s nothing I ever even had a remote interest in studying.

As a result of his technology integrations, Jens felt like his teaching style had become more student-centered. He explained:

Definitely more student centered. At the beginning of my teaching, it was more teacher centered as in I’m trying to survive and figure out what I’m doing. But now, it’s gotta be around the kids. What do they wanna learn, and how are they doing. What do I want them to learn as well is important, and what is the core. But what do they wanna be able to do with the language.

Jens did not abdicate all control over the daily curriculum to his students.

Well, it’s just where their interests are. If they bring up other stuff that I hadn’t necessarily thought of that’s not gonna take us too far off-track of where the game plan is, then it’s not that big of a deal to kind of take a bit of a side-track. At the same time, like before, I do like to have a little bit of control—a lot of control—we’re not gonna go and learn all the different parts of a motor on a World War II bomber and learn how to discuss all that vocabulary as a class. If a student wants to do that individually, great, but as a whole class, no, we won’t spend that time. We’ll talk about some of the grammar concepts and stuff like that, but kinda let them do their own.

Jens felt like he had control over his classroom even though he was more flexible and spontaneous and allowed the students to direct the curriculum. He explained:

But some of the other things—I can kinda control a little bit more of what I want. The audio recordings, here, this is a specific prompt, I want you to talk specifically about this. You have a two minute description you need to do specifically about this. It can’t be shorter than two minutes, though. And they’ll have to be pretty creative towards the end there.
He added:

I like to have control over it. Based on my previous experience, I know what language abilities would kind of help lead into the next ability and into the next ability—which concepts tie into the others. I guess, the—just based on ease for me, being able to control that, that’s easier. But it doesn’t have to be. If something else comes up, great, let’s explore it a little bit. Maybe spend an extra day—a couple of days—going down a different path that I hadn’t thought of.

Jens believed that integrating technology into his lessons had “kind of freed me up to teach the content that naturally comes next with the kids.” He believed that the technology played a direct role in allowing his students more control over the daily curriculum. When asked if technology plays a role, he asserted:

Um-hum. I think so. As far as the lessons go and as far as what goes next, like that? I think element of control—and confidence, I think it gives them—as far as what they can control, not so much I guess. They are very confident with the technologies and I’m getting better.

Jens believed that his students learned better when they had more freedom and could self-direct during the learning process.

Yeah, I think the more they are engaged with what they do, for me, I think it’s the better. The more they drive—intrinsically versus the extrinsically motivated. They’re the ones creating the learning environment. Well, I guess I’m creating the environment, but they’re the ones kind of driving to where they want to go. So, they’re gonna be more interested.

Jens concluded, “I feel more in control even though it might be more freedom for the kids or more student guided and directed.” Jens wanted his students to have more control over the daily curriculum. He believed that his students learned better when they could self-direct more during their learning process. Digital technologies allowed Jens to create a classroom where this kind of learning could occur.

*Teaching students to use digital technologies.* Not all students have the same
background with technology. As a result, it cannot be assumed that all students come into the classroom with the ability to use the digital technologies that Jens integrated. Jens believed that his students needed to be taught how to use the technology when he integrated it into his daily curriculum. This can take time away from teaching the German language and culture. Jens felt that it was still worth it to spend the time teaching students how to use the technology because it improved their learning process. Jens found that students got better at using the technology very quickly. Jens described his stance on teaching students to use technology.

You have to for some of them. Others of them, they can sit down and just figure it out. But each time you introduce a new technology, you figure you always have to plan at least 20 minutes, a half-hour, whatever, to explain how this works, to walk them through the steps. Some will get it and some will say, “This is boring. I know how to do it. I can figure it out on my own.” Some are programming stuff already on their own. But others, you just make it, “Well done. Not everybody is as brilliant and as much of a brain-child as you. Hang out. Help us out. Help your neighbor.” But yeah, each time a new technology is introduced, you’ve gotta explain it.

Jens found that his students had a learning curve when he integrated technology.

No, I think they tend to—well, there’s a learning curve. They get in there the first couple of times—I’m thinking specifically, like, our chat rooms and our little forums or discussion boards, stuff like that we do—the first couple of times, they’re just trying to get their head around staying up on everything else that’s going on and responding to everything in the right amount of time and that kinda thing. Subsequent times when we do it, they know what to expect already so they can go in and they know they need to focus on certain things. However, if it does become mundane, rote, then they’re gonna find ways to make it exciting by goofing off with it or finding ways to undermine it—subvert whatever you’ve got going on.

Sometimes Jens discovered that he spent too much time focusing on technology when he reflected on his technology integrations. He explained:

After you’re done, you always say, “Man, that kinda took a little bit more time,”
like you noticed with your video. So, you kinda say, “Next year, I’m gonna do it a little differently,” or, “Next time we do this, we’re gonna do it a little differently.” So, as you plan the next time, you base it on your past experience and say, “Last time this took a lot longer.” For example, my videos this time, I said, “Guys, this is not about the video. I don’t care about your editing. I don’t care about all this. I just want video footage of you speaking, and I want it to sound fluent. I want it to be not something that you’re reading off a script or you just remember your lines. I want this to just capture conversations you guys are having. The audio is more important than the video technological part.”

Jens was not sure where he saw the threshold between teaching with technology and teaching technology instead of the German language and culture. When asked where this threshold was, Jens replied:

That’s something I’m still in the middle of, because actually, I just barely finished up a project where—exactly like you had just explained—our end-of-year video with my level-two kids. They created that video. A large part of it, well, I guess how I got past some of that is that I spent less class time on it and said, “This is an outside-of-class activity. Make it work.”

When asked if the “make it work” strategy was successful, Jens answered:

Yeah. They all did [finish a video]. Some of them—well, we have a built-in flex period, too, 30 minutes every day. So, they just chose to come in rather than just go to a different class during that time for remediation. They can make it work. If not, I can be flexible to an extent and make it work. I really don’t know where that threshold would be. I’m still trying to figure that out because I don’t want to—it’s fun to use the technology, but teaching technology for technology’s sake is good and helps the kids out, but doesn’t necessarily help us out all the time in our language acquisition. Sometimes it gets in the way.

As Jens taught with digital technologies, he found that he must also teach his students how to use the technology. He believed that it was worth it to spend time training the students how to use the technologies he integrated because the technologies improved the German learning process for his students. Jens was not sure exactly where the threshold lied between too much and too little teaching to use technology. He did not want to teach technology for technologies sake. He tried to address this issue by being reflective about
his technology integrations and making changes when he recognized a less effective integration.

**Self-filtering authentic materials.** Jens was very spontaneous and flexible in his teaching. He encouraged his students to access authentic cultural and language materials both in and outside of class. Jens saw a high probability that his students could come across objectionable material when they accessed authentic German cultural and language materials on their own through the Internet. Jens wanted his students to access authentic materials, but he also saw a need for students to learn how to self-filter the materials they encounter. He explained:

Yeah. I do. I do think about it sometimes. It’s a wide-open YouTube world now. So, I do think about it. I don’t know that it necessarily concerns me a whole lot as long as we continue to teach the kids about the technologies that are there and how to be their own filters and how to, I guess, really how to filter their content—how to responsibly use the technologies that they’ve got.

He continued:

It’s gonna change a little bit into—well, it’s gonna add actually a different aspect of it, of needing to teach children a little bit of moral responsibility, have them—I don’t know. Help them to realize that they are going to need to be a filter, they’re going to need to filter the information that they get from the internet or elsewhere especially as they’re looking into German stuff. If they’re not morally sound, it may be a little bit—they’re gonna need to filter some things. So helping them to do that is going to be an important role.

Jens believed that it was important for him to teach his students how to self-filter the authentic German cultural and language materials they encountered on the Internet. He saw the need for self-filtering becoming more needed over time.

**Technology is an equalizer for students.** Jens taught at a school with 80% lower income students and 40% Hispanic students. Many of his students did not have access to
a computer at home. Jens saw the access that these students had at school as an equalizer for these students. Because nobody at school tracked who had a computer at home or not, students who did not have a computer at home had the opportunity to try on the identity of students with access to technology during their in-school experiences. Jens described his school:

It’s a Title One school, so we’re at—next year we’re looking to get about 72 percent free or reduced lunch. We are about 40 percent Latino, and the rest are Caucasian white kids. Come in really lower income neighborhood, not very affluent. We do have some very affluent neighbors though, so it’s kind of an interesting little dichotomy between the two.

He described his students:

I’ve found that only about half of my students have computers at home, access to internet. They do all have the opportunity to go to the public library and do that kind of thing or stay after school. But many of my kids, they just—they have to go home and baby-sit rather than be at the school to use the technology that we have there. So, any technology use that we have that I will require, I’ve got to make sure that that can be done during the class period.

Jens described the technology skills of some of his Latino students:

Some of them—well, some of the ones that are just barely in the country, and they’re learning - their language ability is getting better, but they are still having a hard time between right and left click and double-click and things like that on a computer. But they learn quick. They learn a lot quicker than I do, I think, in a lot of ways.

Jens explained how his students without a computer at home could take on a new identity at school.

So, what role does their identity play? I guess, it can kinda be, I think, exciting for a lot of them because really—I don’t know—there’s nothing at school that says, ‘These guys have access to the internet at home. These guys don’t.’ So, it’s kind of a good balance or, again, balances all the students out. As far as their identity goes, I think it could be—using the technology can, again, equal them out in the classroom where they don’t have that access at home. The kids that come in with cell phones and iPods and everything like that—these other kids don’t have them.
He added:

I think it really can. They can—some of these kids can really change their identities in the chats, in the forums, things like that. We know now with Facebook, with email, with chats, instant messaging, there’s no immediate face, so the kids are a little bit more bold there than they are speaking face-to-face. Some of my shyer kids, specifically; their identity is being the shy kid, as being the very timid kid, they don’t mind getting in there and sharing their opinion in a forum because they’re not having to confront one person one-on-one a lot of times.

Jens saw access to digital technologies at school as an equalizer. He asserted:

Yes. It’s kind of an equalizer for a lot of the kids, especially where language can be a barrier. But they’re using the technology. They’re all using the same technology. They all know how to do it. And even those high-class, higher socioeconomic status, extremely, very educated parents and whatever, speak English perfectly, they’re on the same German level as some of my Latino kids that come from families that don’t speak any English and don’t have any education and that kinda thing. So, it’s a very good equalizer for them saying that they can accomplish, as well, no matter what situation they come from.

Jens did not necessarily think about the equalizing effect of technology when he planned a lesson. He stated:

When I plan—oh, like, using that technology? I usually don’t [think about equalization]. It’s just kind of a byproduct. It doesn’t usually—it’s not usually on my forethought just saying, “I can use this technology to be a benefit or to expose these kids to something they wouldn’t normally have at home.” That’s not usually a consideration at all.

Jens believed that his technology integrations in his classroom could have an equalizing effect on students who came from a disadvantaged background and did not have a computer at home. He did not think much about this when he planned his lessons, however.

**Conclusion**

Three main themes emerged from my analysis of the two interviews with Jens.
First, technology integrations in a smart classroom reconstitute the classroom environment. Second, Jens believed that his students were more engaged when he integrated technology. Finally, Jens’ technology integrations affected control over the daily curriculum. These themes paint the picture of a teacher who was actively engaged in the process of integrating digital technologies into the daily curriculum. Jens integrated technology into his daily lessons so that he could make his class more flexible and spontaneous. When he integrated technology, his students had more access to authentic cultural and language materials and they had more control over the daily curriculum. Jens believed that his class was more fun and engaging when he integrated technology. Technology integration had become normalized in Jens’ classroom, and his students had come to expect Jens to integrate technology into most every lesson.

**Analysis of Two Interviews with Markus**

**Analysis Process**

I used the constant comparative method (Charmaz, 2006) to analyze my two interviews with Markus. I analyzed the two interviews with Markus after I had already completed my analysis of the interviews with Julia and Jens. Because I analyzed my interviews with Markus last, my analysis with him was influenced by my analysis of the interviews with Julia and Jens. I began the data analysis of the interviews with Markus by reading the first interview and adding thoughts, reactions, and other notes in the margins. Based on what I wrote in the margins, I made a list of possible codes. Some of the codes were the same as the codes I had used to analyze my interviews with Julia. Some were
different. I then read and reread the text multiple times while coding the text. As I coded, I merged some codes, created some new codes, and deleted some codes altogether. Throughout the coding process, I reflected on the critical theory of technology lens (Feenberg 1991, 2001) and the concepts of power and identity. I also reflected on the Foucauldian codes used by Gore (1995). Gore’s codes helped me to settle on codes that would allow me to focus on the concepts of power and identity.

I settled on a list of 13 codes before I started to code the second interview. In comparison to the codes I used to analyze the interviews with Julia or Jens, I also used three additional codes: collaboration with other teachers, less effective integrations, and preparation of curricular materials. I did not divide the SLA utility code into separate codes in my analysis of the interviews with Markus. Although, Markus did talk about comprehensible input, feedback, and student language production, he was not as specific as Jens, and it still made sense to combine all references to second language acquisition processes in the SLA utility code. Just like I did with my analysis of the interviews with Jens, I dropped the relationships code because Markus did not make as many references to his relationships with other teachers, administrators, or students. Any references that he did make to relationships were coded using the identity or changes resulting from technology integration codes.

I used the same set of interview questions for my second interview with Markus that I had used with Julia and Jens. The follow-up questions that I asked during the interview were different as a result of the individual direction that the interview took. As I read, reread, and coded the second interview, I was flexible with changing the codes.
For example, I merged *authenticity* with *SLA utility*, I merged *infrastructure to support technology* with *access to technology*, and I merged *collaboration with other teachers* with *decision making process*. I combined these codes because I had not associated the codes with very many text segments, and they were proving to be less significant in my analysis of the interviews with Markus. Merging these codes left me with the final 10 codes listed in Table 9. The table lists the code name, the number of times I associated the code with a segment of text, and a short description of the code.

After coding my second interview with Markus, I reread each of the text segments that were associated with each of the codes and made a list of possible themes. I connected each possible theme to the codes that I felt supported that theme. I thought about my list of possible themes and began to realize that many of the themes were actually subcategories or aspects of another theme. This process allowed me to decide on three broad themes that have multiple aspects or subthemes that support them. My first broad theme is the same theme that emerged from my analysis of the interviews with Julia and Jens. Not all of the subthemes or aspects that support this main theme are the same, however. Several of the subthemes or aspects that support the other main themes are the same or similar to subthemes or aspects that emerged through my analysis of the interviews with Julia and Jens. The second main theme for Markus is the same as the second theme for Julia, but the subthemes or aspects that support the main theme are different. The third theme that emerged from my analysis of the interviews with Markus is different from the third theme for both Julia and Jens.
Table 9

*Codes Used to Analyze My Interviews With Markus*

<table>
<thead>
<tr>
<th>Code name</th>
<th>Occurrences in text</th>
<th>Code description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Access to technology</td>
<td>53</td>
<td>A reference by the informant to any digital technology that the informant or the informant’s students have access to and can be integrated into the daily curriculum or a reference to the infrastructure that exists to support technology integrations at the school.</td>
</tr>
<tr>
<td>Changes resulting from technology integration</td>
<td>90</td>
<td>A description of or reference to changes in the daily curriculum that have resulted from the informants technology integrations.</td>
</tr>
<tr>
<td>Curriculum control</td>
<td>33</td>
<td>A description of the informant’s perception of who controls the daily curriculum during digital technology integrations.</td>
</tr>
<tr>
<td>Decision making process</td>
<td>106</td>
<td>A description of the informant’s perception of his decision-making process when planning to integrate digital technologies</td>
</tr>
<tr>
<td>Identity</td>
<td>61</td>
<td>A description of the informant’s perception of his own or students’ identity.</td>
</tr>
<tr>
<td>Less effective integration</td>
<td>18</td>
<td>A description by the informant of less effective technology integrations.</td>
</tr>
<tr>
<td>Motivation</td>
<td>56</td>
<td>A description of the informant’s motivation to integrate digital technology or the informant’s perception of student motivation to learn using digital technologies.</td>
</tr>
<tr>
<td>Normalization in the classroom</td>
<td>41</td>
<td>A description by the informant of how a digital technology has become a normal, regular part of the daily curriculum and no longer has an out-of-the-ordinary status in the classroom.</td>
</tr>
<tr>
<td>Preparation of curricular materials</td>
<td>33</td>
<td>A description by the informant of how integrating digital technologies has changed his preparation of curricular materials.</td>
</tr>
<tr>
<td>SLA utility</td>
<td>93</td>
<td>A description by the informant of how a digital technology can be used to help students acquire a second language.</td>
</tr>
</tbody>
</table>

There were many significant similarities and many significant differences between the themes that emerged from each set of interviews. All three described similar experiences, decision-making processes, and value systems. Each informant emphasized some things a little more than the other two informants. My organization of the three
main themes and subthemes or aspects of these themes reflects the emphasis Markus expressed in his interviews. The three main themes along with the subthemes or aspects that support each theme are listed in Tables 10-12.

