

WORKPLACE LITERACY THROUGH SOCIAL EXCHANGE: CASE STUDIES IN
STUDENT AND PRACTITIONER COLLABORATION PROJECTS

THESIS

Presented to the Graduate Council of
Texas State University-San Marcos
in Partial Fulfillment
of the Requirements

for the Degree

Master of ARTS

by

Vita M. Haake, B.A.

San Marcos, Texas
August 2011

WORKPLACE LITERACY THROUGH SOCIAL EXCHANGE: CASE STUDIES IN
STUDENT AND PRACTITIONER COLLABORATION PROJECTS

Committee Members Approved:

Libby Allison, Chair

Deb Balzhiser

Miriam F. Williams

Approved:

J. Michael Willoughby
Dean of the Graduate College

COPYRIGHT

by

Vita M. Haake

2011

FAIR USE AND AUTHOR'S PERMISSION STATEMENT

Fair Use

This work is protected by the Copyright Laws of the United States (Public Law 94-553, section 107). Consistent with fair use as defined in the Copyright Laws, brief quotations from this material are allowed with proper acknowledgment. Use of this material for financial gain without the author's express written permission is not allowed.

Duplication Permission

As the copyright holder of this work I, Vita M. Haake, authorize duplication of this work, in whole or in part, for educational or scholarly purposes only.

ACKNOWLEDGEMENTS

Thank you to my thesis advisor, Libby Allison, for helping me every step of the way along this project. Without her continual guidance and encouragement, this thesis would have never come to fruition. I would also like to thank my committee members, Deb Balzhiser and Miriam Williams, whose input and questioning also helped to shape this project in a big way.

I would also like to thank Scott Dillon for his continued support throughout the lengthy process of researching, writing, and re-writing. He convinced me that I could take on such a large project, and supported me through every step of the way. Last but not least, I would also like to thank all of the students involved in the case studies who were willing and eager to contribute to this thesis. Without you, this thesis would not exist.

This manuscript was submitted on April 20, 2011.

TABLE OF CONTENTS

	Page
ACKNOWLEDGEMENTS	V
LIST OF FIGURES	VIII
ABSTRACT.....	IX
PART ONE: INTRODUCTION.....	1
PART TWO: LITERATURE REVIEW AND THEORETICAL FRAMEWORK.....	3
CHAPTER ONE: ACADEMIC/WORKPLACE COLLABORATION	3
The Current Workplace Culture	3
Collaborative Projects in the Classroom	5
Collaboration with Technical Communication Students.....	8
Problems	9
CHAPTER TWO: THEORETICAL APPROACHES.....	12
Service Learning.....	12
Situated Learning.....	13
Sociotechnological Approach.....	16
CHAPTER THREE: WORKPLACE LITERACY.....	18
Working in the Digital Age	18
Multiple Literacies.....	19
Technological Literacy	22
The Importance of Social Interaction in Adapting to New Cultures.....	23
PART THREE: METHODS AND ANALYSIS.....	28
CHAPTER FOUR: CASE STUDIES	28
Summary of Methods and Limitations	29
Reflective Analysis.....	31
Project One: Service learning.....	32
Method for Analysis	34

Theoretical Analysis Framework: Functional, Relational, and Critical Literacy in E-mail Messages.....	37
Communication Categories	39
Discussion of Findings	48
Project Two: Internship	53
Methods and Framework for Analysis	54
Discussion of Findings	56
PART FOUR: RESULTS	66
CHAPTER FIVE: CONCLUSION.....	66
Summary.....	66
Common Issues	67
Implications for the Classroom.....	71
WORKS CITED	75
WORKS CONSULTED	78

LIST OF FIGURES

Figure	Page
1. Tracked Changes Example 1	35
2. Tracked Changes Example 2	36
3. Total Messages per Category	49
4. Total Messages per Student	50
5. Messages vs. Categories	51
6. Messages per Student in Each Category	52
7. Word Count by Student	55

ABSTRACT

**WORKPLACE LITERACY THROUGH SOCIAL EXCHANGE: CASE STUDIES IN
STUDENT AND PRACTITIONER COLLABORATION PROJECTS**

by

Vita M. Haake, B.A.

Texas State University-San Marcos

August 2011

SUPERVISING PROFESSOR: LIBBY ALLISON

This thesis presents case studies of two academic and workplace collaborative course projects in a technical communication graduate program. Through a literature review, this thesis explores academic and workplace collaborations, workplace literacies, and theories of learning that apply to the specific case studies. The case studies evaluate email communications and academic papers for the purpose of measuring workplace literacy in three categories: functional, relational, and critical.

PART ONE: INTRODUCTION

Learning to adapt to various workplace community cultures and their unique forms of discourse is a vital skill in today's world. In "Teaching Technical Communication in an Era of Distributed Work," Paretti and McNair state that academicians are aware "that the contemporary workplace—and therefore the role of technical communicators—is changing rapidly and dramatically" (327). They go on to describe how more technical communication practitioners are collaborating with colleagues in other parts of the country and across the globe: a structure of distributed work that calls for continual adaptation to communication styles, new organizational structures, and new skills required for such work. But how can this ability to adapt to new workplace cultures and their unique forms of discourse be taught? This ability to adapt to a workplace culture and learn new discourse is key to students developing workplace literacy.

This thesis presents two case studies of graduate students in a technical communication program involved in real-world collaborative projects. Through rhetorical and textual analysis of the students' e-mail communications and course papers, I aimed to identify workplace literacies students used in collaborative projects and observe how social exchange in the form of collaboration helps students learn functional, relational, and critical workplace literacies. I discovered common problems in both the technical and relational aspects of adjusting to new workplace cultures, suggesting that

students need to be both socially and intellectually prepared to enter the workplace environment. Findings also suggest that individual initiative is advantageous for success, especially in the realm of critical literacy.

The case studies analyze two academic/workplace collaborative courses taken for a Master's program at a large, state-funded university. The first was a service learning project coordinated with a public state agency involving four students and a mentor. The second was an internship course with a private high-tech company that involved six students on five separate projects, all with different mentors.

Through a literature review and examination of these projects, I will identify types of workplace and technological skills, or "literacies" as explained by other theorists in the technical communication field. I will then examine the case study materials to determine if the students exhibited any of these literacies. Finally, I will examine and explore the problems students had, which may indicate literacy skills for which the students needed help. Through these discoveries, educators can learn about specific literacies or areas to work on when preparing students for the workplace.

PART TWO: LITERATURE REVIEW AND THEORETICAL FRAMEWORK

CHAPTER ONE: ACADEMIC/WORKPLACE COLLABORATION

The Current Workplace Culture

The rise of collaborative work environments suggests that both academia and the private sector should learn to adapt to collaboration across cultures, genres, and educational and professional barriers. In their article, "Blurring Boundaries Between Technical Communication and Engineering: Challenges of a Multidisciplinary, Client-based Pedagogy", Wojahn et al. suggest that students in any discipline should learn about the value of collaborative work and be encouraged to take advantage of the technological tools available to aid in collaboration. Electronic or "digital" tools have become tremendous aids for collaborative work in today's workplace culture.

The fast-paced and transitory nature of computers and the Internet, as well as continuous releases of new technologies, make the integration of electronic tools in education a challenging task. Stuart Selber attempts to address this problem and offer solutions in his book Multiliteracies for a Digital Age. Selber presents valuable insight through exploration of research that stresses the education of different kinds of literacies. Selber's main audience, as he clearly states, are teachers of writing and communication.

The purpose of Selber's book is to answer questions such as "What should a computer literate student be able to do? What is required of English departments to educate such a student? What are the obstacles to this important task? What perspectives contribute to the current treatment of computer literacy in English departments?" (4). These are questions that drive much of the current literature on literacy studies, and helped to guide the research for this thesis. I use examples from my own experience as a student, in collaborative projects with students and contacts outside of the university setting, to frame the research into a real-life situation.

In "How Should Colleges Assess and Improve Student Learning?" researchers on behalf of The Association of American Colleges and Universities posit that "When it comes to the assessment practices that employers trust to indicate a graduate's level of knowledge and potential to succeed in the job world, employers dismiss tests of general content knowledge in the favor of assessments of real-world and applied-learning approaches" (2). Peter D. Hart Research Associates, Inc, conducted a survey in late 2007 that asked 301 companies to rate their degree-holding employees' preparedness in 12 different areas. Of these areas, the survey showed the highest marks for teamwork, ethical judgment, and intercultural skills, and the lowest scores in global knowledge, self-direction, and writing. Self-direction ranked the lowest; 42% of companies surveyed reported scores between 1 and 5 (on a 1 to 10 scale) or "not well prepared," in self-direction while only 23% reported 8 to 10, a "very well prepared" rating.

Of the companies surveyed, 67% thought that college transcripts are only somewhat or not at all useful in evaluating employee potential while 69% believed "that the completion of a supervised and evaluated internship or service-learning project would

be very or fairly effective in ensuring that recent college graduates possess the skills and knowledge needed for success in their company. In addition, about 30% thought that recent graduates do not have the skills or knowledge to be prepared for the workplace. ("How" 4).

The aim of colleges and universities, as institutions of higher learning, is not to teach workplace tools-of-the-trade. However, giving students opportunities to collaborate with institutions outside of the university and reflect on their learning opportunities from these collaborations is one way the academy can encourage students to think critically, helping to prepare students for further learning outside of the classroom culture.

Collaborative Projects in the Classroom

Collaboration refers to working alongside others in an intellectual endeavor. Collaboration is used frequently today in both academia and in workplaces. Collaboration is prominent in online activities as well. Collaboration in the workplace can be between and among co-workers, workers and supervisors, workers and colleagues from other companies (both face-to-face and online), and practitioners and academics. Collaboration does not have to be between or among individuals of the same workplace title, rank, social status, or otherwise. Collaboration between academics and the "real" world serve to enhance students' learning experiences. Students also collaborate between and among other students and faculty. Collaboration is also gaining in popularity in workplace and digital cultures as the Internet and other digital tools have enhanced and transformed the collaboration experience. In this thesis, I study student to student and student to practitioner collaborations, much of which took place via digital means.

In “A Laboratory in Citizenship: Service Learning in the Technical Communication Classroom,” Sapp and Crabtree state that service learning and technical communication “may embody the ideal partnership” (425). The authors explain how instructors who incorporate service learning type projects into more traditional syllabus-driven courses “create opportunities to discuss with their students the differences between academic and nonacademic work, as well as for-profit versus nonprofit employment” (424). They believe that embracing service learning helps the pedagogy of technical communication become more about the discipline’s social relevance, diversity, and flexibility rather than simple vocational training. Service learning in the field of technical communication “surely produces opportunities for research and publication while contributing to the development of more ethical pedagogy and socially relevant research” (424). Focusing on social relevance, diversity, and flexibility contributes to workplace literacy.

Janice Tovey's "Building Connections between Industry and University: Implementing an Internship Program at a Regional University" names terms, such as service learning, cooperative education, cooperative learning, practicum, and internship, which are used, sometimes interchangeably, to "designate experiences outside of the academy, particularly the workplace" (226). Cooperative experiences between universities and the workplace have long been considered valuable, the extent of which seems to grow rapidly as jobs become more technical and highly specialized. Tovey believes that the "environmental, social, and cultural conditions of the workplace can help students identify their own strengths, interests and abilities. It can aid students in

making decisions about their education as well as their career path following graduation" (225).

The responsibility of incorporating internships and service learning projects into college programs falls on educators, many of whom are still learning how to integrate the more collaborative, multi-cultural, and technologically-driven aspects of today's workplace into their classrooms. At the same time, technologies change so quickly that it becomes difficult to incorporate specific software, hardware, and communication practices into the classroom without them becoming obsolete some years, months, or even weeks later. Thus, it becomes a daunting task for those educators who are willing to create learning opportunities beyond the conventional classroom such as internships and the like to also include technology in their teaching strategies.

In their article "A Historical Look at Electronic Literacy," Selfe and Hawisher state that without documenting large-scale social movements, the profession of technical communication will be hard put to trace and understand the context within which electronic literacies developed in the last century, and to anticipate the context within which they will develop in the next century (231-232). A historical analysis of that nature would require a lot of time and resources, but we can still study the smaller bits and pieces that will eventually fit into these broader contexts. Analyzing and documenting literacies in the narrower frame of specific workplace cultures, as I do in this thesis, can offer insight into some specific literacies of the present time by exploring not only what these literacies were, but how they were learned, used, and shared.

Most researchers agree that collaborations between the academy and the workplace greatly benefit both sides. In the article "Problems in Service Learning and Technical/Professional Writing: Incorporating the Perspective of Nonprofit Management," McEachern explains how "students can put theory into practice and gain valuable experience, and businesses can help train and recruit future employees while having certain projects completed inexpensively" (211).

Collaboration with Technical Communication Students

Some primary functions of technical communication teachers include helping students learn how to understand graphics, revise and design documents, give effective oral presentations, and communicate effectively in the workplace. Teaching students how to "communicate effectively" expands teaching responsibility into broad territories. By integrating service learning type projects in the classroom, teachers enable students to apply the skills they have learned in other technical communication courses, such as: document design, instruction writing, ethics, proposal writing, and technical editing. In addition, service learning projects can offer even more varied and at times more advanced experience to technical writing students since many small and local businesses do not have experts on staff (Sapp and Crabtree, McEachern, Breuch).

