May 2017

An Exploratory Study of Learning Transfer from the Online Technical Communication Course to the Workplace

Richard Scott Schnoll
University of Wisconsin-Milwaukee

AN EXPLORATORY STUDY OF LEARNING TRANSFER FROM THE ONLINE TECHNICAL

COMMUNICATION COURSE TO THE WORKPLACE

by

Richard Schnoll

A Dissertation Submitted in

Partial Fulfillment of the

Requirements for the Degree of

Doctor of Philosophy

in English

at

The University of Wisconsin-Milwaukee

May 2017

ABSTRACT

AN EXPLORATORY STUDY OF LEARNING TRANSFER FROM THE ONLINE TECHNICAL COMMUNICATION COURSE TO THE WORKPLACE

by

Richard Schnoll

The University of Wisconsin-Milwaukee, 2017
Under the Supervision of Professor Rachel Spilka

For technical communication educators, a fundamental consideration is to what extent the skills and information students learn in the classroom are applied in a workplace environment. While this issue has been studied, it has not been examined from the perspectives of students taking an online writing course or of instructors teaching that kind of course. To investigate this issue, I conducted a two-part, qualitative study consisting of surveys and follow-up interviews that explored instructor and student (former and current) perceptions regarding learning transfer from online business and technical writing courses to postgraduate jobs or careers.

Learning transfer theory was used as a theoretical base to guide my investigation and interpret the results. Study findings show that many students in an online technical communication course learn the meta-level rhetorical skills needed for high road transfer to take place. Subjects also perceive inherent features in online technical communication courses that prepare them well for workplace writing. Students perceive

strengths of online courses as including flexibility and the high degree of practical real world value that they offer. They also perceive shortcomings of these classes as including lack of community and lack of immediate feedback and guidance.

This study resulted in a list of best practices for facilitating learning transfer from the online writing courses to the workplace, along with suggestions for future research.

Dedicated to

the memory of my loving parents

Shelly and Mel Schnoll

TABLE OF CONTENTS

LIST OF TABLES

ACKNOWLEDGEMENTS

I would like to thank to my dissertation committee members: Drs. Rachel Spilka, Bill Keith, Dave Clark, and Bill Van Pelt. Their helping hands have provided me with academic guidance and professional opportunities that have impacted my life enormously. I feel very lucky to have encountered such a wonderful group of people.

I want to especially thank my dissertation advisor, Dr. Rachel Spilka, for her unwavering support throughout my degree journey. From my initial contact with the department to the completion of this project, Rachel has been ever-present to help me along and encourage me through some difficult life events. It's not an exaggeration to say that I couldn't have done this without her.

My deepest love and gratitude to my beautiful wife and companion, Monica Reynés, for her endless patience and continual love and support. Finally, to my adorable daughter Hannah, who fills my heart daily with all the love, inspiration, and motivation I could ever need.

Chapter 1- Background and Rationale for Study

Introduction

There is no denying the ever-growing importance of good writing skills in the professional workplace. Whether it is day-to-day communication in the form of emails, memos, or letters or more involved tasks such as formal reports or technical documents, being able to write effectively for a given context can mean the difference between success and failure in the job. As writing increases in importance in the workplace, we as scholars and educators need to understand how best to prepare students for this challenge.

Consider the following two scenarios: In scenario A, Michael, a recent graduate of a four-year undergraduate business degree program, begins his first days on the job at a well-known financial firm. He does his best to acclimate himself to the position, as there is so much to learn about the job and his new role in the company. Shortly thereafter, his boss assigns him his first meaningful task, which involves analyzing the performance of an investment and writing up a short report to communicate his findings. Michael is relieved; he recalls how well he did in his online report writing class that he took during his senior year and feels confident he can again produce a successful report, this time for a real-life situation. Luckily, he saved his material from the class and kept the textbook, so he immediately goes back and reviews the information presented there. When it comes time to write the report, he faithfully reproduces the model shown in

the text and discussed in the class material. With great pride and confidence, Michael submits his completed report to his supervisor. Imagine his surprise, then, when he is told that what he had submitted is unacceptable and would need to be completely rewritten to conform to the industry and company standards for investment reports. Michael's boss is disappointed with his effort, and Michael is left wondering where he had gone wrong—after all, he had relied on what he had learned in his university course. How could that information be incorrect?

Now consider Scenario B. Allison, also a recent graduate of the same program, is starting a similar job to Michael's, but for a different firm. She faces the same acclimation period and is tasked with a similar writing project shortly after starting the job. While she also took the same online report writing class in her senior year, she had a different instructor. That instructor used the same textbook as a basis for the course, but throughout the class an emphasis was placed on the need for understanding the particular writing situation and context, and the fact that the genres presented in the class were not fixed or static models. The instructor taught that aspiring writers need to research the discourse community that they need or want to join in order to fully understand the best way of approaching the writing task at hand. With this knowledge, Allison takes a different approach than Michael. Before starting a draft of the report, she first does an internet search to find some sample investment reports that were posted online, noting some features that were common to all of them. Next, she has a

conversation with a co-worker who has many years of experience at the company and has written numerous investment reports. This co-worker gives Allison many tips and guidelines for how to approach the report, and also directs her to the company archives, where there are years of previous reports on file. Allison spends several hours going over these reports to better understand exactly how they are typically structured and written, taking note of similarities and differences to the genres she had previously studied. As a result of all of this research activity, she is able to produce a successful report that meets the needs of the writing context. Allison has successfully utilized what she learned in the online classroom and applied it to the workplace environment.

Michael and Allison brought two different models of learning to their first postgraduate jobs, with the equally different outcomes indicating that learning transfer does not happen automatically. Over the past several decades, theories of learning transfer have been researched and debated by scholars in the field of technical communication, with the mixed results showing how complex this issue is. To what extent and under what conditions is information learned in university courses later successfully utilized in a professional workplace setting? This is an important question for understanding the mechanisms and conditions for learning transfer, and it also has practical implications for educators in the field. What has not yet been studied, however, is how well the skills and knowledge taught in an *online* technical communication course transfer to the workplace setting. I present here the results of

3

exploratory research I have completed aimed at investigating instructor and student perceptions based on their online teaching or learning of technical communication.

This chapter will begin by discussing the exigencies for a preliminary study of online learning transfer, focusing on how a technical communication course[1] in an online setting in particular merits its own examination. It will also look at some of the previous literature on technical communication learning transfer. Finally, the chapter will conclude with a discussion of the theoretical perspective used for this current study.

Why Research Online Learning Transfer?

Surprisingly, no research specifically addresses learning transfer in an online technical communication course, a gap this study seeks to address. Clearly, online education is a high-growth area. Allen and Seaman (2013) conducted a 10 year study and found that 62.4% of the 2800 colleges and universities surveyed offered a fully online degree, while a study by the National Center for Education Statistics reported 12.2 million enrollments in distance education courses in the 2006-2007 academic year (Parsad, Lewis, & Tice, 2007). With the rising cost of a college education and a continued increase in non-traditional student enrollment, it is likely that online education will continue to grow in popularity as we move forward. However, although the sheer prevalence of online courses demands our attention, there are even more critical

---

[1] Throughout this dissertation, the term "technical communication course" will refer to both business and technical writing courses.

theoretical and pedagogical exigencies for researching learning transfer in an online

technical communication course.

Primarily, this research will help build knowledge about ways in which online

courses can be an effective medium for teaching the rhetorical, social, and cognitive

skills needed in technical communication. A well-established idea in the field is that

there isn't a clear, one-to-one transfer of skills from a technical communication course

to the workplace. As illustrated in Michael and Allison's hypothetical stories above,

there aren't clear formulae that students learn and apply in a given setting the way, say,

engineering students might follow. Rather, students need to learn how to apply what

they learn to a given context. Smart and Brown (2002) demonstrated how internship

students entering the workplace for the first time transformed what they learned about

collaborative writing and rhetorical analysis to meet the demands of a new writing

situation. They had to relearn skills in a new environment, but they did so quickly

because they were able to use general strategies acquired in the classroom rather than

particular, discrete pieces of information. Wardle's 2007 pilot study also concluded that

while there may not be a direct transfer of skills from a writing course, "meta-awareness

about writing, language, and rhetorical strategies may be the most important ability our

courses can cultivate" (p. 82). So, for example, students don't learn the one proper,

formulaic way to write a report in order to reproduce it precisely in the workplace.

Rather, they learn that writing is a rhetorical and social activity that is situated in

particular contexts, and that they will need to craft their writing for whatever writing

situation awaits them beyond the academy. As a result, instructors need to help their

students develop skills like critical thinking, problem solving, rhetorical analysis

(audience, purpose, and context), collaboration, and project management. A hypothesis

of this study is that these meta-level rhetorical skills are being learned not only in

traditional face-to-face classrooms, but in online courses as well. Confirming this

hypothesis can give the field more knowledge about the effectiveness of online

technical communication classes and add to their legitimacy as they continue to grow in

popularity.

Another exigence and additional hypothesis of this study is that, in terms of

pedagogy, online technical communication courses have certain inherent features that

highlight important differences from face-to-face classes, and many of these differences

are perceived by students and instructors as being more beneficial in preparing students

for future workplace writing. First, communicating and collaborating over time and

distance by use of technology is increasingly how the professional technical

communicator typically works, and this model is the essence of the online course. The

virtual environment of the online course itself reflects that of virtual teams seen in the

workplace today. In a given online course, it is not unusual to find students scattered

across the globe, representing a multitude of different countries and native languages,

all united in the common purpose of participating in a group learning experience. This

reflects the growing reality of today's workplace: As we move further ahead into the global economy, virtual teams have become commonplace in the field, as organizations "have increasingly had to change the way they work in order to address critical resource, personnel, and logistical issues" (Nystrom & Asproth, 2013, p. 64). In addition, the online course allows students to gain experience by using social-mediated technologies, structured learning environments, and multimedia presentation tools (Baehr, 2012). This study seeks to explore ways in which the online format can prepare the technical communication student for the workplace with a special emphasis on ways it might even surpass traditional, face-to-face classes in this regard.

In addition, digital technologies have become the central tools of technical communication work, and online students can use online collaborative tools daily. Behles (2013) demonstrated that 85% of practitioners in the field use online collaborative writing tools such as wikis, Google Docs, and Microsoft SharePoint, with half of them using these tools daily. It might even be possible that no learning modality is better suited to using these tools than online learning. One possible reason is that the online learning management systems (LMSs) themselves function as collaborative tools, and students have used them "for document management, collaboration, and communication without any external prompting" (p. 38). Apart from the learning management system, however, students are very often required to collaborate through the use of a wiki or by using an application such as Google Docs. Although the setting of

a course is distinct from the global workplace, in both situations participants need to collaborate at a distance on a piece of writing or a document design, and very often will utilize the same tools.

Finally, online technical communication students have the opportunity to enhance their overall digital literacy, developing skills that have become critical in today's technical communication workplace. Cargile Cook (2002) identified six "layered literacies" that are essential to technical communicators, including "technological literacy." Jablonski and Nagelhout (2010) agree, stating that "students who are expected to write in technical and professional settings need to develop multiple literacies." These include "visual, information, and computer" (p. 172). By participating in a technical communication course entirely online, students are likely developing these important literacies to a greater extent than they would in a traditional face-to-face classroom. This benefit should not be taken lightly; there is a definite learning curve when it comes to gaining competence in using these technologies. Students participating in their first online technical communication class will very often go through a period of adaptation to the virtual environment. Many will have never participated in a collaborative wiki, for example, and will need several weeks to feel comfortable and adept at utilizing its various features. This study hopes to confirm that with these important tools in their tool kits, these students will be well-prepared to enter the workplace.

Another key exigence for studying online learning transfer is the critical need to identify and describe potential negative learning outcomes of online instruction. Overwhelmingly, online learning has been seen as a positive, with minimal attention to its negative features and effect. However, some critics of the online medium have concluded that the lack of social presence and face-to-face interaction with classmates and instructor results in a learning environment that might negatively impact the learning experience. Xu and Jaggars (2013) found that some student populations at the community college level will do poorer in an online course and be less likely to complete it. Richardson and Swan (2003) concluded that students' perceptions of social presence and interaction in an online course will negatively impact their perception of learning and satisfaction. It's worth keeping in mind that online learning is still a relatively new phenomenon that is still in the process of growing and developing, so we do need to keep an eye out for potential drawbacks and areas that might need to be addressed. This is another strong exigence for investigating both the pros and cons of online classes, and there is a strong need to study the online technical communication course as distinct from its traditional counterpart.

Previous Research

Technical communication researchers have begun to study the topic of learning transfer in a traditional face-to-face classroom. Brent (2011) summarizes several

decades of research by identifying three overlapping stages in approaches to learning

transfer— what he calls "Closing the Gap, Glass Half Empty, and Glass Half Full." These

stages are a useful way of examining this large body of literature and will be used in this

section as the method of organization. It is important to note, however, that these

categories should not be taken as rigid and well-defined boundaries; rather, they are

just a rough framework, and many studies do not fall neatly in one or another category,

while others could fit in more than one.

The earliest stage identified by Brent ("Closing the Gap") attempted to identify

the skills needed in the workplace, with the idea that if we teach these skills in the

classroom, students will be able to transfer them to the workplace, thus closing the gap

between these two different settings. This was an advance from simply presenting

students with models of typical documents that they might encounter in the

workplace—specific letters, memos, and reports.

Halpern (1981) spent two years compiling survey results from 125 writers in

business, industry, and government, asking them what were the most useful knowledge

they learned in their on-the-job training. She concluded that there are "underlying

strategies in business writing" (p. 39) that need to be taught for students to be

successful in the workplace. In 1984, Green and Nolan published their study with the

telling title of: *A systematic analysis of the technical communicator's job: A guide for

educators*. In it, they attempted to do a thorough analysis of exactly what technical

communicators do on a day-to-day basis, with the idea that we as educators can best

prepare students by arming ourselves with this information and structuring our classes

to address each of the skill areas they identified. In addressing the third major skill area,

"researching, writing, and editing," they concluded that "educators should be sure that

their programs prepare their students to use writing and editing skills proficiently" (p.