After coding the two interviews and deciding on the three main themes, I created a document that included Tables 9-12 as well as all of the text segments that I had linked to each main theme and the subthemes or aspects that support the main themes. I also included a brief summary of the main points I would make in my full write-up of my data analysis. I sent this document to Markus via email and asked him to review the codes, themes, and text segments to see if he felt like my analysis accurately portrayed what he felt like she had communicated in the interviews. He responded in an email, “The themes

Markus: Theme One and the Subthemes or Aspects that Support It

<table>
<thead>
<tr>
<th>Theme one</th>
<th>Subthemes or aspects of theme one</th>
</tr>
</thead>
<tbody>
<tr>
<td>Technology integrations in a smart classroom reconstitute the classroom environment.</td>
<td>• Technology integration is a process that happens over time.</td>
</tr>
<tr>
<td></td>
<td>• Digital technologies change the daily curriculum.</td>
</tr>
<tr>
<td></td>
<td>• Digital technologies change the planning process for Markus.</td>
</tr>
<tr>
<td></td>
<td>• Digital technologies improve teacher comprehensible input.</td>
</tr>
<tr>
<td></td>
<td>• Digital technologies create more opportunities for student language production.</td>
</tr>
<tr>
<td></td>
<td>• Digital technologies allow for more feedback.</td>
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<tr>
<td></td>
<td>• Digital technologies help to engage students.</td>
</tr>
<tr>
<td></td>
<td>• Problems and glitches are an expected part of the process.</td>
</tr>
<tr>
<td></td>
<td>• Some digital technologies have become a normal, expected part of the classroom experience.</td>
</tr>
</tbody>
</table>
Table 11

*Markus: Theme Two and the Subthemes or Aspects that Support It*

<table>
<thead>
<tr>
<th>Theme two</th>
<th>Subthemes or aspects of theme two</th>
</tr>
</thead>
<tbody>
<tr>
<td>Markus’ SLA beliefs affect his technology integrations.</td>
<td>• Digital technology integrations should be based in SLA methodology.</td>
</tr>
<tr>
<td></td>
<td>• The teacher’s role is multi-faceted.</td>
</tr>
<tr>
<td></td>
<td>• Markus believes that the teacher should direct the daily curriculum.</td>
</tr>
<tr>
<td></td>
<td>• Markus motivators are multi-faceted.</td>
</tr>
<tr>
<td></td>
<td>• Digital technologies are not always best.</td>
</tr>
</tbody>
</table>

Table 12

*Markus: Theme Three and the Subthemes or Aspects that Support It*

<table>
<thead>
<tr>
<th>Theme three</th>
<th>Subthemes or aspects of theme three</th>
</tr>
</thead>
<tbody>
<tr>
<td>Markus’ beliefs about identity affect his technology integrations.</td>
<td>• Markus believes that today’s students do not perform as well academically.</td>
</tr>
<tr>
<td></td>
<td>• Students bring identities with them into class.</td>
</tr>
<tr>
<td></td>
<td>• Markus believes that it is not technology; it’s the teacher.</td>
</tr>
</tbody>
</table>

you have selected seem entirely appropriate, and as far as they support your theses and your theoretical framework, I think you should use any quotes you want.” At this point, I proceeded with a full write-up of my data analysis for my two interviews with Markus.

**Theme 1: Technology integrations in a smart classroom reconstitute the classroom environment.** The first main theme that emerged out of the analysis of my interviews with Markus was that his technology integrations reconstituted the classroom environment. In the interviews, Jens expressed this theme in a variety of ways. In this
section, I will present eight subthemes or aspects of the main theme that technology integrations reconstitute the classroom environment. I will first describe Markus’ perception that his digital technology accumulation was a process that happened over time. Next, I will explain how digital technologies changed the daily curriculum in Markus’ classroom. Next, I will summarize how digital technologies changed Markus’ planning process. I will then describe how digital technologies allowed Markus to improve his teacher German language comprehensible input. Next, I will outline how digital technologies create more opportunities for student language production. Next, I will illustrate how digital technologies allowed Markus to give more feedback to his students and get more feedback from his students. I will then explain how digital technologies helped Markus engage his students. Then, I will report that Markus expected problems and glitches to be a part of the process of integrating digital technologies. Finally, I will explain how some digital technologies became a normal, expected part of the classroom experience for both Markus and his students. Each of these subthemes or aspects illustrated Markus’ perception that integrating digital technologies reconstituted his classroom environment.

**Technology integration is a process that happens over time.** Markus taught in a smart classroom and had access to many different digital technologies. He described the basics of his smart classroom.

I would say the projector is the primary interface digitally aside from the computer and the speaker system. We also have an audio enhancement system which I can use to project my voice by computer or any small digital device like a Palm Pilot or an iPhone or something like that.

In addition to the digital projector, computer, and sound system, Markus had a mini-lab
with five computers at the back of his classroom. He also had an interactive slate that he got this year. With the slate, he could control his teacher computer station from around the room. Markus described some of the ways he integrated these digital technologies in his curriculum.

I use all kinds of different digital file formats on a constant basis whether I pull them off of YouTube or from DVDs or whatever. We show video excerpts or entire-length videos depending on what I need to get out of them for the students. I use iTunes on a regular basis in between classes when we’re teaching songs. We have PowerPoints which we have integrated with our slates, which I can show you right here, which are used with the SMART Technology software where we can carry this around and use it as a digital mouse. I can control the computer with my slate. I can write over and elaborate on things that we’re doing on a PowerPoint, or I can even just open up the SMART Technology software and do free writing, and I can pass this around to students in the class so that they can write, and everybody can see it without having to go to the whiteboard.

Markus had accumulated his technology over time, and he saw his technology integrations as a process that happened over time. When I interviewed him the first time, he was working on acquiring a classroom set of clickers so that he could get immediate feedback from his students. Markus worked closely with the other members of his department to acquire technology for the entire department. He described the process.

For instance, we [the department] had some money, and we had to make a decision as to whether we were gonna build some document cams which was an idea I picked up on a workshop that you did, and the other option was to get some clickers so we could get some participant feedback. And the department decided as a whole that the clickers were a higher priority this year. So right now, I am in the middle, actually, of negotiations trying to buy some clickers for the foreign language department with the rest of the money that we didn’t spend on the slates.

Markus felt like the clickers would be a good addition to his smart classroom. He explained:

But we talked to the technology director for the district, and we talked to the individual teachers in the math and science department and had them come in and
give us demonstrations during our collaboration time. And we are very much impressed with what we’ve seen, and we think that it’s a technology that is very adaptable and very well suited to a foreign language classroom because we could play so many games with it, and we can get so much instant feedback to find out whether the students are really on board or whether they’re just nodding their heads and smiling.

Markus worked to acquire technology for his classroom, but he did not see himself as dependent on any given digital technology. He summed up his feelings about technology, “Technologies come and go. I might as well use whatever is at my disposal.” Markus saw his technology integrations as a process that included acquiring new technologies and replacing older technologies with newer technologies when they became available.

*Digital technologies change the daily curriculum.* When Markus integrated digital technologies, it changed his daily curriculum. He integrated a wide variety of digital media into his lessons. The digital technologies affected what he taught, how much he could accomplish in a class period, and the general pacing of his class. He described what he wanted his students to be doing in his class.

> You have to get the students involved. In my classes, if the students are not engaged, then they’re not learning. I want them to be using the language. I want them to be listening to the language. Even in German 1, from Day 1, they have to be responding in German every single time they hear something. We do a lot of TPRS. We do a lot of stories with the projector. But no matter what we’re doing, I want them to be engaged and involved, and if they’re just sitting there, watching something passively, and they’re not translating, they’re not answering questions, then they’re not learning, to my mind.

Markus found that the digital projector helped him get his students involved in the learning process, and he used the projector almost every day. His digital projector shaped the kinds of activities he planned for his students. He illustrated:

> There are very few days when I do not use my projector. Even talking to my predecessor, Frau Jones, whose program I took over when I came to this high
school. She told me ‘the day that the projector was installed my teaching changed drastically. The way I prepared lessons changed drastically. The amount of input I was able to give my students changed drastically and overnight everything that I was looking for in terms of text, in terms of videos changed because I, all of a sudden, had this presentation format that was not there for me before.’ Yeah, it is a lot easier for the students to concentrate on something which is that big, and it helps to keep their attention focused.

Markus felt it was important that his digital technologies shaped the activities he planned because his students had grown up in a world full of technology. He described our culture.

We live in the video culture. We live in an MTV culture where the students are used to seeing things in 5-minute little sections. So if that’s the way we have to teach, then we teach them in 5-minute sections. We’ll show them something, talk about it, move onto something else. And the projector and the digital media and the computers allow us to chunk up our teaching a lot faster, and because you can just turn on a machine and have something new on the machine, it allows you to make those transitions that much faster as well.

Markus offered a very specific example of how his digital technologies had changed his daily curriculum. He recounted:

Let’s take one specific example. I have tried to introduce comedy into my classroom. Twenty years ago I would have had to read a script, or have them study a sketch. Ten years ago I could have them listen to an audio CD and annotate that or support it with scaffolding. I could have had them watch a video with a German soundtrack, but because we were using VCRs it was very difficult for them to be able to see anything written while they were watching. With the advent of DVDs all of a sudden, I was able to have two modalities in front of the students at once or three actually because they are watching video, listening to the authentic German, and seeing subtitles at the same time. I can choose as a teacher whether I want them to see subtitles in German or they are watching English sound tracks or German sound tracks and the flexibility allows for better comprehensible input. I don’t know about more but certainly better integrated.

Markus presented a second specific example of how digital technologies had changed his daily curriculum.

I used to have students create commercials twenty years ago. If they wanted to
create commercials most of the time they would just write out a script, act it out, and perform the sketch. Ten to fifteen years ago maybe they had a video camera, and they would go out and film something, but their editing capabilities were extremely limited compared to what they have today with digital technology and digital applications on computers. Now days, they can whip out their cell phone and within two or three days create a pretty polished finished project. The ability to integrate and edit soundtracks and video tracks and apply text over the video track—to spell check, to search for authentic texts, to translate things using web resources like Leo.org—it makes a huge difference in terms of how long it takes the students to put something together, and it allows them to feel better about their finished project.

He offered a third specific example.

When we were reading stories—for instance fairytales. Twenty years ago we would be reading one paper or maybe mimeograph copies—whatever, and I would be asking students questions about what we were reading as we go, and they would have to be able to respond to show me they were on task. We still do that even when I am presenting stories using the projector. One difference is that when I am presenting stories with the projector, I can interject a lot more input. I can put pictures, audio, whatever into the story as opposed to just text. Another thing about the projector is I can control how much of the text they can be looking at in any given point. They can’t be looking back at text we covered before and they cannot be looking forward to the rest of the story because it is interesting to them or because they are bored. They have to concentrate on the text that I have in front of them, so it helps me to direct their attention.

Markus drew an interesting conclusion about how digital technologies changed his daily curriculum. He reflected:

I think it’s made me more flexible, and it’s certainly—I think it’s made my lesson plans more interesting. I think integrating pictures and video and sound into your teaching can’t help but make it more interesting. I think if I were gonna take a class for myself, I would have wanted to take a class from myself now more than I would have 20 years ago.

The digital technologies that Markus integrated into his daily curriculum affected not only the content of his teaching but also the kinds of activities and the scope and sequence of his class.

**Digital technologies change the planning process.** Markus planned his lessons
differently today than he did 20 years ago. Digital technologies had a profound effect on his planning process. He offered a specific example.

For instance, today we were doing a PowerPoint about a city that we’ve been talking about in Germany. We did a story about the city. We did a story about a person who lived in the city, and then I wanted to show them what the city looks like. In the 1980s, I had to go over to Germany and take pictures of these places that I wanted to show them, scan them into the computer, and then show them through the computer onto a television screen hardwired. Today, I can jump on Google, and I can get the pictures I want in 30 seconds, 2 minutes. I can download them, crop them, put them into a PowerPoint, dump them into a PowerPoint, and edit them and annotate them and have them ready to go in an hour. So what would have taken me a week in the 1980s, I can do in an hour now, and it’s so much easier to put lesson plans together. I can get images when I want to and illustrate some vocabulary. I can get images for stories. I can get text. Any story that’s ever been written is almost available on the Internet now, and with some of the new search engines, like wolframalpha.com, you can find specific text extremely quickly and download them. I can find the song lyrics from just about any song I’m doing. I don’t have to sit there and listen to it like I did in the ‘80s and try and type it down.

Markus describes his planning before he had technology in his classroom.

I taught for many years without the projector because we couldn’t afford it. I taught for many years without a computer in the classroom, and you find ways to make it work. It was a lot harder when you had to come up with everything on the spot, when you had to print out a copy for every student every single time you wanted to do a story because you couldn’t project it. It was a lot harder when you had to come up with overheads and overlays of overheads and big books with big pictures so that they could see it from the middle of the classroom. But by the same token, my class sizes were probably 50% of what they are today 15 years ago.

He added:

I have always wanted to have as much authentic material as possible from the very beginning of my teaching. I was always collecting audio, authentic samples—both audio and video and text. It was just more time consuming, and it was harder to make it exciting for the students, I think, because making a text accessible to the students is hard even if you have people collecting them for you, and placing them in context and finding images to support them was just a lot harder.
Markus compared his planning in the past to his planning today.

Where I would spend time before previewing text and creating questions, now I preview videos, music, or images, and in some ways the preparation time has been diminished, and it is a lot easier to come by a lot of this information. The videos are a lot easier to come by now days then they were even ten years ago. I can just hop on an internet site and order videos and have them there the next week. I can download them off of an internet site using torrents, or I can find them on YouTube. On the other hand, there is probably a lot of hunting that I probably would not have done ten, twenty years ago because it wasn’t available, so I knew it was going to be time consuming, so I would just concentrate on other things.

He continued:

I spent more time looking for material before and less time integrating it, and now I find that I’ve got so much material at my fingertips that I want to take the time to sit down and put together comprehensive units where I am integrating a lot of different materials with a common theme—I don’t know with a common pedagogical goal.

Markus described how planning is different when he integrated technology.

In some ways the planning is more intensive because if I can get through three activities in one period verses one then I have to do more planning, and I have to decide where am I going to put this in the plan, how am I going to integrate it with the other materials that I am going to present. There is a lot more thought put into it, I think, verses twenty years ago it would have been more time consuming mundane work in my lesson plan. Like typing something up on the computer, having it printed up on a mimeograph sheet and then going down to the mimeograph room making copies of it.

He added:

It makes a huge difference in terms of how long it takes to do my lesson prep. It allows me to be more creative with my lesson plans because I’m not spending so much time doing the grunt work that I used to have to do.

Digital technologies also allowed Markus to improve his lesson plans more easily.

Certainly I refine my lesson plans constantly, and the first time I use the technology it is never going to be the best time I use my technology. So, the first time I put a PowerPoint together was obviously not as good as the last time I put a PowerPoint together, and the first time we did a video project was certainly less
productive than the last time I did a video project. Therefore, I am constantly revising what I expect, revising my instructions, and revising my whole method of doing things.

Digital technologies completely changed the way that Markus planned his lessons and the activities he planned for his lessons. This was another way that digital technologies reconstituted the classroom environment.

**Digital technologies improve teacher comprehensible input.** Markus found that the quality of his teacher comprehensible input in German improved when he integrated digital technologies. His students got more comprehensible input when he used digital technologies, and his comprehensible input was more authentic. He explained his goal.

Creating massively more amounts of comprehensible input. Making input more comprehensible by using images, videos, streaming video, anything that I can use to—music—any kind of input I can give them will make the input more comprehensible, and you talked about modes a little bit earlier. I think the modes of communication are quantifiably larger than they were ten to twenty years ago. And just by using more modes at the same time I can access more parts of their brain and get them to understand more at the same time.

Digital technologies allowed Markus to bring more authentic cultural and language materials into the classroom.

So in some ways I have to worry less about what I bring into the classroom because they have access to these types of realia. They can get on the German websites and look at German products. They get into a German department store. They can follow German ads and watch German advertisements on the internet where that would have been impossible for them to do even ten years ago.

He added:

I have always wanted to have as much authentic material as possible from the very beginning of my teaching. I was always collecting audio—authentic samples both audio and video and text. It was just more time consuming, and it was harder to make it exciting for the students, I think, because making a text accessible to the students is hard even if you have people collecting them for you. And placing them in context and finding images to support them was just a lot harder.
Digital technologies allowed Markus to improve the quality of his comprehensible input.

He gave a specific example:

Take the lyrics, for example. When I had to type out my own lyrics, there were times when I actually messed up a little bit. I got a word wrong here or there or an ending wrong here or there. And when you can get it directly from the jacket, if there’s a mistake, it’s the band’s fault, not yours. Your sources tend to be much more authentic and reliable. And that’s good for the teachers, and it’s good for the students.

He offered another example:

We were also fortunate enough to have a student teacher not too long ago who was a brilliant illustrator, and he illustrated a lot of these stories for us, so we’ve actually got pictures, and that just adds one more level of comprehension to the stories. So, yeah, I think that the classrooms stories and the fairytales that we tell in class are one thing that has definitely made good use of the technology, and I feel like it’s really working in a good way.

Markus used his interactive slate to improve his comprehensible input.