One way to ensure successful collaborations would be to find a common ground in both academia and the workplace. In "Jumping Off the Ivory Tower: Changing the Academic Perspective," Bosley explains that academics and practitioners share similar work environments, work practices, and workplace documentation processes. In "Researching a Common Ground: Exploring the Space Where Academic and Workplace Cultures Meet," Blakeslee illustrates how identifying similarities between each other

would assist practitioners and academics in working together successfully, a point of which a majority of both agree "falls rightfully and predominantly to technical communication more than other fields" ("Researching" 42). Blakeslee thinks non-academic writing instructors "must equip writers with anthropological, social science, and linguistic skills (e.g., participant observation, journal keeping, interviews, analysis of electronic messages) that will enable them to analyze their sociotechnological writing environments as well as participate in them" (52). Blakeslee suggests one way to find common ground is through performance evaluation, or assessing an individual's quality of work, a process similar in both the workplace and academia.

The authors in this thesis are striving to help educators and students learn what they need to do to successfully adapt to the various discourse communities that they will join in workplace settings after they leave college. The case studies in this paper also aim to add to this conversation, and perhaps shed more light onto solutions for the classroom.

Problems

Obstacles for students and educators are seemingly endless. McEachern summarizes problems in internships and service learning activities as "poor communication among students, teachers, and agency representatives; poor quality of finished work; and lack of support from the parties involved" (212). Still, practitioners can benefit from the latest scholarly ideas and research that a student may bring to a job. In "Cultural Impediments to Understanding: Are They Surmountable?" Dicks suggests that enabling collaboration and communication may require, "at least initially, focusing on short-term arrangements rather than long-term attempts that tend to confront too many cultural differences" (14). Bosley believes that academics' "focus on differences between

academia and industry rather than on similarities of their work environments, work practices, and workplace documentation processes and products" impedes workplace learning (27).

In "Keeping Writing in Its Place: A Participatory Action Approach to Workplace Communication," Pare brings up the issue that workplace writing can sometimes be dangerous because the "form, content, distribution, and use of many professional texts are closely governed by both implicit and explicit guidelines and regulations" (59). Pare describes how he has had success with teaching about this issue and other socially difficult aspects of workplace writing in his courses, very early in the semester in which they are held. Pare thinks that academics and researchers who enter the workplace should be humble and sensitive as "it takes a long time to understand another's culture, and great nerve to seek to change it" (60). He explains how writing is always "enmeshed in a larger social action" (62) and that people learn what they need to know through engagement and with guidance. Expertise, Pare explains, is "in part a gradual transformation that occurs in situ, under the guidance and direction of experienced members of particular communities of practice" (62). In other words, Pare sees workplace writing as problematic because of social issues that one may understand better through collaborative learning situations.

Organizations may also have problems with the students. In "Integrating Service Learning and Technical Communication: Benefits and Challenges," Matthews and Zimmerman discuss how organizations that had problems with volunteers in the past may have a hard time trusting students in collaborative work projects. Some students define their roles in such projects as volunteer work or charity rather than academic work that

can provide important relationships and skills, and are therefore reluctant to do any work not required of them. These students come into such projects very unaware of the type of work expected by the organization. In addition, the term "service," in "service learning," tends to make students feel that they are somehow inferior, like a servant. For this reason, students may also approach projects with a negative ideological position. The authors think that redefining "service learning" as "learning to negotiate projects within a nonacademic community" (398) would solve the problem of students' misconception of service learning as charity work.

CHAPTER TWO: THEORETICAL APPROACHES

Service Learning

Internships and other collaborations between academia and the public and private sectors have long been considered valuable; the value of these experiences seems to increase rapidly as jobs become more technical and highly specialized. Service learning, internship, cooperative education, cooperative learning, and practicum are different experiences that can have vastly different teaching approaches, but all of these terms refer to student experiences in or with the workplace. In "Building Connections between Industry and University: Implementing an Internship Program at a Regional University," Tovey explains how environmental, social, and cultural conditions of the workplace offer students experiences that can help them identify their own strengths, interests, and abilities. The workplace experiences and learning outcomes aid students in making decisions about their education and career plans (225).

Sapp and Crabtree believe "service-learning projects help instructors teach students how to struggle with real-world problems" and "traditional internships give students opportunities to apply their academic skills while also strengthening job prospects" (413). Service learning also "has the additional objectives of developing more civic awareness in students and meeting needs in the larger community" (427). Sapp and

Crabtree recommend that internships and service learning projects should be “combined within technical communication curricula to maximize the benefits of higher education for students, universities, and communities” (427). Through collaborative projects such as internships and service learning projects in their classrooms, the authors have frequently witnessed both students and instructors finding more avenues for publication, earning recognition, and rewards from university administrators, and experiencing networking opportunities in other disciplines.

Situated Learning

In a similar vein to service-learning, situated learning is a theoretical approach in which students learn within specific contexts, often in workplace settings, outside of conventional classrooms. Learning and adapting to digital communication practices involves much more than just learning workplace tools. In “Learning to Write Professionally: ‘Situated Learning’ and the Transition from University to Professional Discourse,” Freedman and Adam describe how the notion of genre as an indication of larger contextual social, cultural, ideological, and political regularities aligns with theories of situated learning. Situated learning stems from the field of psychology and was proposed in 1991 by Jean Lave and Etienne Wenger as a model of learning by practice as part of a community. The primary foci of situated learning are "knowing" and "learning", but these terms carry different definitions than in traditional studies of cognition.

Situated learning applies to learning that happens in the same context for which it is applied. According to Lave and Wenger, situated learning refers to learning that naturally occurs as a function of the activity, context, and culture in which it occurs (i.e.,

it is situated). Social interaction is critical to situated learning. As learners become involved in a "community of practice," they become familiar with certain beliefs and behaviors practiced in that community. As the learner moves from outside the community to part of it, he or she becomes more familiar and engaged in the culture and eventually evolve from a beginner into an expert. Lave and Wenger think situated learning is not deliberate, but most often unintentional. This means that the learning that takes place was not anticipated by the learner. The students do not go into the situation expecting to learn what they do.

Fundamental to the theory of situated learning is the notion that knowing or knowledge is social in an interpersonal sense. In situated learning, "learning and knowing are context specific, learning is accomplished through processes of coparticipation and cognition is socially shared" (Freedman and Adam 312). Pare explains the critical notion of situated learning, that writing is "a relation among people engaged in activity in, with, and arising from the socially and culturally structured world" and that "people learn what they need to know, and where they need to know it, and they learn it through engagement and with guidance" (Pare 61).

Other researchers have further developed theories that are based on situated learning. Brown, Collins and Duguid explain the idea of cognitive apprenticeship in "Situating Cognition and the Culture of Learning." Brown et al. think cognitive apprenticeship "supports learning in a domain by enabling students to acquire, develop and use cognitive tools in authentic domain activity" (40). They think that learning, both in and out of the classroom, happens through "collaborative social interaction and the social construction of knowledge" (41). Brown et al. also emphasize the need for a new

epistemology for learning -- one that emphasizes activity and perception over conceptual representation.

McLellan's book Situated Learning Perspectives explains how cognitive apprenticeship offers an example of situated learning in which learners participate in a community of practice, developed through activity and social interaction, similar to the way that apprenticeships are crafted. McLellan thinks "cognitive apprenticeship supports learning in a domain by enabling students to acquire, develop, and use cognitive tools in authentic domain activity," (5) meaning activities are performed in the context of the work environment or culture.

Freedman and Adam also expand on the cognitive side of situated learning. They propose a "cognition plus view" which extends the scope of theories of individual learning to include social interaction and everyday activities. In a cognition plus view, social factors become "conditions whose effects on individual cognition are then explored" (312). Freedman and Adam go a little deeper to pose a second viewpoint, the "interpretive view." In this view, situated learning happens in the context of language and/or social interaction. Their third and most expansive viewpoint, "situated social practice," includes the interpretive perspective along with an insistence that "learning, thinking, and knowing are relations among people engaged in activity in, with, and arising from the socially and culturally structured world" (312). In other words, building relationships within the workplace and reflecting upon these relationships, as well as reflecting on the learning that took place, represents situated social practice.

Sociotechnological Approach

The focus of my case studies is to look at electronic collaborations in two service learning projects to explore how digital and other communication styles enhance or develop workplace literacies. Several theoretical perspectives could be used to explore digital communication in the workplace culture. With the constantly evolving field of electronic communication, no one set of guidelines could encompass them all.

In "Thinking Critically About Technological Literacy: Developing a Framework to Guide Computer Pedagogy in Technical Communication," Breuch cites research to suggest a sociotechnological theoretical perspective as useful for analyzing electronic communication, given the social nature of digital discourse. The sociological perspective suggests that social context shapes technology while technology changes the existing social context ("Thinking" 489). Breuch thinks technological literacy can be viewed in a fully integrated manner with technical communication practices. Through research, Breuch extracts learning objectives for technological literacy that combine performance, contextual factors, and linguistic activities. The framework Breuch advocates helps others learn from and build upon their own experiences as technical communicators.

Others like myself can use Breuch's and other existing theoretical frameworks in different situations, compare the results, and add to the conversation about what it means to be workplace literate. Selber says, "There's no one right answer to what it really means to be computer literate, but professionals must provide responses that are concrete, comprehensive, and capable of being implemented" (28).

One theory that plays into the sociotechnological approach is social presence theory. "Social presence theory argues that the effectiveness of a communication medium depends on its ability to establish a relationship among communicators, particularly with respect to warmth and sociability" (Paretti and McNair 332). Social presence theory is interesting and applicable to the field of digital communication, wherein relationships are often built and experienced with little to no face-to-face interaction. This was the case in my case studies, where most students communicated via e-mail with little to no face-to-face interaction.

The aim of the case studies in this thesis is to employ the theoretical perspectives discussed in an exploration of workplace literacies. In Chapter One, I defined and discussed academic/workplace collaborations. In Chapter Two, I identified theoretical perspectives that help explain how to use these collaborations as learning opportunities. In order to employ any type of theoretical framework, I must first define workplace literacies.

CHAPTER THREE: WORKPLACE LITERACY

Working in the Digital Age

For success in the workplace, students today should be skilled or literate in several different areas. I will refer to these areas as workplace literacies. The definition of literacy is expanding to encompass more than just traditional texts. Even the idea of text itself is continually transforming with the onslaught of new technologies; there is now an essential focus on written communication within the boundaries of workplace literacy.

Gunther Kress' Literacy in the New Media Age observes how there has been a global shift from print media to computer screens. Kress raises two questions regarding this shift: (1) How will the nature of literacy change with use of digital texts, and (2) what will the sociocultural effects of this new literacy be?

Writing in electronic spaces has changed most workplaces. The impact of e-mail has forever changed the workplace. The nature of electronic communication provides individuals with the opportunity to reflect and examine problems and pose questions before responding, unlike face-to-face or telephone conversations which require more of an immediate response. However, the opposite can also be true: because e-mail enables such a fast response, often times people may send a response without taking time to reflect on what they'd like to say first. Given the growing need to be able to

communicate effectively via electronic means, simply knowing how to use a word processing program will not sufficiently prepare one for the workplace. Workplace literacy studies should focus on creating understanding in how to effectively communicate within a technological context.

Multiple Literacies

In Multiliteracies for a Digital Age, Selber groups literacy skills and concepts into three main categories: functional literacy (computers as tools), critical literacy (computers as cultural artifacts), and rhetorical literacy (computers as hypertextual media). The purpose of Selber's book is "to help teachers of writing and communication develop full-scale computer literacy programs that are both effective and professionally responsible" (xi). I used the concept of multiple literacies discussed by Selber and others to develop a framework to measure workplace literacies for the case studies in this thesis.

What are workplace literacies? Chapter 2 of Selber's book, "Functional Literacy: Computers as Tools, Students as Effective Users of Technology," is a strong starting place to answer this question. In this chapter, Selber discusses how computer literacy starts with basic skills and uses of various "tools," which are the basic or functional level of literacy. Functional literacies are specific, specialized skill sets detached from social contexts, including "the skills associated with writing and communication processes as teachers have come to understand them in the digital age" (44). Selber breaks functional literacies down into five performance-based parameters--educational goals, social conventions, specialized discourses, management activities, and technological impasses (44). These are just some of the terms used to describe workplace literacies.

Selber asks us to reflect on assumptions that tool metaphors are politically neutral. Selber posits that “functional literacy often becomes a blunt tool with which ruling classes create minimally skilled workers” (33). Critical literacy skills, such as reflection in writing, help students think beyond basic tool-based training. Critically literate students can scrutinize and criticize the tools used, which helps them understand the institutional forces that shape the usage of computer-based tools in the workplace culture they're situated in (96).

