Usability Report

Graduate Certificate in Teaching Technical Communication Webpage

Team Members:
Daniela Barron
Taryn Seidler
Claire Oldham

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Executive Summary

Test Goals and Research Question

The goals of usability testing include establishing and validating user performance and preference measures by addressing efficiency and user satisfaction. Our usability test focuses specifically on the Teaching Technical Communication Certificate webpage's search functionality and user experience while navigating it.

> Our specific research question is as follows:
> ***How well can users locate and identify program information, required materials, and contacts for the website?***

Process

Following industry standard methods of usability testing and the concepts of user experience design learned in English 5394, our team undertook an evaluation of the Teaching Technical Communication Certificate webpage, identified user profiles, and developed a 3-scenario test plan for the study. Upon a test-the-test presentation to client and client's approval of our test plan, we recruited three (e) participants to evaluate the Teaching Technical Communication Certificate website at Texas Tech University and recorded all observations and analyses in this Usability Test Report.

Findings

Overall, 2 out of the 3 participants struggled to complete 2 out of the 3 tasks. Two (2) participants successfully completed Scenario 1, which tested participants' ability to locate the website itself and the application requirements, while one (1) participant was unable to complete the task. Three (3) participants successfully completed Scenario 2, which involved locating one course (specifically a theory course) that they could take for the certificate. Two (2) participants successfully completed Scenario 3, which aimed to test users' ability to locate contact information for the page, while one (1) found the information, but through a different source. Two (2) out of the 3 participants were unable to complete one (1) out of the 3 scenarios within the 5:00 minute benchmark for the 2 scenarios that required a 5:00 time slot. The second scenario has a 1 minute benchmark and each participant met this time slot. Most participants ranked the tasks high in difficulty and had a difficult experience with the Teaching Tech Comm Certificate webpage overall, with "Intimidating,"

"Cumbersome," "Time-Consuming," and "Frustrating" being the most frequently chosen words to describe the site based on the IBM Product Reaction Card.

Based on analysis of the severity and frequency of errors and difficulties observed, two primary issue categories were identified: (1) Organization and Navigation and (2) Aesthetics and Logistics. Category (1) included difficulties locating important information, issues with repetitive content, and slow navigational time. Category (2) included issues with broken links and unappealing aesthetic issues.

Recommendations

To address the above issues, several recommendations can be made. We recommend providing navigation tools such as a sidebar with relevant anchors, logically organizing content to meet users expectations, deleting repetitive content, repairing broken links, and designing intentionally to break up text heavy content.

Methods

Usability Test Summary

The usability evaluation of the Teaching Technical Communication Certificate website was conducted by 3 testers in Dr. Jason Tham's ENGL 5394 course at Texas Tech University in the Fall semester in 2019.

During the usability evaluation, three (3) participants were asked to spend about 30 minutes with the Teaching Technical Communication Certificate webpage. During the test period, participants:

- Completed a user background questionnaire and signed consent forms
- Performed real-world tasks on the site while thinking aloud
- Answered questions about their overall experience

Recruiting Strategy

Our participants were recruited through a convenience sampling and were all related to Texas Tech University in some way. They all were expected to be highly proficient with the internet and will help us isolate key opportunities for further consideration or development within the design of the webpage. They have different experience with Texas Tech Websites, specifically in the English department, a reality for which our testing has accounted.

Participant Profiles

We recruited participants who resemble the characteristics of users based on our understanding of the variety of user personas.

- Near the end of undergraduate, or recently graduated and looking into options for further education
- Affiliated with Texas Tech
- Aged 18-35

With the characteristics of the users and the way they access the site, we recruited three (3) participants to test the Teaching Technical Communication Certificate webpage.

The following table shows a breakdown of the participants' profile.

	Participant 1	Participant 2	Participant 3
Sex	Female	Female	Male
Age	19	22	26
Occupation	Community Partner	Graduate Student	Attorney
Highest Education	Bachelor's	Bachelor's	Law Degree
Computer Usage	At least daily	At least daily	At least daily
Engl Dept. Web Usage	Yes	Yes	No
Engl Dept. Web Usage Rate	Less than once a month	A few times a month	Never
Last Engl Dept. Web Usage	Within the last week	Within the last week	Never

Test Location and Environment

Participants took part in the usability test in room 424 of the English Building. Room 424 offers multiple desks and space for all participants and testers. There is a computer with the website and supporting software will be used in a typical office environment. The computer was set up on Incognito mode with Chrome to a Google search engine page. The moderator sat next to the participant and interrupted only to prompt the participant to think out loud or give additional direction if needed. Data logger monitored the sessions in person.

Roles

The roles involved in the usability test were as follows:

Greeter: Taryn Seidler

- Welcomed participants
- Provided overview of study to participants
- Ensured proper paperwork are read and signed

Moderator: Claire Oldham

- Defined usability and purpose of usability testing to participants

- Assisted in conduct of participant and observer debriefing sessions
- Responded to participant's requests for assistance

Data Logger/Test Observer: Daniela Barron
- Recorded participant's actions and comments
- Acted as a silent observer
- Identified problems, concerns, coding bugs, and procedural errors

Ethical Guidelines

All persons involved with the usability test were required to adhere to the following ethical guidelines:

- The performance of any test participant must not be individually attributable. Individual participant's name should not be used in reference outside the testing session.
- A description of the participant's performance should not be reported to his or her manager.

Usability Scenarios and Tasks

The usability tasks were derived from test scenarios developed during ENGL 5394 class activities. The tasks were identical for all participants of a given user role in the study. In this usability test, we have developed three (3) scenarios. Each scenario contains three (3) realistic tasks.