10). In a similar approach, Pinelli, Barclay, Keene, Kennedy, and Hecht (1994) conducted

a massive survey of aerospace engineers and scientists (n= 2,355) to find out what

technical communication behaviors are needed on the job. They compared these results

with the technical communication abilities, skills, and competencies of aerospace

engineering students in order to find out where the deficiencies that needed to be

resolved for these students to eventually integrate themselves successfully into that

professional community. In looking at the field of engineering, Reeve (2004) also called

on educators to close the gap between what engineering students are learning and

what is later required in the workplace. She cited a number of studies that showed how

important communication skills are in the engineering workplace, "yet many

engineering education programs include minimal, if any, training in communication

skills" (p. 453). Finally, Moore (1997) makes the case that educators need to take an

"instrumental" rather than "rhetorical" approach to teaching technical communication,

as students will ultimately need more of a task-oriented approach that will best prepare

them for communication such as instructions and online documentation. He sees

rhetoric as abstract in nature and not focused on completing a particular task; therefore, the academy should focus on narrowing the gap between a theoretical approach to learning writing and what students will actually need in the workplace. While this seems to be a sensible approach, one limitation is that there are so many different tasks and settings in the workplace, it makes it impossible to prepare students adequately for all of them.

In addition, there is the difficult issue of whether the classroom and workplace have enough in common for learning to transfer. The second large stage of research, coined "Glass Half Empty" by Brent (2011), calls into question whether it is even possible at all to successfully teach for the workplace setting. Researchers in the late 1980s and 1990s used rhetorical genre studies, activity theory, and situated learning to show that even if we do identify the skills needed, the fact that these two activity systems are so different means that learning transfer is difficult at best and impossible at worst.

Although these three theories are closely related and often discussed together, they each have a slightly different perspective and approach in explaining why it is difficult to transfer what is learned in the classroom to the workplace. It was the work of Carolyn Miller that first clearly articulated the idea that written genres should not be seen independently from the context in which they arise. In her view, genres are not static documents that are unchanging; rather, they are fluid forms that respond to the

exigencies of the particular situation in which they are being utilized. Miller points out

that "genre refers to a conventional category of discourse based in large-scale

typification of rhetorical action; as action, it acquires meaning from situation and from

the social context in which that situation arose" (1984, p. 163). So, while we do see

certain repeating written forms in technical communication, it would be a mistake to

believe that there is a one-size-fits-all document for any given genre that we can simply

teach students to use in future workplace environments.

Activity theory dates back to the work of Vygotsky in the 1920's (Spinuzzi, 1996).

The basic idea is that within a given organization or "activity network" an object is

transformed by subjects using tools in order to achieve a particular outcome (a motive).

Each of these components will be distinct, depending on each particular activity

network and the different motives that they have. So, for example, in the activity

network of an architectural firm, all of the employees and associates—from the lead

architect to the document delivery personnel—are the subjects, the tools are the office

equipment, written words, design software, etc., the objects are the architectural

designs that are produced, and the outcome or motive is profit, prestige for the firm,

etc. In this context, the written documents that are used as tools (such as memos,

reports, and letters) serve to transform and influence the architectural designs (the

object), which in turn will ultimately affect the outcome (profit and prestige). This model

is particularly useful in thinking about genres, as it clearly shows how the context of a

particular situation will influence the written forms needed. Spinuzzi also notes how activity theory can be used to underscore the difficulty in teaching workplace genres as "researchers have long recognized that classroom activity networks tend to have object(ive)s that are quite different from those of workplace ANs" (1996, p. 342). In a classroom, while many of the tools may be the same, the objects and motives will be very different. In the workplace, the writing serves the purposes of completing the task at hand and achieving a work objective, whether that may be to inform, persuade, build relationships, etc. or a combination of these. A report is written in the workplace because a report is needed for that given rhetorical situation. Conversely, in the classroom the primary objectives are to successfully complete the assignment, learn the material, and obtain a high grade. Freedman and Adam (1996) call this type of learning in the classroom "facilitated performance" to capture the idea that the main goal of the activity is student learning, as opposed to the completion of the activity, which is what the workplace is concerned with.

Finally, the third of these closely related theories, situated learning, is connected to the seminal work of Lave and Wegner (1991), and shows how learning is essentially a social endeavor that is shaped by various forces of the situational environment in which it takes place. In this view, learning takes place when the individual enters a community of practice and participates in the social exchange of information in order to achieve the particular goals of the organization. The inherent difficulty, then, is that the classroom

will present different situations and contexts than those found in the workplace, as there are different goals and communities. Many researchers have echoed this notion. Brown, Collins, and Duguid (1989) point out the difference often seen in education between knowing and doing—with knowing being abstract and decontextualized and doing being concrete and situated—and they argue that we actually learn by doing and participating in the authentic activities of a given culture (as cited in Carter, Ferzli, & Wiebe, 2007). What this given culture may be, however, is subject to variation and change. As Berkenkotter and Huckin (1995) note, genres are "always sites of contention between stability and change. They are inherently dynamic, constantly (if gradually) changing over time in response to the sociocognitive needs of individual users" (p. 288).

Given that genres are subject to change based on the context in which they are being used, teaching fixed template genres in the technical communication classroom can be problematic. Students will be writing for a variety of different professions that each has its own standards and conventions, and this goes beyond simply superficial differences in formatting. Russell (2007) points out that learning to write in a discipline is a "socializing process… of taking on the identity, set of values, and, often, political stances of those who write in a particular discipline" (p. 258). And, even within disciplines there is still the need to understand the situational context. Spilka (1995), for example, shows that even writing among government employees of the same department is highly context-specific and that there is a need to understand the

rhetorical situation in order to produce successful documents. In addition, another inherent difference with the classroom environment is that the audience is almost always the instructor. The result is what Spinuzzi (1996) calls "pseudotransactional writing," which is concerned primarily with meeting the expectations of the instructor rather than fulfilling the needs of the task at hand. He believes that while writing activities in the classroom can approximate a workplace task, ultimately the activity of the assignment itself and the expectations of the instructor will "inevitably affect the forms of their utterances" (p. 343). As a result, because of the situated nature of learning and the fact that no matter how well-conceived the activity may be it will never be able to account for all of the variation of different social contexts, instructors are faced with a challenging task in helping to prepare students for workplace writing.

While all of this may seem especially bleak for educators tasked with teaching online technical communication, more recent studies have been more encouraging. In what Brent (2011) terms the "Glass Half Full" stage, these studies have tried to move beyond thinking of learning transfer as something that happens in a neat, one-to-one manner, and instead look to see how knowledge that is learned in the classroom can be transformed and used as a platform for new postgraduate learning in the workplace.

Recently, researchers have approached a broader view of transfer. Artemeva, Logie, and St-Martin (1999) equipped students with skills that would be useful in the engineering workplace. They did this by integrating projects that came directly from

engineering courses that students were taking at the same time. Although they

recognize that the academy is still a different discourse community than the workplace,

they believe that by making the work more relevant and inhabiting the academic

engineering discourse community, they are giving students strategies that can later be

used in the workplace. Smart and Brown (2002) observed that students at the end of

the writing program who were entering the workplace as interns were able to adapt to

the new environment quite easily. They conclude that rather than students using

specific genres or techniques, what they were really doing was accurately evaluating the

rhetorical situation and adapting their writing appropriately to it. They were also using

the skill of writing collaboratively, something they had learned in the classroom. They

note that "the interns, having previously developed the expert writing practices needed

to perform well in academic activity systems, were able to resituate and extend—or

reinvent—these practices in their new worksites in simultaneous acts of performance

and learning" (p. 122). Echoing the work of Smart and Brown, Schneider and Andre

(2005) found that students benefitted from classroom assignments that had a

substantial amount of collaboration, and also from instruction that gives them "a solid

grounding in the procedural skills of research and analysis integral to certain genres" (p.

215).

Brady (2007) in her 6 year longitudinal study of eight writers concluded that

these students who moved from the technical classroom to the workplace were able to

take with them the important step of the composing process—invention—and utilize it

in the context of the workplace, where it continued to grow and develop. A summary of

the subjects' reflections was that "problem solving must be adaptable, flexible, and

responsive to the needs of the writers who use it to guide their composing as they

investigate their audiences, the contexts in which their audiences exist, and their

intended purposes" (p. 51). Thus Brady demonstrates that transfer can take place to

some degree, though it has to do with transforming skills learned in the classroom for

use in the distinct social context of the workplace. Finally, in a particularly relevant

article for the current study, Russell and Fisher (2009) discuss how a workplace

simulation using the online Web 2.0 tools of a virtual learning environment can produce

a simulation much closer to an actual workplace environment than a traditional

classroom. The result is that:

> The distinctions between domains that made 'transfer of learning' so hard to
>
> identify previously may well be broken down by creating virtual environments
>
> that mimic, generically, other virtual environments. And the processes of learning
>
> a genre become processes of learning a genre system or ecology. (p. 188)

So, while all of these researchers in the "Glass Half Full" category see learning transfer

as something that is achievable to one degree or another, there lacks a unifying and

underlying theoretical base to these approaches. For this, we turn to learning transfer

theory, a well-established approach that until now has been underused in the field of

technical communication.

Theoretical Foundation for this Study

To help frame and understand the value of this study, I will now discuss how my

research relies on learning transfer theory for its theoretical base. Although this is a

well-developed and rich theoretical approach that has been in use for nearly a century,

it has not been utilized extensively in technical communication. Brent (2011) suggests

that learning transfer theory originally had its roots in the cognitivist traditional of

educational psychology, thus not appealing to writing researchers, who tend to take a

more social view of writing. However, learning transfer theory has long since adopted a

more social view of transfer, and many writing researchers using this approach draw

directly upon activity theory and situated learning to help explain the process of transfer

(Wardle, 2009; Beaufort, 2007; Smit, 2004).

According to Tuomi-Grohn and Engestrom (2003), transfer theory has its roots in

the work of Thorndyck in the early 20th century. Thorndyck (1924) proposed a theory

called "identical elements," positing that learning will transfer when the two situations

share identical elements in common. This was an advance from the earlier pedagogical

view from the field of psychology, which held that study of the various disciplines such

as math and literature would strengthen the learner's mental powers and agility so that

learning would take place in subsequent situations—an idea with little empirical support. In Thorndyck's view, in order to maximize these identical elements, new learning situations should be as small of an advance as possible from the previous ones. However, it was Judd (1939) who challenged this idea, arguing instead that learning transfer is facilitated when learners have a good understanding of the general principles underlying the skills needed for transfer. He set out to prove this theory with an experiment that showed subjects performed better on a sensorimotor task when they were taught the underlying principles of physics relevant to the task, thus showing that this understanding made learning easier in the subsequent task. Whether this experiment can be generalized to writing tasks transferring from the classroom to the workplace is questionable, but Judd's work laid the foundation for many studies that followed.

Moving away from this cognitivist view of learning transfer, the primary lenses through which technical communication researchers have examined the issue of transfer are a combination of activity theory, rhetorical genre studies, and situated learning. Some recent researchers have moved beyond looking for a one-to-one transfer of skills and knowledge, however, and have tried to find evidence of how knowledge and skills may have been *transformed* rather than directly transferred (Wardle, 2007; Beach, 2003). This is where learning transfer theory may help frame this current investigation of the perception of learning transfer, as there are various approaches that

take a broader view of the concept. Perkins and Salomon (1988) have made a large contribution to the field, and they begin by making a distinction between "near" and "far" transfer. Near transfer occurs when a skill learned in one context is carried over and used in a different but similar context, whereas far transfer requires using knowledge learned in one context in another context that is much further removed from the original. They also identify the key mechanisms of transfer—the "psychological paths by which transfer occurs" (1992, p. 6-7)—that they defined as "high road" and "low road" transfer. Low road transfer occurs in near situations where the learner can rely on automated responses of well-practiced routines. They give as one example of transferring learning to drive a car with later learning to drive a truck. The skills learned in the car, such as steering, using the brake and gas pedals, and so on, will be a low road transfer when applied to a truck. On the other hand, high road transfer "depends on deliberate mindful abstraction of skill or knowledge from one context for application in another" (1988, p. 25). An example would be a chess player who might abstract the principle of controlling the center of the board to a far reaching field of business. "How would controlling the center be manifested in a business context?" the player might ask himself. This would be an example of high road transfer, and, more specifically, *forward-reaching* high road transfer. Perkins and Salomon (1988) also distinguish between whether the knowledge is abstracted for future use (forward-reaching) or previous knowledge is applied to a current task (backward-reaching). It's important to note,

21

though, that for high road transfer to take place, the learner must actively and mindfully abstract and generalize the learned concepts for use in a new and further-reaching context. To help facilitate this, *bridging* is used as "instruction [that] encourages the making of abstractions, searches for possible connections, mindfulness, and metacognition" that will allow learners to apply their knowledge in future contexts (1992).

Researchers like Rounsaville suggest that we have now moved into a new phase of research that goes beyond the "application metaphor," meaning there isn't a neat and easily measurable transfer of knowledge from one situation to another. Rather, she believes that we need to look into "the spaces, processes, and mechanisms that make up moments of negotiation and foreground the interplay of context and the individual learner as a dynamic site of knowledge construction rather than a one-sided attempt at knowledge application" (2012). Earlier work by Hatano and Greeno (1999) came to a similar conclusion by arguing that we shouldn't be looking for an exact replication of skills from one context to another. Instead, they believe it's a matter of "productivity," which "refers to the extent to which learning in some activity has effects in subsequent activities of different kinds" (p. 647). Along these same lines, Wardle (2007) believes that it is impossible to teach specific genres; instead, we should focus on a meta-awareness about writing, language, and rhetorical strategies. She takes up the notion of *generalization*, first put forward by Beach (2003), which is defined as "our ability to use

prior knowledge in new ways and in new situations" (Wardle, 2007, p. 68). Beach's

concept of generalization is worth examining closely, as it represents this new way of

approaching learning transfer—as an interplay between the individual and the social

context. He presents five points about generalization, which are that generalization: 1)

"involves multiple interrelated processes rather than a single procedure"; 2) "is never

separated or decontextualized from social organization"; 3) "involves change in both

individuals and social organization; 4) "is best understood as a set of processes that

relate changing organizations and individuals; and 5) "consists of the construction and

associations among social organizations" (p. 40-41). Seen in this way, the transfer of

learning is more complex than simply applying a discrete piece of information learned in

the classroom directly and neatly to a workplace situation. As the research has shown,

we should look to develop students' meta-awareness of writing and help to develop

their rhetorical knowledge to cross the boundary between the school and work activity

systems. These theoretical approaches provide a promising body of work with which to

examine the data in this study. Recalling the scenarios at the start of this chapter, we

can see that while Michael unsuccessfully attempted to transfer a discrete classroom

learning experience, Allison was able to use her rhetorical knowledge and meta-

awareness of writing to tackle a novel writing task successfully. By analyzing the

perceptions of instructors and students, this study aims to help advance our

understanding of the ways in which online technical communication courses succeed or

fail in preparing students for workplace writing.