To help students become critically literate, Selber suggests that faculty “situate technological impasses in a broader context so that their characteristics can be organized and understood” (70). Technological impasses are points at which individuals encounter a problem with technology that they are not able to overcome. Selber explains that “some students have bought so deeply into the logic of the machine that they almost always see themselves as the causal root of technological impasses” (71). Selber suggests educators use a heuristic approach to these technological problems wherein qualitative inquiries are created to examine the problems, place them within an empirical framework, and apply the tools appropriate to solving the problems. For example, a question about a specific procedure in an online software program should lead a student to an online help system, while a more interpretive question, such as “why did this happen?” should lead the student to more comprehensive resources like reference materials or the campus help desk (72). Knowing when to apply these forms of assistance can empower students to overcome what Selber calls “performance-oriented impasses” (72), or problems with technology that can hinder an individual from completing a task.

To further develop critical literacy, Selber suggests that teachers foster student inquiries into whether the technologies used are tools of potential political and social use and abuse. Selber thinks students should ask why and how technology-driven subjects such as websites, computer labs, and software have been set up to persuade, control, direct and use all of us. Selber explains rhetorical literacy as an aim to engage students in a deeper understanding and sharpened perception of social and cultural climates and changes. He strongly suggests that faculty do their part to help students evaluate technology in rhetorical contexts, and re-evaluate and even reproduce the technology in positive ways, a process he refers to as "reflection in action." Selber's ultimate hope is that students will move from being functionally adept computer users to becoming fully aware, critical interface designers. (144-182). Selber states that "in order to function most effectively as agents of change, students must also become reflective producers of technology, a role that involves a combination of functional and critical abilities" (182).

The general concept of multiple "literacies" has been a focus in many recent educational conversations, in which literacies most often used in the workplace are of particular concern and importance. Wojahn et al. believe that solving workplace problems in academic settings helps students "practice skills not only in oral and written communication, but also multiple literacies in critical thinking, project planning, management, leadership, personal development, and team building" (Wojahn et al. 138). Parette and McNair identify the most important competencies for technical and professional communication students, which are "(in order of importance): collaboration (with subject matter experts as well as coauthors), writing to the audience/user needs, learning and operating new technologies, and self-motivation and self-critique" (329).

The skills mentioned in both articles fit into all of Selber's categories, with most easily occupying more than one category at once. An overarching topic, especially paramount in the technical communication workplace culture, is that of technological literacy.

Technological Literacy

Technological literacy is a very large term to define. It touches upon all of Selber's notions of literacy and is discussed in most recent discussions of technical communication literacy studies. In "Conversations with Technical Writing Teachers: Defining a Problem," Selting discusses how technology has affected the very notion of literacy. Selting explains how computers have changed the way we read, construct, and interpret texts, making us rethink what it means to be human. Technology disrupts the ways in which we communicate and make meaning, bringing a whole new meaning to what it means to be literate (253-55). E-mails, text messaging, and video messaging are becoming increasingly popular in home, school, and workplace cultures.

Users of technologies must learn not only how to operate the tools such as phones, computers, and laptops but also must learn the language of the users, including things like acronyms and "text speak," to effectively communicate with users through these specific mediums. Freedman and Adam explain how "when students move from the university to the workplace, they not only need to learn new genres but they also need to learn new ways to learn such genres" (334). In other words, being able to adapt and learn quickly is just as important as learning how to use specific technological tools. Breuch defines technological literacy as the learning that "addresses the ability to use technology; the ability to read, write, and communicate using technology; and the ability to think critically about technology" ("Thinking" 269).

Most businesses, agencies, and organizations use technology to communicate, no matter what they are buying, selling, or supporting. Learning new ways to communicate using different modes of technology helps prepare students for the workplace. But teaching technology requires more than just teaching basic functions of computers and software. New media formats facilitate the incorporation of multiple communication modes, such as image, audio, and video, to text. Kress believes that these new media formats are "governed by distinct logics [which] change not only the deeper meanings of textual forms but also the structures of ideas, of conceptual arrangements, and of the structures of our knowledge" (16). The nature of the logic depends on the political and social aspects of the agency in which it is applied.

The Importance of Social Interaction in Adapting to New Cultures

Adapting to a workplace culture from an academic background is not often easy. McEachern thinks that in academic and workplace collaborations, the most obvious problem occurs when students do not understand and share the mission of the organization with whom they are collaborating (216). Dicks thinks practitioners and academics have some significant cultural differences in areas such as perception, discourse, philosophies on collaboration, and reward structures. Dicks explains how the perception of information, along with normative pressures, often forces practitioners away from participating in academic dialogue (15-25).

Blakeslee argues that the "failure of academics to have an impact on the workplace is tied to our underestimating the similarities and points of overlap" between academia and the workplace ("Researching" 53). Blakeslee explains how competition and other social and political dynamics often affect final outcomes. "These are subtleties

of genres that are not always explored and acknowledged, especially in classrooms, but clearly they have an impact on communications" ("Researching" 51). Blakeslee thinks success for teachers lies in uncovering and understanding below-the-surface issues such as "status and authority, criteria and priorities for decision making, standards of work processes, and work flows" ("Researching" 51).

Standards of work practices are quite different between the academy and the workplace. In "The Overruled Dust Mite: Preparing Technical Communication Students to Interact with Clients," Breuch explains that problems occur in interactions between students and companies because the students don't know what questions to ask about the projects, or assume that client expectations are the same as their teachers'. In this article, Breuch describes a situation in which students "overruled" what their client, a physician, wanted in his project: a picture of a dust mite in a brochure about allergies. The students, confused about the extent of their authority, ignored what the client "boss" wanted, even after the client restated that they would have really liked that picture in the brochure (197-201). Even if the students had a valid reason not to include the image, they failed to effectively communicate this to the client; effective communication is an important skill for situations that often occur in the workplace. Matthews and Zimmerman think that students' ability to adapt to the characteristics of new genres are more important than their surface-level writing skills. Students should learn to expect a cycle of transition to the workplace culture that involves stages of expectation, struggle, and accommodation. Learning to read and adapt to unfamiliar epistemological, social, and organizational characteristics is more important than only knowing how to write. (392-94).

Classroom and workplace dynamics also share some similarities. Bosley thinks that both academics and technical communication practitioners should recognize that the missions and methods of each others' communities are vital to the successes of both. To help facilitate this recognition, Bosley believes that technical communication faculty should view and place themselves in positions as practitioners, which not only gives them a new perspective but also helps faculty gain understanding about technical communication practitioners that they may not have had before. One way to place faculty in the position of practitioner is by publishing in trade journals. Becoming a practitioner helps shape the classroom because a technical communication curriculum must blend both theory and practice. Bosley suggests that faculty work across different disciplines, for example science and engineering, to design and administer technical communication programs (30-32).

Brech points out that educators have to do more than just organize projects with clients. Brech states, "If we truly want to help students understand workplace contexts, purposes, and audiences, we must also prepare them to interact with client audiences so that they can immerse themselves in these contexts" ("Overruled" 196). In the study "Bridging the Workplace and the Academy: Teaching Professional Genres Through Classroom-Workplace Collaborations," Blakeslee suggests that "individuals must be immersed in a community, interact with the members and artifacts of the community, participate in and adapt to the social actions of the community, and appropriate the routinized tools-in-use of the community" (170). Today, such tools are increasingly technical and computer-centric. Offices use various computer software programs for word processing, remote work, programming, and communications, to name a few. Not

only do office workers frequently use personal computers along with cellphones, laptops, projectors, and copiers but also technical writers are often asked to install, troubleshoot, and experiment with the products they write about.

Simply teaching industry or community-specific tools is not a long-lasting solution. Selting explains how some teachers, while "recognizing technical prowess as a 'tool of the trade'" think that integrating technology into the classroom will distract students from the "high-level problem-solving skills requisite in effective workplace communication" (256). Selting's survey of technical writing teachers uncovered strong resistance to the notion that they should also teach new technologies and the problem solving skills needed to navigate them. Selting agrees that it is not simple to teach technology use in the technical writing classroom because "teaching this type of workplace literacy is not analogic to teaching concrete, formulaic ways to produce what are actually highly sophisticated and consequential pieces of writing" (252). In other words, teaching both the technology and the rhetoric of technical writing, a profession requiring "knowledge of and acquired comfort levels with software and the Internet" (252), is not as simple as teaching students step-by-step instructions on how to write a basic resume or cover letter. In today's world, resumes are often read by technology that searches for key words and simple formatting for employers who may be more interested in an applicant's web site or online portfolio.

Teaching writing and theory only is not the solution, either. Selting explains how some students disdain theory and want to learn software. But, as Matthews and Zimmerman point out, many students have been educated in large classrooms where

educators focused on measurable behaviors, such as objective multiple-choice tests, which do very little to prepare students for life beyond the classroom. Breuch explains how students may not have learned the appropriate interactions for client projects. Therefore, they may have trouble recognizing a new audience outside of the classroom. Breuch proposes that student success in client projects depends on their recognition of and action upon opportunities to learn and grow from new experiences. McEachern agrees with this point and also emphasizes the importance of reflective analysis. McEachern's article uses as an example the work of one student who "wrote a 10-page paper about what she'd learned about working (and writing) in a nonprofit organization, and how it differed from what she'd been taught in my business and technical writing courses" (221).

For the case studies that follow, I created a framework that identifies literacies based on the main concepts I just discussed: multiple literacies, technological literacy, social interaction, and reflective analysis. Through discussion of these topics, I gleaned some workplace skills or literacies that are common for technical writers. These include functional literacies such as collaboration, project planning, management, leadership tasks, searching for information, and technological savvy; relational literacies such as team building, socialization and cultural adaptation; and critical literacies such as reflection, self-criticism, and peer review.

PART THREE: METHODS AND ANALYSIS

CHAPTER FOUR: CASE STUDIES

My case studies were from a graduate-level Technical Editing course and a graduate level Internship course. My data includes written communication (e-mails) and academic papers. My methodology was to do a discourse analysis of these communication interchanges. Through rhetorical and textual analyses, I aim to identify and discuss workplace literacies in technical communication used by the students by exploring the aspects of collaboration and theories discussed in Chapters One and Two alongside the workplace literacies discussed in Chapter Three.

Blakeslee explains how industry-specific political and social dynamics often affect the outcome, or product, in workplace settings, and "are not always explored and acknowledged, especially in classrooms" (51). To gain better understanding of social and political issues that lie beneath the surface, Blakeslee suggests that academics research and recognize "status and authority, criteria and priorities for decision making, standards of work processes, and work flows" (51). Blakeslee points to research that suggests academics learn and use "anthropological, social science, and linguistic skills (e.g., participant observation, journal keeping, interviews, analyses of electronic messages) that will enable them to analyze their sociotechnological writing environments

as well as participate in them" (52). In this thesis, I used analysis of electronic messages to drive my study.

Institutional Review Board Approval

All of the internship participants agreed to work with me on this project, and the agencies involved gave their permission as well. I have filed signed approval forms with the Institutional Review Board (IRB) at my university.

I developed the IRB approval forms and distributed them to participants of both projects. The forms were signed by each individual, electronically scanned, and attached to my IRB application #2009R8326. On January 13, 2010, the IRB determined that this thesis is exempt from their approval.

After gaining proper permissions, I began to collect course and communications documents that I thought would give me a better idea of the communication and collaborative practices that went on with each case study.

Summary of Methods and Limitations

My case studies consist of two academic and workplace collaborations, one an internship and one a service learning project. Both collaborations were part of coursework for Master of Arts students in a Technical Communication program at a large, state-funded university. Because I participated in both collaborations, I have quite a bit of insight into what went on with the internship and service learning project from the beginning stages through completion. I analyzed my own communications along with the other students', and for the purpose of this paper I have made all of the students anonymous, including myself. I assigned a letter to each student, so students from each

group are identified by the following labels: Student A, Student B, Student C, and Student D. These labels were used consistently throughout my analysis and throughout this thesis.

In "Business E-mail Communication: Some Emerging Tendencies in Register," Giminez explains how the oral nature of electronic communication combined with its written representation has established electronic communication as an independent genre. In "Writing Electronically: The Effects of Computers on Traditional Writing," Ferris suggests that electronic communication, which includes e-mails, chat rooms, and message boards, models itself on conversational speech and should therefore be examined outside of the print genre. Because a great deal of communication for the collaborations I studied took place electronically, both collaborations are very suitable for an exploration of the types of workplace literacies within collaborative projects.

As a participant and an observer, my case studies have both advantages and limitations. As a participant, I can use and draw from experiences that an outside party might not otherwise have collected, such as feelings and insider communication strategies. However, my close involvement with the collaborations I studied creates a danger of researcher bias. To help curb bias, I attempted to collect data in a systematic way by using a survey for all of the students involved, and developed a well-defined framework for measuring the types of messages used. Although the small sample size and highly specific natures of the collaborations I studied make any findings unable to be generalized to the larger field of technical communication, these case studies can provide useful insights into academic and workplace collaborations for both educators and students alike.

Conducting the studies via discourse analysis also has its limitations. Though I put a lot of time and thought into defining specific categories, it is very likely that I overlooked some things or other researchers may not agree with my categorization. Regardless of any limitations in this regard, my study can still offer valuable insight into collaborations between academia and the workplace, which may help shed some light onto the development of the technical communication discipline.