It’s nice to be able to circle something when we’re talking about it, and you can erase it, of course, as fast as you can circle it, so you can highlight certain things, especially when we’re doing pop-up grammar. We’ll be reading a story, and we want them to concentrate on one little sentence or one little phrase, and so you can highlight that really quickly, put a circle around it, underline it, and that’ll call their attention to it. They know exactly where they’re supposed to be focusing on. It makes my job just that little bit much easier than—much easier.

Markus outlined why his comprehensible input was better when he integrated digital technologies. He asserted, “Again you are talking about better quality comprehensible input—integrating different modalities, but you are making the input more comprehensible which is always better for the students.” Markus believed that comprehensible input was an important part of the language acquisition process. He found that digital technologies allowed him to improve the quality of his comprehensible input for his students.
Digital technologies create more opportunities for student language production.

One of Markus’ highest priorities was student German language production. He judged the success of his activities based on the amount and the quality of the German language that students produced during an activity. Digital technologies created more opportunities for student German language production in Markus’ classroom. He defined his position on student language production.

Where I differ from most of the theoreticians in terms of language acquisition is that I think the students need to be much more active. They need to take a very active role from the get go. If they are not actively involved in making decisions and asking questions and answering questions from the very beginning then the competence will not increase as quickly as if they are just passive.

When asked how he determined if a classroom activity was successful or not, Markus responded succinctly “the output.” He went on to explain what he meant by output.

Student language output. Well, if they can show me that they have understood by producing coherent language and proficient—any kind of proficiency—then I know that I have accomplished what I set out to do. If we go through any activity whether it be using technology or not, and I see the proficiency is lacking at the end of that activity then I know that I didn’t accomplish what I wanted to accomplish, and I have to go back.

Markus provided a specific example of how his interactive slate created an opportunity for student German language output.

One thing that the students really enjoy are the stories that we tell. We have a lot of fractured fairytales or stories that sometimes we just make up off the top of our head, but we put them into PowerPoints, and we are able to read and translate and mess with them in real time because of the slates and because of the integration between the computer and the slate.

Markus wanted his students to produce as much German language as possible. The amount and the quality of the language that his students produced was the measuring stick he used as he reflected on the success of his classroom activities. Digital
technologies created more language production opportunities for his students.

**Digital technologies allow for more feedback.** The digital technologies that Markus used in his classroom allowed him to give his students more immediate and specific feedback. This was particularly true of the clickers that he acquired between our first and second interview. Markus explained how he planned to use the clickers.

I find that I am able to get a lot more immediate feedback from students with technologies. With the integration of the iClickers, I think that will take it up to a whole new level. I can get a sample of how many people in the class understand something within a matter of seconds and not have to wait to get a quiz. I can see whether they understand what I am trying to get them to understand. If I see that enough of the class is bored with something, or if they understand it to my satisfaction, then I can move on. And I find that I don’t belabor certain aspects of what I am trying to teach. Before I would have had to wait until I had actually given them a quiz and graded that quiz before I could make any kind of an assessment in terms of what their—giving a snapshot of what they understand.

Markus described how he would use the clickers more in the future.

Well, what I will probably do is integrate little formative assessments into all of my presentations just to see how many students are paying attention—to see how many students are understanding, to keep them on task, to keep them focused, and if they have to constantly give me input whether it be—probably not every frame, but let’s say if we are doing a slide show if I were to stop every five to ten frames and say “okay what did you understand, what do you remember?” I think that is going to help them to retain a lot more.

The clickers affected the quality and amount of feedback that Markus gave his students.

Again the clickers are a good example. I can give them immediate feedback on anything. I can show them using a graph how much of the class understands something right away so if they don’t understand something they can see on that alone or if they do understand something they can see exactly how other students understand it.

The clickers also affected the quality and amount of feedback that Markus could get from his students.

We think that it’s a technology that is very adaptable and very well suited to a
foreign language classroom because we could play so many games with it, and we can get so much instant feedback to find out whether the students are really on board or whether they’re just nodding their heads and smiling.

Although he was just beginning to integrate the clickers into his daily teaching, Markus could see a great potential for improved feedback resulting from this technology integration.

**Digital technologies help to engage students.** One reason that Markus integrated digital technologies into his daily teaching is that he believed that the students could be more engaged when he used the technologies. He wanted his students to be engaged in his class. He stated, “In my classes, if the students are not engaged, then they’re not learning.” He described his motivation to use technology.

I like to do anything that will get the kids motivated and interested in learning German. So, any technologies that I can use that are at my disposal that will help to accomplish those goals that is what I like to do. I do not know if there is any limit on what technologies I would use or where I would apply them.

Markus believed that today’s students were conditioned to interact with the world through technology. He synthesized his view of students and the purpose of integrating technology.

And to keep them engaged. We live in the video culture. We live in an MTV culture where the students are used to seeing things in five-minute little sections. So if that’s the way we have to teach, then we teach them in five-minute sections. We’ll show them something, talk about it, move onto something else. And the projector and the digital media and the computers allow us to chunk up our teaching a lot faster, and because you can just turn on a machine and have something new on the machine, it allows you to make those transitions that much faster as well.

Even the size of the screen that his projector projected on played a role in engaging students. He asserted, “Yeah, it is a lot easier for the students to concentrate on
something, which is that big, and it helps to keep their attention focused.” The mobility that his interactive slate provided him allowed Markus to use his teacher presence to improve student engagement. He described a scenario.

I don’t have to be standing up in front of the board which means for instance if I’ve got some trouble makers sitting in the back of the room who are having trouble staying on task, I could be standing right next to them while I am circling something on the board rather than in front of the board and circling on the white board or using that smart board or whatever. Having the slate allows me to walk about the room a lot more freely rather than sitting by my desk for instance to forward a PowerPoint presentation.

Markus saw his digital technologies as tools that he could use to engage his students, and this was one of the factors that motivated him to integrate digital technologies into his daily curriculum.

Problems and glitches are an expected part of the process. Markus recognized that problems and glitches would be a regular part of the process of integrating digital technologies. Although these problems could be frustrating and undermine his plans, they did not cause him to avoid integrating digital technologies. He explained:

Every once in a while technology gets glitchy, and it throws you a curve. If you have a DVD that gets scratched all of a sudden, and you want to go on to the next—and you have to show it. It gets caught, and you don’t have a backup. It is a problem. One time when I was using VCRs I remember I would put a video cassette in that I was going to use later in the period, and one of my more clever students went up to the front of the room and pressed record. Recorded a blank screen over half the video so that it would be unusable for the rest of the time, and I had to actually go back and repurchase the video or recopy it. Yea when the computers go down, your projector bulb goes out, and you do not have a back up because they will not buy them in advance because of the shelf life—it can be problematic, but I think those are little glitches that I am certainly willing to live with given the benefits that technology brings with it.

He tried to make sure that he integrated technologies that he felt comfortable with to avoid as many problems as possible. He contextualized his approach.
No. I’m a pretty stubborn person. Usually, I get it working if I really think it’s worth trying out in the first place, and I will go to workshops or talk to other people, such as yourself, to see whether a technology is something which I really want to integrate into my classroom before I go to the time and trouble of attempting it.

Markus wanted to learn how to use a digital technology well before he used it in class.

I don’t want to do it halfhearted, and I don’t want to do it so that it’s—I don’t want the students to be sitting around waiting for me to figure out how to do something. And I’ve seen too many teachers fumble, even in the early days with video recorders. I mean, the teachers would spend five minutes trying to get the video recorder set up and then bring the TV in and get it situated so that the students could take advantage of it, only to have that much wasted time in the class period. For me, I want it to be something that I am familiar with, I’m comfortable with, and that I can do quickly so that the students don’t have to sit around and watch me fumble. And once I have something down to where I feel comfortable with it, then I will start integrating it right away.

Sometimes integrating digital technologies accentuated other classroom problems.

Markus explained:

I actually have had students with severe disabilities in terms of eyesight, and that does certainly play a role in how you are going to adjust certain lessons or how you are going to present certain lessons. Because when you are using the projector for everything, and that student cannot follow anything that is on the projector, you need to come up with other ways to make it accessible for them.

He told the story of a Latina student he had in class last year.

Yeah, we actually—there was a Latino girl in one of my classes last year who couldn’t afford glasses so the school went out and bought her a pair of glasses using special money, and we had to actually force her to wear the glasses. She would always take them off to walk through the halls because you just don’t want to be seen with glasses on, and we had a little tracker basically that we had to get her to sign whether she is wearing her glasses or not. It got to a point where she would walk into the class every day, and each of her teachers would say okay it’s time to put your glasses on, and you have to cue her to put her glasses on. If we did that she would, and she would be able to follow the board, and she would get more done than if she hadn’t. I am hoping that this is not something that would become commonplace. I hope that most students will have the ability to rectify their vision problems so they can see the board if they need to. I usually ask at the beginning of the semester whether students may need to be seated.
closer to the board for any reason and some will be very honest and say yea can I
be seated closer so I can see what is going on better because my eyesight is not
very good, and I don’t wear glasses or wear contacts.

Glitches and problems arise when a teacher integrates digital technologies into the daily
curriculum. Markus expected these problems and he would rather deal with the problems
than avoid using technology. He tried to minimize the problems by learning to use the
technologies he integrated well before he began to use them.

Normalization of digital technologies in the classroom. Some of the digital
technologies that Markus integrated in his classroom had become a natural, expected part
of the learning experience for his students. This was particularly true of his digital
projector. When asked how often he used the digital projector, Markus responded:

[I use the projector] daily. The digital projector, as my predecessor said, has
basically transformed the way we teach foreign languages at the school.
Everything is, well, not everything—we obviously play a lot of games, but even
when we play games, we’ll have things showing on the projector, and we have
them on every period almost. We use them to teach culture. We use them to teach
about the country. We use them to teach geography. We use them to teach
language. I tell stories, and a lot of times, I’ll have the sentences on the overhead
as I’m reading the story or telling the story so that they can actually see it, and
they get a double shot of the German. There are a lot of ways that you can use a
projector and cameras—we have a video camera as well—creatively to get the
students involved. We watch commercials. We watch all kinds of short programs
from German TV. We watch—we create commercials. We create music videos.

Markus’ students did not see digital technologies as out-of-the-ordinary or special. They
saw digital technologies as a regular part of the education landscape. He described his
students’ expectations of class.

They expect things to be—they expect feedback on everything they are doing
right away and they do not want to wait. They want smaller chunks of input to
digest because of who they are and the way they’ve grown up which probably has
something to do with the fact that language ability has diminished over the last ten
years. They also expect a faster pace. They want action, they want pictures, they
want loud noises, they want—they are not content with what classes might have been content with twenty years ago.

He added:

There are a very few students who are adverse to technology, probably if for no other reason than that they’re surrounded by it daily. I think for students to say “I don’t like using videos” or “I don’t like watching input on the screen” would be analogous to a student 50 years ago saying “I don’t like using pencils.” I just do not think it would occur to most of them to say something like that.

Digital technologies had become a natural part of the classroom landscape for Markus as well. He reflected:

Could you imagine teaching in a classroom before paper and pencils were readily available? Imagine how limited you would be in terms of what kind of feedback you can get in terms what kinds of samples you can get from your students in terms of what they can do during the class period. It is a completely different environment than the type of education that you could offer would be a drastically different thing. I think that there are a lot more tools that we have access to right now then people had a hundred years ago. What they may have had a hundred years ago was considerably more than they had a thousand years ago, and I think that is a good thing. But, what I do not want to see is that technologies dictate what happens in a classroom. I do not want to see technology take over and I do not want to see this technology replace a teacher’s role in education.

Markus thought that teachers should be striving to integrate technology in their classes—particularly the digital projector. He asserted:

Twenty years ago I would have said a teacher who does not use an overhead projector is not a serious teacher. In the twenty-first century if you find a teacher who does not have a projector in their classroom or who does not bring a projector in to their classroom at least whenever possible—you have to wonder whether they are really doing everything they can to make their lessons successful to their students. I think students expect that every teacher will have a computer in their classroom for use in editing assignments and used for completing assignments. But again this is going to differ gravely depending on what class you are in. I think there are still a lot of English classes where computer technology is less integrated and probably rightfully so. There are science classes where you have a lot more of it like for instance where I teach biology it’s really a positive thing for me to jump on to YouTube and find an animated illustration of a certain point I want to make or a certain process which is a way more effective teaching
tool than showing them slides on a microscope or drawing them pictures on a board or looking at pictures in a book. The animations that we use in the hard sciences now a days are leaps and bounds better than what we were using ten or twenty years ago.

Markus felt like technology had become normal in his classroom. He believed that his students expected him to integrate technology. He thought that integrating new technologies could be as natural for this generation as a pencil and paper were in previous generations.

**Theme 2: Markus’ SLA beliefs affect his technology integrations.** The second main theme that emerged from my analysis of my two interviews with Markus is that his beliefs about SLA affected his technology integrations. Throughout the interviews, Markus addressed this theme in a variety of ways. In this section, I will present five subthemes or aspects of this main theme. First, I will explain how Markus believed that his technology integrations should be based on his SLA beliefs. I will then describe Markus’ perception that a teacher’s role was multi-faceted. Next, I will present Markus’ strong conviction that the teacher should determine the classroom curriculum. Then, I will outline Markus’ descriptions of the multi-faceted motivators that lead him to integrate digital technologies into his teaching. Finally, I will illustrate Markus’ belief that using technology was not always best. Each of these aspects supports the main theme that SLA beliefs affected his classroom technology integrations.

**Digital technology integrations should be based in SLA methodology.** Markus believed that his understanding of SLA methodology should guide his decision-making process as he planned lessons and integrates digital technologies into his daily classroom activities. Markus believed that comprehensible input played a significant role in student
language acquisition. He also felt strongly that the students needed to produce as much language output as possible. He described his SLA beliefs:

I am a big believer in immersion. I am a big fan of Stephen Krashen and his comprehensible input. It is definitely the key part of that equation. Where I differ from most of the theoreticians in terms of language acquisition is that I think the students need to be much more active. They need to take a very active role from the get go. If they are not actively involved in making decisions and asking questions and answering questions from the very beginning then the competence will not increase as quickly as if they are just passive.

Markus wanted these beliefs to guide his digital technology integrations.

Everything is affected by my knowledge of second language acquisition. I mean, that’s part of my job. If I didn’t take that into consideration, then I wouldn’t be having good lesson plans. I don’t think that that’s something you could ignore, no matter what you’re doing. Every game we play, every discussion we have, every video we watch, every story we tell, there’s always that as an underpinning, the second-language acquisition aspect of it.

Markus described the way he approached any technology integration, “I look at my goal, my pedagogical goal, and I say is this technology going to help me achieve my goal more affectively, if the answer is yes then I will use it.” He continued:

More than anything, I would much rather have a meaningful comprehensive activity for the students where they get a lot of L+1 input without the technology than say, ‘Oh, look at me. I’m a tech teacher because I have technology,’ and some teachers will go up there, and they’ll have really flashy presentations, but the input’s not there. And for the teachers that do integrate both of them successfully, I think that’s a wonderful thing, and it’s really very pleasant to sit in a classroom where the teachers do control the technology really well, but they use it in an instructive way and where there’s good pedagogical input, and I’ve seen both. And I’ve seen classrooms with no technology that work just fine, too.

Markus did not want the technology rather than his pedagogical goals to dictate what happened in the classroom. He asserted:

But, what I do not want to see is that technologies dictate what happens in a classroom. I do not want to see technology take over and I do not want to see this technology replace a teacher’s role in education.
He preferred to see technology as a tool that he could use to accomplish his goals.

Technology is a tool. That’s definitely the way I feel about it, and I will use whatever tools I have in my arsenal to get to the desired end effect which is competence and student proficiency.

Markus concluded:

I do not think that is fair to segregate technology from what you are doing as a whole because again if the technology is considered a tool then either the tool is effective or it wasn’t effective. Certainly there are times when I have used a technology and found that the output was less than what I expected and that may be partially a residual of the technology use itself but more times than not I think it probably has more to do with the student motivation and their willingness to do the work that it takes to produce the output that I am looking for.

For Markus, language acquisition was about maximizing comprehensible input and language output in the classroom. He wanted his technology integrations to be based on those beliefs. He did not want to just integrate technology for technology’s sake.

The teacher’s role is multi-faceted. Markus did not believe that integrating digital technologies had changed his role in the classroom. He stated, “It is the same role that I have always had.” He did, however, believe that digital technologies had changed him as a teacher. He explained:

I think it’s made me more flexible, and it’s certainly—I think it’s made my lesson plans more interesting. I think integrating pictures and video and sound into your teaching can’t help but make it more interesting. I think if I were gonna take a class for myself, I would have wanted to take a class for myself now more than I would have 20 years ago.

Markus had a multi-faceted view of the teacher’s role in the classroom. He did not want to simplify this role with only one adjective. He saw the teacher as a decision-maker, integrator, motivator, entertainer, guide, facilitator, planner, organizer, collaborator, orchestrator, and disciplinarian. He described these roles.
The roles that teachers play—decision makers, designers, guides, policemen, entertainer that is all part of being a teacher. I am still making decisions as to what input I want the students to see. I just have more flexibility. I was doing that before the technologies were available. I am still designing lesson plans. I am still guiding the students through whatever I want them to learn. I still have to be doing some kind of classroom management, and I still have to entertain the students. It is a lot easier to do that with video and with audio and with instant feedback and with interactive technologies than it was back in the day when we were using the audio-lingual method or when we were just doing natural method. You have to find some way to make it interesting for the students, and I find that the type of materials that you select is just as important today as it was twenty years ago or fifty years or a hundred years ago. I am sure Socrates had to worry about what examples he was giving to his students. Yeah, I think to a certain extent teachers always are going to have to be inventive and playful and entertaining and controlling and that is just part of the job.