Remaining Chapters

The remainder of this dissertation will be divided into three additional chapters: Chapter

2, *Methodology*, will present my research questions and discuss the design of this

qualitative study. It will include a rationale for selecting my particular subjects, my

methods and procedures for collecting data, and a discussion of the qualitative research

approach. Chapter 3, *Survey and Interview Findings*, will present the data gleaned from

the surveys and interviews. The evidence will demonstrate that both students and

instructors believe that online learning allows for a transfer of the rhetorical, social, and

cognitive knowledge necessary for successful workplace writing. Finally, this study will

conclude with Chapter 4, *Implications and Future Research*, which will discuss and

interpret the findings and contribution to learning transfer theory in the context of

business and technical communication pedagogy. It will also discuss the limitations of

the study. The chapter will conclude by suggesting directions for future research on the

topic.

Chapter 2- Study Design and Methodology

This chapter will discuss the design and methodology of my study. I will begin by presenting my research question and hypotheses, and then move to a discussion of the qualitative approach that I took. After that, I will explain how participants were chosen, discuss the design of the study, and talk about the methods that I employed to gather my data.

Research Question and Hypotheses of Study

In this chapter, I discuss a qualitative study that I conducted between June 2016 and February 2017 on the attitudes and perceptions of current students, former students, and instructors regarding the efficacy of online technical communication classes. The goal of the project is to add knowledge to the field's understanding of learning transfer from online technical communication courses to work contexts. Evaluating the perceptions of the various participants will lead to a more developed understanding of the strengths and limitations of these online courses in facilitating this learning transfer to the workplace. To accomplish this goal, the study sought to answer the following research question:

> *What are instructor and student (former and current) perceptions regarding the*
>
> *strengths and shortcomings of online technical communication instruction in*
>
> *preparing new writers to function effectively in work contexts?*

In addition, there are two hypotheses for the study:

Hypothesis #1: *Meta-level rhetorical skills like critical thinking, problem solving, rhetorical analysis, collaboration, and project management are being learned not only in traditional face-to-face classrooms, but in online technical communications courses as well.*

Hypothesis #2: *Online technical communication courses have certain inherent features that students and instructors perceive as being more beneficial than those of face-to-face classes in preparing students for future workplace writing.*

Researching Perceptions

The *perception* of learning transfer was chosen as the object of the study for two main reasons: ease of access and a potentially richer source of information. From a practical point of view, there was much greater access to students' and instructors' thoughts and opinions regarding the success of an online course in preparing students for workplace writing than there was concrete evidence proving that this transfer had or had not taken place. In the early stages of this study, an attempt to gather this concrete evidence was undertaken. The original plan for the study was to recruit participants from an online technical communication course who would be graduating shortly after

26

the class and who already had a writing-oriented job waiting for them upon completion

of their degree. The idea was to follow-up with them at their place of employment,

interviewing their supervisors and analyzing their workplace writing artifacts. These

artifacts would have been compared with their student writing samples as a way of

looking for more empirical evidence of learning transfer. Unfortunately, however, it

proved impossible to recruit participants who met these rather stringent criteria. As a

result, the current direction of studying perceptions was chosen as an alternative.

In addition, however, examining perceptions closely allowed me to obtain a

developed understanding of the situation. In order to examine the subjective topic of

the strengths and shortcomings of on online technical communication course in

facilitating learning transfer, it is useful to study the perceptions of the actual people

involved in the teaching and learning process. By closely examining participants'

perceptions of these skills and concepts in a qualitative approach described below, I was

able to get a nuanced and rich perspective into this complex life process.

Exploratory, Qualitative Approach

In an attempt to answer this question, I decided to use an exploratory, qualitative

study approach, which allows for a holistic and open-ended approach to investigating

this complex topic of revealing perceptions of learning transfer across academic and

work contexts. As Yin (2009) states, a qualitative study "allows investigators to retain

the holistic and meaningful characteristics of real-life events—such as individual life cycles, small group behavior, organizational and managerial processes, neighborhood change, school performance, international relations, and the maturation of industries" (p. 4). The phenomena under examination here fit this description, and because my method of data collection is relying solely on the thoughts and opinions of subjects— both through survey data and oral interviews—a qualitative approach that accounts for subjects' ideas and experiences is most appropriate. In addition, the "how" and "why" questions that are characteristic of qualitative studies are a prominent feature of the data collection questions that I asked the study participants.

Sullivan and Spilka (1992) argue that a qualitative approach in the field of technical communication "should focus on discovery, on researching a problem, a product, or an issue in context, and on presenting the explanations developed in descriptively rich detail" (p. 596). Because no research has been conducted that looks at perceptions of learning transfer in an online technical writing course, an exploratory, qualitative study is a sensible choice to aid in this process of discovery. This approach has allowed me to go deeper in my understanding of the situation by exploring how participants feel about the effectiveness of online technical communication classes in preparing students for workplace writing. A qualitative approach also enabled me to develop a rich and nuanced understanding of thoughts and perceptions, something that would not be possible using a quantitative design.

Study Participants

In order to gather data regarding the thoughts and perceptions of the effectiveness of online technical communication courses, I recruited participants who were associated with a large, urban Midwestern university, which was selected because of the degree of access I had to subjects. Three groups of participants were created: Group A-- current online business writing students (n=30); Group B-- alumni of a university writing program who have taken at least one writing course online (n=6); and Group C-- university instructors who have experience teaching technical communication classes online (n=10). The different groups of participants allowed me to gain a wide spectrum of perspectives from individuals at various stages of learning and knowledge: Current students are in the pre-workplace stage and generally have yet to actually put their learning to use and have only experienced academic writing. Former students have recently entered the workplace and thus have some experience in a "real-world" writing context. However, they are not so far-removed from their studies that they cannot recall their learning experiences. And, finally, instructors have the greatest amount of experience, provide the means of knowledge transmission, and can freely move between the worlds of workplace and academic writing.

The 30 Group A participants were drawn from two online business writing classes taught during a four-week summer session of 2016. The two classes were taught by different instructors (one by myself), and extra credit points were awarded for those

who participated. The 30 participants represented approximately 80% of the total number of students in these classes and provided me with a robust amount of data. The six Group B participants had graduated from the same university with either a graduate certificate in Professional and Technical Writing or a degree in English (with a specialization in Professional and Technical Writing) and were contacted by email. Two of these subjects graduated with a bachelor's degree, two earned a master's degree, and two graduated from the certificate program. It was more difficult to recruit these subjects; of the 24 alumni contacted, only six agreed to participate. While a larger sample size for this group would have been preferred, six provided enough data from which to draw conclusions. The ten Group C participants were also affiliated with the university and currently teaching there, with the exception of one professor emeritus of the university who, while still affiliated, had taught business writing there for over three decades. These participants were also contacted by email, and the ten subjects provided a large enough sample to represent this population.

Study Design

This goal of my data collection and the use of various subject groups was to achieve methodological triangulation, allowing me to study the topic from different perspectives and using different means. Data was collected in two stages. In stage one, conducted in August of 2016, all participants completed a survey that was designed for

their particular group. Stage two, conducted in February of 2017, was a series of follow-up interviews with a small number of participants from two of the three groups. The survey gave me an overview of the situation and allowed participants to broadly express their views, while the follow-up interview allowed subjects to expand on their thoughts quite a bit in order to provide a more complex and detailed picture of the situation. Taken together, the survey and interview combination provided me with a clear window into the minds of instructors and students regarding their thoughts on the effectiveness of online technical communication classes. Relying on either of those methods alone would not have been sufficient to draw any solid conclusions, but together they do provide a rich amount of data to analyze.

Study Method

The method of data collection for the study was divided into two stages: Stage 1 consisted of surveys designed for each particular group, while Stage 2 consisted of interviews with participants from Groups B and C.

Stage 1: Surveys

Stage 1 of my data collection involved administering surveys by email to all three groups. For the current student group (Group A), the survey shown in Table 1 below was given. The first five questions gathered demographic information regarding the subjects'

studies and experience with online learning. The next six questions elicited subjects'

thoughts about the writing process and workplace writing in particular. These questions

allowed me to assess their knowledge of rhetorical writing concepts such as audience,

purpose, and context. The final five questions asked about subjects' perceptions of the

usefulness of the current class and their thoughts on the effectiveness of the online

format. The concluding question allowed for any thoughts to be expressed that weren't

specifically addressed.

Survey Questions for Current Students

1. What academic year are you currently in? When will you graduate?
2. What is your major?
3. List all of the **face-to-face** English or writing courses you are taking or have taken at the college level (at UWM or elsewhere). Include course names rather than numbers.
4. List all of the **online** English or writing courses you are taking or have taken at the college level (at UWM or elsewhere). Include course names rather than numbers.
5. Apart from this class, how many online classes have you taken in total (any subjects)?
6. Have you ever had to do any writing for a job? If so, describe the writing tasks you had to complete.
7. Briefly describe your writing process. If you answered "yes" to the previous question, describe your writing process for documents written for the workplace. If you have no workplace writing experience, describe your general writing process.

8. What do you think are some important things to consider for producing successful workplace writing?
9. What are some of the different purposes of workplace writing? How will the document's purpose influence your approach to the writing, if at all?
10. Is it important to know about the person or people who will read workplace documents? Why or why not? How will that influence your approach to the writing, if at all?
11. How standardized are workplace documents, do you think? Meaning, if you learn how to write a business report in school or on the job, how similar will the formatting and approach be in a different workplace?
12. On a scale of 1 to 5 (5 being most helpful), how helpful do you think your experience in ENG 205 was in preparing you to complete workplace writing tasks? Please explain.
13. What are some of the benefits to taking ENG 205 online?
14. What are some of the drawbacks to taking ENG 205 online?
15. Do you think it might have been more helpful to take ENG 205 in person rather than online? How so?
16. Do you have any other thoughts regarding your experience in ENG 205 and writing in the workplace?

Table 1: Survey Questions for Current Students (Group A)

The Group B survey for the alumni group (Table 2 below) followed a similar

structure as the Group A survey to achieve some overlap in the questions in order to

detect possible cross-group patterns in responses, which would strengthen any

conclusions I might draw. As such, the first five questions again asked demographic

questions regarding subjects' area of study and the types of online classes they have

taken. As with the Group A survey, the next six questions focused on thoughts about the

writing process and rhetorical considerations, but they also included questions

specifically addressing workplace writing that they may have experience with. The final

five questions again had subjects evaluating the effectiveness of online writing courses.

The survey concluded with a request for a follow-up interview.

Survey Questions for Former Students

1. When did you graduate? From which university? What degree or certificate did you earn?
2. What was your major or specialization in your academic program at UWM?
3. How many face-to-face English or writing courses have you taken in the most recent degree or certificate you earned?
4. List all of the **online** English or writing courses you took at the college level (at UWM or elsewhere). Include course names rather than numbers.
5. How many online classes have you taken in total (in all subjects—not just English or writing)?
6. What is the most challenging job involving writing that you have ever held? Describe the challenges you faced in writing tasks for that job.
7. In a few sentences, discuss whether and how any online courses you completed at the university level gave you specific preparation for those challenges.
8. Describe your typical writing process for that job.
9. What do you think are some important things to consider for producing successful workplace writing?

10. What are some of the different purposes of workplace writing? How will the document's purpose influence your approach to the writing, if at all?
11. What are some important audiences of workplace audience? In one or two sentences, how do you consider the audience when writing documentation in work contexts?
12. On a scale of 1 to 5 (with 1 being "poor" and 5 being "excellent"), how would you evaluate how well your **online** courses in English or writing prepared you to write effectively in your postgraduate jobs? Please explain.
13. List three (or more) benefits to taking English or writing classes online.
14. List three (or more) drawbacks to taking English or writing classes online.
15. Do you think it might have been more helpful to take all or most of your English or writing classes in person rather than online? How so?
16. Do you have any other thoughts regarding your experience in English or writing classes and writing in the workplace?
17. Would you be willing to participate in a brief follow-up interview, at your convenience, either by phone or email? If yes, please provide your email and/or phone number.

Table 2: Survey Questions for Former Students (Group B)

Finally, the Group C survey for instructors shown in Table 3 below was a bit briefer than the previous two. There were only three initial demographic questions, followed by a single question that asked about their approach to teaching rhetorical concepts in a writing class. There are then four questions that focused on the instructors' opinions about the effectiveness and desirability of online classes. The survey concluded with the open-ended opportunity to discuss any further ideas

regarding the topic and asked if they would be willing to participate in a follow-up

interview. The Group C survey is shown in Table 3 below.

Survey Questions for Instructors

1. How many years have you been a writing instructor?
2. List all of the **face-to-face** English or writing courses you have taught at the college level (at UWM or elsewhere). Include course names rather than numbers.
3. List all of the **online** English or writing courses you have taught at the college level (at UWM or elsewhere). Include course names rather than numbers. (If you have never taught an online course, please write N/A and stop the survey—no further responses needed.)
4. Please summarize in a few sentences how you address rhetorical approaches to workplace writing in an online course. Please indicate which online course you are describing.
5. On a scale of 1 to 5 (1 being not at all helpful and 5 being very helpful), how helpful to you think online writing courses prepare students to complete future workplace writing tasks, when compared to face-to-face writing classes? Please explain.
6. List three benefits for students taking English or writing classes online.
7. List three drawbacks for students taking English or writing classes online.
8. On a scale of 1 to 5 (with 1 being "highly unlikely" and 5 being "highly likely"), how likely would it be that you would want to teach writing courses online? Please explain.
9. Do you have any other thoughts regarding your experience teaching online writing classes and writing in the workplace?

10. Would you be willing to participate in a brief follow-up interview, at your convenience, either by phone or email? If yes, please provide your email and/or phone number.

Table 3: Survey Questions for Instructors (Group C)

Stage 2: Interviews

Stage 2 of data collection was to conduct interviews to elicit responses that went into greater depth than the surveys. The questions also allowed for participants to freely express whatever thoughts they may have on the topic, in an attempt to gather as wide of a range of ideas as possible without restricting participants to tightly scripted questions. The conversations also gave me the opportunity to follow-up with questions in the moment so that I could further explore statements that participants had just made during the interview. After determining which participants from Groups B and C would be willing to participate in a follow-up telephone interview, three participants from each of these two groups were interviewed for 30-45 minutes by telephone, with the conversations recorded for accuracy. Only three alumni subjects were willing to participate in an interview, so I chose three instructors to achieve balance between the two groups. The structured interview questions were also tailored specifically to each group, and are shown in Tables 4 and 5 below.

