Teaching an Introductory Technical Writing Class Online

Technical writing is a growing field that encompasses many disciplines. An increasing number of disciplines require that students take an introductory technical writing class as part of their degree plans. Currently, the introductory technical writing class, TECM 2700, at the University of North Texas (UNT) is only offered in the classroom. UNT does not offer TECM 2700 as an online class. An online version of TECM 2700 could be an asset to UNT’s increasing online curriculum. By including an online version of TECM 2700, UNT could reach a larger number of students.

I began my project by researching the option of implementing an online version of TECM 2700 at UNT. However, because of the limited availability of current research on the value of teaching technical communication online versus teaching it in the classroom, the research does not apply to today’s level of available technology. Therefore, UNT’s Department of Linguistics and Technical Communication should perform its own research to determine if UNT can offer an effective online version of TECM 2700.

Because I did not have enough data to determine the viability of UNT implementing an online introductory technical writing class, I examined the available research and have presented an overview of that information.

Technical Writing at UNT

Students at UNT take TECM 2700 as a part of their curriculum or to improve their technical writing skills in the workplace. TECM 2700 is an introductory technical writing class that introduces the student to the basic aspects of technical writing. In TECM 2700, students complete assignments that help them improve their technical writing skills. These skills can then carry over into the workplace where students can become effective communicators.

Technical Writing in the TECM 2700 Classroom

By completing the following assignments, students use the writing skills they learn in TECM 2700 to better communicate their ideas in their personal lives, in their classrooms, and in their work environments.

Style Exam

Students take a Style Exam to test their knowledge about the writing style of technical communication. To prepare for the Style Exam, students must learn effective writing style and how to avoid style problems when they write professionally.

Correspondence Case Study

Students complete a Correspondence Case Study to learn how to write correspondence in a professional manner. Students learn how to effectively write e-mails, memos, and letters.

Students learn to write concise and effective reader-focused correspondence. Students must also learn how to analyze the situation to determine if they need to deliver information in a direct or indirect manner.
Job Search/Resume/Letter of Application
Students learn how to research a job posting, write an effective letter of application, and create an effective resumé. These skills enhance a student’s ability to find a job during or after college.

Proposal
Students learn how to write an effective proposal. They must define a problem, research a possible solution, and present the proposal to their instructor. In this assignment, students not only learn how to write proposals, but they also learn how to research problems they encounter and develop solutions for those problems.

Instructions (Collaborative Assignment)
Students learn how to write clear and concise instructions. This assignment allows students to collaborate as a team. Most students will eventually have to work as part of a team when they enter the workforce. When students work together as a team, they learn valuable interpersonal skills and develop the skills necessary for collaborating in the workplace.

Feasibility Report (Collaborative Assignment)
Students learn how to write a feasibility report as a team project. To do this assignment, students must work cohesively as a team and research the feasibility of a set of products by determining the testing criteria and then using those criteria to test the products. They develop their conclusions, recommend an option, and present the report in a professional manner.

Technical Writing in the Curriculum
As technical writing becomes more prevalent in the workplace and in the university curriculum, students need easier access to technical writing classes. UNT offered 27 classes of TECM 2700 in the fall of 2009. UNT offers that many TECM 2700 classes because the following colleges require or recommend TECM 2700 for their degrees ("Catalogs"):  

- **College of Arts and Sciences**  
  - BA/BS Biology  
  - BS Cytotechnology  
  - BS Medical Technology  
  - BA/BS Biochemistry  
  - BA Communication Studies  
  - BA/BS Mathematics  
  - BA/BS Physics  
  - BS Engineering Physics  
  - BA in English (Technical Writing concentration or certificate)  

- **College of Public Affairs and Community Service**  
  - BS Criminal Justice  
  - BS Emergency Administration and Planning  

- **College of Business**  
  - BS Accounting
UNT does not offer technical writing classes online. Online classes appeal to many students, especially students who commute to Denton from other areas around the DFW Metroplex. Online classes also provide an easier way for non-traditional students to complete their programs while allowing the flexibility they need to schedule around school, work, and family. Mehlenbacher, et al. says, “as student populations become less and less traditional, attuning instruction to the varying needs of students will be even more imperative” (169). Additionally, online classes provide a viable solution for employers and employees who wish to enhance their skills in the workplace. These students seek universities that offer a wide variety of classes online. UNT is at a disadvantage because it does not offer TECM 2700 online, thereby reducing its prospective student base.