He offered another description.

But I am still having to orchestrate what happens in my classroom, and I still have to decide what the students are going to be presented with, and I still have to police what kind of content comes in and how they are acting while they are being presented, and I still have to entertain whether I am using video and audio or whether I am telling stories or whether I am working with the texts.

Markus reflected on the use of the word “facilitator” to describe a teacher’s role.

I think a term that gets overused today is facilitator, and this gets back to the whole problem with the overuse of technology. There are those people in this country who I think would love to see teachers’ roles in education diminished and who would love to put more control to the hands of very few people who decide what students are going to be taught and how they are going to be taught it. I think this is becoming a problem in Utah where we have a small group of people who are thinking that they should be able to tell us what methodologies we can use in the classroom and what types of images to show our students and what types of content we should be able to expose them to. They really see teachers more as facilitators who just make the content accessible to students somehow or who make sure the students are exposed to it and then take their mandatory assessments. This is especially something, which has hit hard in our district with the ESL program that I was a part of. Where we went from classroom teaching and teachers coming up with their own texts and ways to make language acquisition fun for the students to certain people in our district saying “We have purchased a computer program and all we want you to do as ESL teachers is to sit the students down at the computer, and make sure they are following the program step by step, and that they are doing their required assessments, and that they
understand how to use the headphones and the microphones.”

He continued:

It’s part of what I do. Facilitating in the original—again, if you do not understand French you do not understand what facilitating means but in the sense of making something easier for the students, yeah. For teachers that is a big part of what we do. We make learning easier for them by directing their attention to certain aspects of the language. By showing them how a language might be related to another language from anywhere, or by giving them a very specific view of the language which makes it more accessible.

Markus was very reluctant to reduce the role of a teacher down to one or two adjectives. He wanted to keep the role of the teacher as multi-faceted as possible. He concluded, “It is all part of being a teacher: orchestrating, designing, integrating and entertaining.”

**The teacher should direct the curriculum.** Markus felt strongly that the classroom teacher should direct the daily curriculum. He did not want any other group to take over this role from the teacher. He believed that the classroom teacher was in the best position to decide what was in the students’ best interests. He believed that the teacher should direct all classroom activities and control the pacing of the class. When asked who should direct the curriculum, Markus responded:

I think it has to be the teacher first and foremost. Not some committee sitting in Salt Lake City or Washington D.C. or in Brussels. I think it should be the teacher who is determining what kind of interaction takes place, and what kinds of tools are being used, and what students are actually learning, and what they are submitting, and what they are becoming proficient at.

He explained his reasoning.

Well, for a number of reasons. I guess the teacher is supposed to be the initiator of most of the learning in the classroom setting. They are supposed to be qualified to decide what kinds of things are important and what kinds of things are not as important. If you diminish the teacher’s role in making those decisions then you will come dangerously close to allowing a select few to determine what the large masses are going to be learning, and I don’t see that idea—it smacks of fascism.
Markus did not believe that his students should direct the curriculum. He did not mind, however, if his students had an illusion of controlling some elements of the curriculum because he had built student choice into an activity. He explained:

I don’t really believe that students should be directing their own curriculum. I think that is a dangerous precedent, but that having been said, I like it when students have the illusion that they can direct their own curriculum. I like to give them choices in a PowerPoint—saying where would you like to go from here, and for me as an educator it does not matter because I want them to go everywhere eventually, and they are just making the decision as to where they want to go right at this moment. So, for those times when it is really, really completely Wurst [doesn’t matter] to me whether they go A, B, or C as long as we get to A, B, and C eventually. If it makes them feel better about their own educational experience and feel like they are in control of it, more power to them. If we are doing an activity, and I allow them to help come up with some of the content, that is great.

He added:

I try not to let them change the curriculum. I like to present them with the illusion that they are choosing what they are learning, but again I don’t think that students should be choosing their own curriculum. My pedagogical goals are the pedagogical goals I set for my students, and I decide what I want them to learn—what I want them to be able to produce, how they get there. I might give them some flexibility on how they get there, but I do not think I should be turning the curriculum over to them per se. There is a difference in my mind, a very clear difference between determining curriculum verses determining classroom activities. Does that make sense?

He concluded:

I really don’t feel like they should be determining curriculum as a rule, but I find ways to let them direct what they are doing, and I was able to do that before the technology was available, and I am finding ways to be able to do that with the technology.

Markus believed that problems arose when the students controlled the curriculum. He explained what could happen when students worked more independently.

I think the problem is not so much the technology as it is having them work independently verses having them work in a teacher-directed atmosphere. When
we are doing sketches in class or we are reading something together as a class they have to be on task. They have to be following what we are doing, and that can dictate the pace. When they are working independently, it’s much more difficult to dictate how much you are going to accomplish in a given time period, and that’s what I feel usually drags that process on so then instead of three days it turns into two or three weeks. I think students are getting very good at figuring out ways to get around doing work, and I think they find the technologies often are treated like toys and not so much as a tool for them. So, for them, editing video is like playing a video game and less like putting together a presentation for a teacher. For them putting together a PowerPoint is more about copying and pasting and picking up cool fonts and transitions than it is about coming up with better content.

He continued:

Quite honestly I would say most of the technology I am using is for teacher-directed activities and less of it is for group work or individual work simply because of the before-mentioned factors. When they have too much time to work on something independently, they get off task. They concentrate on the wrong things and they don’t come up with the content that I want them to come up with.

He added:

That thought process has been there the whole time. When they did individual work before I could always—well I still can do this, I still could say ‘okay I want to check your progress at the end of the day. Turn in what you have gotten done.’ But, it’s a lot easier to have them turn in a draft of something on paper than it is to say ‘okay I want to see your video at the end of the fifty minute class session.’ And they are always going to have the excuse ‘well I didn’t have the right flash drive, I didn’t have the right—and somebody forgot to bring the camera today’ and whatever. There is a long list of excuses they can come up with, and so I find myself having to give them more time to complete projects then I might have given them otherwise.

When asked if there was a distinction between students determining the curriculum and students self-directing in their own learning process, Markus responded:

Yes there is. I think it is a very important distinction. Probably the quality of making those determinations has improved but not the quantity. They don’t make more decisions which affect their own education in my classroom, but they are able to make qualitative decisions and again this relates to the feedback that they can get. If they can get immediate feedback as to who understands what, it helps them to decide whether they need to work on something more. Maybe they just
understand more right away because of the different modalities that are being presented as well.

Markus did not believe that his students should direct the curriculum more when he used digital technologies than they did in the past. He did believe that student choice played an important role in education, but integrating technology had not changed that role. He stated:

I do not really feel like they are directing the curriculum more now than they were 20 years ago. I have done classroom stories from the very beginning, and whether I am writing on a chalk board or white board or typing it into a document really doesn’t matter that much. I still have to come up with the German for them because the web translators are still terrible. When we are doing stories or when I have them say ‘where would you like to go from here?’ The Montessori Method hasn’t really changed just because of technology. Having students choose what they want to study on any particular day or choosing what assignment they want to do or what games they want to play to reinforce whatever vocabulary we’re learning or whatever. I don’t think that the technology has changed that principle or the process.

Markus believed that the teacher should direct the classroom curriculum. No other outside force should usurp this role. He wanted his students to self-direct and make choices in his classroom, but he did not want them to determine the curriculum.

**Markus’ motivators are multi-faceted.** Markus’ technology integrations were motivated by many factors. Pedagogical goals, accuracy, quality, time, utility, ease of use, and authenticity all motivated him to use digital technologies. He did not want to separate or rank these motivators. For him they were all part of one big whole that was rooted in his SLA belief system. He summarized:

The same things we talked about before how easy it is to use, is it going to save me time in preparation, is it going to keep the students interest, and is it going to accomplish my stated pedagogical goals-those are the main driving forces.
He reflected:

It all plays a role. It all factors in. I cannot tease that apart and say this is usually more important than this. They all are important and they should all be given due consideration. I would be lying if I did not say that speed of—that I don’t do something on certain days when I am really, really busy just because they are easier to put together and easier to throw in front of the students. I think we have all been there before. Some people call it master teaching. Some people call it thinking fast on your feet or just getting something done. There are times when I need to put something together quickly during my lesson plan when I know I have got an interview with the administrator or committee meetings or something else that I have to be doing with my prep time, and when I know I will be limited. Then maybe I will choose something which is easier to put together, but that doesn’t mean that I don’t still have the other factors in the back of my mind—the pedagogical goals, keeping the students interests, the finished product. I really can’t tease that out. I really do not think that is fair to say that one is more important than the other is.

He concluded, “But I try to—as a rule I would try to include all those factors in to my decision making process.” Markus had a strong sense of his own SLA beliefs. Because of this, he did not want to distinguish between the factors that motivated him to integrate digital technologies. He saw them all as different aspects that were all rooted in his SLA beliefs.

**Digital technologies are not always best.** Markus did not believe that integrating digital technologies into his lessons was always best. He thought that teachers could be effective without technology, and he thought that technology could even have a negative effect on a teacher’s teaching. When asked if he believed that technology could make a teacher’s teaching worse, he responded:

Yes it can. It’s possible, but by the same token I think those teachers who use exclusively PowerPoints and worksheets probably are the same teachers who would have been using exclusively lecture and worksheets or would have been using nothing but worksheets before. So teachers who tended to limit themselves to certain modalities probably have just switched modalities as opposed to becoming less proficient as an educator.
He had witnessed several less effective examples of technology integration. He recounted:

I had a principal about 10 years ago who thought that using PowerPoints in the classroom was the be-all, end-all of education and that every teacher should use PowerPoints every day, and they should just have their lesson plans on PowerPoints, and that would keep the students interested. And I think that’s a huge mistake, and I told him so. I have professors at the university whom I work with here in town who think that everything should be on a PowerPoint, and that’s very interesting. I’m also the exchange student coordinator for our school, and I’ve had two students who—one of them actually turned around and went home after two or three weeks because she says, “I can’t deal with it any more. All my teachers just show PowerPoints and then give a worksheet every single day.” And she said, “That’s not using technology to make classes interesting. That’s just a substitute for teaching.” And I’ve sat in some of those classrooms on a project which we have here at our school called “The Student for a Day,” where the teachers actually shadow a student and go through all the classes to see what it’s like to be a student at our school, and it was true. I went to three or four classes, and that’s all they did was they watched the PowerPoint presentations, and then they got a worksheet to take home and answer questions about it, or some—a lot of times, they would follow along and answer as they’re going. But it’s deadly boring, and that’s not the way to integrate this kind of technology. If you’re just gonna do it as a substitute for teaching, then don’t bother.

He offered another similar example of an educational presenter coming to his school.

Okay. Then we’ll have a speaker come in and give us a 90-minute PowerPoint presentation, and they will print out the PowerPoint presentation and hand it out to everybody in the audience, and most of the teachers being good students and educators have finished reading through the PowerPoint in five minutes, ten minutes. And the rest of the time, we’re sitting there listening to the presenter read their PowerPoint presentation to the faculty, and it is the most tedious thing in the world. I think it’s a waste of time. They should never have bothered to put it on a presentation if they’re not gonna integrate some video or some music or something into it to make it interesting. If they’re using it as bullets and then elaborating, that’s fine. But the speakers who just get up there and read their PowerPoints and then hand it out to you and expect you not to read it ahead of time are wasting precious time that could be spent on something else, and I think that’s the majority opinion at our school. We really—it’s almost demeaning to have to sit through that sometimes.

Markus believed that technology should not determine what happened in the classroom.
The teacher should use digital technologies as a tool to accomplish the teacher’s pedagogical goals. He explained, “Technology is a tool. That’s definitely the way I feel about it, and I will use whatever tools I have in my arsenal to get to the desired end effect which is competence and student proficiency.” He continued:

But, what I do not want to see is that technologies dictate what happens in a classroom. I do not want to see technology take over, and I do not want to see this technology replace a teacher’s role in education.

Markus concluded:

I would hate to see the technology become the focus of the classroom and not the teacher and I don’t think it’s a serious problem at this point, but I think it could be a problem and I am very happy about the technology and very happy anytime I get a new tool that I can use to help facilitate language acquisition, but I don’t think the technology will ever be the be-all end-all of any teaching environment. I think it contributes but it is not the determining factor.

Markus saw digital technologies as tools. Sometimes it was appropriate to use technology. Sometimes it was not. Technology was not always best. Markus wanted the teacher to be the decision-maker who makes this determination.

Theme 3: Markus’ beliefs about identity affect his technology integrations.

The third theme that emerged from my analysis of the two interviews with Markus was that Markus’ beliefs about identity affectd his technology integrations. This theme was more subtle than the other two themes. Markus talked about this theme from a variety of angles, and often his comments about this theme were embedded in answers that he gave about a variety of topics. I found three subthemes or aspects that I associated with this main theme. I will present the main theme by first illustrating Markus’ belief that today’s students did not perform as well academically as students from previous generations. Second, I will depict Markus’ perception that his students bought their identities with
them into class and that digital technologies had little or no effect on student identities. Finally, I will present Markus’ conviction that it was not the digital technology that was responsible for creating a learning environment; it was the classroom teacher. All three of these subthemes or aspects supported the main theme that Markus’ beliefs about identity affected his digital technology integrations in his classroom.

*Today’s students do not perform as well academically.* Markus believed that today’s students did not perform as well academically as students of previous generations. He believed that digital technologies offered today’s students more learning opportunities than students had in the past, but he did not think that his students were sufficiently motivated to take full advantage of those opportunities. When Markus was asked if he thought his students performed better when he integrated digital technologies, he replied:

> It’s hard to gauge, to be quite honest, whether the new media are being as effective as they could be because it seems like, at least in our district, there’s been a huge wave of apathy in the last couple of years, and the students are not very motivated to learn, with a few notable exceptions. The level of academic rigor and intellectual curiosity has diminished noticeably in the last [years].

When asked if he could expect more of his students when he integrated digital technologies, Markus responded:

> That is difficult to gauge. You would think you could expect more of them because the materials that are available and the modalities are so much different than they were twenty years ago, but when I go back and look at what my students were producing twenty years ago, I don’t really find that the quality has improved that much. As a matter of fact, I just read a study that was done in Germany looking at students who have taken the *Abitur* [university entrance exam], and from a linguistic point of view the results have gone downhill for the last one hundred years. In spite of the advances in pedagogy and in spite of the advances in technology, what the students are actually producing with very few exceptions are poorer today, substantially poorer, than they were a hundred years
ago. There is even a discernable difference between what I’m seeing my students producing right now and what they were producing 15, 20 years ago.

Markus concluded that “it seems like the students were [in the past] actually more on task and were more motivated to learn, for whatever reason.” Markus considered grade inflation to be a significant part of the problem. He asserted:

I think the biggest part of the problem is grade inflation, and that has nothing to do with technology. I don’t think the technology is the problem. I think the technology is a good thing, and I think if it’s used wisely and not used as a substitute for good teaching, then it is wonderful.

He also thought that motivation and overall linguistic ability were major factors in slipping student performance. He posited:

I think it has a lot to do with motivation, and I think it has a lot to do with the linguistic capabilities of students in general. I think students spend considerably more time now days interacting with computers and video games and televisions and iPods and iPads and all kinds of technology than they did twenty years ago, but they spend less time interacting verbally, and I think I’m going to go out on a limb here and say that the level of native language pedagogy has actually gone downhill in the last twenty years or so. The number of actual written samples that the students actually produce in any given week or month is fewer than they were back then.

Despite Markus’ perception that his students were producing less academically, he believed that they had more opportunities to learn in smart classrooms. He reflected:

They’re different students, and can it allow them to go further than it did before? Yes. And I have had certain students who have really jumped on it and spread their wings and run with it as far as they can, and I’ve been very impressed with that. Other students will say, “Well, they’re just gonna present it to me anyway, so why should I bother doing any work on my own or actually making an effort?”

Although he saw a general decline in performance, Markus did have students who performed at high levels academically. He gave the example of making commercials in class.
The students who goofed off before and didn’t produce very good commercials are the same students today who will spend seventy-five percent of their time worrying about which soundtrack they are going to use or which font they are going to use or editing their commercial verses coming up with real product. But I still have plenty of students who like twenty years ago will come up with some good text, good dialogue, good copy and take their time correcting that and making sure that it is presentable and those are the students who will spend less time worrying about the editing aspects of it.

Markus’ perception of his students’ academic orientation influenced his decisions as he integrated digital technologies into his daily curriculum. He stated:

We live in the video culture. We live in an MTV culture where the students are used to seeing things in five-minute little sections. So if that’s the way we have to teach, then we teach them in five-minute sections. We’ll show them something, talk about it, move onto something else. And the projector and the digital media and the computers allow us to chunk up our teaching a lot faster, and because you can just turn on a machine and have something new on the machine, it allows you to make those transitions that much faster as well.