Interview Questions for Former Students

1. When did you graduate? What degree or certificate did you earn?

2. What was your major or specialization in your academic program at UWM?

3. What online English or writing classes have you taken? Favorite 3 or 4 f2f writing classes?

4. What is your current job? What kinds of writing tasks does it require? Since graduating, have you had other jobs that required a significant amount of writing? What kind of writing tasks were those?

5. On a scale of 1-5 ("5" meaning "extremely well") how well did your English or writing classes prepare you for writing in the workplace? (*1-3* In what ways did your writing courses at UWM not succeed in preparing you for workplace writing? *4-5* In what ways did those writing courses prepare you well?)

6. Which specific writing skills or concepts did you learn at UWM that helped you the most in your postgraduate jobs? FOLLOW UP: Were any of those really helpful courses online? Which ones? What did they teach you?

7. When you did writing for the first time in your jobs after graduation, what writing skills were especially challenging or difficult for you? How might your online or face-to-face writing courses have done a better job in preparing you to handle those writing tasks?

8. How did you feel about online classes in general? Did you enjoy taking them?

9. What were some of the positives of learning online? Some of the negatives?

10. How do you think online education compares to face-to-face classes?

11. How well did you think online classes facilitated learning the professional writing skills or concepts that you needed for your postgraduate writing?

12. How would you compare your online professional writing classes with your face-to-face classes in terms of preparing you to handle the challenges of workplace writing projects?
13. What advice might you have for us at UWM for improving the effectiveness of online writing classes in preparing students for workplace writing?

Table 4: Interview Questions for Former Students (Group B)

Interview Questions for Instructors

1. How many years of experience do you have as a writing instructor?
2. How long have you taught writing courses online? How did you prepare to teach online – with formal or informal training or mentorship? With self-training? From publications/readings?
3. What online writing courses have you taught?
4. How do you think we can best prepare students for future workplace writing and why?
5. When teaching business or technical writing, what are some of the specific skills or concepts you want students to learn?
6. From your own teaching experiences, how well have your courses prepared students to write effectively in their first workplace jobs? What are they trained and ready to do on the first week of a new job?
7. How do you feel about online classes in general? Do you enjoy teaching them?
8. What are some of the positives of learning online? Some of the negatives?
9. When teaching an **online** course in business or technical writing, what are some specific skills or concepts you want your students to learn? Are they different from f2f classes?

10. How well do you think online classes facilitate learning the professional writing skills or concepts you just mentioned?
11. Have you ever deliberately designed or taught an online course in business or technical writing **differently** from the way you've designed or taught those same courses face-to-face? If so, why did you decide to do that and how did it work out? And what did you deliberately keep **the same** and why, and how did that work out?
12. From your own experience, how do you think teaching online compares to face-to-face teaching? In your own teaching, how do they compare and how do they differ, and why?
13. Based on your own experiences and observations, how well do you think your own online courses in business and technical writing have prepared your students to write effectively in their first workplace jobs?
14. What might be done to improve the effectiveness of online writing classes in preparing students for workplace writing?

Table 5: Interview Questions for Instructors (Group C)

Conclusion

This chapter discussed the research question and goal of the study; rationale for

studying perceptions; reasons for choosing an exploratory, qualitative study; selection

of study participants; overall approach to the study design; and methods of data

collection. I have shown why a qualitative approach was best suited to answer the

research question, and using both surveys and interviews with a wide array of

participants allowed me to draw conclusions about the perceived effectiveness of online

technical communication courses in preparing students for future workplace writing. In

the next chapter, I will present findings regarding participants' perceptions of online

learning and the transfer of writing skills to the workplace.

Chapter 3- Findings

This chapter will examine the results of the study findings in relation to this research question:

What are instructor and student (former and current) perceptions regarding the strengths and shortcomings of online technical communication instruction in preparing new writers to function effectively in work contexts?

The chapter will be divided into two main sections: *Specific Findings* will describe the results of the data in terms of answering specific parts of the research question. The second section, *General Conclusions*, will analyze some of the general findings that are relevant to the issue of online technical writing courses. In this chapter, I will be analyzing the practical and pedagogical implications of the findings; in Chapter 4, the study results will be analyzed from the vantage point of learning transfer theory and contributions to the field, as well as overall approaches to the pedagogy of online teaching.

Specific Findings

This section will examine the data by looking at what emerged as some of the perceived strengths and shortcomings of online technical communication courses.

Perceived Strengths of Online Technical Communication Courses

 Flexibility- One of the clearest perceived strengths that was mentioned

repeatedly across all populations in both the surveys and interviews is that online

courses offer students an enormous amount of flexibility during the class. Of the 30

survey participants in Group A-- current online business writing students—seventeen of

them mentioned some form of flexibility or convenience when answering the question

"What are some of the benefits to taking ENG 205 online?". For Group B (alumni of the

university), all six survey participants mentioned flexibility as a benefit to taking English

or writing classes online, and in the instructor group (Group C) five of the 10 surveys

mentioned flexibility or convenience as a benefit for students learning online. Finally, of

the six follow-up interviews conducted, five of the six participants mentioned

convenience or flexibility as a positive for students taking technical communication

courses online.

 These results are not terribly surprising; there is no doubt that online education

offers students a flexibility of time and place that cannot be matched in a traditional,

face-to-face environment. Studying online affords students the ability to set their own

schedule for when they wish to "attend" class. They are not constrained to coming to

the university two or three times per week for an in-class lecture, and for many, this

freedom of place can be an enormous benefit. Especially for students not living on

campus, having to get in a car and commute can mean a great deal of additional spent

time in traffic and the added cost of transportation. In addition, the university in the

current study has a perennial parking problem, and several of the survey participants

specifically mentioned the benefit of not having to find parking when taking classes

online.

Being freed from the constraint of where and when to attend class means

students have more flexibility to set their own schedules and work at their own pace.

While online technical communication classes will typically still have weekly deadlines,

subjects indicated that they felt a greater sense of freedom in managing their time

working on the course material. "Work at my own pace" was a phrase that was used

repeatedly by current students as a benefit to studying online, and the idea of having all

of the material in one place online where they can access it 24/7 contributed to the

feeling that online classes allowed for much greater flexibility.

This flexibility is particularly important for different populations of students. One

of the results of the explosion of online education in the early and mid-2000s is that the

opportunity to study and earn a degree is no longer constrained to the traditional

university student demographic of 18-22 year-olds who are single, unencumbered, and

often still dependent upon parents for support. Being required to attend lectures on

campus at specific times can make going to school nearly impossible for working adults

who may also have family obligations. With online classes, even the busiest of students

can arrange their schedules to allow for online coursework to be completed. As one

instructor noted in the interview:

> I think (online classes) can be really, really useful for students who are not able to
>
> do face-to-face classes for whatever reason. A lot of the students in my online
>
> classes are either in military training, so they can't come to class all the time, or
>
> they are single moms and balancing a job and they need to not have the
>
> commitment of having to go to a physical place to study. (Mary, Instructor)

This reflects my own teaching experience as well. I have over ten years of college and

university-level online teaching experience in a variety of schools: Public and private

four-year universities; community colleges; and for-profit colleges and universities. The

vast majority of my students are not the aforementioned 18-22 year old "typical"

college student; rather, they are people of all ages, of all backgrounds, and of all

circumstances:

- Working adults, very often with young children.

- Military personnel who are trying to earn a degree while still on duty.

- Older adults who need to retrain to stay marketable in a changing workplace.

For these students, the flexibility of online classes is more than a convenience—it is a

requirement. In addition to this population, however, I also teach the traditional college

student, and while online classes are not a necessity, I still hear regularly how much they

appreciate the convenience and flexibility they afford. So, it seems that no matter which

student population we are discussing, a strength of online technical communication courses is the flexibility they provide, and the data in this study has clearly supported this idea.

Real World Application- The other main strength of online technical communication classes that clearly emerged from the data is the high degree of practical, real world value that the courses offer. This real world application was mentioned throughout the data, and can be broken down into the following sub-categories: distance/global technical communication work and collaboration; practice using rhetorical skills; and the use of technologies. I will discuss each of these in turn.

➢ *Distance/global technical communication work*

In the modern work world of the 21st century, it is increasingly common for clients, coworkers, and other associates to work in various locations around the country and world. This is especially true for today's technical communicator. As stated in Chapter 1, one hypothesis of the study was that online classes most closely mirror the type of workplace environment students will likely face once they become technical writers. The data supports this hypothesis, as many participants indicated that they feel online technical communication classes best prepare them for this type of virtual work environment. One alumni survey respondent noted that online classes "offer authentic experiences that mirror real-world settings. A lot of business is now done remotely with

conference calls, so it is similar to online classes." This was echoed by another former

student during the interview, when they stated, "A lot of the interaction that you have

with people (in the workplace) is generally not face-to-face, so (online classes) could

potentially be seen as giving you a little bit more real world experience." (Lisa, Alumni)

The practice of working remotely with various groups and individuals naturally

leads to the often necessary activity of collaboration at a distance. Working as a team

with people who might never be in the same room together presents inherent

challenges for the technical communicator. It is essential that they learn to collaborate

at a distance through the primary medium of writing, however. While video

conferencing can be utilized, the nature of technical communication production means

that writing is often the utilized form of communication. Online courses are the ideal

medium in which to practice the skills of collaborating at a distance. While it can be

challenging to collaborate in an online class and difficulties can arise, students and

instructors recognize the value of these activities. One instructor put it this way during

their interview:

> Online collaboration is really good preparation for job situations. There are an
>
> awful lot of distributed teams out there in workplaces, and it will be very likely
>
> that you'll work on a project where someone is staffed halfway around the globe.
>
> My anecdotal evidence from friends of mine working in consulting for different
>
> industries that they are often put in real situations where they have to coordinate

with someone who is staffed out of the office in Mumbai or London or something

like that. So, these are real workplace situations when they are starting to

develop strategies for efficient or effective work. (Linda, Instructor)

In my own experience teaching an online technical communication course with a

collaborative component, I have seen students struggle with different aspects of the

activity that were unrelated to an understanding of the actual content of the project.

Rather, difficulties inevitably arise around group dynamics and issues related to

communication and collaboration. Students are challenged to come up with strategies

for resolving conflicts that may arise from the distribution of work, maintaining steady

contact, negotiating what should or should not be included in the final product, meeting

team-imposed deadlines, and assuring that each team member contributes high-quality

work. These are challenging enough issues when team members meet regularly face-to-

face; it's that much more challenging to resolve these matters at a distance. These

collaborative projects can be a source of frustration for students, but ultimately they are

gaining valuable experience in the online technical communication course that will very

likely be utilized later in the workplace. Four of the six alumni surveyed specifically

mentioned the value of collaboration as a benefit to taking an English or writing course

online. It should be noted that since the Group A (current students) class was only a four

week summer course, a group project was not included; therefore, no survey

participants from that group mentioned the benefit of collaboration.

➢ *Practice using rhetorical skills*

If we accept the premise that much of today's technical communication work is done by working with colleagues and clients at a distance, it follows that online technical communication classes will help students practice the rhetorical skills they will need to successfully work in the field. In order to skillfully do their job, a technical communicator needs to gather a variety of information about: their audience and purpose; a product, process, or service; document formatting; user experiences; and so on. Since this research is often not done in face-to-face meetings, technical communicators need to develop the skills and comfort level to gather this information at a distance, whether through email, telephone, or video conference calls. They also have to be very skillful in locating needed information through internet searches. All of these skills are practiced and strengthened in the online technical communication course. Rather than seeking information or clarification from a client, the technical communication student may need information or clarification from the professor or a classmate, and they will need to find a way to solve their problem at a distance, whether by email, discussion forum, or even telephone. One current student stated in the survey that taking the class online "forces you to use all the resources and look things up on your own, so (it) promotes independence in a way. Also, you have to work more closely with other students such as giving feedback to one another more often than in a (face-to-face) classroom." This sort of real world connection between the classroom and the

workplace is one of the strengths that the online format offers. These ideas are summed

up by an instructor, who noted in the survey that "students are more likely to learn

digital/remote strategies for successful workplace writing from completing most or all

work online, which will prepare them well for 21st century work environments."

> *Use of current technologies*

As the name of the field itself suggests, technology is a fundamental component

of technical communication. Not only is technology often the main subject of the field,

technology is heavily relied upon to do the work. The data from this study shows that

both students and instructors perceive online technical communication courses as

beneficial in preparing students to use the current technologies found in the technical

communication workplace. This can range from a greater familiarity to communicating

through email and general computer literacy to practice using the latest multimedia

tools that will be utilized in industry. Different instructors pointed out things like "some

tech tools and multimedia assignments work better in online environments than in a

traditional classroom" and that online classes provide "exposure to communication

technologies" and "more experience with online media and genres." Students also

showed a recognition of this advantage to online learning, with one current student

(Group A) writing that:

Some of the benefits of taking (this) course online is that you are constantly using the same channel that you are going to be using in the real world. You will constantly be on the computer reading emails, reports, memos, and researching. You will take that information and communicate with others in the workplace just as we have.

The more closely the classroom experience for technical communication students can reflect what they will actually encounter in the workplace, the better. Since communicating through technology and at a distance is the norm in the technical communication workplace, the more practice students can get doing this in the classroom, the better. Something that often strikes students who are new to online learning is the amount of practice they get writing, and specifically writing with their hands on the keyboard. So, not only are students practicing writing through the actual writing assignments, they are also honing their electronic communication skills each time they login to the class and send an email, write a discussion post, ask a question in a forum, or respond to a classmate's ideas. By the time a course has ended, students will have written a significantly greater amount than using the exact same class material provided in a face-to-face classroom. This can't help but better prepare students for future technical communication work, and the data of this study shows that students and instructors are aware that this is the case.

What is clear is that both students and instructors perceived that online technical communication classes were better equipped than their face-to-face counterparts to simulate a real world workplace environment.

Use of online resources and media- Several participants brought up the idea that taking a technical communication course online allows for a better access to material than a face-to-face class. Not only are textbooks today usually able to be accessed online, most will include supplemental material, quizzes, videos, and presentations that can *only* be accessed online. As one current student noted, "I truly loved the content from the online book as well as the interactive and realistic assignments that can easily be used in real life settings. I find this to be the most effective way of learning personally and I have a lot to take out of the class." These kinds of interactive assignments and exercises this student is describing is only possible in an online setting, and textbook publishers have responded by heavily investing in the development of this approach to e-learning. This is a current trend that only continue to expand.