Reflective Analysis

Tovey says that "time away from class and the academic atmosphere can help students put a concrete experience to the abstract concepts they have been taught," which usually end up being "quite different from the experiences we try to replicate in the classroom" (230). Reflective analysis is when students write and analyze their learning. Reflective analysis invites students to write about frustrations or problems and successes in an informal way, and is, according to Bowdon and Scott's "Service-Learning in Technical and Professional Communication" textbook, "one of the critical elements that distinguishes service learning projects from other real-world projects" (146).

In a similar vein, Breuch suggests that students in technical communication courses keep a reflection log that documents their usage of technology. Breuch uses research to suggest that performance-based assessments of technological literacy are limited as technology becomes a greater part of our lives. Based on this limitation, a critical perspective is most effective as it deals with individual consciousness of the political, social, and cultural factors surrounding technologies. Consciousness of these social and political dynamics enables individuals to recognize trends and adapt to new

technologies in their specific contexts. Individuals can also critically reflect on their experiences (“Thinking” 487-89).

To harness skills in critical thinking and reflection, Breuch suggests students keep a reflection log that documents usage of technology for "activities such as reading online, conducting Internet research, working with groups in electronic spaces, writing documents, participating in a listserv, or creating computer-generated graphics" ("Thinking" 490). Documenting these activities helps students to recognize and strengthen their technological literacy skills. Instructors can also learn a lot from reflecting. Sapp and Crabtree echo others who think reflecting in a meaningful way on our experiences is paramount to the learning process. Sapp and Crabtree go on to explain that by reflecting on “our own teaching and learning processes, gained skills, expanded knowledge, and evolving belief systems, we bring our entire selves in to the learning process—cognition, action, and emotion” (426).

The reflective process was very useful for both of the case studies because it offered insight into what and how the students learned. I was also able to observe interactions between participants in both collaborative projects. The electronic record of the discourse activities that took place during the projects provides data that can be analyzed to gain insight into the collaborative process. Through my examination, I was hopeful to discover if and how the collaborative process facilitates particular workplace literacies.

Project One: Service learning

The Project: Editing an Employee Manual for a State Insurance Agency

The service learning collaboration took place during a course in graduate Technical Editing over a full semester, lasting approximately 15 weeks from January through May of 2008. Among other assignments for the course, students worked all semester on a final project with a service learning requirement. The final project was worth 30% of the overall grade for the course, with another 10% of the overall grade given for the final presentation of the client project.

For the final project the students worked with the state public insurance agency. The students kept in contact with Cindy, a project manager and service support representative at the agency. Cindy is also an alumnae from the same graduate program as the students. Cindy spearheaded the project and made herself available for students' questions. With the students' and agency's permission, I collected the following: (1) e-mail communications between students and the agency contact regarding the project, (2) papers turned in for the course, (3) survey answers from an online survey I conducted for the purpose of this paper, and (4) other written questions asked during my data collection.

The purpose of the project was to overhaul an internal document for the state agency, which contained several chapters in Microsoft Word format, from an employee manual that presented policies and procedures regarding Internet, telephone, and technology usage in the workplace. The manual had become quite outdated, having last been edited several years prior, but limited resources at the agency had pushed any revising and editing to the back burner.

Four students split three chapters evenly by page count, which equated to 14 pages each. The students gave brief background information on themselves when first

starting the project. Only one mentioned having any prior experience with editing. One student was in the Rhetoric and Composition graduate program while the other three were enrolled in the graduate Technical Communication program.

Method for Analysis

There were 10 graduate students in the course, four of whom worked collaboratively on the state agency project, which I am focusing on for the purpose of this case study. The data collected was a convenient sample because I had first-hand experience as well as easy access to a majority of the electronic communication that took place via e-mail. The students were geographically spaced out in a larger region of a state, so communicating electronically via e-mails made communication easy.

My observational data consisted of approximately 80 one-sided 8.5"x11" printed pages of e-mail correspondence and 30 pages of academic papers written about the class project. As mentioned previously, I received permission from the students to use these materials, and let the IRB know about my project. In addition to the aforementioned e-mails and a short letter of transmittal, I also examined the "problem analysis and goals report" paper written collaboratively by all four students for the course instructor.

The students edited the employee manual for grammar, spelling, style, and formatting. In an effort to keep all the chapters consistent in style, the students did a good deal of discussing via e-mails how to alter specific things, or in many cases leave them the same. The students were essentially creating a style guide, which is a set of standards for the writing and design of documents for general use or for a specific publication, organization, or field. The students learned about style guides in class and

were instructed to create one for some written assignments. Style guides are important because they provide uniformity in style and formatting of documents for companies or organizations, and are widely used in both academia and the workplace. Style guides are important for the users or readers of documents because they help make reading easier.

Time constraints kept the students from doing a comprehensive edit, but many overall content, design, usage and organizational suggestions were sent to the agency contact along with general edits to grammar (ex. removing the passive voice), spelling, and simple formatting (ex. inconsistency in telephone number dashes). Students used Microsoft Word's track changes feature to show edits and comments. The track changes feature allowed students to know who made what changes. Two examples of these comments and edits are included below.

The screenshot shows a Microsoft Word document with tracked changes. The document contains two tables. The first table, titled "TDI TOLL-FREE TELEPHONE NUMBERS", lists various phone numbers and their corresponding services. The second table, titled "TELEPHONE MONITORING", describes the monitoring system. The document is marked with red lines and boxes indicating tracked changes. Two specific comments are highlighted: Comment [JA1] regarding the addition of a prefix "1" to all 800 numbers for consistency, and Comment [JA2] regarding the capitalization of "Hotline" to "Hotline".

TDI TOLL-FREE TELEPHONE NUMBERS	The toll-free telephone numbers for general information and specific TDI services are as follows:
1-800-578-4677	TDI's main switchboard
1-800-252-3439	Consumer information toll-free number
1-800-952-7099	Jobline toll-free number
1-800-599-SHOP	Publications automated orders
1-800-599-(7467)	
1-800-248-6032	Windstorm Inspections
1-888-327-8818	Fraud Hotline
1-877-4-FIRE-45	Arson Hotline
(1-877-434-7345)	
1-800-452-9595	Safety Violation Hotline
1-800-252-7031	Injured Worker Hotline

TELEPHONE MONITORING	The main TDI numbers, Agents Licensing, and the Consumer Help Line numbers are equipped with a telephone monitoring system. Telephone calls to these numbers may be monitored. Other lines may be monitored for the purpose of ensuring quality customer service.

Figure 1. Tracked Changes Example 1

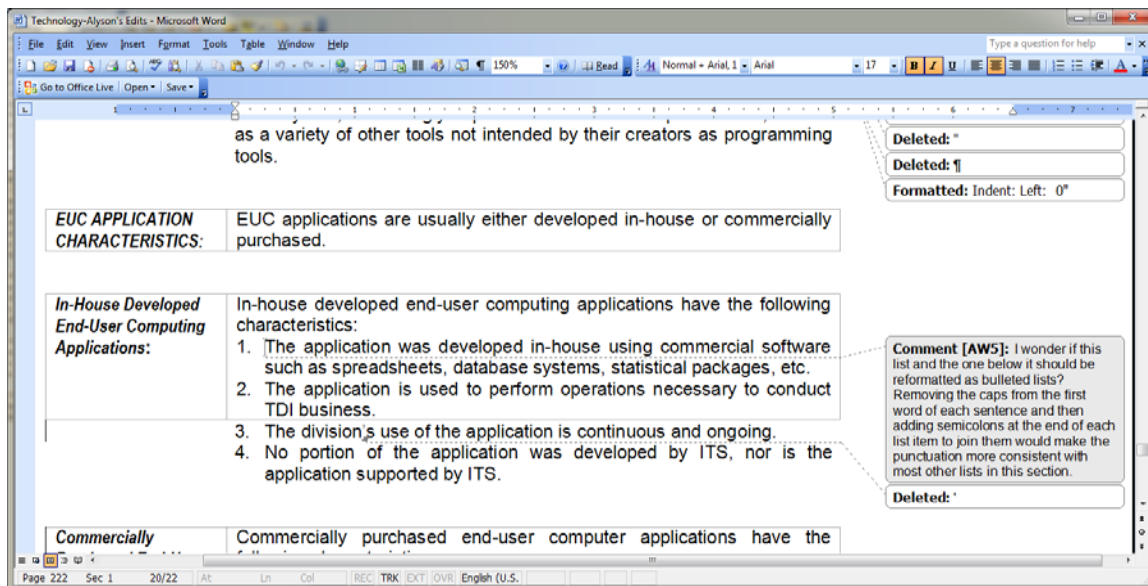


Figure 2. Tracked Changes Example 2

The students submitted an official letter of transmittal to Cindy, which all of the students approved and signed, along with the completed project files. The letter of transmittal summarized which students edited which chapters, thanked the agency contact for giving the students the opportunity to do the project, and included the following brief summary of the overall editing process:

*Since two project group members shared “Technology” and two shared “Telephones,” [sections of the manual] we have merged these edits into one document per chapter for your convenience. The primary issue we tackled throughout these documents was inconsistency—in terminology, punctuation, capitalization, and formatting. We also made an effort to avoid introducing further inconsistency from our editing by checking each other’s work before submitting the documents to you. **Student A***

As I've discussed, for this project I had access to an electronic record of nearly all of the communication that occurred with the professor, company contact, and group members through e-mail. Collaborating through e-mail had benefits and disadvantages, as two students noted below.

Because our project group members were geographically scattered and had such varied schedules, we had to collaborate almost entirely via email. Although this was challenging, it was a great learning experience in distance/online collaboration. One benefit we realized of collaborating via email is that at the end of the project, our emails served as a record of the entire collaboration process. Student A

For conducting the majority of our collaboration through email, I think it went incredibly smoothly. At times it felt like our exchanges would have been more expedient and efficient had we actually been in the same room. On the flip side, email has the advantage of really allowing one to expand and clarify one's thinking. It's also nice that we have a written record of our collaboration process. Student C

Theoretical Analysis Framework: Functional, Relational, and Critical Literacy in E-mail Messages

In the article, "Communication Topics and Strategies in E-mail Consultation: Comparison between American and International University Students," Biesenbach-Lucas created categories based on several scholars' work. In Biesenbach-Lucas' study, "communication topics were assigned to students' e-mail messages based on general communicative goals and reflected categories" which they adapted from other scholars discussed in the article. Biesenbach-Lucas' categorization was very useful to this thesis because "each communication topic subcategory was examined for communication

strategies integral to consultation via e-mail" (29). Biesenbach-Lucas broke their communication categories into three: facilitative, substantive, and relational. Facilitative relates to things such as scheduling appointments, submission of work, class attendance, and message confirmation; substantive relates to clarification of assignments and evaluation of work; relational relates to any communication topics meant to maintain social relationships (29-30).

Chapter Three explores other theorists who define literacies in the technical communication workplace. These literacies include functional literacies such as project planning, management and leadership tasks, searching for information, and technological savvy; relational literacies such as team building, socialization, and cultural adaptation; and critical literacies such as reflection, self-criticism, and peer review. I combined these literacies into four main types of for coding the messages. These types were assigned a number, which I marked in the margins of the printed e-mails next to the sentence or paragraph for which they applied. The types and numbers were as follows: 1 for project planning tasks, 2 for management and leadership tasks, 3 for team building and socialization, and 4 for critical statements. These types were placed into three main categories: functional, relational, and critical, for the analysis portion of this thesis.

I read all of the messages through completely four times during the coding process. There were 120 e-mail messages sent, many of which included more than one communication type. There were 139 instances coded for the communication categories. I categorized the messages on a sentence or paragraph basis, based on full ideas. For example, a paragraph that started with "Great work, everyone!" followed by "Here is a breakdown of what everyone is doing:" with a four sentence description of division of

page count was given a "3" for a team building statement, and a "1" for a project planning statement. Since project planning and leadership tasks are both functional literacies, they were combined into Category 1 (functional literacy) for the analysis portion of this thesis. More discussion on the content of these three categories follows.

I explained the message categories to a colleague who coded 10% or 12 random full e-mails without being able to see my markings. The inter-reliability of research based on this method was 83%.

Communication Categories

Following is more detail on the three workplace literacy categories I developed and used to code the messages, including quotes from the messages themselves as examples.

Category 1: Functional

Category 1 refers to project planning, task management, and other facilitative tasks. I developed this category using Selber's description of functional literacy as "tools" along with the literacies of project planning, management, and leadership posed by Wojahn et al. This category made up 50% of the messages coded.

Project Planning

Messages categorized as project planning included statements about methods and details, identifying basic problems and offering solutions. Direct examples of messages about project planning follow.