Factors Affecting Online Classes
“Colleges and Universities are rapidly moving courses and even entire degree programs onto the Internet at a staggering rate” (Mehlenbacher, et al. 166). However, when developing an online curriculum or taking an online class, universities, instructors, and students must evaluate the factors that affect online classes. The factors below affect the viability of an online class.

The Virtual Classroom
In order to effectively implement any class online, the university must create an online learning environment. This online environment becomes the virtual classroom where students go to retrieve their class materials. Some virtual classrooms implement online versions of textbooks. Students can access these online textbooks from the virtual classroom. The students read the syllabus, do the assignments, and then upload their assignments to the virtual classroom. Students can communicate via virtual classroom’s discussion boards, emails, or other online media.

Strong Instructor Engagement
The virtual classroom requires strong instructor engagement with the students. “[N]early 64 percent of faculty said it takes ‘somewhat more’ or ‘a lot more’ effort to teach online” (APLU).

Student Self-Motivation
Students must be self-motivated in order to do well in online classes. They have to actively engage in the learning process because they do not have the structure of the traditional classroom. “Our data suggest that the type of active engagement that we require of our online students may be different than the type of engagement we expect in a conventional classroom. Students must adapt to working in some degree of isolation, though they can be very much virtually connected to other students” (Mehlenbacher, et al. 178).
Student/ Instructor Knowledge of Technology
Both students and instructors must know how to use the available technology. Students today have a deeper knowledge of computers because they have grown up in a computer-based society. However, some older instructors have had to acquaint themselves with the expanding technology through the years. The instructors must be as up-to-date on the technology as the students. “Because computers are a technology of language and communication, writing instructors have used them in increasingly complex ways” (Mehlenbacher, et al. 167).

Accessibility to Technology
Students and instructors must be able to access the technology to support an online learning environment. Obviously, a student who does not have access to a computer cannot take an online class. However, most universities have computer labs available to students.

Communication
Students and instructors must effectively communicate in order to create an effective learning environment.

Student-to-Instructor Communication
Students must feel comfortable communicating online with their instructors. In the traditional classroom setting, students may feel singled-out when asking questions about topics that everyone else seems to understand. E-mail and online discussion boards enhance the student’s ability to communicate with their instructors without the fear of embarrassment.

Instructor-to-Student Communication
Instructors must effectively communicate with their students. Online students can ask questions via e-mail or discussion boards, and instructors need to respond as soon as possible. Instructors need to also make themselves available to students who want to come to the university to talk with them face-to-face.

Student-to-Student Communication
Students must be able to effectively communicate with each other. The instructor can facilitate this by requiring students to post to the discussion board of the virtual classroom. In an online technical writing class, students will have to communicate in order to collaborate on team assignments.

Collaboration
Students must learn how to effectively collaborate online. One of the main goals of teaching technical communication is to facilitate a student’s ability to work as a part of a team. If students learn to effectively collaborate, they can carry over that knowledge into the workplace. “In the world of practicing technical communicators, no one works in isolation” (Gurak 196).

Technical Writing Classes and Online Collaboration
Technology changes quickly and the problems that researchers had in the past when ascertaining the feasibility of teaching technical writing online may no longer exist due to the availability of new types of online collaboration. Online collaborative applications, such as videoconferencing, weblogs, and chat rooms, enable students to collaborate in real time. “As scholars, we use the
internet to make connections to others near and far. We increasingly define our research community based on those we best communicate with from a distance. The type of research we conduct also changes because of the Internet” (Gurak 193).

**E-mail**
Students can use e-mail to collaborate. They can exchange documents and ideas by e-mail. However, students have to wait for their teammates to check their e-mail and respond. This is an effective method of communication, but can often be a slow process.

**Blogs/ Discussion Forums**
Blogs and discussion forums offer another option for online collaboration. Instructors can implement blogs into their virtual classrooms and require students to post topics and respond to other student’s topics. Students can use outside blogs to collaborate, but like e-mail, it can be a slow process if students are not online at the same time.

**Videoconferencing**
Students can use videoconferencing technologies to collaborate. However, students must have access to Web cams in order to use this form of communication.