In addition to the textbook and its supplemental material accessible online, however, the vast and virtually limitless amount of material and information available on the web provide another strength for the online technical communication course. A resourceful instructor will take advantage of the free material that is available on the web to act as a sort of curator and guide. In addition to providing their own lectures and

notes on various class topics, instructors in the online course can use their expertise to draw upon relevant and credible material that can be used as a supplement to the textbook and provided class material. Often, this material can be in the form of multimedia such as videos, podcasts, lectures, or interactive exercises. Only in the online environment can students access this multimedia material, which can add a high degree of interest and engagement. Students and instructor participants noted the positive of multimedia tools in the class, with one instructor stating that a benefit of the online course includes "more experience with online media and genres."

The data shows that students and instructors perceive clear positives to the online technical communication course. Chief among them is the flexibility they afford students in terms of time and place. However, all groups also recognized that the online setting provided students with considerable real world experience to prepare them for the workplace. This can take the form of mirroring today's globally distributed teams, practice using the rhetorical skills needed for working at a distance, and familiarity using today's current technologies. Finally, the data shows that some of the participants recognized the online course's strength in providing supplemental and multimedia material.

Perceived Shortcomings of Online Technical Communication Courses

In addition to the above list of strengths, participants also identified several shortcomings of the online technical communication class.

Lack of Community- As clearly as the idea of flexibility came through as a strength of the online technical communication course, so too did two perceived specific shortcomings emerge. One of them is the perceived lack of community in the class. Like the obvious strength of flexibility, this too comes as no surprise, as one of the most common criticisms leveled against online classes is that there is a missing social element that can leave students feeling isolated and disconnected. The data in this study bears out this idea, with a significant number of subjects pointing to the lack of community. Six of the 30 subjects in Group A mentioned some form of a lack of social interaction, either with the instructor or classmates. In response to question #15 ("Do you think it might have been more helpful to take ENG 205 in person rather than online? How so?"), some of the responses were "Yes I do because I learn more from interaction" and "Yes, face to face interaction is very helpful to me." The Alumni Group showed an even greater perception of a lack of community, with responses to the question asking about the drawbacks of online classes (#15) such as "Less of a class identity/alienation;" and "it feels like you are disconnected from your peers and your instructor;" and "The online setting can be more isolating than a traditional face-to-face class." In fact, all six of the

Group B Alumni pointed to the lack of community and interaction as a drawback to the online technical communication class.

This shortcoming of the online course is of great significance. With the benefit of being able to participate when it is most convenient for a student comes the other side of the double edged sword, which is that the learning experience will necessarily be a more solitary pursuit. Although discussion boards attempt to simulate a conversation, the reality is that students are still ultimately interacting with words on a screen rather than living, breathing human beings. Although the job of technical communication does tend to be more solitary in nature, there is still a strong social component, as practitioners need to interact with others regularly during researching and writing. An accepted idea in the field is that the act of writing is a social pursuit that takes place within a particular social situation and context. Whether or not online courses prepare students adequately for this aspect of the job is not clear, but there is a perception that the sense of community is lacking. As one instructor put it in their survey response, "There is no way to practice effective, appropriate, and professional face-to-face communication, which I believe is a vital part of business communication even though it isn't writing; I believe there are ways that face-to-face interaction can inform good writing practices." Another instructor echoed this point during the interview by questioning whether online technical communication students were getting the social skills needed to effectively function in the workplace:

What's missing in an online class are the skills to effectively communicate. I'm

not sure if the online class gives students communication skills that transfer to

face-to-face interactions. In the face-to-face class, if I assign team projects for

students they are all sitting around together discussing how to approach a

particular assignment. Even if they go and work on it separately in a Google Doc,

they know each other and they're used to having face-to-face conversations with

one another. (Mary, Instructor)

Lack of Immediate Feedback/Guidance- Along with the lack of community, the

other very clear shortcoming that emerged from the data is that subjects perceive a lack

of immediate feedback and/or guidance in the online technical communication course.

Twelve of the 30 participants in the Current Student group mentioned some form of a

lack of immediate feedback or guidance as a drawback to taking the course online, while

three of the 6 alumni cited this as a problem. More than half of the instructors (7) also

perceive that not being able to give students immediate feedback or coaching is a

drawback to taking technical communication courses online. The lack of immediate

feedback was noted in two areas: feedback on questions related to the material in the

class and feedback on questions regarding assignments. Both of these areas appeared in

the survey and interview data, though as often as not the type of feedback lacking was

not specified—just the term "feedback" was used when noting a drawback of the online

format.

As students work their way through the material provided, whether posted in the

online course, presented as external supplemental material, or found in the textbook,

they are bound to have questions that require clarification. In a face-to-face class, it is

easy enough to simply raise their hand and ask the question, with an immediate reply

following. In the online course, however, a question is either posted in a forum or sent

as an email, and response times can vary. A standard practice is for instructors to

respond within 24 hours, and though a reply might come hours before this, the sense of

immediacy is sacrificed. The same wait time for a response also applies to questions

regarding how to approach an assignment, and in my experience these are by far the

most common types of questions students will ask. Some of the survey responses from

current students regarding the issue of the lack of immediacy of feedback were, "On

one assignment I did not do so well. If I had been in class I might have caught what it

was that I missed or what exactly it was you were looking for." And, "a big drawback is

not being able to fully understand what the tasks require." One student

straightforwardly declared that "some drawbacks to taking ENG 205 online would be

not being able to ask a question during class."

It may be relevant to consider that in the case of the lack of immediate feedback,

perceptions may carry more weight than reality. In a typical face-to-face class, the class

will usually meet two or three times per week for an hour or two at a time. Add to that a

professor's limited office hours on one or two days during the week, and students'

immediate access to their instructor is restricted to a relatively narrow band of time.

How often, then, are questions answered *immediately* upon arising in the student's

mind? If a question on how to approach an assignment comes up during the week, the

student might have to wait 2 or 3 days before getting an answer. In an online course, on

the other hand, the maximum wait time for a response might be 24 hours, with

responses even coming on the weekend. One might make the case, then, that the

overall access to their instructor is actually greater in an online course, if not necessarily

immediate.

One aspect of the lack of immediate feedback that is a shortcoming without

question is the type of interaction that can occur during a face-to-face class meeting

itself. During a live class session, it's possible for instructors to interact with students in

a more spontaneous and targeted manner in order to help clarify and expand on

particular ideas. As one instructor put it during our interview:

> I think there is a lot of in-person mentorship that can go on in a face-to-face
>
> setting that is really difficult to duplicate online. Just the fact that you can have
>
> these conversations as asides with students in a classroom setting… when
>
> students are working in small groups I roam the room and can kind of overhear

little conversations and redirect when (I) hear that they are going off the rails on

something. (Linda, Instructor)

More than any other group, instructors perceive the lack of immediate interaction and

guidance to be a shortcoming of the online technical communication course. They made

comments like "coaching and guided practice becomes more complicated for

instructors" and "in-class activities have significant intangible value" and "some

students also seem to benefit more from in-person conversations about writing." So, it's

clear that one of the perceived shortcomings of the online technical communication

course is the lack of immediate feedback, whether that comes in the form of getting

questions answered, concepts clarified, or simply to interact with the instructor and

classmates in a live and spontaneous conversation.

Discussion Forums- Live and spontaneous conversations are simulated in the

online environment through discussion board forums, and several participants perceive

these discussion boards as a shortcoming of the online technical communication course.

An argument could be made that discussion boards are the heart and soul of the online

course; it's the place where "the rubber hits the road" and students and the instructor

are able to interact with each other to form the community of the classroom. If

discussion boards didn't exist in the online course, online learning would look more like

a correspondence course of old, where students mailed in completed assignments and

instructors graded them and mailed them back. Email would be the only means of communication, and there would be no community of learners working together to discuss course concepts or common assignments.

It has been discussed that a perceived drawback of the online technical communication course is a lack of community, but several subjects pointed specifically to the discussion boards as a factor in this. One current student noted that "the conversations were not as natural as in a classroom." An alumnus echoed this idea, pointing out that "no spontaneous in-class discussion" is a drawback to taking a writing course online. Another alumnus mentioned that "it's easier to convey ideas orally in a traditional classroom setting rather than written in a discussion forum online." This is similar to what was stated in an interview with an instructor, who noted that:

> I think it's hard to have an actual discussion that's like a real discussion forum
> where there's a sense of a whole group and everybody is kind of aware of what
> everybody else is saying and listening to everybody else, rather than just a series
> of one-to-one communications. Online classes don't simulate discussions very
> well. (Mary, Instructor)

The goal of these discussion boards is to provide a place where the class can come together to engage in a conversation, but for this to function properly, students have to continually revisit the board to read new posts as they develop the discussion. It is unclear, however, whether this is happening to a sufficient degree. As another

instructor put it, "I'm not always sure that students will return to a discussion board to

read additional posts" (Linda, Instructor).

In my own experience, it can sometimes feel as though students are simply trying

to do the bare minimum to complete the exercise, and that can include initial responses

that are remarkably similar to those of classmates and a minimum number of

participation response posts that appear to be written in order to just barely satisfy the

acceptable level of depth and development. That's certainly not always the case,

however. There are always a handful of students in each class who put a genuine

amount of effort and thought into their posts and are clearly engaged and ready to

discuss the material. Unfortunately, though, these students tend to be the minority

rather than the norm. This could very well be an outcome of what the data from this

study shows: that students perceive the discussion board format to be a shortcoming of

the class. Perhaps these same underachieving discussion board participants would be

more energized and engaged in a face-to-face classroom rather than simulating

discussions in a chat forum that does not leave participants feeling as though they are

interacting with a community of learners.

Difficulties with autonomous learning- The final perceived shortcoming of the

online technical communication course that participants mentioned with a degree of

frequency is the challenge of completing the necessary coursework on time without

close instructor supervision. While some students are self-disciplined and work well with little oversight, some others find that without regular face-to-face contact with instructors and classmates they are prone to falling behind. One current student remarked that "I have to remind myself when things are due and don't have the luxury of going to campus and having a professor telling me what's due as a reminder." Two other students stated that "it's easy to fall behind." Instructors also seem to be very aware of this, with comments like, "some students lack the maturity to organize and complete their work independently and might fall behind or fall short of doing all the work." Or, "(it's) easy for students to go AWOL or not do the work," and "(a drawback of online classes is) the lack of accountability for completing assignments."

With the great degree of flexibility and autonomy that the online technical communication course offers, it also brings the possibility of students becoming, as one instructor put it, "lost in cyberspace." We've seen that one of the perceived shortcomings of the online format is the lack of a feeling of community, and perhaps one of the consequences of this is that without the feeling of support from classmates and the instructor, students who may be less organized or more prone to procrastination will find it harder to keep up with the pace of the class. Just as in a traditional face-to-face class, the online course will have weekly assignments to complete, with deadlines clearly noted on the syllabus, in class announcements, or in a variety of other ways an instructor may choose to inform the class. On the surface, then,

it would seem that there should be little difference between the two formats when it comes to keeping up with the work. It appears, however, that certain individuals will have a harder time staying on top of the workload without the regular contact that a face-to-face class brings. This does appear to apply to some more than others, and one instructor noted during the interview that:

> Students need to be coached about choosing their classes. Will you be able to succeed in an online environment? I'm not sure students understand very well what it will take to get a lot out of an online class as opposed to what it will take to get a lot out of a face-to-face class. People who are not all that well-organized probably shouldn't be in an online class. (Linda, Instructor)

In analyzing the data, very clear findings emerged that show subjects perceive the strengths of the online technical communication course in terms of greater flexibility, its real world application, and its use of online resources and media. However, shortcomings also emerged from the data as well. Participants perceived a lack of community, a lack of immediate feedback and guidance, limitations with the discussions, and some found it harder to complete the needed work to deadlines. From these specific findings, we will now turn to examining some general conclusions that can be drawn based on a continued analysis of the data.

General Conclusions

In this section, I will discuss some general findings that emerged from the data that are particularly relevant to an understanding of the online technical communication course.

Preference for face-to-face classes

An unexpected result from the data is that most current and former students in my survey population preferred the traditional face-to-face class setting more than the online format. When asked "Do you think it might have been more helpful to take ENG 205 in person rather than online? How so?" 18 of the 30 current students responded "yes," citing a variety of reasons such as "I would have had a better relationship with my teacher" and "I would have liked to have engaged in more face-to-face conversations about (the textbook)" and "When I had questions about my writing, it would have been easier to get help." With one notable exception mentioned in the next section, the reasons given fit into one of the shortcomings of online courses discussed in the first section of this chapter.

For the alumni group of participants, 4 of the 6 thought it would have been helpful to take all or most of their English or writing classes in person rather than online. Some of their comments included: "Online feels more impersonal, because I want my English courses to be a conversation" and "I miss hearing the lecture and taking notes... I

want to be in there with the expert absorbing the experience" and "I prefer classes in person because I like the dynamic that occurs in that setting." What is particularly interesting, however, is that while the majority of students voiced their preference for face-to-face classes, they still largely felt as though their online classes prepared them well for workplace writing. For the alumni group, their response to the question "On a scale of 1 to 5 (with 1 being 'poor' and 5 being 'excellent'), how would you evaluate how well your online courses in English or writing prepared you to write effectively in your postgraduate jobs?" yielded a mean value of 4.33. The average for the current students responding to their corresponding question ("On a scale of 1 to 5 (5 being most helpful), how helpful do you think your experience in ENG 205 was in preparing you to complete workplace writing tasks?") was somewhat lower at 3.6, but it still indicates that students overall felt it was a positive learning experience. This lower average of this group might be the result of not having the chance to apply their knowledge from the course to writing tasks in actual jobs. Or, perhaps they didn't have the benefit of time away from the course to develop the perspective that the alumni have. In any case, the data shows that while students recognize and respect the value of online technical communication classes, given the choice, the majority would still prefer to learn in a traditional, face-to-face class.