*I agree with all of you--splitting up the work into even chunks will probably be less confusing and easier in the long run. I will take the last 14 pages of "Telephone" if that is still available. **Student C***

*An idea: we each read our documents and then go through and edit the first few pages. . . after which we get together to talk about what our plans are. **Student B***

*I don't have a AP/Chicago preference at all, but I'd almost lean toward Chicago since we all have that manual, and that might help with consistency? **Student D***

*I just started scanning through and reading my section today. At first glance, it looks like it will benefit from shorter sentences and perhaps a bit less repetition. There were a couple grammar errors as well. **Student B***

Leadership and Management

As mentioned, leadership and management skills are considered functional literacies. While identifying problems can be simple, offering solutions to these problems requires initiative on the part of an individual to take the lead. Taking the initiative to lead others is important in collaborative work. Students all took turns taking on a leadership role and demonstrating qualities in leadership and management that help to facilitate the collaborative process. The following excerpts are examples of these types of conversations.

*I've noticed a lot of inconsistency in the use of commas in a series. Sometimes there is a comma before the last item in a series, and sometimes there isn't. Have you noticed this issue in your sections? I'm used to AP (Associated Press) style, which does **not** put a*

comma before the last item in a series. However, traditional grammar dictates that you should put a comma before the last item. What do y'all think? (I haven't checked Chicago style yet - not sure what Chicago dictates. Anyone know?) **Student A**

There are a couple of other formatting issues I've noticed that we probably need to be consistent on. For items in a bulleted list, are we going to capitalize the first letter of the first word? It seems to be done both ways in the document and isn't dependent on whether or not the sentence is a complete one. Should we capitalize all complete sentences in the list and not capitalize the incomplete ones? Or should we just stay consistent with all of them? **Student D**

Since we have such a short amount of time to complete this assignment, I think we should just do our best, according to our individual judgment, and then swap our edits before sending them to [Cindy], just to make sure we don't have any glaring inconsistencies. At least if we track our changes, [Cindy] can easily spot what we've edited and reject whatever changes she deems unnecessary or in disagreement with [agency] style. We can also ask [Cindy] questions about any style or formatting issues that are burning us up but that we're hesitant to change. **Student A**

So we need to do the following:

format the transmittal letter

consolidate an analysis of problems and design goals

powerpoint presentation

collaboration report (individual)

*We'll also need to decide who will be speaking/presenting, or if all of us will equally, and I'd imagine an in-person practice meeting before presentation day would be very beneficial. Since we didn't get to do any style editing, I expressed that I felt like our project was a little weak. I messed around with the telephone chapter a bit, and applied new font styles/spacing to the first three pages. **Student B***

*Maybe one of us can summarize what we did for the project, another person can discuss/demonstrate ideas for further revision that we would have liked to pursue if we had the chance, and someone else can talk about our challenges and triumphs, and so on. It may become clearer who would like to talk about what after we've divided up the work of preparing the presentation. For example, if I work on the letter of transmittal, I could also volunteer to talk about our experience collaborating with [Cindy], or something like that. Just an idea. . . **Student A***

I originally coded the data with leadership as its own category. However, I found that leadership was very difficult to measure with any rhetorical accuracy. Leadership statements always appeared alongside statements that were categorized as functional, mostly related to project planning, so the two were difficult to separate. All four of the students displayed leadership at some points, but Student A (group spokesperson) sent messages with a managerial tone the most often, more than half as much as any of the other students. All in all, the students demonstrated that they had facilitative skills that enabled them to plan and participate in a successful collaborative effort among other students.

Category 2: Relational

Category 2 represents team building and socialization. This category was developed based on the workplace literacy of team building discussed by Wojahn et al., and the notion of social interaction being paramount for immersion in a workplace culture, as posed by Breuch. Relational messages pertained to course-related matters, personal discussions, or other courses to name a few examples. Emoticons (such as a smile or sad face made with text) were also counted as socialization.

Team Building

Team building is important as a relational literacy, especially when working in a collaborative group. Team building can help foster relationships that are so important to the cultural adaptation of the workplace. Following are some examples of messages that were coded as team building.

You guys are so good at this! This is really my first technical writing class (I am in the MARC program), so I am quite new to this. **Student C**

I think she did a fantastic job representing us. That took a lot of extra time. **Student B**

This sounds great, guys. . .at least we have some idea of what we're going to say tonight.

Student D

Thanks for getting us organized, [Student A]. I think you will be a perfect spokesperson.

Student C

*The transmittal letter looks great! Only edit I have is for the Internet chapter -- the full title is "Internet, E-mail, Enterprise Instant Messaging and [agency] Web Site" (ugh.) Same on the analysis, which I think looks wonderful. Good job on that, ladies! A conclusion probably isn't necessary if everyone agrees. I think the intro completes it. The collaboration report is perfect -- great organization, [Student A]. **Student B***

Socialization

The students did some socializing in the form of personal anecdotes, general pleasantries, and emoticons. Socializing is also important for the social interaction that helps individuals become acculturated into a workplace. The following are examples of socializing messages in the students' e-mail messages.

*I am still experiencing aftershock but am slowly starting to readjust to the real world, haha! **Student A***

*Hope your trip to the vet went smoothly and that your dog is OK. **Student A***

*I did the stupidest thing when we were leaving the building tonight - you mentioned picking the wrong door because that entire building looks the same, well I picked the wrong door. . .of course!! And ended up walking around the ENTIRE building in the rain. I thought that might amuse you. ;D **Student D***

*I'm moving into a new apartment on the 29th (which I'm still searching for.) Please bear with me. :) **Student B***

Whoa, I think I kinda got carried away on this topic!! Sorry. I am extremely unmotivated right now to do any real studying, so I guess I am in hyperdrive chat mode again. **Student A**

Happy Friday! **Student C**

Category 3: Critical

Category 3 represents critical literacy. This category was developed from Selber's notion of critical literacy as recognizing and overcoming technological impasses, along with McEachern and Breuch's discussions on the importance of recognizing opportunities, growing from new experiences, and reflecting critically upon these experiences. In this section of my analysis, to consider messages as examples of critical thinking, I looked for examples that showed characteristics of students anticipating outcomes or problems. For example, Student A said the following in one of the first group messages:

***One more thing.** . .so as not to barrage [Cindy], I was thinking it might be a good idea for one of us to be the spokesperson of the group whenever we need to send her updates.*

What do you think? **Student A**

Student A anticipated the problem of barraging the agency contact with e-mails and offered a solution of having one student be the main contact person throughout the project. The other students agreed that this was a good idea, and ultimately Student A became the group spokesperson.

The students' project was unique in that even though it was a final project for the course, they did not have much time to complete it by the agency's deadline. The first contact with the agency was on January 31, and edits were due on February 18. The students worked under the tight deadline, split up tasks, and came up with a plan of action. They thought critically about what they needed to do, offered solutions, and looked at their classmates' suggestions with a critical eye. The following are examples of the students critiquing each others' editing suggestions.

*I think the only caveat I would add is that sometimes redundancy is necessary for clarification. In the third excerpt is near the beginning of the section I think you should be a bit redundant at first, just to make sure employees will understand what "electronic messaging" includes. **Student A***

*As far as the phone numbers go, I'd suggest checking with [name] before we change any phone numbers that might cause a disruption. **Student D***

*The only problem with preserving the individual voices is that it makes the report longer and somewhat repetitive due to some overlap of comments. So please take a look at the report when you get a chance and tell me what you think of this arrangement, yea or nay. Is it too repetitive as is? Would it be better to create a single voice by combining all our comments, rather than identifying each person's comments separately? And what do you think about the categories into which I divided the comments? **Student A***

Some students anticipated problems by expressing concern over methods. Some students went further to additionally offer solutions to those problems. Student C expressed outright concern and asked her classmates to think about possible solutions.

I am concerned with changing the words dramatically. I totally agree that there is too much repetition and it could all be so much simpler. How much should we change, though? **Student C**

Student B anticipated technical problems and gave helpful suggestions to the other students to help curb any issues.

I've merged changes in documents before, but never with track changes showing. My suggestion is to make sure they are saved elsewhere before experimenting with that. Another good idea would be to print out the final copies before merge, so you can scan through after they're merged to make sure nothing was missed. **Student B**

Student B also expressed concern over the amount of work done for the project, suggesting that it was not good enough to meet course requirements.

I know we've done a good deal of editing in a short time, and it feels like a lot of work, but does anyone else feel like what we've done isn't enough for the project? Since we can't mess with the design/layout, I feel like we're lacking bigtime. Thoughts? **Student B**

Critical literacy was not as easy to measure in e-mail communications as in reflective writing, which could explain why the percentage of critical statements overall was so small. Some critical literacy examples from the students' academic papers written for the course appear in Chapter Five under the subheading "Common Issues." The following is one example of critical reflection by Student A.

I learned how important it is to defer to others when you're working in a team on the same project. With editing, it's crucial that the revisions appear as seamless as possible, which can be a challenge when more than one person is editing the same document. I also learned that a lot of editing issues are gray areas if I'm unfamiliar with the client's style and organizational culture. For tough decisions, I have to either consult with the client or make a judgment call. In future, I hope I'll be better prepared to handle these gray areas. **Student A**

Discussion of Findings

The goal of the present study was to examine which types of literacies students used in their work with each other while collaborating on a project via electronic means. This study is relevant as there is a "rapid rise of distributed work, in which more and more of us work not in isolation but in teams with colleagues across the country and around the globe" (Paretti and McNair 328). The study was conducted over the course of one semester in a technical communication program and can help provide insight into which literacies students are adept in and which they may need help with. The major findings were as follows:

- Among the three major communication topics (functional, relational, and critical), messages from students addressed 54% functional aspects, 40% relational, and 6% critical.
- The student group leader (Student A) had over half of the total critical statements.
- Student A also sent double or more the messages that Students C and D sent.

There were 75 messages categorized as functional, which made up 54% of all the messages coded. Relational messages followed with 55 messages making up 40% of the total, and critical was last with 9 messages making up 6% of the total. Following is a pie chart that illustrates these numbers as a whole.

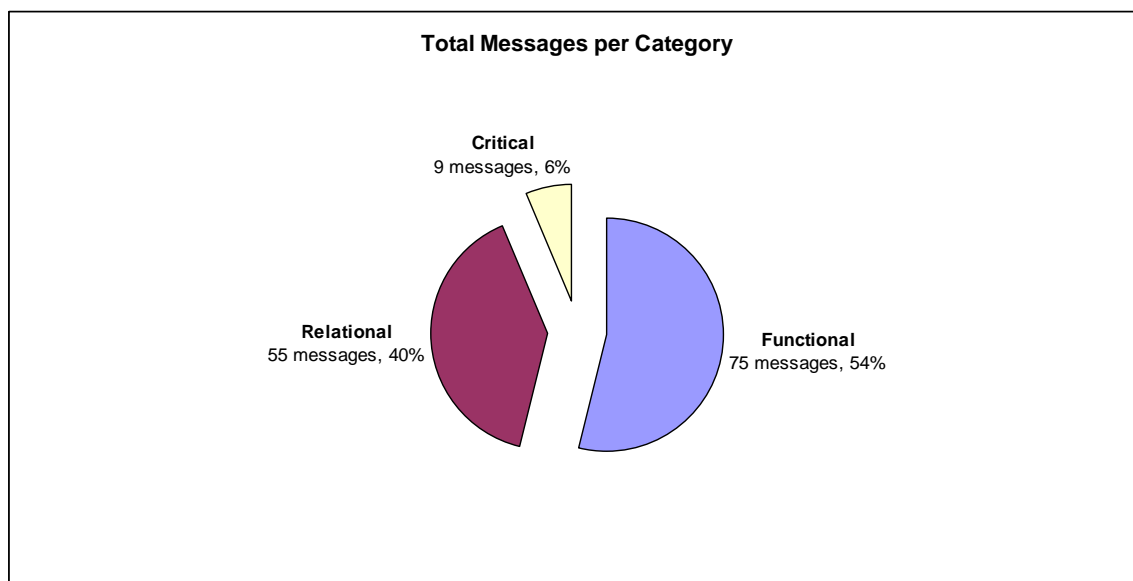


Figure 3. Total Messages per Category

Although the page count to edit was split up evenly, the number of e-mails sent varied among students. Students A and B were nearly equal in their number of e-mails, both having 30% of the total number of e-mails, while Students C and D sent less at 22%

and 18% respectively. The following chart illustrates these differences.