**Online Chats**
Students can collaborate in real-time by using online chat rooms. Students can coordinate their schedules and meet in an online chat at a designated time to collaborate on their assignments.

**Instant Messaging**
Students can use instant messaging services to collaborate. However, typical instant messaging formats only allow students to communicate with one other person per instant messaging window. This method can be difficult if more than two students are on the collaborative team.

**Wikis (Open Editing Pages)**
Wikis are open editing pages where multiple users can contribute information to an online document. The students can create a wiki and add content to it. The downside of this method is that, unless the can limit the users who can contribute to the wiki page, anyone can contribute information to the page.

**Social Networking Sites**
“We create online communities for ourselves and our students as a means to foster the exchange of ideas, identify new resources, and grow professionally” (Gurak 193). Students can use social networking sites to discuss assignments. Most social networking sites allow users to limit the information that others can access. However, because these sites are more social than educational, students might get distracted by the social aspect of it and not be able to focus on the task at hand. In order to effectively collaborate through a social networking site, the students should set aside a page that they only use for educational collaboration.

**Collaborative Websites**
Collaborative websites allow users to access a variety of collaboration tools from one website. These sites are one-stop-shops for users who want to collaborate online. The user joins the site
(sometimes for a fee) and then can access blogs, videoconferencing, and chats from the same site.

**Overview of Research Factors**
In order to effectively research this topic, I had to understand the factors that affect a university’s decision to implement an online learning environment and an instructor’s decision to teach an online class.

**Technology**
Many researchers cited technology as the main factor when teaching technical communication online. In TECM 2700, students have access to the UNT Technical Communication Lab and its available technology. Students can also go the library to research or use computers. However, “students rarely use traditional library sources in their search for resources or communities in support of their learning and research. Most research for homework assignments and research projects is conducted on the Web” (Gurak 194).

**Attitudes of Universities/Instructors**
Universities must be willing to spend the time and money to create an online classroom. The faculty and staff who create the online learning environment must have the necessary skills and the desire to do so. Because online instruction is often more time-consuming than classroom instruction, instructors must be willing to spend the amount of time necessary to effectively teach an online class.

**Attitudes of Students**
In order to effectively engage in online learning, students must be self-motivators. Students must be able to do their assignments without the motivation of going to a class at the university. Students who think that taking an online class is an easy alternative to the traditional classroom setting can find that the online process is more intense and more time-consuming.

**Difference between Online and Face-to-Face Instruction**
A 2009 study conducted by SRI International for the Department of Educations states, “[o]n average, students in online learning conditions performed better than those receiving face-to-face instruction” (Lohr). The biggest factor in determining the difference between the two learning environments is motivation.

**Learning Outcomes**
While some research notes that no significant difference occurs between the learning outcomes of traditional classroom instruction and online instruction, the Association of Public and Land-grant Universities’ (APLU) Sloan National Commission on Online Learning released a report in 2009 that states, “[a]mong faculty with online teaching or development experience a majority believe that the learning outcomes are as good or better than face-to-face instruction” (APLU).
**Dates of the Research**
The biggest drawback I found when analyzing the available data is the dates of the research. Technology increases so quickly that the issues that negatively affect students’ and instructors’ ability to communicate via the internet are no longer problematic.

**Literature Review**

**“Technical Communication on the Web: A profile of learners and learning environments” by Suzanne Schneider and Clark Germann (1999)**

Suzanne Schneider and Clark Germann both taught internet classes through universities in Colorado. They provided demographic data about the students who took classes through distance education. They also researched the type of learning environment provided by interactive technology. They determined that most of the students who took part in distance education were older than the students who took class in the face-to-face classroom. They also determined that slightly more females took the online class than males. Their research indicated that since more online students were older, an “effective learning environment for these students should reflect characteristics best suited for adult learners” (43).

They refer to David Kolb, Irwin Rubin, and Joyce Osland’s study that identifies the five characteristics of a learning environment best suited for adult learners (44).

- Learning involves giving as well as receiving.
- Adults prefer an experienced-based learning environment.
- Learning emphasizes personal application.
- The learning experience should be individualized and self-directed.
- The environment must integrate learning and living.

Their research indicates that “these findings show promise because they indicate that working adults who may not have time to take traditional campus-based classes may find more educational opportunity in distance education courses” (46).