Online and face-to-face classes as distinct learning modalities

Perhaps a useful way to interpret the conflicting data above is to view the online

course as something distinct from a traditional, face-to-face class. Rather than seeing

the two forms of learning as interchangeable, it might be more productive to see online

courses as a different type of classroom environment that is better suited for certain

types of courses and material. All three alumni who were interviewed remarked that

technical writing courses are particularly well-suited to the online format. As one

participant noted:

> The discipline of technical communication lends itself better to online learning. I
>
> don't know that I'd want to take a sociology class or history online. (Those) I'd
>
> really want to hear and absorb, but maybe for writing because it's so step-by-
>
> step and more structured, I guess. (Barb, Alumni)

This is quite similar to what another alumnus stated in the interview, which was that "I

think (online classes) are more effective for practical-based classes… it can be really

effective for writing classes. I think for seminar-based classes it's really not so effective"

(Roberts). Finally, in a statement that again discusses the benefit of online classes in

providing real-world experience, the final alumni group interviewee pointed out that:

> As far as technical writing goes, there are definite positives to online classes
>
> because obviously a lot of the writing you do is via computer and a lot of the

interactions you have with people are generally not face-to-face. So, I guess it

could be seen as giving you a little more real-world experience. (Lisa, Alumni)

So, it would appear that technical communication courses, with their writing-based

content, are particularly well-suited to the online format. This may not be the case,

however, for other classes that have more of a seminar-based approach that might lend

themselves better to an in-person experience that would allow for richer and more

interactive discussions. Thinking of the online course as something that is a distinct kind

of learning experience that is not made to replicate the traditional face-to-face class

might be a more useful approach than seeing them as completely interchangeable.

Online courses provide a great deal of needed flexibility for many students, and they are

also particularly well-suited for practicing writing and other real-world activities. They

are not without their limitations, however, so perhaps the fullest education can be

achieved using a judicious mix of the two types of distinct learning modalities.

A four week course is too short

One issue noted by multiple participants in the current student group is that a

four-week class is simply too short. In response to the question "What are some of the

drawbacks to taking ENG 205 online?" 7 of the 30 students mentioned that the class

was too condensed for all the material presented. It may be that four weeks might be

just too short of a time for a full semester's worth of learning. Not only does this stand

alone as a general conclusion of the study, but it's possible that the abbreviated length

of the course influenced the perception of the online course in general. The duration of

the class should theoretically have nothing to do with being a drawback to taking ENG

205 online, yet seven students did specifically mention this in the survey, indicating that

they may not have seen the shortened version of the class as something separate from

the online format itself. In order to account for this, any future research in this area

should be conducted with students taking a full semester-long online course.

Differences among populations

The final general conclusion that can be drawn from the data has to do with the

notable differences that appeared among the groups of participants. One finding that

stood out in particular is the wide chasm between the current student and alumni

groups in terms of their level of understanding. In particular, it appears as though the

current student group by and large didn't fully understand many of the basic rhetorical

concepts regarding workplace writing that they were supposed to have just learned.

While the current student group thought the online class they had just completed

prepared them reasonably well for future workplace writing, their responses to a

number of the survey questions would indicate that this might not be the case. For

example, when asked about audience ("Is it important to know about the person or

people who will read workplace documents? Why or why not? How will that influence

68

your approach to the writing, if at all?"), seven of the 30 participants said that no, it is not important to understand your readers, while 2 said yes but clearly didn't understand why. When asked the question "What are some of the different purposes of workplace writing? How will the document's purpose influence your approach to the writing, if at all?" eleven of the 30 responses were completely off the mark and had nothing to do with the rhetorical concept of purpose. Some examples that were particularly nonsensical were "workplace writing favors quality over quantity. More is not better, it is better to be concise" and "different jobs require different workplace writing, but the different [sic] in workplace writing and essays is the format. Essays go by MLA or APA format which is different from workplace writing which is usually brief descriptions or actual typed up documents." In contrast, all six alumni showed an understanding of these fundamental technical communication concepts.

One of the possible causes for this disparity in understanding could have to do with the previously discussed brevity of the four week summer course. Clearly, many students didn't learn some of the very fundamental concepts of technical communication rhetoric, and it may well be that such a short course doesn't allow for enough time for these concepts to become internalized. It may also be that the current students didn't have enough real world work experience to put these ideas in some sort of context. When asked the question, "Have you ever had to do any writing for a job? If so, describe the writing tasks you had to complete" eleven students had no on the job

writing experience, and three had only written the occasional email. So, nearly half of the current student group had little to no practical experience with professional writing, which could account for the lack of understanding and differing perspective on the topic. Contrast that with the alumni group, who were all working professionals in various jobs that required writing on a daily basis. This group had also completed a degree or certificate from a university writing program, so it should be expected that they will have a more sophisticated understanding of these concepts.

Another difference among the various groups has to do with how each tends to perceive the shortcomings of the online technical communication course. Current students focused more on the issue of the lack of immediate feedback as it specifically related to understanding the material or assignments. While they did mention the lack of community and issues with discussions, the tendency of this group was to see the shortcomings through the lens of immediate feedback related to the course content and assignments (or didn't specify beyond a "lack of feedback"). In contrast to this, both the alumni and instructor groups saw the main shortcomings of the online technical communication course more in terms of the lack of in-class discussions and sense of community. Here again, these differences could be a result of the different levels of experience and sophistication with the course content. Whereas current students might be mainly concerned with the nuts and bolts of navigating the course and its

assignments and earning a good grade, alumni and instructors are looking to delve

deeper into the material with more nuanced discussions.

Finally, none in the alumni group mentioned issues with autonomous learning,

which was solely a problem that current students noted with online classes (along with

instructors, who were pointing out that some students struggle with this). When

considering this point, it's useful to keep in mind that the current students are mostly

undergraduates in their junior year, and most in this population fit the traditional, 18-22

year old college student demographic, meaning their overall level of maturity and

academic experience clearly does not match that of the alumni or instructors. Further

evidence of this can be seen by simply reading through the survey responses of the

current student group, which were filled with grammatical and spelling errors. The

writing would be considered poor for any college level task, but it is especially surprising

to see this level of writing from a group of students who had just completed a business

writing course.

Conclusion

This chapter analyzed some of the key conclusions that were drawn from the

survey and interview data. What emerged were some very clear "specific findings" that

discussed participants' perceptions of the strengths and shortcomings of the online

technical communication course. Following these specific findings, "general

conclusions" were drawn that helped to understand and interpret the data further. We

will now turn to Chapter 4—Implications and Future Research, which will examine the

findings in the light of learning transfer theory, discuss implications for teaching and

practice, and suggest directions for future research.

Chapter 4- Implications and Future Research

This final chapter will begin by revisiting the research question and main hypotheses of this study to analyze whether and how the data supported them. I will then discuss the findings of the study from the perspective of learning transfer theory as presented in Chapter 1. After that, I will discuss best teaching practices based on the survey and interview data, and the chapter will conclude by suggesting directions of future research in this area.

Study question and hypotheses

In order to begin to discuss the implications of the data, it may be helpful to recall that the question this study seeks to answer is:

What are instructor and student (former and current) perceptions regarding the strengths and shortcomings of online technical communication instruction in preparing new writers to function effectively in work contexts?

Hypothesis #1- In Chapter 2, the first hypothesis posited that:

Meta-level rhetorical skills like critical thinking, problem solving, rhetorical analysis, collaboration, and project management are being learned not only in traditional face-to-face classrooms, but in online technical communications courses as well.

The data support this hypothesis, though with some qualifications. Instructor

participants of this study teaching technical communication online are certainly aware

of the need to teach students the rhetorical skills that will equip them with a meta-

awareness of writing that can be applied to any given workplace setting, and they

indicate that they incorporate activities into their online courses to achieve this goal. My

survey and interview data for the alumni group shows that these subjects did learn

these higher-order analysis skills like critical thinking, collaboration, rhetorical analysis,

and project management in their online technical communication courses. One student

alumnus said this when asked about some important ideas to consider for producing

successful workplace writing:

> A lot of us are presumably already good writers--it's not necessarily the
>
> mechanics of writing that we need to improve. The challenge is getting an idea of
>
> the workplace culture and getting assimilated into your environment. Good
>
> workplace writing often requires lots of collaboration, feedback, and critique (of
>
> yourself and others).

This statement shows a meta-awareness about writing that is key to success in future

writing tasks. This same subject went on to talk about how specific online classes helped

prepare them for the workplace—in particular technical editing and advanced project

management—supporting the idea that online technical communication courses can

also teach these concepts to students. All of the alumni showed an understanding of

these higher-order writing concepts, and as one participant succinctly put it, "the online

courses I completed at UWM prepared me for the level of discourse needed to

effectively communicate in a workplace environment."

Hypothesis #1 was not clearly supported among the current student group,

however. While some did demonstrate knowledge of these concepts, as Chapter 3

discussed, a sizable number of the current student participants showed a clear lack of

understanding of the basic rhetorical concepts such as audience and purpose. On the

basis of my study data, however, it remains unclear whether this is a shortcoming of the

online format in particular. Possibly, the abbreviated four-week summer course in

particular challenges an instructor's ability to include collaboration and in-depth

discussions of rhetorical concepts in the class. With students working to complete an

entire 16 week semester's worth of work in a quarter of the time, instructors might be

focusing more on current traditional concerns of the writing product such as formatting,

grammar, and other sentence-level aspects. So, while there is evidence that hypothesis

#1 is true, more data is needed—especially during normal semesters or trimesters—to

examine with greater certainty if meta-level rhetorical learning is less likely to occur in

the brief courses we offer during winter and summer sessions.

Hypothesis #2- In Chapter 2, hypothesis #2 stated that:

Online technical communication courses have certain inherent features that students and instructors perceive as being more beneficial than those of face-to-face classes in preparing students for future workplace writing.

Hypothesis #2 was clearly confirmed by the data. Students and instructors alike perceived that the features of an online technical communication course lends itself particularly well to preparing students for future writing work in the field. As discussed in the previous chapter, students and instructors perceive that online technical communication courses have real world applications that are superior to those of face-to-face classes. One of these is that the course takes place remotely, which gives students practice communicating and working in a manner that is increasingly common in the field of technical communication today. One instructor noted that "students are more likely to learn digital/remote strategies for successful workplace writing from completing most or all work online, which will prepare them well for 21st century work environments." Virtual teams are a reality in today's technical communication workplace, so it makes sense that the online collaboration among students is going to best simulate what students will likely face upon graduation. In addition, students are better able to practice using many of the tools that are being used in the workplace, and this again is better suited to the online class. Another instructor brought up this very point by stating that "some tech tools and multi-media assignments work better in

online environments than in a traditional classroom." Students are also aware of this

benefit to online learning. As one alumnus put it, "the online courses were beneficial in

that they introduced me to the technology tools of which I had previously been

unaware." Beyond specific technology tool practice, however, is the somewhat obvious

fact that students taking technical communication courses online are getting daily

practice writing, researching, and generally interacting with the material and each other

through the primary tool of the technical communication workplace… the computer.

Although many of today's students are generally digitally competent, they may not have

as much experience working in a formal setting to accomplish knowledge work of some

sort. While it may be the case that some face-to-face technical communication classes

are taught in a computer lab to make use of this technology, the online technical

communication class still gives students that extra amount of practice that a traditional

face-to-face class may not.

Learning Transfer Theory

Learning transfer theory is a broad approach to explaining how knowledge

learned in one setting is later applied in a different one. It was developed in the 1920s

and 30s using a cognitivist approach related to educational psychology, but recent

scholars in the field of technical communication have begun to use it in a way that

accounts for the social nature of writing. How can learning transfer theory help me to

interpret the data of this study? One of the key concepts from learning transfer that helps frame the survey and interview data is *transformation*. Recalling the hypothetical scenarios from Chapter 1 involving recent graduates tackling workplace writing for the first time, we saw that Michael failed because his attempt at a one-to-one transfer of information learned in the classroom was inadequate, while Allison succeeded because she was able to transform what she had learned and applied it to a new context. According to Beach (2003) and Wardle (2007), Allison was able to *generalize* her understanding of the writing process in order to transform what she had learned previously for use in a new and novel situation. It's this meta-awareness of writing and an understanding of rhetorical concepts that will help students move from the classroom to the workplace.

The results of this study show that this can be learned in the online technical communication classroom. Although there were mixed results from the current student group regarding their meta-awareness of the writing process, the alumni group showed an understanding of the rhetorical concepts needed to transform and generalize what they had learned in their online technical communication courses for use in the workplace. One subject from the alumni group remarked that "for more industry-focused courses, I enjoyed taking those online. They always seemed to include a practical or applied component which was really helpful in developing transferrable skills/experiences." Another alumnus provided further evidence of the effectiveness of

the online format in teaching meta-awareness with the comment that "it was good to

experience online English classes. They allowed me to think differently, and in some

cases more critically because I would seek out help from my friends and peers and

further discuss the topics posed in my classes with them."

Not only does this comment demonstrate the critical thinking needed for learning

transformation to take place, it also highlights another important element cited by

researchers in the field: collaboration. As discussed in Chapter 3, one of the strengths of

the online technical communication class that emerged from the data was the real

world application of collaborating remotely. This sort of collaboration and engaged

critical thinking with the material is what Guile and Young (2003) feel are keys for

learning transfer and transformation to take place:

> Learners need to be supported to participate in an activity system that
>
> encourages collaboration, discussion, and some form of 'risk taking.' Second,
>
> learners need to have opportunities to share and be inspired by a common
>
> motive for undertaking a specific learning task. (p. 74)

These ideas align well with what participants in the instructor group mentioned. In

response to the survey question "Please summarize in a few sentences how you address

rhetorical approaches to workplace writing in an online course," most instructors cited

projects and activities that attempted to approximate future workplace activities and

that often involved collaboration. This approach fits with what Smart and Brown (2002)

concluded when they observed interns who had just finished a writing program. These recent students who were just entering the workplace were able to analyze the rhetorical situation and adapt their writing appropriately. They also relied on the skill of writing collaboratively—something they had learned in the classroom. Alumni also perceived the usefulness of this approach. As one subject noted:

> Good workplace writing often involves lots of collaboration, feedback, and critique (of yourself and others). A lot of this relies on good communication, and while it may be difficult to teach, working with different clients… will allow you to adapt to different audiences and situations.

The practice of incorporating activities in an online technical communication course that approximate real world workplace projects is also supported by the learning transfer work of Perkins and Salomon (1988). Although the online class and workplace are by definition different activity systems, the closer the online class can approximate the workplace, the "nearer" the transfer will be. In this near transfer context of the online technical communication class, the mechanism by which learning transfer takes place, according to Perkins and Salomon, must be "high road" transfer. This high road transfer "depends on deliberate mindful abstraction of skill or knowledge from one context for application in another" (1988, p. 25). Since all instructors in my study indicated that their approach to teaching rhetorical concepts in an online technical communication course included teaching students to analyze and understand particular

writing contexts, the question becomes whether students were able to apply "mindful abstraction" needed for high road transfer to the workplace to take place. The results of this study indicate that the alumni were all able to do this. As one alumni participant indicated:

> It is important to consider the culture of the workplace. In investment management, the culture is very conservative and the writing needs to reflect the values and brand. I worked with several writers who struggled to adapt to the environment and subsequently they didn't last long. The environment doesn't adapt to your writing style; instead, a good writer needs to have the versatility to adapt to the culture.