When asked if his students performed better when he integrated digital technologies, Markus asserted that as a group, today’s students did not perform as well academically as the students of previous generations. He saw the lack of academic performance as part of the group identity of this generation of students. His perception of this group identity affected his technology integrations.

_Students bring identities with them into class._ Markus found that in his experience integrating technology had little or no effect on students’ identities. He believed his students brought their identities with them into the classroom, and the digital technologies tended to have no effect on their identity. He explained:

In my experience shy students are still shy whether they are using technology or not. Outgoing students are still outgoing whether they use technology or not. Spastic students are still spases whether they are using technology or whether they are writing or doing whatever. Can it accentuate certain features of a person’s personality? Yes. Can it help them express themselves in ways that they might not
have thought of before? Yes. But, fundamentally I don’t think it really changes their identity.

Markus did believe that digital technologies affected the expectations of his students.

I do not think it affects who they are, but I think it affects their expectations. Some specific examples would be the immediate feedback. They expect things to be—they expect feedback on everything they are doing right away, and they don’t want to wait. They want smaller chunks of input to digest because of who they are and the way they’ve grown up which probably has something to do with the fact that language ability has diminished over the last ten years. They also expect a faster pace. They want action, they want pictures, they want loud noises, they want—they are not content with what classes might have been content with 20 years ago.

An increasing number of Markus’ students did not have access to a computer at home.

This was part of their socioeconomic identity. Markus reflected on his thoughts about students who posses this identity.

I do not feel like that is specific to my class because they are getting enough opportunities in the other classes to use computers. I mean technology classes are required at our school. They have to know how to keyboard. They have to know how to put PowerPoint presentations together. They have to be familiar with some type of word processor before they can get to the software class, so I don’t feel like I am a big part of that machinery that is helping them to become adept at using computers and technology. Anytime that I can help them be more comfortable with it, then I feel like I am doing something good, and if I am helping them to adapt to technology on any certain days, as opposed to getting them more German, at least they are learning, and I am still a teacher so.

Markus dealt with the issue of varying access to technology and varying skill levels with technology by giving fair assignments. He preferred “to specifically use assignments where I feel all the students have equal access.” He continued:

If I have a class where I know everybody has access to better technology, then I can expect more of them. For instance, sometimes when I teach a college class the university allows me to assume that they have computers at their disposal and to give assignments which I wouldn’t give to a first year class just because it’s—I don’t want to say a different caliber of student but a different level, and when they are taking university courses they are expected to have certain tools at their
disposal.

When asked if he considered students with no home access to computers when he planned, he replied:

Occasionally, and then you make up for those discrepancies when you need to. It doesn’t take up a lot of my thought processes when I am doing a lesson plan. If I feel confident that the majority of the class or all of the class will have a certain technology mastered, then I will expect that from them. But, if I do not feel like I can make that assumption, then I won’t even bother.

Markus thought about identity in his planning process. Because he believed that integrating digital technologies had little or no effect on his students’ identities, he only rarely thought about identity in conjunction with technology. He explained:

I think about student identities all the time. Do I think about them with regard to technology? Probably not that often. Again it is a tool, and I think that their identities do not change that much because of the tools I am using.

Markus believed his students brought their identities with them into his classroom. He saw little or no change in their identities when he integrated digital technologies. Markus’ technology integrations were contextualized by this perception of his students’ identities.

*It is not technology; it’s the teacher.* Markus saw digital technologies as tools that he could use to create a learning environment. He saw the teacher in the decision-making role. For him, good teaching could take place with or without digital technologies. The relevant factor in determining whether the educational environment was successful or not was the teacher, not the digital technologies. Markus’ understanding of what happened in the classroom always focused on the teacher. He described his view of technology, “Technology is a tool. That’s definitely the way I feel about it, and I will use whatever tools I have in my arsenal to get to the desired end effect
which is competence and student proficiency.” He created a classroom environment with “the technology that is available” in order to “determine the environment.” He concluded, “It’s a tool that you can use. Sometimes, it enhances the experience. Other times, it’s taking the place of something else which would have been equally good.” He did not see the process of using tools to create an environment as any different with digital technologies today than it was for teachers of previous generations. He compared digital technology to books.

Yes, but is that really that different than what we were doing 20 years ago or 50 years ago or 100 years ago? We had to do things in class because they did not have the books in their home libraries to go home and read. We had to have copies of the books and stories for them available. We had to make text available for them because I do not know whether they are going to have that available for them at home.

He reflected on creating a learning environment with tools.

I do not say [the learning environment] is the sum of the tools but it is certainly affected. The Socratic Method worked really, really well in ancient Greece because they didn’t have chalkboards and pencils and paper and computers. It still works really well in certain various, clearly-defined contexts. Showing videos can be a really useful tool but it is not the be-all and end-all of education, and I disagree with teachers who think that they should be showing videos everyday in class.

When asked if he thought technology helped him connect better with his students, Markus gave an answer that reflected his belief that the classroom teacher created the learning environment.

I think a good teacher probably could have reached that student without the technology. A good teacher probably could have found a way to do that twenty years ago. There are always going to be reluctant students. There are always going to be students who do not want to be on task. There are always going to be students who are looking to undermine your lesson plans, I think that’s a given in nature, probably one of Murphy’s corollaries. But you certainly have more tools at your disposal with technology to try to adjust those students and try to get them
involved in what you are doing than you did before. So yes, it is easier to reach those students possibly using technology, especially if those students that are interested in technology. But as you pointed out, some students are also neophytes or technophobes, and you have to find ways to address those students anyway. So again being teacher is being creative. You always have to find creative ways to address the resistant students and to reach out to students who are not getting it using the traditional methods.”

Markus concluded:

“Markus concluded: It is not an either-or. Could you imagine teaching in a classroom before paper and pencils were readily available? Imagine how limited you would be in terms of what kind of feedback you can get, in terms what kinds of samples you can get from your students, in terms of what they can do during the class period. It is a completely different environment. The type of education that you could offer would be a drastically different thing. I think that there are a lot more tools that we have access to right now than people had a hundred years ago. What they may have had a hundred years ago was considerably more than they had a thousand years ago, and I think that is a good thing. But, what I do not want to see is that technologies dictate what happens in a classroom. I do not want to see technology take over, and I do not want to see this technology replace a teacher’s role in education.

Markus believed that he could create a better learning environment for his students when he integrated digital technologies. He did not see the digital technologies themselves as being responsible for this environment. It was the classroom teacher who made decisions and used the tools who was responsible for the educational environment. It was the teacher, not the technology. This perception of his identity as teacher affected Markus’ digital technology integrations.

Conclusion

Three main themes emerged from my analysis of my two interviews with Markus. First, Markus believed that his technology integrations reconstituted his classroom environment. Second, Markus’ SLA beliefs affected his technology integrations. Finally,
Markus’ beliefs about identity affected his technology integrations. These themes reveal that Markus was not only actively engaged in the process of integrating digital technologies into his daily curriculum, he is also thoughtful and analytical in his reflections about his teaching practice. Markus had a strong conviction that the classroom teacher played an important role as a decision maker. Marcus integrated digital technologies to provide a better learning environment for his students. He believed that the teacher should control the curriculum, and students should have the freedom to self-direct their own learning process within the parameters of the classroom activities that the teacher created. Markus believed that students acquired languages best when they experienced massive amounts of quality teacher-comprehensible input and had many opportunities to create language output. Markus felt today’s students performed less well academically than students of previous generations. My analysis of the two interviews with Markus showed that he was thoughtfully working to maximize his integrations of the digital technologies in his smart classroom.

Chapter Summary

Three main themes emerged out of my analysis of the interviews with each of my three informants. The themes from Julia’s interviews are as follows. First, technology integrations in a smart classroom reconstitute the classroom environment. Second, Julia’s beliefs about SLA affect her technology integrations. Third, Julia’s technology integrations are affected by non-SLA-related issues.

The themes from Jens’ interviews are as follows. Technology integrations in a
smart classroom reconstituted the classroom environment. Second, Jens believed that his students were more engaged and learned more when he integrated technology. Third, technology integration affected control over the daily curriculum.

The themes from my interviews with Markus are as follows. Technology integrations in a smart classroom reconstituted the classroom environment. Second, Markus’ SLA beliefs affected his technology integrations. Third, Markus’ beliefs about identity affected his technology integrations. The first theme that emerged from my analysis of the interview data is the same for each informant. However, the subthemes or aspects that support this first main theme are different for each informant. The second main theme is the same for Julia and Markus, but once again the subthemes or aspects that support the main themes are different. The third main theme is different for each informant. Although there is significant similarity between the three main themes for each informant, each informant talks about the main themes in different ways during the interviews. Each highlights different aspects of their classroom experience based on their belief system and teacher priorities. It is the subthemes or aspects that support the main themes that express the belief system and teacher priorities of my informants.
CHAPTER V
INTERPRETATION OF THE DATA, CONCLUSIONS, AND
SUGGESTIONS FOR FUTURE RESEARCH

Interpretation of the Interview Data

In this chapter, I reflect back on themes from my literature review and my conceptual framework. First, I compare what my informants expressed in their interviews with the research that I have cited and draw my own conclusions. Then, I interpret what my informants said in their interviews through the lens of my conceptual framework and draw conclusions. As I refer back to the interviews with my informants, I report what my informants say in broad and synthesized terms. I report my overall impressions and interpretations of what my informants express in the interviews based on my analysis of the interview data that I presented in Chapter IV. After my reflections on themes from my literature review and my conceptual framework, I conclude by reviewing my two research questions. This chapter ends with my suggestions for future research.

In my reflections on themes from my literature review, I first look back at the larger context of CALL research and practice. I review the historical organizations of CALL practice and research submitted by Bax (2003), Kern (2006), and Warschauer and Healey (1998) and then situate my informants’ descriptions of their technology integrations to these historical organizations. Next, I turn to Chapelle’s (1997, 1998) assertion that CALL research should be grounded in SLA pedagogy. In this section, I illustrate how my informants’ SLA beliefs influenced their digital technology
integrations. My reflections on my literature review continue with Zhao’s (2003) contention that more CALL research is needed on teachers who are fully integrating digital technologies into the daily curriculum, and I report my informants’ perceptions of their experiences as they engage in the process of integrating technology into their daily curriculum. The next section is based on Burston’s (2003) suggestion that CALL researchers study teachers’ beliefs about their roles, their expectations of students, and their training and infrastructure needs. In this section, I synthesize my informants’ perceptions about their roles, their student expectations, and their infrastructure needs. I conclude my reflections on my literature review by examining Felix’s (2005) and Kern’s (2006) recommendation that CALL researchers focus on the complex context of technology integrations rather than cause-and-effect relationships. I follow this up by describing my informants’ hesitancy to connect their technology integrations with specific learning outcomes. My reflections on these themes from my literature review lay a foundation for my reflection on themes from my conceptual framework.

In my reflections on themes from my conceptual framework, I first review Feenberg’s (1991, 2002) description of the instrumental and deterministic views of technology and his contrasting critical theory of technology. I follow this review up by discussing my informants’ view of technology and suggesting how their view of technology influences their daily technology integrations. Next, I focus on how implicit power embedded in classroom interactions affects all the technology integrations of my informants (Foucault, 1980a, 1980b, 1990; Gore, 1995; Levitt, 2008). Based on my informants’ descriptions of their technology integrations, I interpret the role that implicit
power relations in their classrooms have on their technology integrations. After interpreting the power relations in the classrooms of my informants, I explore my informants’ descriptions of their classroom discourse and suggest how this discourse shapes their daily technology integrations (Ball, 1990; Foucault, 1971, 1984, 1990). I then turn to the concept of normalization (Ball, 1990; Bax, 2003). I look at the technologies that have become normalized in the classrooms of my informants, and I connect the classroom discourse to the normalization of technology integrations in my informants’ classrooms. I end this section by exploring my informant’s descriptions of their own identity and their perceptions of their students’ identities. I compare my informants’ perceptions to Menard-Warwick’s (2005) assertion that students’ ability to take on new identities in SLA communicative activities enables them to position themselves in new ways in the classroom. My reflections on these themes from my conceptual framework lay a foundation for my broader conclusions.

In my Conclusion section, I reflect back on my two research questions and offer broad answers that have emerged to these questions through the process of this study. My two research questions are: (1) How do secondary German language teachers describe the changes to teaching and learning contexts in their classroom that result from integrating digital technologies into their daily curriculum? and (2) What are the resulting changes to the implicit power embedded in their classroom interactions as they integrate digital technologies into their daily curriculum? I begin by looking at the broad answers to my first research question that emerged from the process. I assert that digital technology integration is a process that happens over time for my informants, I describe what this
process looks like for my informants, and I stress that my informants are actively working on integrating their digital technologies into their daily curriculum. I conclude that my informants’ descriptions of their process provide a deeper, more contextualized understanding of teachers’ perceptions of their technology integrations. Next, I focus on my second research question by revisiting the concept of power relations in my informants’ classrooms. I describe the normalized classroom discourses that my informants depict in their interviews, and I interpret how those discourses affect the technology integrations of my informants. This Conclusion section takes a broad look at the answers to my research questions that emerged from the process of this study.

Reflection on Themes from My Literature Review

Larger context of CALL practice and research. In this section, I situate my informants’ technology integrations in the larger context of CALL practice and research. As I reported in my literature review, several (CALL) researchers have produced an historical organization of CALL practice and research. Kern (2006) organized CALL practice and research by dividing computer second language acquisition (SLA) functions into three roles: the roles of “tutor,” “tool,” and “medium” (p. 191). Computers used in the tutor role provide students with the opportunity to interact with language learning software while receiving both instruction and feedback. Computers used in the tool role offer teachers and students access to authentic cultural and language materials. Computers used in the medium role “provide sites for interpersonal communication, multimedia publication, distance learning, community participation, and identity formation” (p. 192). Kern asserted that historically, CALL research has focused on
tutorial applications, but in the last 10 years has focused more on medium roles. In another organization of CALL practice and research, Warschauer and Healey (1998) divided the history of CALL research into three paradigms or phases that are loosely linked with specific decades: “behavioristic,” “communicative,” and “integrative.” They linked the drill-and-practice-on-the-computer behavioristic phase to the 1970s and 1980s. They link the fluency-acquired-through-communicative-activities-on-a-computer communicative phase to the 1980s and 1990s. They suggest that language teachers of the 21st century are moving into an integrative phase of CALL characterized by interactive, communicative multimedia and internet uses of computer technology that produce authentic discourse and foster student agency. Bax (2003) offered a third organization of CALL practice and research. Bax used the terms “Restricted CALL,” “open CALL,” and “integrated CALL.” Restricted CALL activities are closed drills and quizzes in a computer lab that provide minimal interaction with other students and are not integrated into the syllabus but seen as optional or extra. Open CALL activities are flexible simulations, games, or computer mediated communication (CMC) where students interact with the computer and sometimes other students in a separate language lab. Open CALL activities are still not fully integrated into the syllabus but instead are seen as a neat toy. Integrated CALL activities are CMC, word processing, email, or other activities where students interact frequently with other students in the normal classroom setting and computer activities are fully integrated into the syllabus. Bax linked restricted CALL to 1960 through 1980 and open CALL from the 1980 until today. He believed that integrated CALL existed in a few places, but it is far from common. Bax argued that the
future of CALL is normalization which he defines as “the stage when a technology is invisible, hardly even recognized as a technology, taken for granted in everyday life” (p. 23). Regardless of the terms that they used, Kern, Warschauer and Healey, and Bax all presented CALL practice and research as an historical progression that was moving toward more interactive, communicative, computer-mediated activities that are increasingly embedded or normalized in the full curriculum.

My interviews with all three informants suggest that their classroom technology integrations are moving in the direction that Kern, Warschauer and Healey, and Bax describe. My informants were using digital technologies to provide increased access to authentic cultural and language materials, create more student interaction and communication, and enable more instantaneous and specific feedback. All three of my informants integrated digital technologies into their daily teaching in their smart classrooms. They also frequently took their students to a school computer lab to access other technologies not available in their classrooms, but their technology integrations were not restricted to only the computer lab visits. All three informants referred to the technologies that they integrated as tools. Jens and Markus said that they use those tools to create a classroom environment. Markus added that the classroom environment was more than just the sum of the tools that he used to create it. Some of digital technologies that my informants integrated in their classrooms were already normalized. This was true for the computer with internet access, the digital projector, and the sound system. These technologies were fully embedded in classroom practice and were no longer seen as supplemental or out-of-the-ordinary by my informants or their students. Jens and Markus
recently obtained clickers and an interactive slate. Their use of these tools up until the end of this last school year had been largely supplemental. Both intended to make these technologies a normalized part of the classroom experience in the coming school year. Although Julia had had a document camera for some time, she still preferred her overhead projector. She still saw her document camera as a supplemental tool that she could use to occasionally add to her lessons. Julia reported that she used her digital technologies more to provide access to authentic materials and less to enable student interaction and communication. Jens used Moodle software to create computer environments (forums and chat rooms) where his students can interact and receive additional feedback from the teacher. All three of my informants used their digital projectors to display text, pictures, video, and multi-media materials that served as a support or scaffolding for a wide variety of student interactions such as role plays, interviews, performances, and communicative games.