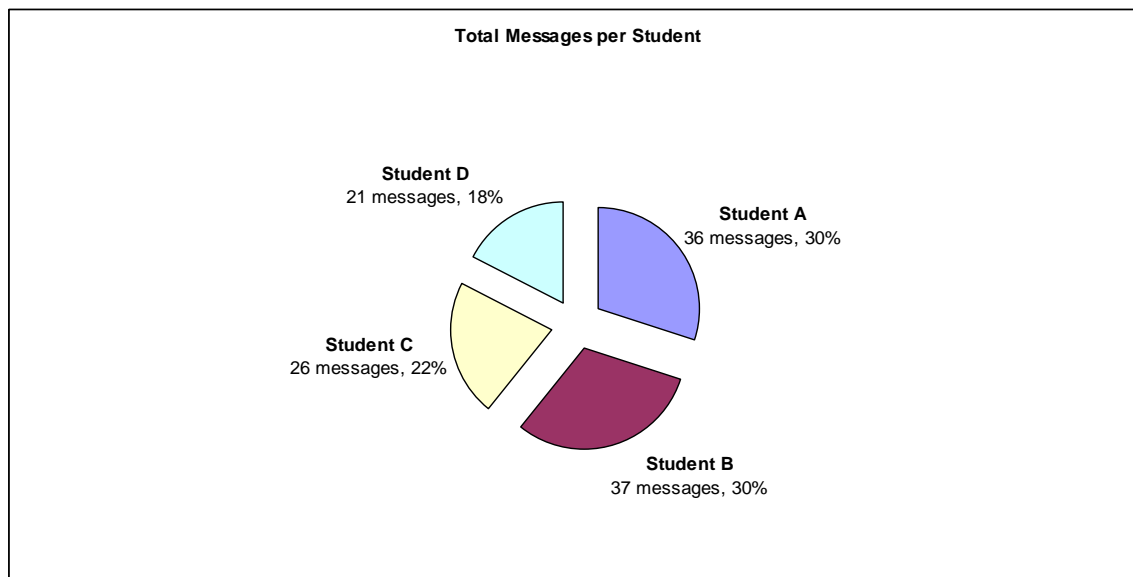


Figure 4. Total Messages per Student

Student A wrote the most lengthy and detailed e-mails, and frequently used visual and textual cues such as bolded subheadings, bullet points, lists, and bold or italicized words and sentences to bring attention to topics and ideas. The other students wrote more informal, shorter e-mails without as many visual cues. There were 120 e-mails sent with 139 categories marked throughout the messages. Students C and D had the same number of categories marked as they sent e-mails, while students A and B had more. Student B had 4 more coded messages than the total number of e-mails they sent, while Student A had 14 more. The following chart illustrates these differences.

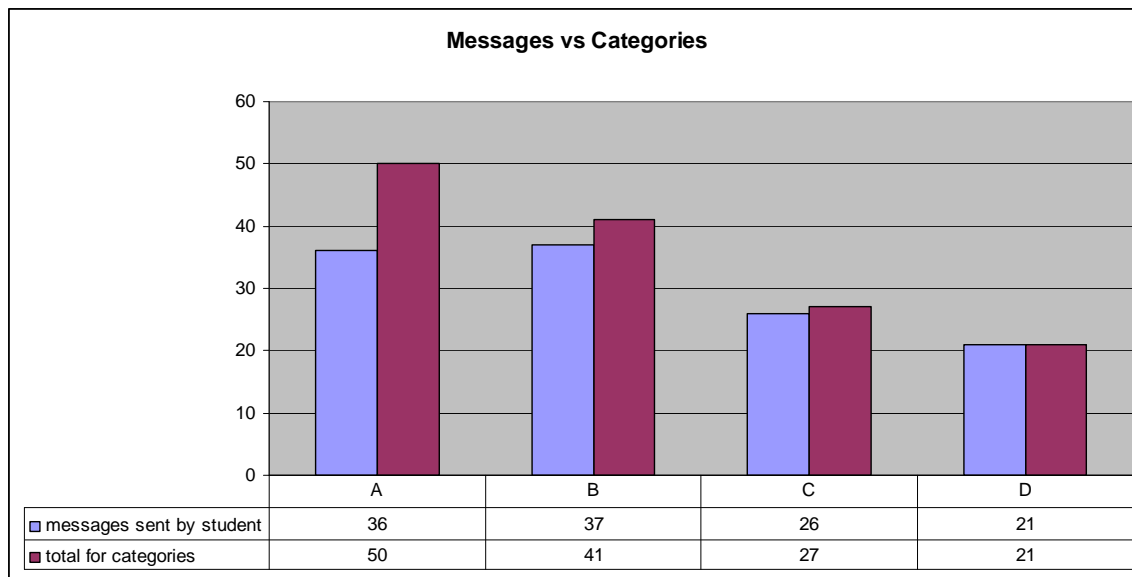


Figure 5. Messages vs. Categories

Student A was named "group spokesperson" by the team early in the project. The team thought she would be a good candidate for this role because of her employer's proximity to the building in which the company was located. Although it never became a need, the team agreed that Student A would represent the group in case anything ever needed to be hand-delivered to the company contact. Naming Student A as the group spokesperson so early in the project seemed to create a leadership role as evidenced by the conversations that followed. Student A sent more emails and had more marks for critical literacies than anyone else in the group. The other students did not send nearly as many messages using critical literacies. The following chart illustrates the number of messages in each category by each student.

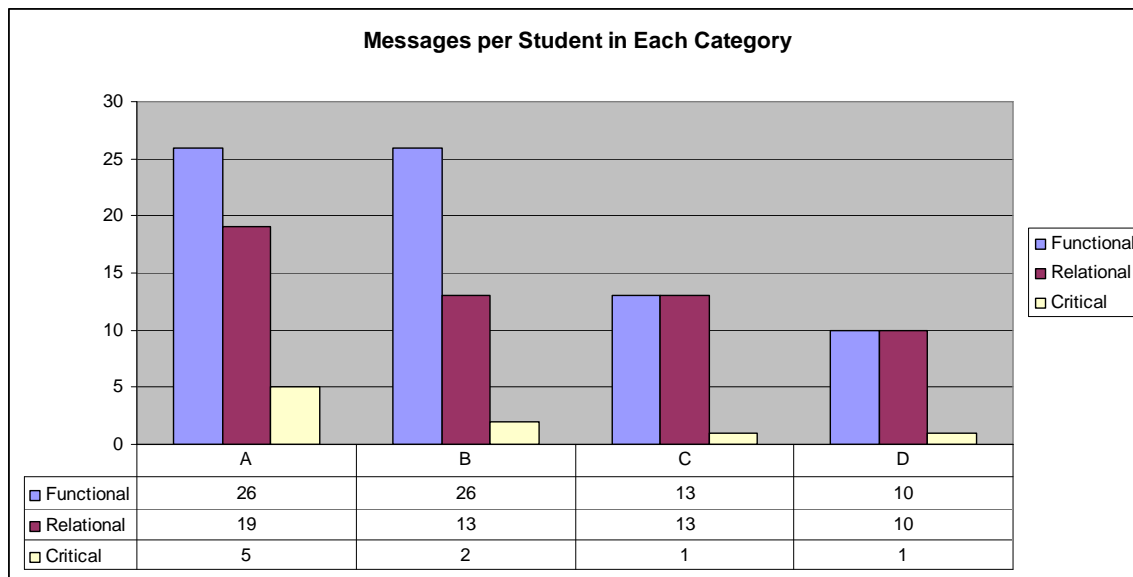


Figure 6. Messages per Student in Each Category

In the last few weeks of the semester, Student A was working on a large capstone project for another class, at which point the other students really started to step into the leadership role without any apparent struggle from other group members. Sapp and Crabtree point out that, in their experience, students who work in group arrangements have a sharpened sense of duty, “bolstering interest and attendance” (423). Paretto and McNair identify trust as central to success of virtual teams. Trust among team members can be “formed early by social communication and maintained by regular, frequent task communication throughout the project” (332). Throughout the project the students seemed to exhibit trust based on their regular and frequent communication of tasks.

Student A acted as a very team-oriented leader as evidenced by the number of relational statements in her communications. The other students' relational statements were close in number, indicating that all of the students saw it as equally important to socialize and foster a teamwork attitude.

Students used skills in collaboration, audience analysis, technical writing and editing, page layout and design, letter and memo writing, critical thinking, problem solving, and oral presentation to varying degrees for this project. Students also used reflective analysis in both the final presentation and the final report written for the course instructor, which I will discuss more in Chapter Five.

Project Two: Internship

The Project: A Graduate Technical Communication Student Internship with a Private High-Tech Company

The second case study was an internship course for graduate students, lasting approximately 15 weeks during January through May of 2009. The six students I focused on for this paper all worked with the same private high-tech company for their internship. These six students worked on five separate projects, each spearheaded by different mentors at the company. For the purpose of this paper, I will henceforth refer to the company as High-Tech Incorporated (HTI).

Students were given a guideline by the instructor to spend 6 to 8 hours per week on their internship. Credit consisted of 60% for self-direction and successful completion of applied project, 30% for three written documents reflecting on the learning experience, and 10% for the final presentation.

The internship projects at HTI varied among the students. One student worked on an internal document for HTI technical writers, another student worked on a Getting Started Guide for a newly developed customer software product, and two students worked together on a rewrite of a step-by-step exercise out of a customer education manual. Students completed all of the aforementioned projects with Adobe Framemaker, a program for which none of the students had any prior experience.

The remaining two students worked on projects that were html-based, one on a help file for a new toolkit for HTI software, and the other on an internal document for product engineers to reference while using another piece of company software. The html-based projects involved the use of Homesite (an html editing program) as well as various graphics editing programs, file management software, and internal databases.

Students used skills in student-to-student and student/mentor collaboration, audience analysis, technical writing, editing, page layout and design, collaborative instruction writing, oral presentations, critical thinking, and problem solving. They also used reflective analysis in papers written for the course instructor.

Students were evaluated and graded based on three criteria: (1) self-direction and successful completion of applied project (worth 60% of the final grade), (2) three written documents reflecting on the learning experience (worth 30% of the final grade), and (3) a final presentation (worth 10% of the final grade).

Methods and Framework for Analysis

For the internship project, I collected proposal reports in which students described what their projects were and how they would be completed, discourse analyses students wrote about the company, and final evaluation reports all written by students as course assignments. These papers consisted of about 60 printed pages. I also collected the projects and final presentations, if available in written format.

Using the same theoretical framework of functional, relational, and critical literacy skills in project one, I identified workplace skills in the students' papers and survey results. My main focus was a textual and discourse analysis of the students'

project evaluation papers from the end of the semester. These papers included a description of the project, a discussion of processes used to complete the project, problems faced, and outcome. There were no word or page limit guidelines, and the students' papers ranged from 3 printed pages and 949 words to 18 printed pages and 4,336 words. Below is a graph showing how many words each student wrote.

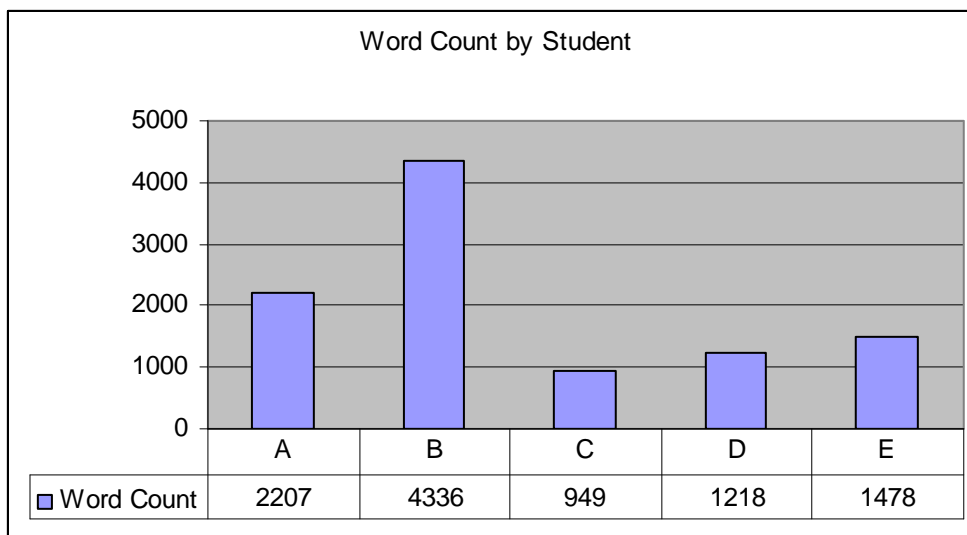


Figure 7. Word Count by Student

Student D is a group of two students who worked together on one project. Students A, B, C, and E worked on individual projects through the entire semester.

I also examined results from an online survey I sent out to students in May of 2010. This supplemental survey was used to gather more information about the projects that may not have been available in the e-mail communications or academic papers. Unfortunately, only half of the students participated in the survey, so the results were not complete. Three students completed the survey; one student from D, Student C, and Student E. The survey asked the following questions:

1. How much time per week did you spend on the project?

2. What technologies (web-based and otherwise) did you use to collect information for your project? (For example: web sites, software, and applications.)
3. How often did you share information obtained on the Internet with others in your group?
4. What technologies did you USE to complete your project? (Software, hardware, Internet sites, etc.)
5. What, if any, new technologies did you have to LEARN to complete your project? (Software, hardware, Internet sites, etc.)
6. How much time was spent using electronic technologies to complete your project?
7. When confronted with technological dilemmas, what digital resources did you use to get questions answered?
8. When confronted with technological dilemmas, what human resources did you use to get your questions answered?
9. Did you learn about any resources, technologies, or methods that you think will help you in future career projects? Please explain.
10. How did email and distribution lists facilitate communication among participants and supervisors?