Clearly, this participant has internalized the fundamental rhetorical concepts that a good writer needs to be successful in any given writing situation or context. About half in the current student group appeared to have applied this mindful abstraction of the rhetorical concepts. One current student's response to the question "What do you think are some important things to consider for producing successful workplace writing?" was "some important things to consider are your audience, the reason you are writing, and what format of communication is appropriate." It's interesting that this student did not simply parrot back "audience, purpose, and context," but instead showed the mindful abstraction of these concepts needed for the high road transfer described by Perkins and Salomon.

It is important to note that roughly half of the current student participants did not appear to have internalized this rhetorical knowledge. It may be that without the experience of applying this knowledge in the workplace, it is more difficult for students to perceive that they learned more than formatting or grammar in the course. So, while students may be exposed to this knowledge in the online technical communication course, instructors need to work hard to ensure that students have a chance to apply this knowledge as well, regardless of the length of the class.

Study Implications/Best Teaching Practices

Having presented the findings of this exploratory study of learning transfer in the online technical communication course, we now turn to a discussion of how instructors can maximize the strengths of the online technical communication course while minimizing its shortcomings.

Maintaining flexibility- One of the main perceived strengths of the online technical communication course is its flexibility, and it's important for instructors to maintain this. One way to do this is by avoiding activities that rely on synchronous participation. While something like a live presentation or lecture using a meeting tool such as WebEx could be a dynamic way to connect with students, it would come at the expense of the freedom and flexibility that allows students to work when it is most

convenient for them. Although a recording of the event can be posted, those unable to attend might feel as though they have missed out on something in the class. Therefore, I recommended that instructors maintain the asynchronous aspect of online classes.

Another way to strengthen the aspect of the flexibility of the online technical communication course is to give students as much information as possible, as soon as possible, about assignments, due dates, and class expectations. This includes a syllabus with policies and due dates, a course calendar, and assignment sheets with full descriptions and instructions. By doing this, students have a better opportunity to plan out their schedules ahead of time and decide the best way to devote the needed time to be successful in the class. Of course, there will still be weekly assignments and activities to complete, but having all of this information ahead of time allows for students to maximize the flexible aspect of the online format.

Emphasizing real world aspects- The research has shown that the more closely the class experience can reflect later workplace practices, the more likely the knowledge and skills taught in the course will transfer to the workplace. This means emphasizing the areas of the online learning experience that most closely mirror practices in the technical communication workplace. One way to do this is by incorporating group collaboration projects, which require that students learn to work together at a distance. Although it can sometimes cause difficulties for both students and instructors, in the

end students gain invaluable experience in negotiating group work through the use of

technology, as well as experience identifying and solving problems that arise during

collaboration. This experience will serve them well in the workplace, as the global

economy relies more on workers and teams physically located around the country and

world.

Another way to emphasize the real world aspects of the online technical

communication course is for instructors to design activities that strengthen students'

skills of researching and gathering information at a distance. In the workplace, a

technical communicator often researches a particular product or process with internet

searches and interviews of professionals, so it's useful if some projects in the online

technical communication course require practicing these sorts of activities. The goal is

not to provide students with a complete transfer simulation; instead, the goal is to

approximate workplace tasks in order to create a "near transfer" situation. So, the more

realistic the assignments are in the online course, the more effective they will be.

Projects might require students to research a particular product, a service, or a process

in order to successfully complete a task. They could be required to investigate

characteristics of a specific audience, as well as the purpose and context, and then

reflect on how they can apply that rhetorical knowledge to specific strategies for

planning and writing their documentation. Not only will this strengthen their skills of

researching at a distance, it will also help them with their meta-awareness of the writing and research process.

A final best practice that stresses the real world aspect of the online technical communication course is to make use of current technologies and online resources and media. Because of the rapidly changing technology landscape, trying to ensure that universities are employing the very latest tech tools in the online technical communication classroom is ultimately a futile effort. It is simply not feasible for all of the latest programs or applications to be immediately incorporated into the classroom. That said, an effort might be made to use some of the most common and established ones whenever possible. For example, students might be required to collaborate on a project using Google Docs, a common collaboration tool that is used in industry. This software is easy to use and to incorporate into the online classroom. Students can benefit greatly by practicing using the kinds of technologies that they are likely to encounter in the workplace, so whenever possible, instructors could seek ways to incorporate them into the online technical communication course.

In addition to incorporating various technological tools commonly used in the workplace, instructors of online technical communication courses might try as much as possible to make use of online resources and media. One easy way to do this is to take advantage of the supplemental material that many textbook publishers are putting online to accompany their textbooks. Particularly for introductory courses, a companion

website is often be available that provides students with a variety of additional material such as quizzes, presentations, videos, and additional readings. This material is often very interactive as well, thus taking advantage of the online platform. So, while students might have a physical textbook to read as usual (or not, as they may have an e-book), the material can become much richer and more engaging by incorporating these online activities as well.

Instructors can also integrate into their courses some of the vast amount of material found on the web. As experts in the field, instructors can act as curators and guides for students, providing various supplemental material that enhance the instructor's material and textbook readings and activities on a given topic. Maybe there is a video interview with a professional in the field. Perhaps a podcast focuses on a debate of a particular grammar or linguistic issue. Or, it could be that a website happens to give more information on working in the field of technical communication. The amount of material is nearly limitless. Obviously, though, not everything found on the web is of acceptable quality, which is why it takes a qualified instructor to help filter out the noise and present only the most valuable material for students to use.

Building Community- One of the most often cited shortcomings of the online technical communication class is students' lack of a feeling of community. This is a difficult challenge to overcome. As noted above, I recommended that the asynchronous

element of online classes be maintained, so how does one go about bringing people together if they are never communicating in real time or meeting face to face? One way is to continue to emphasize collaborative group projects that require students to work with each other in small groups. Although they still may never meet or communicate in real time, it will be easier to build relationships through multiple exchanges with several team members, versus few exchanges with many. Depending on the length of the class, it may be possible to have more than one group project so that students can work closely with a number of different classmates.

Another way to potentially mitigate the perception of a lack of community in an online technical communication course is to make use of profile pictures and video messages. I suspect that part of the feeling of a lack of community stems from the seemingly anonymous interaction among participants. Of course, they *aren't* anonymous, but interacting with people who are solely represented by names on a screen can make it feel that way. Although all of the major course management platforms give users the opportunity to use a profile picture, very few actually do so. In addition to requiring a profile picture, instructors can develop assignments that require students to record short videos of themselves and post them to the class. In addition to a video introductory post to the class, video responses can be in the form of a formal presentation or informal responses to discussion questions.

An opposing view might say that requiring students to post videos takes away one of the positives of the online format, which is that potential biases based on appearance are eliminated. There is truth to this idea—without any visual information about an online participant, their words and ideas alone represent them (along with any biographical data they may choose to include). This is a powerful idea; however, I would argue that the benefit of an increased sense of community that could come from being able to see each other outweighs the loss of anonymity. And, obviously in a face-to-face classroom all are there to see in person, so requiring photos and videos only serves to better approximate the traditional classroom setting as a means to overcome the lack of community shortcoming that this study identified.

Efficient Feedback- Addressing the identified shortcoming of the lack of immediate feedback and guidance in an online technical communication course is challenging. If the asynchronous format is to be maintained (which I would advocate for), then instantaneous feedback is impossible, except for rare cases when the instructor happens to be online and checking messages the very moment a student asks a question. Otherwise, there is simply no way to ensure immediate feedback or guidance for students. What can be done, then, to mitigate this perceived drawback to the online technical communication course? First, instructors can very clearly communicate the timeframe for responding to student questions. By letting students

know what to expect regarding when they will get answers to their questions,

frustration can be avoided, as the student won't be left guessing or wondering when

they will receive a response.

I would also suggest that instructors check their email and questions forum in the

class *at least* two times each day—once in the morning and once at the end of the day.

That way, a question asked during business hours will be answered that same day, and

one asked in the evening will get a response first thing in the morning. I would also

recommend checking in at least one time on the weekend. While this doesn't solve the

lack of immediate feedback, it does make the wait for an answer shorter. Finally,

instructors can still hold office hours on one or two days each week by being available

by Skype or some other form of instant messaging or chat. In this way, no synchronous

activities are being required of students, yet they still do have the chance to engage in

real time with their instructor to get some amount of immediate feedback or guidance

in the class.

Dynamic discussions- Perhaps the most difficult perceived shortcoming of the

online technical communication class to address is that of the discussion boards. In my

study, students and instructors alike complained that the discussion boards do not do a

good enough job of simulating actual conversations, and some pointed specifically to

the discussion boards as contributing to the sense of a lack of community in the class.

There are no easy solutions to this issue, unfortunately. As the discussion boards currently function, the best an instructor can do is require a great deal of student participation—perhaps on four or five days per week—in order to prod students to engage with the material and each other. Another best practice is to require a substantial number of response posts that address other posts on the board. In this way, a sense of conversation can be developed, as opposed to students posting their initial response and then quickly dashing off a few participation posts and being done for the week. Requiring that students continue to post throughout the week will help to keep them engaged with the material and each other's ideas, hopefully generating something of a conversation that at least approximates what might take place in a face-to-face classroom.

I believe that what really needs to happen to improve the functioning of online discussions is to completely reimagine how discussion boards are designed and utilized. In an interview, one instructor lamented about how poorly the discussion boards in D2L function and how there has to be a better way to go about this. This solution has yet to appear on the market, however. All current course management discussion boards have essentially the same appearance and structure, and they are as engaging and exciting to use as a spreadsheet. Lines of post titles (usually with a less than attention-grabbing name like "Re: Week 1 Discussion") appear under each other, one after the other, with nesting to indicate responses to particular posts. A better system would be more

graphically-oriented, with students able to instantly see their own posts and people's responses to them. Perhaps course management system designers could take a cue from some of the popular social media platforms, where people spend countless hours engaging in online exchanges that seem to pass as conversations. An online technical communication class that keeps students engaged with each other in more of a social media-type exchange would perhaps address the perceived shortcoming of current discussion boards.

Support autonomous learning- The final best teaching practice that addresses the results of this study is for instructors of an online technical communication course to help students succeed as autonomous learners. As the data showed, some students at the undergraduate level found it difficult to keep up with the coursework when there was no face-to-face contact with the instructor or classmates. One way to help students who might struggle in this area is to send out reminder emails or post announcements when assignments are coming due. This extra nudge could be just the kind of additional contact some students might need to stay on track. In addition, instructors might keep an eye out for students who may have missed an assignment and reach out to them to see if they need any assistance.

Ultimately, of course, it is each student's responsibility to submit their work in a timely manner. For some students, however, this kind of extra attention can go a long

way toward helping them to keep up with the work. In a face-to-face class, the

instructor will remind students of due dates and perhaps reach out to individual

students they have identified as struggling. The same can be achieved in the online class

with minimal additional effort on the part of the instructor. While students will still need

to get a handle on autonomous learning in order to be successful, these timely

reminders or quick check-in notes can help contribute to their success.

Table 6 below summarizes these best practices:

Summary of Best Teaching Practices

Pedagogical Goal	Best Practices
Maintaining Flexibility	- Avoid synchronous activities. - Give students all assignment descriptions, due dates, and class expectations.
Emphasize Real-World Aspects	- Incorporate group collaboration projects. - Include activities that require research and information gathering. - Make use of current technologies and online resources and media.
Building Community	- Incorporate group collaboration projects. - Use profile pictures. - Require video responses.

Efficient Feedback	- Clearly communicate instructor response time. - Check for email or forum questions frequently. - Provide weekly office hours.
Dynamic Discussions	- Require participation on 4-5 days per week. - Require a substantial number of participation posts.
Support Autonomous Learning	- Remind students when assignments are due. - Reach out to struggling students.

Table 6: Best Practices for Teaching

Future Research

My exploratory study identified student and instructor perceptions of the strengths and shortcomings of online technical communication instruction in preparing new writers for the workplace. In addition, the data showed that online technical communication classes can and often do teach students the meta-level rhetorical skills needed for high road transfer to the workplace. The study also concluded that both students and instructors perceive the online format as having features that are more

93

beneficial than those of face-to-face classes in preparing students for future work in the field of technical communication.

While these results are a useful place to begin to understand the issue of transfer in an online technical communication course, in this section I will suggest directions for future research in the field.

Moving beyond perceptions- One significant limitation of this current study is that it measures only subjects' perceptions. However, do these perceptions match up with what is actually happening in the class and workplace? Future research might focus on confirming that students are actually learning these meta-level rhetorical skills in the online technical communication course, and that whether, when, and why students transfer them later on to the workplace. In order to accomplish this, a longitudinal study would be needed that follows students from the online class to the workplace. Each subject's writing samples from the classroom and workplace would be analyzed and compared in order to determine whether or not there was evidence that the rhetorical skills taught to them were generalized and later transformed for use in the workplace context. This information could be combined with interviews and surveys with the students, instructors, and their workplace supervisors in order to gain the most information about students' learning and later performance on the job. To overcome the difficulties that I encountered attempting to take this approach, future researchers

might draw from a larger pool potential subjects and allot for more time to follow subjects to the workplace. It is not often the case that a student graduates and has a job waiting for them; I would recommend that future researchers account for this additional time.

Another potential study approach would be to focus on how well online technical communication classes compare to traditional face-to-face classes in preparing students for workplace writing. Again, the idea would be to move beyond perceptions. A finding of this study is that online classes are perceived to be more effective than face-to-face classes in preparing students for work in the field, but is this really what's happening in actual rhetorical situations in industry? An interesting result of this study is that most student and alumni participants prefer face-to-face classes, yet at the same time feel as though the online format better prepares them for workplace activities. Further research could help to shed light on whether the online format really is more effective, and if so, why students would prefer face-to-face classes in spite of their perceptions and reality showing that online classes better prepare them for the workplace.

Best courses for online- One of the findings that emerged from the data is that student participants felt as though certain classes were better suited for the online format than others. Specifically, some alumni participants think that technical communication courses that focused on theory or seminars that had a heavy emphasis

on discussion were better suited to a traditional face-to-face class. On the other hand, they perceive that classes that have a more practical or writing-based focus work particularly well online. Future research might focus on determining which types of classes are best suited to the online format and why. A potential research question might be: "How can technical communication classes that have a heavy discussion component best be adapted for the online format?" This could be a rich area of exploration and would help the field understand how to best utilize the ever-growing online format.