In CALL practice and research, the vision of how technology can support, influence, and enable student SLA has developed over time as technology capabilities and access to those technologies have increased. This same process of increasing and developing a vision of how digital technologies can support, influence, and enable student SLA is occurring on a micro level in the classrooms of my informants. As they gain access to new technologies and have ideas about how to use those technologies, my informants are moving into the “medium” (Kern, 2006), “integrative” (Warschauer & Healey, 1998), or “integrated CALL” (Bax, 2003) phases of technology integration.

**SLA beliefs and technology integrations.** In this section, I describe how my
informants’ technology integrations are affected by their SLA beliefs. In her description of the state of CALL research, Chapelle (1997) invited CALL researchers to ground their future research in SLA pedagogy. Chapelle (1998) suggested seven technology integrations that are grounded in SLA pedagogy and that enable student second language acquisition. She explained that digital technologies allow teachers new possibilities to (1) make key linguistic characteristics salient, (2) offer modifications of linguistic output, (3) provide opportunities for comprehensible input, (4) provide opportunities to notice errors, (5) provide opportunities for linguistic output, (6) support modified interaction in the target language, and (7) allow learners to act as participants in second language tasks (pp. 23-28). Chapelle organized the possibilities for integrating digital technologies into seven categories. Based on my interviews with my informants, I want to simplify those seven categories into three broad categories: teacher comprehensible input (Krashen, 1981), student target language output (Swain 2005), and feedback. My category of teacher comprehensible input includes Chapelle’s categories 1, 3, 4, and 6. My category of student target language output included Chapelle’s categories 2, 4, 5, 6, and 7. My category of feedback included Chapelle’s categories 1, 2, 3, 4, 5, 6, and 7. A side-by-side comparison of Chapelle’s seven categories and my three categories can be found in Table 13. I choose to use only three broad categories because they represent the way my informants talk about their SLA beliefs and their technology integrations in the interviews. I will use these three categories to interpret how my informants’ SLA beliefs affect their technology integrations.
Table 13

*Side-by-Side Comparison of Chapelle’s Categories and My Categories*

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<thead>
<tr>
<th>Chapelle’s categories</th>
<th>My categories</th>
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<td>Integrating technology can help the teacher to:</td>
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<tr>
<td>• Make key linguistic characteristics salient.</td>
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<td>• Provide opportunities for comprehensible input.</td>
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<td>• Provide opportunities to notice errors.</td>
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<td>• Support modified interaction in the target language.</td>
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<td>Teacher comprehensible input</td>
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<td>Integrating technology can help the teacher to:</td>
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<tr>
<td>• Offer modifications of linguistic output.</td>
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<td>• Provide opportunities to notice errors.</td>
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<td>• Allow learners to act as participants in second language tasks.</td>
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<tr>
<td>Student target language output</td>
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<td>Integrating technology can help the teacher to:</td>
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<td>• Make key linguistic characteristics salient.</td>
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<td>• Offer modifications of linguistic output.</td>
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<td>• Allow learners to act as participants in second language tasks.</td>
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<td>Feedback</td>
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Almozaini (1998) and Chen (2006) found that teacher SLA beliefs affected their technology integrations, and I expected to find that this would also be true of my informants. In their interviews, each of my informants expressed a conviction to ground their digital technology integrations in their SLA beliefs. Each of them did this in a different manner, however. For example, Julia learned German as a high school foreign exchange student. Because of her experiences, she highly valued providing her students with access to authentic cultural and language materials. Although she also valued the ability of her technology integrations to assist her students in producing German language
output and to help her give her students feedback on their language output, her responses in the interviews suggested that her primary focus in her technology integrations was providing her students with improved comprehensible input in the form of greater access to authentic cultural and language materials via the Internet.

My interviews with Jens suggested that his highest priority in his technology integrations was teacher-to-student and student-to-student feedback. Jens also used technology to improve his teacher comprehensible input and to create more opportunities for student German language output. In my interviews with Markus, he spoke repeatedly about how digital technologies had changed his preparation of curricular materials that he used to provide better teacher-comprehensible input and create opportunities for more student language output in class. Each of my informants made decisions about classroom technology integrations based on their SLA beliefs. Each focused on different aspects of SLA pedagogy based on their experience and priorities.

Each of my informants was an active integrator of digital technologies who was in the process of discovering effective methods of technology integration. They were all considered leaders in technology integration in the Utah German teacher community. As my informants engaged in the ongoing and developing process of integrating technology into their daily curriculum, they experienced success in different ways and developed different patterns of technology integration. Despite their significant successes, none of my informants was at this point taking advantage of the full potential of the digital technologies in their smart classrooms. Each focused on some aspects of SLA pedagogy more than others. My informants focused on a more full range of SLA pedagogy when
one included their nontechnology teaching. Their current vision of the technologies in their smart classrooms caused their technology integration focus to be more narrow than their overall teaching focus. As a result, I suggested that more teacher sharing in the form of workshops, conference presentations, and informal communications would help secondary German language teachers to expand their vision of how they use digital technologies in their smart classrooms and how they ground their technology integrations in their SLA beliefs.

**Development of full curricula integrating digital technologies.** In this section, I illustrate how my informants are in the process of developing full curricula that integrate digital technologies. In his meta-analysis of CALL research, Zhao (2003) asserted that more “research about appropriate ways and contexts of technology use is much needed” (p. 22). He further argued that “in the future, what is needed is the development of full curricula that are supported by available technologies instead of individual tools that are only used infrequently or as a supplement to a primarily print-material-based curriculum” (p. 22). My three informants taught in smart classrooms and were actively engaged in the process of fully integrating their digital technologies into their daily curriculum. All three informants saw their accumulation and integration of digital technologies as a process that happened over time as their vision of what they could do with technology grew and developed. All three also reported in their interviews that they improved the quality of their technology integrations with repetition. All three expressed that there were numerous classroom activities that they planned where they did not integrate technology, and Julia and Markus were both adamant in their assertions that some activities were
better without technology. My informants did not perceive digital technologies like the computer with internet access, the digital projector, and the sound system as supplementary to their curriculum. They saw these technologies as having a primary role in curriculum development and delivery, and they frequently use these technologies in tandem with each other. Other technologies like a document camera, clickers, or an active slate were in the process of moving from a supplementary role into a primary role in the classrooms of my informants.

The interviews with my informants suggested that it was the vision and experience of the individual teacher that was the primary driving force in how curriculum was developed and delivered using digital technologies. All three of my informants were largely producers of their own curriculum. They all had classroom textbooks that they used infrequently. They each produce their own lesson plans and much of their own curricular material. All three regularly attended teacher workshops and seminars where other teachers shared their experiences and curricular materials. Often these workshops and seminars had a technology component. All three of my informants also had access to specific technology training classes on the school and district level. All three reported that they occasionally took advantage of these classes. All three informants also referred to individuals or groups who had affected their technology integrations.

Jens’ current principal encouraged him to integrate digital technologies into his daily curriculum. Markus collaborated effectively with the teachers in his school’s World Language Department, and they frequently made decisions about acquiring new technologies together as a department. Julia served on her school’s technology team in
the past, which had given her increased access to digital technologies in her classroom. All three of my informants reported a variety of influences on their technology integrations, but when they sat down to plan or when they stand in front of students, they were the primary decision makers. When it came to daily pedagogical decisions about how to prepare curricular materials using digital technologies and how to integrate a digital technology into a specific classroom activity, my informants made their decisions based on their own vision and experience.

Zhao (2003) would like to see more classrooms where digital technologies played a primary role in the development and delivery of the curriculum. My informants were in the process of creating that kind of classroom using their smart classroom technologies. There are textbooks on the market that have fully integrated technology components, but my informants did not have access to these textbooks. For my informants, gaining access to smart classroom technologies had been a separate process from gaining access to textbooks that fully integrated digital technologies into a predetermined curriculum. Both Julia and Jens reported that they enjoy the freedom that digital technologies allowed them in the classroom. They enjoyed allowing their students to have more influence on the curriculum and made some decisions about what the class would next. This was possible in part because they did not rely on the curriculum of a textbook for their class. Markus was very adamant in his assertion that the classroom teacher should make curriculum decisions and not rely on decisions from some far away committee. For all three of my informants, the digital technologies in their smart classrooms were not closely coupled with preset curriculum associated with a textbook that fully integrates technology. In all
three cases, my informants were the primary driving force in creating and implementing curriculum using technology.

The relationship between digital technologies and the daily curriculum that was reported by my informants suggested several conclusions. First, if the vision and experience of the classroom teacher was the main driving force behind technology integration, then more opportunities for teacher training and teacher collaboration can lead to improved technology integrations. Second, if some classroom teachers prefer to create their own curriculum, district- and school-level technology committees would benefit from close collaboration with classroom teachers before they make decisions about acquiring specific technologies or textbooks. Third, if daily-technology-integration decisions are made largely by the classroom teacher, then it would make sense to make the classroom teacher a part of the decision-making process about what technologies the classroom teacher would have access to. The process of developing and implementing full curricula that integrate digital technologies into the daily curriculum is an ongoing process, and my three informants are fully immersed in this process.

*Changing teacher roles, expectations, and needs.* In this section, I reflect on changing teacher roles, expectations and needs. Because integrating digital technologies into the daily curriculum affects so many changes in classroom practice and the classroom environment, Burston (2003) suggested that researchers study “changes in teacher beliefs about their roles, what they expect of students, what they require in the way of professional development and IT support infrastructure” (p. 225). Each of these three topics came up multiple times in my interviews with my informants.
Each of my informants had a strong sense of their teacher role when they integrated digital technologies. All of my informants saw teachers as playing multiple roles at different times depending on the teacher duties they perform. Julia highlighted her role as facilitator and guide. She wanted to facilitate access to authentic cultural and language materials for her students and then guide her students through these materials and help them as a result of their interactions with the materials to acquire German. Like Julia, Jens perceived himself as a facilitator, but he also enjoyed being an entertainer. He wanted to facilitate more access to authentic materials and have his students engage more fully with those materials because they are entertained. Markus also saw himself as a facilitator, but he thought that that adjective was too reductive. He preferred to focus on the multi-faceted, decision-making nature of his role as a teacher. He saw everything he did as a teacher as being part of one big whole that could not be described by just one adjective.

As my informants gained access to new technologies and used those technologies to produce and deliver curricular materials in the classroom, their perceptions of their teacher roles developed and changed. When Julia and Jens talked about their first years in the classroom, they described themselves more as curriculum deliverers than as facilitators. In my interviews with Markus, he always spoke of himself as a decision maker, but he described the kinds of decisions he made when he integrated digital technologies differently. Before he taught in a smart classroom and had access to digital technologies, Markus was able to plan fewer activities and provide less scaffolding for those activities. When he integrated digital technologies, Markus thought more about
how he could improve his teacher-comprehensible input and integrate more modes of communication into his classroom activities. In all three cases, integrating digital technologies into the daily curriculum was having an effect on my informants’ perception of their role as teacher.

Integrating digital technologies has also affected my informants’ expectations of their students. Julia expected her students to participate more in class and develop more cultural knowledge through increased access to authentic materials. Jens expected his students to be more engaged in SLA activities and produce greater quantities of spoken and written German. Markus believed that his students today were less prepared and less motivated to learn a second language than students he had taught in the past. He believed that our culture has trained students to want to be entertained and consume their learning in shorter, faster-paced segments. Based on his beliefs about his students, Markus expected that they would engage more in his teaching as he integrated digital technologies and plans lessons that matched the attention span of his students. My informants’ expectations of their students were closely linked to the classroom environment that they created with the digital technology tools in their smart classrooms.

All three of my informants reflected multiple times during the interviews on the technology training available to them and the existing technology infrastructure of the school and district. All three of my informants felt like they had access to enough technology training. Each of their schools and districts provided a variety of technology training workshops on a regular basis. All three reported that they picked and chose which workshops they would attend. They each expressed the feeling that they had access
to enough training; they just did not have enough time to take advantage of all of the training available to them. Julia and Markus both described a well-functioning technology infrastructure in their schools. Both were satisfied with the problem-solving efforts of their school IT teams both in terms of response time and quality of work. When Jens described his school, he focused on the role of a group of teachers (including himself) who enjoyed teaching with technology. This group of teachers solved most of the technology problems that other teachers in the school experienced. Jens also repeatedly referred to his new principal who had brought a new emphasis on technology to the school. This principal had changed the technology climate in the school and encouraged teachers to work together to solve problems. The principal also had provided his teachers with more money to acquire technology.

In general, all three of my informants were satisfied with the technology infrastructure at their schools. Markus mentioned that his school did not have wireless internet access, which caused him some logistical problems in his classroom. All three of my informants talked about their access to technology training and the technology infrastructure that existed in their school as if training and infrastructure were not the major hindrances they experienced while trying to integrate digital technologies. Before I conducted the interviews, I expected that training and infrastructure would be bigger problems for my informants because of my more negative experiences with training and infrastructure and because of my literature review. Braul (2006), Chen (2006), Chernow (1997), Kim (2003), Lazlo-Wilson (2007), and Zhao (2006) all reported in their dissertations that better opportunities for teacher technology integration training was
needed. However, the answers that my informants gave during their interviews painted a different picture. My interpretation of my informants’ answers during the interviews was that a vision of how a specific technology could be used to support and enable SLA activities was the biggest hindrance to the classroom technology integrations of my informants. Increased technology training could improve my informants understanding of how they could use the technologies they already had, but my informants did not attend all of the training workshops that were offered at their schools or in their districts. This pointed to the real hindrance to improved technology integrations—time. My informants already spent more than their contract day working on their technology integrations. They were basically already improving as fast as they could, and their improvements to their daily technology integrations in the classroom was a process that happened over time. The experiences of my informants suggested that increasing technology training opportunities and improving technology infrastructure could have only a limited impact on a classroom teacher’s technology integrations because those teachers had limited time and their time was already filled with many other things. This was particularly true of teachers who were already actively stretching themselves in their technology integrations like my three informants.

**Outcomes or context.** In this section, I assert that it is more important to focus on the context of teacher technology integrations than cause-and-effect relationships within those integrations. In her review of CALL research, Felix (2005) asserted that it was increasingly difficult to study the effectiveness of technology in CALL because “technologies, settings and teaching methods have not only become more complex but
inextricably linked and outcomes therefore even more difficult to measure” (p. 16). She added, “The ever pursued question of the impact of ICT on learning remains unanswerable in a clear cause and effect sense” (p. 16). Echoing Felix, Kern (2006) posited that “whereas early CALL research generally sought out relatively simple cause-effect relationships between human-computer interaction and learning, current research seeks to understand complex relationships among learners, teachers, content, and technology within particular social and cultural contexts” (p. 201). Both Felix and Kern highlighted the difficulty of establishing cause and effect relationships between classroom technology integrations and student learning outcomes because of the complexity of the context of the technology integrations.

During the interviews, all three of my informants echoed the assertion of Felix and Kern. All three would rather contextualize their experiences integrating digital technologies than make exact connections between their technology integrations and specific student learning outcomes. All three reported benefits from their technology integrations, but all three felt uncomfortable making definitive statements about student learning outcomes. Julia was very hesitant to connect her technology integrations to improved student outcomes. She felt sure that the quality of her teaching improved when she integrated digital technologies, but she equivocated when asked if her students performed better. Jens also felt sure that his digital technology integrations improved his teaching, and he was more willing to link his technology integrations to improved student performance. In the interviews, he asserted that his students produced more German language output because of the forums and chat rooms he created with Moodle software.
He also believed that the extra feedback he was able to give his students in these communicative settings improved the quality of their German language output, but Jens had not made any specific comparisons or conducted any experiments to substantiate his perception that his students’ learning outcomes were affected by his technology integrations. Markus commented extensively on how digital technologies had improved the planning process and curriculum development process for him. He reported that as a result of his technology integrations he was able to integrate more multi-media and modes of communication into his lessons. He was also able to move through curricular material in a more streamlined fashion and, therefore, teach more material. Markus believed that his students were less motivated and less prepared for academic success than students he had had in the past. Markus suggested that his technology integrations improved his teacher comprehensible input and provided more opportunities for student language output, but he did not feel comfortable directly connecting technology integration to student learning outcomes. My three informants provided great context when they described their daily technology integrations, but they did not feel comfortable making definitive statements about the relationship between their technology integrations and their students’ learning outcomes.

**Reflection on Themes from My Conceptual Framework**

**View of technology.** In this section, I examine the view of technology held by my informants. Feenberg (1991, 2002) differentiated between the instrumental and deterministic views of technology, and he introduced his own critical view of technology.
The instrumental view asserts that technology is merely a neutral tool that is “indifferent to the variety of ends it can be employed to achieve” (Feenberg, 1991, p. 5). The determinist view of technology posits that technology use “constitutes a new type of cultural system that restructures the entire social world” (Feenberg, 1991, p. 7). Feenberg (1991) rejected these two perspectives on technology and outlines the basis of his critical theory of technology:

Critical theory argues that technology is not a thing in the ordinary sense of the term, but an ‘ambivalent’ process of the development suspended between different possibilities. This ‘ambivalence’ of technology is distinguished from neutrality by the role it attributes to social values in the design, and not merely the use, of technical systems. On this view, technology is not a destiny but a scene of struggle. It is a social battlefield, or perhaps a better metaphor would be a parliament of things on which civilizational alternatives are debated and decided. (p. 14)

No classroom technology integration takes place in a vacuum. Each integration is fully embedded in and contextualized by the coconstructed and negotiated meanings of the participants in the integration. A smart SLA classroom is a complex microcosm of the larger society that Feenberg described. The view of technology that the participants in the technology integration have affects the technology integration. Because of the teacher’s role as the designer of the technology integration, the teacher’s view of technology is particularly influential on how the integration plays out in the classroom.