Discussion of Findings

The goal of the present study was to examine which types of literacies students used to successfully complete an internship. The study was conducted over the course of one semester in a technical communication program and can help provide insight into

which literacies students are adept in and which they may need help with. The findings can be generalized as follows:

- Most students mentioned collaboration and communication as vital to project completion.
- Most students thought that skills in project management and project planning were useful and helpful for project completion.
- All of the students discussed challenges they faced while learning the processes and procedures of the company, including computer programs and company discourse.
- A few students discussed the relationships they built with their mentors at the company, and how those relationships were important to project success.
- Two students exhibited critical thinking to identify the company's specific philosophy of learning and how they were able to adjust to these new learning styles.
- The two students who exhibited critical thinking skills had the highest word count in their evaluative reports.

For the discussion of literacies demonstrated in the students' reflective papers, I chose to break the discussion into several main themes. Although the students wrote individual papers and worked on separate projects, many of the same themes appeared in every evaluation.

Collaboration and Communication

Collaboration and communication was discussed in some form by all of the students. Students thought that frequent, clear communication with others was important to the collaborative process and the ultimate success of their projects. Below I listed comments taken directly from the papers that illustrate this point.

I learned that to be a successful technical writer one must be highly capable of working on his or her own for much of the day, but also be adept at collaboration because each project undergoes several reviews before publication. **Student B**

This project taught me a lot about communication... **Student E**

Communication is key to keeping up with the changing expectations of project...as team members we stayed in constant communication via email, phone, text messaging, the classroom chat and in person meetings. **Student D**

(Company) values employee input and collaboration. My documentation came back marked with edits and questions from (name) five times, after which she sent them through a complicated review process consisting of engineers, engineer managers, and technical writer managers. **Student A**

(Name) managed the project by attempting to keep me on-schedule and providing me with high-level information when I needed it; (name) did the very technical tweaking at the end of my writing process. All and all, my documents went through at least three

*rounds of editing before they reached their final form. **Student C***

*We made sure as a collaborative team that we met at least twice a week and we set goals for when we would spot check our project. **Student D***

The students demonstrated that they learned something about the collaborative process that technical writers at HTI go through and reflected on the important role that collaborative writing among colleagues has in the workplace culture.

Project Planning

All of the students mentioned barriers that they overcame by employing functional literacies such as overall time and project management and developing project plans by scheduling, organizing, and often times re-scheduling tasks and deadlines. Most students found that time constraints created an issue, especially considering the training and learning they had to do before they could begin the project. Some students explained how they spent time carefully planning and managing their time. The following two students explained how they scheduled tasks for their projects.

*I learned to be proactive in my response to these challenges and was able to overcome these difficulties by allotting more time for the project, writing up a detailed timeframe with a weekly breakdown of the work into sections and by going into the office weekly for help. **Student E***

We now understand the numerous rewrites, reorganization, and re-planning that is precedent in the technical writing field. Time management was our number one concern

and goal throughout this semester. We made sure as a collaborative team that we met at least twice a week and we set goals for when we would spot check our project.

Student D

Getting up to Speed

A large obstacle, mentioned by all of the students, was that of needing help with the subject matter. None of the students had any prior training or knowledge when it came to HTI's products and internal procedures, so a lot of struggling to learn took place. They also had difficulties learning sophisticated software and dealing with technology failures. A few students described their struggles and fears when facing these technological impasses.

*I was completely scared and had no idea what anything was on the screen. Everything was completely foreign to me and it felt like someone had just handed me a book written in Japanese and told me to skim through the first chapter. **Student B***

*. . .we were inundated with engineering concepts, vocabulary and technology that provided us insight into a tech writers world. We also experience the technology frustrations with learning to access and use (program) in the revising portion of our project. **Student D***

*I probably spent as much time wrestling with Frame as I did writing the definitions and in retrospect I wish I had known going into the project what kind of learning curve existed with Framemaker. **Student C***

I started late start on the project because of needing to learn various software programs.

Student E

Our first barrier was the miscommunication of the expectations for the deliverables.

Student D

*The last obstacle was software malfunction; when you're both learning and testing new software, you're bound to hit some bumps. **Student A***

Not only did students face the challenges of learning new technology, but some also remarked on the challenges of having too much information available, or what's commonly known as "information overload."

*The biggest obstacle was learning the material; during the beginning stages of the project, I felt that the more I researched, the less I understood what I was to be writing about. **Student A***

*These notes were very helpful to me in defining the specifications but they were undoubtedly "full of holes" and often contained unnecessary information. I spent a good amount of time simply trying to decide which part of her notes to keep and which parts needed more explanation. **Student C***

*I feel like a lot of time was spent fumbling around trying to learn the ropes, and although there are help topics available for virtually everything, there was definitely information overload. A lot of times I didn't know where to look, or I'd look in one place but it was located in another. **Student A***

All of the students responded to the challenges they faced by asking their mentors or others for help, using the Internet, and using software help documentation. Knowing where to seek help and find answers quickly is an important skill for overcoming the technological impasses and feelings of information overload. Paretti and McNair explain that students do not just need a list of tasks or formats to succeed in collaborative teams, "they also need metaknowledge to help them understand the dynamics of such teams and the roles of communicative acts in supporting or sustaining such teams productively" (330). Metaknowledge is the knowledge about when and how to use particular strategies for learning or for problem solving. The following student statements describe how they got their questions answered.

*I enlisted help from tech support on campus, as well as (name), our technical writer with (HTI). **Student D***

*After having some difficulties understanding what was expected of me to complete the project, I met with (name) in person, to go over the project. **Student E***

*(Name) and the software engineers recommended that I start with Wikipedia, and I visited other sites linked through there. **Student A***

*I primarily relied on Wikipedia, an electrical engineering dictionary, and my wealth of engineering friends to help me decide the most important bits of information. **Student C***

*I started doing more Google searches in hopes of finding something that'd help it make more sense. **Student A***

Most of the students used a combination of electronic help and getting help from HTI employees.

Acculturation and Socialization

Two students reflected on their fears and how they confronted them by sharing them with their mentors. The mentors helped the students feel better about their lack of knowledge and skill, and helped them become more comfortable working on the projects.

Establishing a more personal relationship with others in order to help reach goals is another workplace literacy that technical writers need to help them become experts in their subject matter. The following student statements describe how students used socialization with others to overcome fears and ultimately become more comfortable with what they wrote about.

*After a discussion with (name), I learned just how typical my situation was for a technical writer at (HTI) and began to have a sense of resolution about the project. **Student B***

I finally expressed my concern to (name), and asked if she had any suggestions to help me

*succeed. As I became more comfortable with the material, I became less hesitant to ask for specifics on how things worked. **Student A***

Critical Thinking

Some students identified HTI's unique philosophy of learning and what they went through to adapt to that philosophy. As discussed early in this chapter, recognizing learning and reflecting on it is a critical literacy skill. The students identified the culture of learning at HTI and described how it made them feel.

*I will not say that I learned a great deal about the program that day, but I did learn more about the philosophy of learning at (HTI). Instead of handing me what little documentation there was on this fledgling program, my supervisor chose to throw me in feet-first, so to speak, and see what I could learn about it on my own. **Student B***

*Support was excellent but I think a more structured training in the beginning would've been very beneficial. I feel like a lot of time was spent fumbling around trying to learn the ropes. **Student A***

The students also recognized that they needed to overcome their previous ways of thinking by accepting criticism and edits from their mentors. Collaborative writing in workplace settings is becoming increasingly popular, so learning how to accept criticism and implement changes from others is a valuable literacy skill. The following statements describe how students handled criticism from their mentors.

I began to feel inadequate again when I got my draft back covered in edits, but she assured me that it was normal. **Student A**

(Name) also shared some of her work with me that contained editing marks by other technical writers, which helped me feel more at ease with the amount of editing marks on mine. **Student B**

Many of the students stated that despite all of the difficulties with software and processes, as well as with time and project management, they felt their experience was valuable and would help them in their career endeavors.

Overall, students displayed several functional literacy skills, indicating that the students had the functional skills needed for workplace success in a technical writer role. Some students also displayed relationship building relational skills, and shared how these relationships were helpful for their success. Two students exhibited critical skills with their descriptions of recognizing and adapting to the company culture along with the resulting problems and successes. Two students who took the survey responded "yes" to question 9, "Did you learn about any resources, technologies, or methods that you think will help you in future career projects?" In their evaluation reports, two other students expressed that they felt their workplace experience was invaluable.

PART FOUR: RESULTS

CHAPTER FIVE: CONCLUSION

Summary

Through my study I have used three main categories of workplace literacies: functional, relational, and critical, and measured each literacy category in student e-mail communications and course papers. The students exhibited literacies in all three categories, with functional literacy being the most prevalent. Relational and critical statements were not as prevalent, indicating that students may require help learning the social and critical thinking aspects often present in different workplace cultures.

The benefits of the workplace experience for students include the following: improving writing skills, gaining a sense of professionalism, feeling pride and satisfaction for developing a meaningful document, realizing the value of a project, and earning respect and approval. Business-academia collaborations "provide community support and visibility for a technical communication program and research opportunities and practical experience for faculty" (Tovey 231). Paretti and McNair suggest that, in order to "study" collaborations, technical communication students "explore and practice strategies for establishing and maintaining effective virtual teams, implementing organizational structures that support effective communication in distributed teams, and fostering social presence and team cohesion through communicative practices" (333).

Common Issues

The case studies, though conducted in very different workplace cultures with different outcomes, shared some characteristics. Similarities were especially noted in the problems that both sets of students faced when adapting to the workplace culture. Tovey believes that issues "such as professionalism, socialization and acculturation, motivation, and training problematize the workplace experience and provide learning experiences for both supervisors and interns" (226). Working through these problems serves to help students become more functionally, relationally, and critically literate in the workplace. Tovey uses a study to demonstrate that "the development of context occurs in the workplace setting with exposure to and interaction with the people, language, and formats" (227). Students in both projects dealt with the following issues.

- **Struggle with learning curves**—it was difficult and often took longer than expected for most students to learn the concepts, software, and processes needed to complete their projects.
- **Software glitches**—students described particular software glitches, such as programs frequently having to be restarted or the inability to get software to perform specific tasks.
- **Accessibility issues**—students had problems gaining access to licensed software and internal documents such as style guides, because most of them did not work on-site.
- **Feelings of inadequacy**— students reflected on feeling that they did not have the skills and knowledge they needed to succeed, and in some cases expressed their fears that resulted from these feelings.
- **Information overload**—some students felt overwhelmed with the amount of information given to them, and were not sure where to start.
- **Feelings of disconnect**—students described how working remotely created some difficulties learning how the company or agency operates and adapting to the projects, as well as difficulties communicating with agency contacts.

The students' reflections indicate that they were not only aware of the problems but many also identified a critical literacy skill: recognizing how to overcome such problems.

Following are some student reflections from both case studies. The students from project one are identified as "Service Learning Student" and the students from project two are identified as "Internship Student." A few students remarked on the benefit of having the experience to learn from.

*I was able to work around limiting conditions of software glitches and with constant changes to produce quality documentation. I cannot emphasize how great a learning experience this was for me and how I feel I could not have gained this level of experience elsewhere. **Internship Student***

*There was some insight gained about the company, manual process, and lack of consistent style in this meeting. However, none of this was something that could assist us with the actual editing part of our project. It did, however, provide us with more information for our presentation. It also brought the point home to me that fast deadlines are normal things in the business world, and you must just work with what you have in the best way you know how. **Service Learning Student***

*This project provided a real life opportunity to work under the pressure of tight deadlines and rules. **Service Learning Student***

This internship has presented us with many barriers however they have provided professional learning experiences. Despite the frustrations of the barriers, as students we have taken an interest in learning more about the writing processes of tech writers.

Internship Student

Some students went into detail about what they learned. In the situated learning approach, knowledge and skills are taught in real-life situations. This strategy is based on the premise that knowledge is not independent, but fundamentally situated, being in part a product of the activity, context, and culture in which it is developed (Wenger, Pare, Brown et al.). Learning requires more than just being part of a situation, it also requires participation in the culture. Thus, in situated learning, it is the unique social context in which learning occurs that increases knowledge. This increased knowledge can then be applied in new ways and new situations by the learner. The following quotes demonstrate situated learning by the students.

Although I have experience editing in a variety of timeframes, this is the first collaborative editing project I've participated in, and I learned that requires more time than editing alone. Nevertheless, collaborative editing is beneficial because it gives each editor the opportunity to have more than one pair of eyes check her work—and with editing, it is always better to have more than one person check the same document.

Service Learning Student

I faced many difficulties while doing this project. I learned a lot about HTI, its people, its processes, and what being a technical writer entails through this project. As a whole, it

*was a very positive experience that I believe will help my career goals. **Internship Student***

These students identified issues they faced and described how they learned from these issues and use them to their advantage. Both students remarked that they now have the advantage of knowing what to expect in the working world as technical writers.