Explore differences among groups- A final area for future research might focus on examining how different amounts of academic experience influence learning transfer from the online technical communication class to the workplace. This study showed clear differences in perceptions between the undergraduate students and alumni. First, it appears as though having real-life professional work experience has an impact on what students perceive as being important for future workplace success. Researchers might explore what impact work experience has on the ability to generalize the meta-level rhetorical knowledge needed for high road transfer to the workplace. Also, what differences exist between the undergraduate and graduate level students in this respect? Do graduate students with the same amount of work experience show a greater ability than undergraduates in generalizing these concepts?

Finally, it might be beneficial to study undergraduate students in a full semester online technical communication class in order to better determine if the abbreviated four week summer course had a significant impact on this study's results. In addition, researchers could focus on exploring ways to ensure that these meta-level rhetorical skills are being taught to students no matter what the course duration may be. This is particularly relevant today, as it is becoming more and more common for programs to offer courses that are significantly shorter than the traditional 15 or 16 week semester.

Conclusion

This study focuses on the topic of learning transfer in an online technical communication course, something that up to this point had not been studied. There are a number of reasons that this type of research is important to the field. First, online education is growing rapidly, so it is essential that we understand how well what we are teaching students in this format is later being utilized in the field. Specifically, it is important to know that the rhetorical, social, and cognitive skills that are needed in technical communication work are being taught in the online format. Also, it is important to understand in what ways the online technical communication course might be superior to a traditional face-to-face class, based on many of its inherent features and how well they match what activities take place in today's workplace. At the same

time, we need to know where online courses may be falling short so that we can work to address these deficiencies.

The exploratory data showed that online technical communication courses are perceived as able to teach the meta-level rhetorical skills needed for the transfer of knowledge to the workplace. Subjects also believed that the online courses had certain advantages over face-to-face courses in preparing students for future workplace activities. And, while participants perceived a number of positive aspects of online technical communication courses, negative aspects were identified as well. The field of technical communication, as the name would imply, has always been linked with technology. The online class format is a relatively new and exciting educational technology that merits further research, and this study is a start toward the goal of extending our knowledge in this area.

References:

Allen, E. and Seaman, J. (2013). *Changing Course: Ten Years of Tracking Online Education in the United States.* Babson Survey Research Group. Retrieved from:

http://www.onlinelearningsurvey.com/reports/changingcourse.pdf

Artemeva, N., Logie, S., & St-Martin, J. (1999). From page to stage: How theories of genre and situated learning help introduce engineering students to discipline-specific communication. *Technical Communication Quarterly, 8,* 301-316.

Baehr, C. (2012). Incorporating user appropriation, media richness, and collaborative knowledge sharing into blended e-learning training. *IEEE Transactions on Professional Communication*, 55 (2), 175-184.

Beach, K. (2003). "Consequential Transitions: A Developmental View of Knowledge Propagation Through Social Organizations." *Between School and Work: New Perspectives on Boundary-Crossing*. Eds. Terttu Tuomi-Grohn and Yrjo Engestrom. Boston: Pergamon, 39-61.

Beaufort, A. (2007). *College writing and beyond: A new framework for university writing instruction*. Logan: Utah State University Press

Behles, J. (2013). The use of online collaborative writing tools by technical communication practitioners and students. *Technical Communication*, 60 (1), 28-44.

Berkenkotter, C. & Huckin, T. (1995). Rethinking genre from a sociocognitive

    perspective. In J. Dubinsky (Ed.) *Teaching technical communication* (pp. 283-309).

    Boston, MA: Bedford/ St. Martin's.

Brady, A. (2007). What we teach and what they use: Teaching and learning in scientific

    and technical communication programs and beyond. *Journal of Business and*

    Technical Communication, 21.1, 37-61.

Brent, D. (2011). Transfer, transformation, and rhetorical knowledge: insights from

    transfer theory. *Journal of Business and Technical Communication*, 25 (4), 396-

    420.

Cargile Cook, K. (2002). Layered literacies: A theoretical frame for technical

    communication pedagogy. *Technical Communication Quarterly*, 11, 5-29.

Carter, M., Ferzli, M., & Wiebe, E. (2007). Writing to learn by learning to write in the

    disciplines. *Journal of Business and Technical Communication* 21.3, 278-302.

Chan, Z. C. Y., Fung, Y. L., & Chien, W. T. (2013). Bracketing in phenomenology: only

    undertaken in the data collection and analysis process? *The Qualitative Report*,

    18 (59), 1-9. Retrieved from http://www.nova.edu/ssss/QR/QR18/chan59.pdf

Dias, P*.,* Freedman, A., Medway, P., & Pare, A. (1999). *Worlds apart: Acting and writing*

    in academic and workplace contexts. Malwah, NJ: Erlbaum.

Freedman, A. & Adam, C. (1996). Learning to write professionally: 'Situated learning'

    and the transition from university to professional discourse. *Journal of Business*

    and Technical Communication 10.4, 395-427.

Green, M. M. & Nolan, T. D. (1984). A systematic analysis of the technical

    communicator's job: A guide for educators. *Technical Communication, 31*, 9-12.

Groenewald, T. (2004). A phenomenological research design illustrated. *International*

    Journal of Qualitative Methods, 3 (1). Retrieved from

    https://www.ualberta.ca/~iiqm/backissues/3_1/pdf/groenewald.pdf

Guile, D. & Young, M. (2003). Transfer and transition in vocational education: Some

    theoretical consideration. In T. Tuomi-Grohn, & Y. Engestrom (Eds.), *Between*

    school and work: New perspectives on transfer and boundary-crossing (pp. 63-

    81). Bingley, UK: Emerald.

Halpern, J. W. (1981). What should we be teaching students in business writing? *Journal*

    of Business Communication, 18, 39-53.

Hatano, G. & Greeno, J. G. (1999). Commentary: Alternative perspectives on transfer

    and transfer studies. *International Journal of Educational Research, 31*, 645-654.

Jablonski, J. & Nagelhout, E. (2010). Assessing professional writing programs using

    technology as a site of praxis. In M. N. Hundleby & J. Allen (Eds.), *Assessment in*

    technical and professional communication (p. 171-187). Amityville, NY: Baywood.

Judd, C. H. (1939). *Educational psychology*. New York, NY: Houghton Mifflin.

Lave, J. & Wegner, E. (1991). *Situated learning: Legitimate peripheral participation.*

     Cambridge: Cambridge University Press.

Miller, C. (1984). Genre as social action. *Quarterly Journal of Speech,* 70, 151-167.

Moore, P. (1997). Rhetorical vs. instrumental approaches to teaching technical

     communication. *Technical Communication, 2nd Quarter*, 163-173.

Nystrom, C. & Asproth, V. (2013). Virtual teams—support for technical communication?

     Journal of Orgnisational Transformation & Social Change, 10 (1), 64-80.

Parsad, B., Lewis, L., & Tice, P. (2007). *Distance Education at Degree-Granting Post-*

     secondary Institutions: 2006-2007: First Look, Washington, D.C.: National Center

     for Education Statistics.

Perkins, D. (1988). Teaching for transfer. *Educational Leadership, 46*, 1, 22-32.

Perkins, D. & Salomon, G. (1989). Rocky roads to transfer: Rethinking mechanisms of a

     neglected phenomenon. *Educational Psychologist, 24*, 2, 113-142.

Perkins, D. N., & Salomon, G. (1992). *Transfer of learning*. In *International Encyclopedia*

     of Education, 2nd ed. Oxford, England: Pergamon Press. Retrieved from

     http://jaymctighe.com/wordpress/wp-content/uploads/2011/04/Transfer-of-

     Learning-Perkins-and-Salomon.pdf

Perkins, D. N., & Salomon, G. (2004). *The science and art of transfer*. Retrieved from

     http://learnweb.harvard.edu/alps/thinking/docs/trancost.htm

Pinelli, T. E., Barclay, R. O., Keene, M. L., Kennedy, J. M., & Hecht, L. F. (1995). From

    student to entry-level professional: Examining the role of language and written

    communication in the reacculturation of aerospace engineering students.

    Technical Communication, 41, 492-503.

Reeve, L. (2004). Technical communication instruction in engineering schools: A survey

    of top-ranked U.S. and Canadian programs. *Journal of Business and Technical*

    Communication, 18, 452-490.

Richardson, J. C. & Swan, K. (2003). Examining social presence in online courses in

    relation to students' perceived learning and satisfaction. *Journal of Asynchronous*

    Learning Networks, 7 (1), 68-84.

Rounsaville, A. (2012). Selecting genres for transfer: The role of uptake in students'

    antecedent genre knowledge. *Composition Forum,* 26.

Russell, D. (2007). Rethinking the articulation between business and technical

    communication and writing in the disciplines: Useful avenues for teaching and

    research. *Journal of Business and Technical Communication* 21.3, 248-277.

Russell, D. & Fisher, D. (2009). Online, multimedia case studies for professional

    education: Revisioning concepts of genre recognition. In J. Giltrow & D. Stein

    (Eds.), *Theories of genre and the Internet* (pp. 163-191). Amsterdam: Benjamins.

Schneider, B. and Andre, J. (2005). University preparation for workplace writing. *Journal*

    of Business Communication, 42.2, 195-218.

Smart, G. & Brown, N. (2002). Learning transfer or transforming learning? Student

    interns reinventing expert writing practices in the workplace. *Technostyle, 18,*

    117-141.

Smit, D. (2004). *The end of composition studies*. Carbondale: Southern Illinois University

    Press.

Spilka, R. (1995). Communicating across organizational boundaries: A challenge for

    workplace professionals. *Technical Communication* 42.3, 436-450.

Spinuzzi, C. (1996). Pseudotransactionality, activity theory, and professional writing

    instruction. *Technical Communication Quarterly* 5.3, 295-308.

Sullivan, P. and Spilka, R. (1992). Qualitative research in technical communication: Issues

    of value, identity and use. *Technical Communication,* vol. 39, no. 4, 592-606*.*

Thorndyck, E. L. (1924). Mental discipline in high school studies. *Journal of Educational*

    Psychology, 15, 1-22, 83-98.

Tuomi-Grohn, T., & Engestrom, Y. (2003). Conceptualizing transfer: From standard

    notions to developmental perspectives. In T. Tuomi-Grohn, & Y. Engestrom (Eds.),

    Between school and work: New perspectives on transfer and boundary-crossing

    (pp. 19-38). Bingley, UK: Emerald.

Wardle, E. (2007). Understanding "transfer" from FYC: Preliminary results of a

    longitudinal study. *Writing Program Administration*, 31, 65-85.

Wardle, E. (2009). Mutt genres' and the goal of FYC: can we help students write the

genres of the university? *College Composition and Communication*, 60 (4), 765-

789.

Xu, D. & Jaggars, S. (2013). The impact of online learning on students' course outcomes:

Evidence from a large community and technical college system. *Economics of*

Education Review, 37, 46-57.

Yin, R. K. (2009). *Case study research: Design and methods* (4th ed.). Thousand Oaks, CA:

Sage.

Richard S. Schnoll

Education

M.A. – Linguistics
University of Illinois-Chicago • August 1992

B.A. – Psychology
University of Wisconsin-Madison • May 1989

Online Teaching Experience

University of Wisconsin-Milwaukee
2015- Present
Flex Program Grader- BTCC

As the sole grader for the Business and Technical Communications Certificate program, responsible for working with students in the following courses: ENG206X (Intro to Business and Technical Communication); ENG435X (Advanced Business and Technical Communication); ENG428X (Strategic Writing for Organizations; ENG429X (Technical Communications and Organizational Leadership; ENG437X (Project Management); ENG439X (Information Design). Responsibilities include evaluating student work, answering student questions, communicating with Academic Success Coaches, entering final grades, and modifying assessments as needed.

Northeastern University
2006- Present
Senior Lecturer/ Lead Instructor

Courses taught as <u>Senior Lecturer</u>: Writing for the Professions I, II (business writing), College English II, College Writing Workshop. As <u>Lead Instructor</u>, responsible for guiding and overseeing the performance of Course Instructors for a University-affiliated program offered in Singapore. Also designed the business writing course in use for this program.

Arizona State University
2012- Present
Adjunct Professor

Courses taught: TWC401- Introduction to Technical Communication; TWC453- Information and Comm. Technology in American History; TWC435- Global Issues in Technical Communication; TWC443- Grant/Proposal Writing; TWC347- Written Communication for Managers; ENG102- English Composition.

Additional Online Teaching Areas

- **Composition**- Extensive experience teaching English Composition at the undergraduate level

- **Linguistics**- Graduate Studies in English Language • Introduction to Linguistics • Structures of Language (*Course Developer*)

- **English as a Second Language**- Second Language Acquisition; Linguistically and Culturally Diverse Learners

- **Literature**- Introduction to Literature

Previous Teaching Experience

University of North Texas (Denton, TX)- (2001-2002)
ESL Instructor
Full-time instructor in the Intensive English Language Institute (IELI). Taught intermediate communication and Academic Skills (listening and note-taking).

ABS International (Buenos Aires, Argentina)- (1999-2001)
Co-owner and Director
Responsible for the successful development and direction of the Corporate English Division, a program created to teach English to company employees in Buenos Aires. Designed the business English program and hired and supervised a staff of 25 teachers.

Southern Illinois University (Nakajo, Japan)- (1998-1999)
EFL Supervisor/ Lecturer
Supervisor of the intensive English program. Scheduled and observed a staff of eight teachers and re-designed the writing curriculum. Also taught English composition and research writing.

EF International (San Diego, CA)- (1996-1998)
ESL Instructor
Taught multi-cultural classes focusing on all aspects of English instruction, including reading, writing, listening, speaking, and grammar. In addition, responsible for curriculum development.

Illinois Institute of Technology (Chicago, IL)- (1993-1995)
Adjunct Instructor
Taught reading and writing courses to post-graduate, foreign university students. Responsible for all aspects of course design and implementation.

Columbia College Writing Center (Chicago, IL)- (1993-1994)
Writing Tutor
Worked individually with undergraduate foreign students, helping them to improve their writing skills. Taught all steps of successful composition writing, from organization to final revision.

Publications

Korzienowska, I., Schnoll, R., and Tomaszkiewicz, A. <u>PT Exam Review: the Essential Guide for the Foreign-Trained Physical Therapist.</u> Thorofare, New Jersey: Slack, 1995.

Other Languages

Fluent in Spanish.