Each of my informants described their views of technology in their answers to my interview questions. Julia wanted her students to be involved in directing classroom learning activities when she integrates technology. She regularly allowed her students to make choices that shape and even change the direction of her classroom activities. This is particularly true when she integrated a technology that is new to her. She reported
that she allowed her students to take more control of activities when she felt less experienced with a technology. Julia explains that she took more control and was more rigid in what she allowed her students to do with technology as she became more experienced with a technology and discovered some of the pitfalls involved in integrating that technology into her curriculum. Julia referred to the digital technologies that she used in her classroom as “tools,” but based on my interpretation of her answers to my interview questions, I describe Julia’s view of technology as more deterministic in nature. She allowed the technology integration to change the ability of her students to direct the curriculum when the technology was new to her, and she subsequently tightened her control over student activities when she discovered problems that could arise from employing a certain technology that she described as an inevitable reaction that was set in motion by the technology integration itself.

Jens also allowed his students to shape and direct the daily curriculum when he integrated digital technologies. Jens believed that there were dangerous materials that his students could encounter on the internet when they were self-directing their own German learning, but he responded to the potential problems that could arise from his students’ self-directed learning by teaching them to self-filter as they self-direct. More than any of my other two informants, Jens used digital technologies to create a learning environment. He did this with the Moodle e-learning software platform. Using Moodle, his students engaged in forums and chat rooms and published videos and audio recordings. Jens reported that his students’ German language interactions could easily degenerate into name calling and insult flinging in the forums and chat rooms.
In response to his students’ potential misuse of the technology environments that Jens created, Jens shaped his students’ communications in the forums and chat rooms through his own participation in the communicative activities and the feedback he offered. He also restricted student access to the forums and chat rooms outside of class time. Jens described the digital technologies he employed in his curriculum as tools that he used to create a learning environment. He saw himself and his students as actors in this environment who cocreate the learning experience through their interactions. I would describe Jens’ view of technology as being mostly critical.

Markus believed that a teacher had the responsibility to direct the curriculum in the classroom. He wanted his students to make choices, but they should make those choices within the parameters that he as the teacher had set. Markus described the digital technologies that he integrated into his daily curriculum as tools. He used the tools at his disposal to create a learning environment for his students. He described the learning environment as being more than the sum of the individual tools because a learning environment was also affected by the teacher and the learners in the environment. Markus suggested that he could still create effective learning environments if he had other tools. For him, the most important factor was the teacher who made decisions about how the tools should be used. Based on his answers in the interviews, I believe that Markus had a more instrumental view of technology.

All three of my informants’ views of technology lean in different directions, and their views of technology affected their technology integrations. Julia’s more deterministic view of technology influenced her to allow her students to take more
control over communicative activities. Jens’ more critical view of technology caused him to create more interactive, communicative activities using technology. Markus’ more instrumental view of technology focused his attention more on how he used technology to create comprehensible input and direct student output. My informants’ vision of the role of technology affected the kinds of classroom activities that they conceived of for their students.

**Power.** In this section, I describe and interpret my informants’ perception of the power relations that exist in their classrooms. Implicit power embedded in classroom interactions affects all of the technology integrations of my informants. Foucault (1990) asserted that “power is not an institution, and it is not a structure; neither is it a certain strength we are endowed with; it is the name that one attributes to a complex strategical situation in a particular society” (p. 93). He added that “power is everywhere; not because it embraces everything, but because it comes from everywhere” (p. 93). Foucault (1980a) described a “disciplinary power” that is pervasive and invisible within modern institutions. Gore (1995) outlined the key features of Foucault’s disciplinary power by explaining that disciplinary power is “productive and not solely repressive,” it “circulates rather than being possessed,” it “exists in action,” it “functions at the level of the body,” and often “operates through technologies of the self” (p. 99). Power operated on the most micro levels of human interaction. Foucault (1980a) extrapolated:

> In thinking of mechanisms of power, I am thinking rather of its capillary form of existence, the point where power reaches into the very grain of individuals, touches their bodies and inserts itself into their action and attitudes, their discourse, learning processes and everyday lives. (p. 39)

Power on this level was “a machine in which everyone is caught, those who exercise
power just as much as those over whom it is exercised” (Foucault 1980b, p. 156). Using the context of Foucault’s writings, Levitt (2008) asserted that “power is not possessed, but is distributed throughout complex social networks.” It “operates through a net-like organization and individuals are the agents of power” (p. 51). My informants and their students interacted as agents of power within the complex social network of their classroom community. Power was part of every technology integration in their classrooms.

Although it is impossible to interpret the full context of power relations embedded in the complex social networks that exist in my informants’ classrooms based on two interviews, it is possible to interpret several aspects of the context of power relations in my informants’ classrooms. At several points during the interviews, my informants described from their perspective the power relations that existed in their classroom communities during technology integrations. These descriptions came when my informants talked about their teacher roles, how they connected with their students, their sense of their students’ perception of the teacher, and their views concerning curriculum control.

Julia perceived herself as a facilitator or guide in the classroom. She connected with her students as a guide who could provide them with increased access to authentic cultural and language materials that the students were interested in. She believed that her students perceived her as a better teacher because she used technology to increase that access. Julia’s technology integrations allow her students to take more control over the daily curriculum. Julia believed that her students were more engaged in the learning
process when she interacted with her students in this way. Julia’s descriptions portrayed the web of power that existed in her classroom. Julia shaped her students’ perceptions of her by creating a curriculum that included authentic cultural and language materials that the students were more interested in. This enhanced her power and control over student behavior in the classroom. She gave her students more control over the curriculum by letting them make more decisions about what authentic cultural and language materials they will access during a SLA activity. By doing this, she distributed some of her teacher decision-making power to her students. As Julia discovered the problems and pitfalls associated with her technology integrations, she exercised a more disciplinary power and restricted her students’ ability to control the daily curriculum.

Julia found that her students sometimes resisted her technology integrations when they believed that they were not effective. Julia listened to the resistance feedback she got from her students and made changes to future technology integrations. Julia and her students were engaged in an ebb and flow of power relations in the classroom. Julia gave her students power to direct the curriculum, and then she pulled back some of that power when she encountered problems. Julia gained power from her students by including more authentic materials in her curriculum. She allocated power back to her students when she responded to their feedback about the quality of her technology integrations. Julia expressed several times in her interviews that she was in control of what happened in the class. She then followed that kind of statement up with examples of how her students directed the daily curriculum. Julia directed the class by sharing power and by allowing a ebb and flow of power to shape her students’ daily learning processes.
In his interviews, Jens also described his teacher role, how he connected with students, his students’ perception of him as a teacher, and his views of curriculum control. Jens saw himself as a guide and an entertainer. He connected with his students through the entertaining act he put on for his students. He believed his students perceived him as more with-it and engaging because of his technology integrations. He encouraged his students to take more control over the daily curriculum as he integrated digital technologies. Jens believed that his students were more motivated and more engaged in the learning process when he interacted with them in this way. Jens’ descriptions portrayed the web of power that existed in his classroom. By entertaining and engaging his students with fun technology toys, Jens increased his power to direct his students’ learning in his classroom. He distributed this power back to his students by encouraging them to direct more of the learning process in class. He created structured technology environments (forums and chat rooms) where his students had significant freedom to direct communication and interaction and thereby learning outcomes.

Jens shaped the interactions in these technology environments through restricting access to the environments and the feedback he offered students during interactions in the environment. As with Julia, the power relations in Jens’ classroom were characterized by an ebb and flow of power between the teacher and the students. Jens received power from his students to direct their learning processes as they buy-in to his classroom activities because of his entertaining style. Jens distributed this power back to his students as he created learning activities that allowed the students to control their own learning processes. Jens took some of this power back as he shaped the technology learning
environments of the class to prevent student abuse of their freedom to direct the curriculum. Similarly to Julia, Jens directed his class by sharing power and by allowing an ebb and flow of power to shape the daily learning processes of his students.

During the interviews, Markus also described his teacher role, how he connected with students, his students’ perception of him as a teacher, and his views of curriculum control. Markus felt strongly that a teacher plays a multi-faceted role as the decision maker in the classroom. Markus believed his students wanted to have positive classroom experiences, and he connected with his students on a professional level by preparing engaging activities. He connected with his students on a personal level through outside-of-class interactions. He believed that his students saw him as a better teacher because he effectively integrated technologies into his teaching and did not just PowerPoint his students to death. Markus believed that the teacher should direct the classroom curriculum. He did not mind if his students had an illusion of some control over the curriculum because he offered them choices in the learning process, but he felt strongly that the teacher should control the classroom curriculum. Unlike the classrooms of Julia and Jens, the power relations in Markus’ classroom were more steady and unchanging.

Based on his SLA beliefs, Markus created and prepared learning activities for his students. He made the decisions and exercised power. He created activities that allowed his students to make choices within the parameters that he dictated. He did not believe that his students were in the best position to direct their own learning. He believed that his greater experience with and wider perspective on language learning put him in the best position to direct the learning activities of the class. Markus could not think of any
example where his students resisted his technology integrations. He thought it would never occur to his students to resist his technology integrations because they had not experienced other alternatives. They accepted the integrations because that was just the way things were. Markus did not see himself as a powerful dictator in his classroom. He saw himself as a wise decision maker who was in the best position to direct the learning of the class. Markus had more understanding of SLA methodology more academic training than my other two informants. Markus maintained more power in his relations with his students than Julia and Jens.

When I reflect on the power relations in the classrooms of my informants, I conclude that their processes of maintaining and distributing power are related to the way that they integrate technology in their classrooms. Jens and Julia tended to share and distribute power and their technology integrations are more open-ended and student-directed. Markus maintained more power in his relations with students, and his technology integrations were more predetermined and teacher directed.

**Discourse.** In this section, I examine the classroom discourse of my informants. The web of power in which my informants and their students are embedded constitutes and is constituted by the discourse in their classrooms. Ball (1990) defined discourse in a Foucauldian sense:

Discourses are about what can be said and thought, but also about who can speak, when, and with what authority. Discourses embody meaning and social relationships, they constitute both subjectivity and power relations. Discourses are ‘practices that systematically form the objects of which they speak.... Discourses are not about objects; they do not identify objects, they constitute them and in practice of doing so conceal their own invention’ (Foucault 1974: 49). Thus the possibilities for meaning and for definition are preempted through the social and institutional position held by those who use them. Meanings thus arise not from
language but from institutional practices, from power relations. (p. 2)

Foucault (1984) saw discourse as regulatory practice conducted through language. He stated, “Discourse is not simply that which translates struggles or systems of domination, but it is the thing for which and by which there is struggle, discourse is the power which is to be seized” (p. 110). Foucault (1990) explained how discourse was a process that both reinforced and challenged existing power.

We must make allowance for the complex and unstable process whereby discourse can be both an instrument and an effect of power, but also a hindrance, a stumbling-block, a point of resistance, and a starting point for an opposing strategy. Discourse transmits and produces power; reinforces it; but also undermines and exposes it, renders it fragile and makes it possible to thwart it. (p. 101)

In the classrooms of my informants, teachers and students engaged in discourse that reproduced and at the same time undermined existing power relations and constituted the meanings of the classroom.

The two interviews with my informants did not and could not reveal the entirety of their classroom discourse. My informants did, however, reveal some significant aspects of their classroom discourse through the answers they gave in their interviews. All three of my informants expressed a strong belief that their function as teacher was to enable their students to acquire the German language. My informants’ beliefs about what it meant to acquire German are somewhat different, however. It was my informants’ beliefs about acquiring German that influenced how they shaped the discourse in their classrooms. Although all three of my informants wanted their students to develop communicative skills in German through participation in their classes, all three had different priorities.
Julia prioritized cultural competence achieved through access to authentic cultural and language materials. She shaped the classroom discourse by allowing her students to choose which authentic materials they were interested in and wanted to explore. Her students knew that they could speak out and direct an activity based on their interests in authentic materials. Julia responded to her students’ requests to explore certain authentic materials by incorporating those requests into current or future learning activities. Julia decided if student requests were appropriate or not. Julia and her students both implicitly understood that students got to make requests and Julia got to decide if a request was appropriate. As Julia and her students engaged in this discourse, they co-constitute the meanings of their classroom.

Jens also valued access to authentic materials, but he prioritized the role of feedback in his classroom. Jens reported that he used technology to give his students copious amounts of both formal and informal feedback. He gave feedback on the quality of his students’ language production and the manner in which they interacted with other students. Jens’ students were used to getting a great deal of feedback from him. Jens also got feedback from his students. He got feedback about their learning processes when students responded using his set of clickers. Jens’ students were also very free to give instant feedback concerning their interest level in the activities that Jens conducted using digital technologies. It was not uncommon for his students to express approval or disapproval during or after communicative activities. Jens and his students knew that both positive and negative feedback was always an acceptable part of the discourse in his classroom. It is through the feedback that Jens and his students constituted the fun and
lively nature of Jens’ classroom environment.

Access to authentic materials and feedback were important in Markus’ SLA belief system, but his answers to my questions in the interviews suggested that his priority was quality teacher comprehensible input, which lead to student language production. Markus used digital technologies to organize and produce multi-media and multi-modal teacher comprehensible input. He used this input to create opportunities for student language output. Markus included a wide variety of authentic materials in his comprehensible input in order to contextualize and set the stage for his students’ language output. Markus’s students had the freedom to express themselves as they chose when they created language output. Markus created the situation and his students expressed themselves within the parameters of the situation. It is through the discourse that was produced as Markus and his students played these well-defined roles that meanings were constructed in Markus’ classroom.

Although the general goal of German language acquisition was the same in the classrooms of each of my informants, the way that the classroom discourse shaped the path to that goal was different in each classroom. Who could speak and what could be said was different in the classrooms of each of my informants. This was influenced by the SLA priorities of my informants.

**Normalization.** In this section, I reflect on how my informants’ classroom discourse normalized classroom technology integration practices. The discourse in the classrooms of my informants caused certain behaviors, activities, and rules to become accepted or normalized in the classroom. Ball (1990) defined normalization according to
Foucault: “By normalization Foucault means the establishment of measurements, hierarchy, and regulations around the idea of a distributionary statistical norm within a given population—the idea of a judgment on what is normal and thus what is abnormal” (p. 2). The concept of normalization is also used in CALL research. Bax (2003) argued that the future of CALL is normalization, which he defined as “the stage when a technology is invisible, hardly even recognized as a technology, taken for granted in everyday life” (p. 23). He described the use of computers in a normalized CALL state:

Computers...are used every day by language students and teachers as an integral part of every lesson, like a pen or a book. Teachers and students will use them without fear or inhibition, and equally without an exaggerated respect for what they can do. They will not be the centre of any lesson, but they will play a part in almost all. They will be completely integrated into all other aspects of classroom life, alongside course books, teachers and notepads. They will go almost unnoticed. (p. 23)

Often, it is the normalization of practices, behaviors, and rules that obscures the implicit power relations that are embedded in all classroom interactions. The normalization of technology-integration practices constitutes and is constituted by the discourse of the classroom.

My informants were in the process of developing smart classroom environments where digital technologies were normalized. Several of the technologies that my informants integrated into their daily curriculum had already become normalized. This was true of the computer with internet access, the digital projector, and the sound system. All three of my informants used these technologies on a daily basis to integrate a wide variety of multi-media into their teacher-comprehensible input and created opportunities for student multi-modal language output. Integrating these technologies had become
normal for my informants and their students. Just a few years ago, integrating each of these technologies would have been out-of-the-ordinary. Teachers would have needed to borrow a digital projector from the media center and prepare a special lesson using the technology. The students would have experienced the lesson as a special treat that the teacher had prepared for them. Today, these technologies are a regular, every-day part of the teaching and learning landscape in my informants’ classrooms.

My informants had other technologies that were progressing toward normalized status but had not yet reached it. Jens and Markus both acquired an active slate and a classroom set of clickers last year. Both had used these new technologies several times in their classes, but they had not yet made them an everyday part of class. In the interviews, both expressed their desires and related their plans to create more lessons that fully integrated these technologies. Julia had a document camera that had not yet become normalized in her classroom. Although she could use a document camera in place of an overhead projector, she still chose to use the overhead projector. This was largely because she shared her classroom. She had not permanently set up her document camera, so she felt like she needed to set up the document camera and put it away each time she used it. She had not used the document camera enough for her to want to make it a permanent, normalized part of her smart classroom. Julia will not be sharing her classroom next year, and this might lead her to integrate her document camera more into her daily curriculum.