However, they published this study in 1999. Technology has advanced far beyond what it was in 1999, so the factors that were important in this study may no longer apply.

**“Active and Interactive Learning Online: A Comparison of Web-Based and Conventional Writing Classes” by Brad Mehlenbacher, Carolyn R. Miller, David Covington, and Jamie Larsen (2000)**

The writers “examined how students enrolled in two web-based sections of a technical writing class performed compared to students enrolled in a conventional version of the class” (166). They determined that no significant difference occurred between the students in demographics or grades. However, they did find that females did significantly better than males in the web-based class.

The writers examined the role of students as active learners in the online classroom. They believe that “contemporary online technologies can be very personal and very interactive” (167). They described the difficulty of comparing the learning environments, because they believe that “the
transfer of active learning strategies to the web is not straight-forward and that interactivity as a
goal of instructional website design requires significant elaboration” (166). However, technology
has changed drastically in the nine years since they wrote this article and learning environments
have changed just as drastically.

“The Impact of the Internet and Digital Technologies on Teaching and Research
As the name of the article states, the researchers studied the impact of the Internet and digital
technologies on technical communication in the areas of teaching and research. They describe
how the availability of information on the Internet has dramatically increased, and in doing so, it
has affected the educational aspects of technical communication. They say, “[s]tudents expect
technical communication curricula to include information regarding software proficiencies,
better abilities to work with tag languages, more emphasis on content management and less on
actual writing of prose, and so on. Students also expect courses and programs to provide online
options, and increasing numbers of programs are providing resources for online learners” (189).

They explore the increasing trend of connecting with and communicating to a wider audience
through the use of the Internet and technology. This wider connection changes the way we, as
technical writers, research and teach. They conclude by saying, that if technical writers and
technical writing instructors “must fully engage in the use of the Internet and digital
technologies,” in order to fulfill our responsibilities as effective technical communicators and
effective teachers of technical communication.

Susan Katz evaluated the differences between teaching business communication completely in
the classroom, completely online, and in a hybrid format (using both classroom and online
instruction). She instructed and evaluated a hybrid class. She used a series of online modules that
she designed specifically for the hybrid class. She determined that the online modules were
effective, but the online teaching process requires more preparation time. She cited two sources
which concluded “online courses required 85% more work time” and “instructors may take three
times as long to prepare for and conduct a course online” (93).

She reiterates that most people learn by doing. This reinforces the idea of an online class being
an active learning environment. She also discusses how online collaboration is difficult.
However, in the almost two years since her report was published, the available technology has
increased enough to facilitate online collaboration.

“Student Ethos in the Online Technical Communication Classroom: Diverse
Voices” by Kristin Walker Pickering (2009)
Kristen Pickering writes, “[t]he digital age prompts us as communicators and scholars to redefine
the traditional confines of rhetoric to include communication, collaboration, and interaction at a
variety of levels using different media and communication patterns.” She moves away from
discussing the advantages and disadvantages of online instruction versus classroom instruction.
Instead, she discusses how to evaluate students’ ethos to determine which factors can help make
teaching online classes more effective. She studied two students during the summer of 2005 so
she could study the process of students creating ethos in an online technical communication course (172).

She explains that students and instructors must be active participants in online learning environments. She concludes by saying that instructors must examine the students’ ethos to determine which strategies work best in on online classroom.

Conclusion
In the current technological environment, computer access is commonplace and more students seek alternatives to the traditional classroom. By using available technologies, students can now research topics quickly and easily from their computers.

We must fully engage in the use of the Internet and digital technologies in our teaching and research. To not do so could mean that our discipline moves away from our traditional institutions, with an emphasis on research-based teaching and toward for-profit universities and learning centers, where students will gain a diploma but lose contact with the long history of what it is we do. (Gurak 197).

While the available research about the value of teaching technical communication online is out-of-date, we must assume that as technology grows, so does the ability to effectively interact in the online classroom. As technical writers, we must stay up-to-date on current technology in the workplace and in the available learning environments. To determine whether a university can proficiently teach technical communication online, we must explore today’s available technology and research how it affects the current online learning environment. Only then will we be able to determine whether or not students can successfully learn technical communication in an online classroom.
Works Cited