All of the students identified problems, but not many went into detail about what they learned from the problems and issues they faced. In "School and Situated Knowledge: Travel or Tourism?" Suzanne Damarin thinks "knowledge is viewed as co-produced by the learner and the situation; engagement of the learner in the situation is critical" (28). Damarin clarifies situated learning and cognition by using the distinction between traveler and tourist in the following metaphor:

A traveler and a tourist can visit the same city, but experience it very differently. A tourist's goals are typically to see all the sights, learn their names, make and collect stunning pictures, eat the foods, and observe the rituals of the city. A traveler, on the other hand, seeks to understand the city, to know and live briefly among the people, to understand the languages, both verbal and non-verbal, and to participate in the rituals of the city. At the end of equally long visits, the tourist is likely to have seen more monuments, but the traveler is more likely to know how to use the public transportation (29).

Some students may be travelers and some may be tourists. Educators can strive to help all of their students become tourists, but they can only take the students so far. Students must possess some of their own interest and initiative to achieve ultimate

success in this role. Students need to be socially and intellectually prepared to adjust to varying workplace cultures. Tovey sites Marion Larson, who categorizes the stages of a transition process of organizational socialization as follows: (1) Anticipation, (2) Encounter, (3) Motivation, and finally, (4) Settling in. Tovey thinks motivation might be a key factor for temporary employees "to be successful as technical communicators in temporary academic and workplace collaborations" (228-9).

Implications for the Classroom

The case studies presented in this thesis paint a bigger picture that describes how educators can prepare students for the various hurdles they may encounter in the workplace. Based on my findings, students can expect to face a variety of challenges from communication issues to personal fears and technological glitches. Students need critical literacy skills to truly reflect on such changes and challenges, adapt to them, and recognize how they can learn from overcoming problems.

Being part of a workplace involves more than just learning job skills. Tovey explains how socialization and acculturation into the organization are also very important. Often times, and such was the case with the internship with HTI, organizations do not offer their formal orientation programs to students. Though HTI provided mentors to each of the students, the students all faced difficulties. Tovey cites one researcher who reveals that "writing and editing interns are especially vulnerable" to difficulties because "they are expected to understand and write for nonacademic audiences, requiring more sophisticated skills" (228). Tovey suggests that, to ensure success of internships, "businesses and other organizations must train and manage the interns with an orientation similar to that of other employees" (236). However,

constraining projects to a limited quarter or semester timeframe makes it difficult to provide the often times extensive training required for technical writers.

The transition from student to employee, even for a limited time, can be very overwhelming. Tovey explains that students and new employees will always need to learn how to make adjustments that do not have to do with writing, such as understanding the community and learning organizational and social contexts. Tovey believes that organizations are at least partly responsible for motivating the student worker. Teachers can train students on how to prepare to accept cultural change, but there is no substitute for learning culture other than becoming a part of the culture itself. (230-31)

One way to become part of a culture is through social interaction and reflection. Brown et al. explain how ideas are exchanged and modified within a culture, and belief systems are developed and appropriated through conversation and narratives. These must be promoted, not inhibited as "they are an essential component of social interaction and, thus, of learning" (40). Brown et al. think learning environments must allow narratives to circulate and "war stories" to be added to the collective wisdom of the community (40). Talking about problems and how the problems were overcome fosters learning.

Sapp and Crabtree explain how establishing long-term instructor/agency relationships enable student satisfaction and success in agency projects. While long-lasting relationships with substantial commitment among instructors and potential collaborators is certainly beneficial, Sapp and Crabtree believe that it would also be sufficient to maintain a "cordial and collaborative dialogue" of "sharing course objective and agency needs, in order to negotiate a mutually beneficial arrangement" (426). The participants in this study displayed a cordial and collaborative dialogue in their e-mails to

each other, containing relational, critical, and functional statements of both personal and professional natures, all of which helped the students to complete the project.

In my case studies, students mainly communicated digitally, primarily through email. Paretti and McNair believe that "face-to-face communication, or something as close to it as possible, can be central to creating the social and professional context that makes distributed collaboration possible" (332). They discuss how such cohesion is established through the informal communication that happens when sharing the same physical space. However, Paretti and McNair explain that some researchers, myself included, believe that electronic communication can foster the same kinds of effective communication in the spontaneous interactions that happen in face-to-face environments (333). I think that as individuals use digital communication more, the more effective and closer to face-to-face communication it will become. Paretti and McNair think that email communication has an advantage over face-to-face communication in that the asynchronous nature of digital communication gives individuals time to digest information, something which can aid in effective decision making. Having more time to think about a response should help develop the reflective process that can aid in better decisions.

Pare suggests that academics and researchers who enter the workplace must be "humble and sensitive" for it "takes a long time to understand another's culture, and great nerve to seek to change it" (60). Sapp and Crabtree suggest approaching academic and workplace collaborations with a theoretically grounded approach. Their approach "deliberately creates a spiraling process of knowledge, acquisition, informed action, and personal and social reflection. That is, in a repeated cycle, students and teachers share

disciplinary content in the classroom, apply it in the community, and systematically reflect upon the process and its deeper social implications” (411). Reflection is key to learning in academic and workplace collaborations.

The students all identified problems, most of which were similar for both sets of students in various different projects. The students also overwhelmingly expressed that they felt learning from these problems will help them in future endeavors. The problems of students feeling disconnected, overloaded with information, or insecure about the subject matter can teach an important lesson: communicating with peers cannot only help alleviate tangible problems such as software or accessibility issues but can also help foster the relationships that help newcomers learn and adjust to new cultures, which ultimately helps them prepare for the workplace. Researchers agree that internships and service learning projects in the classroom have many benefits for both the student and the organization. However, as Paretto and McNair state, "although students have multiple team experiences throughout college, they rarely receive explicit teaching on collaboration and instead are expected to learn by doing" (330). Tovey says "there doesn't seem to be any way to include all of the variables that come into play in a workplace situation," but "learning the value of writing in the workplace through contact with practitioners and professionals might be considered a key factor in arguing for internships, service learning projects, and other practical experience" (230). Teaching students the importance of social and critical interaction with other students and mentors can go a long way in helping students become well-armed for collaborative work in both classroom and workplace settings.

WORKS CITED

- Biesenbach-Lucas, Sigrun. "Communication Topics and Strategies in E-mail Consultation: Comparison between American and International University Students." *Language, Learning & Technology* 9.2 (2005): 24-46. Print.
- Blakeslee, Ann M. "Bridging the Workplace and the Academy: Teaching Professional Genres through Classroom-Workplace Collaborations." *Technical Communication Quarterly* 10.2 (2001): 169-92. Print.
- . "Researching a Common Ground: Exploring the Space Where Academic and Workplace Cultures Meet." *Reshaping Technical Communication*. Ed. Barbara Mirel and Rachel Spilka. Mahwah, NJ: Lawrence Erlbaum Associates, Inc., Publishers, 2002. 41-55. Print.
- Bosley, Deborah. "Jumping Off the Ivory Tower: Changing the Academic Perspective." *Reshaping Technical Communication*. Ed. Barbara Mirel and Rachel Spilka. Mahwah, NJ: Lawrence Erlbaum Associates, Inc., Publishers, 2002. 27-39 Print.
- Bowdon, Melody and J. Blake Scott. *Service-Learning in Technical and Professional Communication*. New York: Longman, 2003. Print.
- Breuch, Lee-Ann M. Kastman. "The Overruled Dust Mite: Preparing Technical Communication Students to Interact with Clients." *Technical Communication Quarterly* 10.2 (2001): 193-210. Print.
- . "Thinking Critically About Technological Literacy: Developing a Framework to Guide Computer Pedagogy in Technical Communication." *Teaching Technical Communication*. Ed. James M. Dubinsky. Boston, MA: Bedford/St. Martin's, 2004. 481-499. Print.
- Damarin, Suzanne. "School and Situated Knowledge: Travel or Tourism?" *Educational Technology* 33.3 (1993): 27-32. Print.
- Dicks, Stanley. "Cultural Impediments to Understanding: Are They Surmountable?" *Reshaping Technical Communication*. Ed. Barbara Mirel and Rachel Spilka. Mahwah, NJ: Lawrence Erlbaum Associates, Inc., Publishers, 2002. 13-25. Print.

- Ferris, Shamila. "Writing Electronically: The Effects of Computers on Traditional Writing." *Journal of Electronic Publishing* 8.1 (2002): n. pag. Web. 23 Nov 2009.
- Freedman, Aviva and Christine Adam. "Learning to Write Professionally: "Situating Learning" and the Transition from University to Professional Discourse." *Teaching Technical Communication*. Ed. James M. Dubinsky. Boston, MA: Bedford/St. Martin's, 2004. 310-336. Print.
- Gimenez, Julio. "Business E-mail Communication: Some Emerging Tendencies in Register." *English for Specific Purposes*. 19.3 (2000): 237-51. Print.
- "How Should Colleges Assess and Improve Student Learning? Employers' Views on the Accountability Challenge." *The Association Of American Colleges And Universities*. 09 01 2008. Peter D. Hart Research Associates, Inc., Web. 23 Nov 2009.
- John Seely Brown, Allan Collins and Paul Duguid. "Situating Cognition and the Culture of Learning." *Educational Researcher* 18.1 (1989): 32-42. Print.
- Kress, Gunther. *Literacy in the New Media Age*. London: Routledge, 2003. Print.
- Lave, Jean and Etienne Wenger. *Situated Learning: Legitimate Peripheral Participation*. Cambridge: University of Cambridge Press, 1991. Print.
- Matthews, Catherine, and Beverly Zimmerman. "Integrating Service Learning and Technical Communication: Benefits and Challenges." *Technical Communication Quarterly* 8.4 (1999): 383-404. Print.
- McLellan, H. *Situated Learning Perspectives*. Englewood Cliffs, NJ: Educational Technology Publications, 1995. Print.
- McEachern, Robert W. "Problems in Service Learning and Technical/Professional Writing: Incorporating the Perspective of Nonprofit Management." *Technical Communication Quarterly* 10.2 (2001): 211-24. Print.
- Mirel, Barbara, and Rachel Spilka, ed. *Reshaping Technical Communication*. Mahwah, NJ: Lawrence Erlbaum Associates, Inc., Publishers, 2002. Print.
- Pare, Anthony. "Keeping Writing in Its Place: A Participatory Action Approach to Workplace Communication." *Reshaping Technical Communication*. Ed. Barbara Mirel and Rachel Spilka. Mahwah, NJ: Lawrence Erlbaum Associates, Inc., Publishers, 2002. 57-79. Print.
- Paretti, Marie, and Lisa D. McNair. "Teaching Technical Communication in an Era of Distributed Work: A Case Study of Collaboration Between U.S. and Swedish Students." *Technical Communication Quarterly* 16.3 (2007): 327-52. Print.

- Patrica Wojahn, Julie Dyke, Linda Ann Riley, Edward Hensel, and Stuart C Brown. "Blurring Boundaries Between Technical Communication and Engineering: Challenges of a Multidisciplinary, Client-Based Pedagogy." *Technical Communication Quarterly* 10.2 (2001): 129-48. Print.
- Sapp, David Alan, and Robbin D. Crabtree. "A Laboratory in Citizenship: Service Learning in the Technical Communication Classroom." *Technical Communication Quarterly* 11.4 (2002): 411-31. Print.
- Selber, Stuart A. *Multiliteracies for a Digital Age*. Illinois: Southern Illinois University Press, 2004. Print.
- Selfe, Cynthia L, and Gail E Hawisher. "A Historical Look at Electronic Literacy." *Journal of Business and Technical Communication* 16.3 (2002): 231-276. Print.
- Selting, Bonita R. "Conversations with Technical Writing Teachers: Defining a Problem." *Technical Communication Quarterly* 11.3 (2002): 251-66. Print.
- Tovey, Janice. "Building Connections between Industry and University: Implementing an Internship Program at a Regional University." *Technical Communication Quarterly* 10.2 (2001): 225-39. Print.

WORKS CONSULTED

- Bernhardt, Stephen A. "Active-Practice: Creating Productive Tension Between Academia and Industry." *Reshaping Technical Communication*. Ed. Barbara Mirel and Rachel Spilka. Mahwah, NJ: Lawrence Erlbaum Associates, Inc., Publishers, 2002. 81-90. Print.
- Cook, Kelly Cargile. "Layered Literacies: A Theoretical Frame for Technical Communication Pedagogy." *Technical Communication Quarterly* 11.1 (2002): 5-29. Print.
- Selfe, Cynthia L. and Gail E. Hawisher. *Literate Lives in the Information Age*. New Jersey: Lawrence Erlbaum Associates, Inc., 2004.
- Williams, Julia M. "Transformations in Technical Communication Pedagogy: Engineering, Writing, and the ABET Engineering Criteria 2000." *Technical Communication Quarterly* 10.2 (2001): 149-67. Print.

VITA

Vita Marianne Haake studied at Kent State University before moving to San Antonio, Texas. She graduated from The University of Texas at San Antonio, where she received a Bachelor of Arts degree in 2007. In late 2007, she moved to Austin, Texas, to work as a Desktop Publisher. She entered Texas State University-San Marcos Graduate School in January 2008, where she began her studies in the Master of Arts in Technical Communication program. In the spring of 2010, she became a technical writer at National Instruments.

Permanent E-mail Address: vhaake@gmail.com

This thesis was typed by Vita M. Haake.