The discourse of my informant’s classroom communities determined what behaviors and practices became normalized. Although it was difficult to gain full access
to the established classroom discourse in my informants’ classrooms through interviews with the teacher, I was able to recognize some patterns of the established classroom discourse from my interviews and my single classroom observation. In their interviews, Julia and Jens reported that their students knew that they could speak out and influence the direction of a classroom activity. I also observed this specific pattern of discourse in my single observation of Julia’s and Jens’ classrooms. Markus preferred to direct the activities in his classroom, but his students knew that they had freedom to express themselves as they wished in the different communicative activities that Markus prepared for them. These patterns of discourse affected the technology integrations on the classroom and, thereby, affected which technology integrations became normalized. It was normal for Julia’s and Jens’ students to speak out and influence the direction of an activity; as a result, their technology integrations were more open-ended and student-directed. It was normal for Markus’ students to exercise freedom within certain parameters that Markus sat, and as a result, his technology integrations were more predetermined and teacher directed.

*Identity.* In this section, I examine my informants’ descriptions of their perceptions of their own and their students’ identities. My informants and their students brought many identities with them into the classroom—adult, child, male, female, race, ethnicity, class, English-speaking, English-learning, disability, ability, and so forth. These identities influenced the classroom discourse. The subject of identity was even more complicated in my informants’ German language classrooms because their students tried on new identities as they engaged in the language acquisition process. Menard-Warwick
(2005) viewed “language learning not as an isolated act of cognition, but as a way of positioning oneself in society” (p. 260). She cited several studies that suggested that “different identities are salient in different contexts, and that particular identities in particular contexts can enhance or detract from language learning” (p. 261). She posited that “language learning can only be successful to the extent that it is congruent with the learners’ sense of their gender roles, societal positions, class backgrounds, and ethnic histories” She added that studies also “indicate that in some circumstances, learner subjectivities can shift, and that through this process language learning can be enhanced” (p. 262). My informants and their students brought identities with them into the classroom, and the students tried on new identities as they engaged in communicative SLA activities. These identities shaped the classroom discourse and the normalized behaviors and practices that develop over time.

The concept of teacher identity came up several times in my interviews with each of my informants. Both Julia and Jens reported that they viewed themselves mostly as curriculum deliverers or presenters early in their teaching careers. They expressed that their use of digital technologies influenced their sense of their teacher identity over time, and they saw themselves more as a guides or a facilitators. Jens also saw himself as an entertainer. Markus did not believe that his understanding of his teacher identity had changed due to his technology integrations. Markus focused on the decision-making role of the teacher. Markus felt like he had always perceived himself as a decision maker. When he integrated digital technologies, his decisions were just contextualized by different possibilities. My informants’ perception of their own teacher identities affected
their technology integrations. Julia and Jens prepared activities where they guided their students through authentic language and cultural materials that they accessed using digital technologies and they facilitated communicative activities that grew out of the context of the authentic materials. The activities that they prepared were frequently open-ended, and their students participated in determining the outcome of the activities. Markus also guided his students through authentic materials and facilitates communicative activities, but his focus on his decision-making identity produced activities that were more predetermined in nature. His students participated actively in the learning process, but they participated within the parameters that Markus established.

The concept of student identity came up multiple times in my interviews with each of my informants. Both Julia and Jens believed that technology integrations could affect a student’s identity. In the interviews, Julia told the story of a male, marginalized Hispanic student who was off in his own little world and did not participate in class. When Julia used her digital technologies to teach a popular music lesson, this student participated actively and won a prize during the lesson. Julia believed that the access to authentic music through technology drew him into the lesson, and she reported that he was more involved in subsequent lessons. Julia also told a similar story about a White female student who never participated in class. This student became a major participator in class when Julia taught her popular music lessons. The student even started looking up German popular music at home on the Internet and sharing what she found with Julia and her fellow students. Jens told the story of two Latino male students who were never active in class. They received positive feedback from their fellow students during a
Moodle forum activity. After receiving the positive feedback, these students became the stars of the class, and Jens even heard from their English teacher that their improved participation had carried over into their English class. These examples illustrate that classroom technology integrations can influence student classroom behaviors that are related to student identities.

During the interviews, I asked my informants if their students’ identities were influenced by SLA activities where the students played roles and took on new identities in staged communicative settings. None of my informants offered any examples of how a student’s identity might be affected by a communicative activity, but Julia and Jens reported that they have students who had restricted access to digital technologies at home. Julia and Jens believed that these students had the opportunity to try on the identity of a student with access to technology in their classrooms when they integrated digital technologies into their daily curriculum.

Markus did not believe that student identity was changed by classroom technology integrations. He believed that students brought the identities that they possessed with them into the classroom, and these identities changed and developed over time but not specifically due to any technology integrations that he planned. Markus thought about his students’ identities as he planned activities, but he did not connect student identities and technology integrations in his mind.

During the interviews, I tried to prod my informants to say as much as possible about identity. Each of my informants provided detailed descriptions of their perceptions of their own teacher identities, but they said much less about student identities. Even
though I asked multiple questions and follow-up questions about student identities, my informants offered only limited descriptions of their perceptions of student identities.

**Conclusions**

This study critically examined three secondary German language teachers’ descriptions of their experiences as they integrated digital technologies into their daily curriculum. Because of the central, decision-making role of the teacher, it was important to have a more contextualized understanding of the technology integration experiences of secondary German language teachers. This study answers two questions: (1) How do secondary German language teachers describe the changes to teaching and learning contexts in their classroom that result from integrating digital technologies into their daily curriculum? and (2) What are the resulting changes to the implicit power embedded in their classroom interactions as they integrate digital technologies into their daily curriculum? I conclude this dissertation with a review of the answers that have emerged to these research questions.

Integrating digital technologies into the daily curriculum has been a process that has developed over time for my informants. Each of my informants reported that they acquired the digital technologies in their smart classrooms over time, and they had increased their vision on how they could integrate these technologies into their daily curriculum as they gained personal experience planning lessons and leading class activities with the technologies. As they progressed through this process, my informants made decisions based on their SLA beliefs that were an outgrowth of their own language
learning experiences, educator training, and previous teaching experience.

As they integrated the digital technologies that they had acquired, my informants found that not all SLA activities were improved through technology integration. Sometimes choosing not to use technology was best. My informants also reported that the kinds of activities that they planned were different when they integrated digital technologies. My informants highly valued the increased access to authentic cultural and language materials that they could provide to their students when they integrated digital technologies. My informants believed that this access to authentic materials allowed them to improve the quality of their teacher comprehensible input. My informants also used their digital technologies to provide their students with more opportunities to create German language output in a variety of modalities. The digital technologies that they integrated also allowed my informants to provide their students with increased teacher-student feedback and enabled student-student feedback. My informants’ descriptions of their technology integrations suggested that they were moving into a normalized state of CALL practice where the technologies they integrated were no longer seen as special or out of the ordinary but were instead a normal regular part of the classroom landscape. Surprisingly, my informants reported that they had access to sufficient training and adequate technology infrastructure. Sufficient time to take advantage of the training opportunities that were available was a larger concern for my informants. My informants were actively working on integrating their digital technologies into their daily curriculum, and their descriptions of this process provided a deeper, more contextualized understanding of teachers’ perceptions of their technology integration.
My theoretical lens focused my interpretation of the interview data on the changes to the implicit power embedded in their classroom interactions as my informants integrated digital technologies into their daily curriculum. Julia and Jens encouraged their students to take more control over the daily curriculum when they integrated technology. Their students had a normalized expectation that they could influence the course of an activity through their comments to the teacher. Both Julia and Jens recounted stories of how some of their students made lasting changes in their classroom identities expressed through their classroom behaviors due to technology integrations. These changes were related to the students’ ability to shape the daily curriculum. The classroom discourse described by Julia and Jens affected their technology integrations which were, as a result, more open ended and student directed. Markus believed that the classroom teacher was the person who was the best prepared and able to make decisions about the daily curriculum. He encouraged his students to be active participants in the SLA activities he prepared. He wanted them to have the freedom to express themselves as they chose within the parameters he set for an activity. Markus did not believe that students should direct the curriculum. The classroom discourse described by Markus affected his technology integrations, which were more predetermined and teacher-directed.

**Suggestions for Future Research**

Felix (2005) and Kern (2006) highlighted the difficulty of establishing cause and effect relationships between classroom technology integrations and student learning outcomes because of the complexity of the context of the technology integrations. As
classroom second language teachers gain access to and integrate more digital technologies and as these technologies become increasingly more normalized in the daily curriculum, the context of these digital technology integrations will only become more complex. As a result, I suggest that future researchers interested in technology integrations in second language classrooms design studies that will provide them with rich descriptions of teacher and student perceptions of those integrations. I chose to focus on teachers, but students play an equally significant role in classroom technology integrations, and I encourage future researchers to study the perceptions of students.

The critical theory of technology lens that I used for this study focused my attention on the implicit power relations embedded in the technology integrations of my informants. This lens was very valuable in interpreting the descriptions of my informants. I chose to conduct two interviews and complete one classroom observation with three informants for this study. I believe that the critical theory of technology lens would be even more valuable in a study that focuses on one teacher and one classroom and that includes interviews with the teacher and interviews with some of the students. Multiple observations of the class would also enable the researcher to observe the classroom discourse rather than just hear descriptions of the discourse in the interviews. Future researchers who want to use the critical theory of technology lens should reflect on these ideas as they design their studies.

My study adds a deeper contextualized description of the perspectives of three secondary German language teachers on their technology integrations. There is still much more context that can be gathered about secondary language teachers’ technology
integrations. I suggest that future researchers engage in more descriptive research that adds to our growing contextual understanding of classroom technology integrations. As the contextual understanding of technology integrations in second language classrooms expands, future researchers will have more resources at their disposal as they seek to design valid quantitative experiments.

**Chapter Summary**

In this final chapter, I reflected back on themes from my literature review and my conceptual framework. I began by comparing what my informants expressed in their interviews with the research that I have cited and then drew my own conclusions. After reflecting on themes from my literature review, I interpreted what my informants said in their interviews through the lens of my conceptual framework and drew my own conclusions. Following my reflections on my literature review and my conceptual framework, I concluded with a review of my research questions. This chapter ended with my suggestions for future research.
REFERENCES


APPENDICES
Appendix A

Interview Questions
Questions Prepared for the First Interviews

1. Describe your teaching setting including for example the community where you teach, your school, your subject, and your classroom setting.

2. Describe what digital technologies (computer, digital projector, internet, email, language lab, digital camera, PDA, iPod, etc.) you integrate in your teaching. How do you use these technologies? Why do you use them?

3. How would you define your successes?

4. How would you define your difficulties?

5. How do you use digital technologies as you create teacher comprehensible input?

6. How do your students use digital technologies to produce language?

7. How do you use digital technologies to give students more teacher feedback?

8. How do you use digital technologies to allow students to give feedback to other students?

9. If you could integrate another digital technology in your teaching, what would it be? Why?

10. How do you learn to use new technologies?

11. How has your technology integration changed your students’ performance?

12. How has your technology integration changed your own teaching performance?

13. What aspects of your teaching are different from what you did five or ten years ago? What role does technology play in those differences?

14. How do you see your role as teacher changing as you integrate digital technologies into your daily teaching?

15. How has your relationship to your students changed? Why?

16. Would you describe your classroom as being more student-centered or more teacher-centered? Why?

17. How would you describe the ideal German language classroom? What technologies would be available? Why?

18. How will the new digital technologies available to teachers change the German language teaching profession? What do you envision?

19. What advice do you have for other teachers who are trying to integrate digital technologies into their daily teaching?
Questions Prepared for the Second Interviews

These questions are intended to dig deeper into your experiences integrating digital technologies in your classroom. There is no right answer to any of these questions. I am interested in better understanding your beliefs, thought processes, and experiences. I will ask follow-up questions to gain a deeper understanding of your beliefs, thoughts, and experiences—not because I am looking for a right answer.

1. What are your core beliefs about language acquisition? How do students acquire a second language in a classroom setting? What role does/can technology play in this process?

2. What are some of the pedagogical reasons that you integrate technology into your teaching?

3. Do you plan/organize classroom activities differently when you use technology?

4. Do you have different goals for your activities when you use technology?

5. Does your teacher comprehensible input change when you use technology? How/why?

6. Do your students engage in different kinds of activities when you use technology? Is your class more or less interactive? How/why?

7. Do your students produce more or less language (oral and written) when you integrate technology? How/why?

8. Do you give students different kinds of feedback when you use technology? How/why?

9. In your opinion, what potential for language acquisitions does integrating technology offer?

10. How do you decide if or how you will use a certain technology? Describe your thought process. Do you think about language acquisition methodology when you make decisions?

11. When you are thinking about using a certain technology, what do you value? Do you value ease of use, saving time, student interest (fun factor), the possibilities the
technology creates for student target language communication, possibilities for teacher-student feedback, or something else?

12. When you reflect on a classroom activity where you integrated technology, how do you evaluate the success or lack of success of the activity? What are you looking for? What are you trying to accomplish?

13. Can integrating technology make a teacher’s teaching worse? How/why? Do you think about this possibility when you make decisions?

14. Has integrating technology changed your teaching style?

15. How would you describe your role in the technology integrations in your classroom? Are you the decision maker, the designer, the guide, the policeman, the entertainer, or something else? Is your role different than when you are not integrating technology? How/why?

16. Students have identities that they bring with them into the classroom? In a language classroom, they take on new identities as we put them into various communicative contexts. For example, they might take on the identity of a car salesperson in a role play about buying a new car. Do you think that integrating technology affects student identities in the classroom? Does integrating technology affect the identities that students bring with them to the classroom? How/why? Does integrating technology affect the identities that students take on during communicative activities in the classroom? How/why?

17. Do some students behave differently when you integrate technology? How/why? Do some students participate more? Do some participate less? Can you think of any examples?

18. Are some students turned off by technology? How do you respond to students who have negative feelings about a technology integration?

19. How has integrating technology changed your relationship with your students? Do you interact differently with students when you teach with technology? Do you feel closer to or more detached from students when you integrate technology?

20. Has teaching with technology changed the discipline in your classroom? How/why?

21. Do your students have equal access to technology outside of your classroom? How does this affect your decision-making process as you plan activities that will integrate technology?

22. Are there times when your students have more knowledge of or skill with using a certain technology than you do? How do you feel about that? How does this affect how you plan activities that will integrate technology?
23. Do your students sometimes have less technological knowledge or skill than you expected? How does this affect how you plan activities that will integrate technology?

24. Do your technology integrations become more effective with repetition? Do your students get better at effectively using a certain technology, or do they find ways to waste time and undermine activities that integrate technology when these activities are repeated?

25. What kinds of feedback do you get from students about your technology integrations? What do they like? Why? Is there anything that they don’t like? Why?

26. Do you adjust your technology integrations based on the feedback that you get from students? How/why?

27. Do your students ever resist your technology integrations? How/why?

28. Do you feel like students have more or less input into your curriculum when you integrate technology?

29. Do your students have more or less freedom when you integrate technology? How?

30. How do your students affect/change the curriculum when you integrate technology?

31. Do you see different digital technologies more as a classroom tool like a chalk board or a pencil and paper, or do you see digital technologies more as creators of a new classroom environment? How/why?
Appendix B

Classroom Observation Field Notes Form
# Classroom Observation Field Notes Form

**Setting:**
Observer:
Role of Observer:
Date and Time:
Length of Observation:

<table>
<thead>
<tr>
<th><strong>Observation Notes</strong></th>
<th><strong>Reflective Notes</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td>Time:</td>
<td></td>
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</tbody>
</table>


CURRICULUM VITAE

STEPHEN VAN ORDEN

Education

**Ed. D.** in Curriculum and Instruction, Utah State University, 2010.
  - Dissertation: *Integrating Digital Technologies in the German Language Classroom: A Critical Study of the Technology-Integration Experiences of Three Secondary German Teachers*

  - Certified in World Languages Other Than English: **German**.

**Secondary Teaching Certificate**, German, Brigham Young University, 1998.
  - Endorsement in **English Teaching**.

**M.A.** in German Literature, Brigham Young University, 1996.

**B.A.** in German, Brigham Young University, **Summa Cum Laude**, 1994.
  - Minors in **Music & Art History**.
  - Goethe-Institut Zentrale Mittelstufenprüfung, Sehr Gut.


Experience

**German Teacher**, Timpview High School, Provo, Utah, 1997-Present.
  - Taught German levels 1-5AP.
  - Advisor for the **AG Deutsch** club.
  - Established German 1010, 1020, and 2010 concurrent enrollment with UVU.
  - Established German 101 concurrent enrollment with BYU.
  - Founded the Utah Kappa Chapter of Delta Epsilon Phi, 2000.
  - Established GAPP Exchange with Franziskaneum Gymnasium in Meissen, Germany.
  - World Language Department Chair, 2000-2004 & 2006-Present.
• School Teacher Leader, 2002-2004.
• Cooperating Teacher for seven student teachers, 2000-2010.
• Mentor teacher to five first-year teachers 2004-2010.

• Taught an introduction to German course for grades 3-6.

**German Instructor**, Utah Valley University, Orem, Utah, 1999-2002.
• Taught German 1010 and 1020.

**German Instructor**, Brigham Young University, Provo, Utah, 1993-96.
• Taught German 101, 102, 201, 202, and 320.

• Authored and graded two second-year high school independent study courses.

**Publications**

“How to Build Your Own Document Camera for Around $100”
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