Scenario 1

For your first scenario, you are trying to find application requirements for the Teaching Technical Communication Certificate at TTU.

Tasks:

1. Start at a Search Engine page.
2. Find the application requirements for the Teaching Technical Communication certificate.
3. Say "I'm done" when you find the application requirements.

Post-task Questions:

1. On a scale of 1 to 5 (1 being easy, 5 being hard), how would you rate the task you just performed?
2. What did you find most difficult in completing the task?
3. What did you find easiest in completing the task?

Scenario 2

For the next scenario, you are trying to find a required course for completion of the Teaching Technical Communication Certificate. Begin at the Teaching Technical Communication Certificate webpage and say "I'm done" when you find it.

Tasks:

1. Start at the Teaching Tech Comm Certificate Webpage.
2. Select one theory course that is required for the Certificate.
3. Say "I'm done" when you've found the required course.

Post-task Questions:

1. On a scale of 1 to 5 (1 being easy, 5 being hard), how would you rate the task you just performed?
2. What did you find most difficult in completing the task?
3. What did you find easiest in completing the task?

Scenario 3

For the last scenario, you have a question about the Teaching Technical Communication Certificate program and you are looking for contact information. Starting on the Teaching Technical Communication Certificate page, find the contact information and say "I'm done" when you find the contact information.

Tasks:

1. Start at the Teaching Tech Comm Certificate Webpage.
2. Find who to contact for more information.
3. Say "I'm done" when you find the contact information.

Post-task Questions:

1. On a scale of 1 to 5 (1 being easy, 5 being hard), how would you rate the task you just performed?
2. What did you find most difficult in completing the task?
3. What did you find easiest in completing the task?

Final Debriefing Questions

1. What did you like most about the Teaching Tech Comm Certificate webpage?
2. Did you find any aspect of the Teaching Tech Comm Certificate webpage frustrating?
3. If you could add one thing (perhaps a button or link) to the Teaching Tech Comm Certificate webpage, what would that be?

Evaluation Measures, Metrics, and Benchmarks

Usability metrics refers to user performance measured against specific performance goals necessary to satisfy usability requirements. Scenario completion success rates, time-to-completion, error rates, and subjective evaluations are used in this test.

Task Completion Rate

Completion rate is the percentage of test participants who successfully complete the task without critical errors. A critical error is defined as an error that results in an incorrect or incomplete outcome. In other words, the completion rate represents the percentage of participants who, when they are finished with the specified task, have an "output" that is correct.

Note: If a participant requires assistance in order to achieve a correct output then the task will be scored as a critical error and the overall completion rate for the task will be affected.

A completion rate of 100% was the goal for each task in this usability test.

Error-free Rate

Error-free rate is the percentage of test participants who complete the task without any errors (critical or non-critical errors). A non-critical error is an error that would not have an impact on the final output of the task but would result in the task being completed less efficiently.

An error-free rate of 80% was the goal for each task in this usability test.

Time on Task (TOT)

The time to complete a scenario is referred to as "time on task." It is measured from the time the person begins the scenario to the time he/she signals completion.

For each scenario, our TOT goal was 5 minutes.

Subjective Measures

Subjective opinions about specific tasks, time to perform each task, features, and functionality were surveyed. At the end of the test, participants rated the level of difficulty they experienced with overall system. Combined with the interview/debriefing session, these data were used to assess attitudes of the participants. Goals for subjective measures included:

- Determine if the participants can complete the scenario tasks satisfactorily
- Collect participants' satisfaction level on using the Teaching Tech Comm Certificate webpage
- Collect verbal/narratives of user experience

Problem Severity

To prioritize recommendations, a method of problem severity classification were used in the analysis of the data collected during evaluation activities. The approach treats problem severity as a combination of two factors – the impact of the problem and the frequency of users experiencing the problem during the evaluation.

Impact

Impact is the ranking of the consequences of the problem by defining the level of impact that the problem has on successful task completion. Impact can be high, moderate, or low. The following severity scale will be used to measure impact:

- **Severity 1** – High impact problems that often prevent a user from correctly completing a task. (critical errors)
- **Severity 2** – Moderate/high frequency problems with moderate/low impact. Typically erroneous actions that participant recognizes needs to be undone. (non-critical errors)
- **Severity 3** – Either moderate problems with low frequency or low problems with moderate frequency; these are minor annoyance problems faced by a number of participants. (non-critical errors)
- **Severity 4** – Low impact problems faced by few participants; there is low risk to not resolving these problems. (non-critical errors)

Frequency

Frequency is the percentage of participants who experience the problem when working on a task.

- *High:* Two or more of the participants experience the problem
- *Moderate:* Oe participant experiences the problem
- *Low:* No participants experience the problem

Limitations

The limitations of this usability testing activity include the following:

Small Sample Size

Due to this project being part of a graduate seminar and the time constraint imposed by the schedules of each tester and participant, the project team was not able to conduct a full-fledged usability test. Without access to funding and full use of the lab facility, the team was only able to recruit three (3) student participants to evaluate the webpage. These participants have similar user characteristics and demographic backgrounds. Hence, the generalizability of our findings are limited.

Different Levels of Familiarity with the English Department websites

Based on the participants' responses to our background questionnaire and observations during the tests, we have found that our participants have varying levels of familiarity with the English department website. This caused some discrepancies with each participants ability to navigate each task and locate the website itself, application requirements, courses, and contact information. Due to the fact that some participants were very familiar with the English Department website, some participants struggled while others found tasks simple.

Results

Summary of Results

- Success rates for scenarios
- Time completion for scenarios
- Participants' feedback during post-test interviews
- Participants' rating of difficulty in scenarios
- Participants' reaction to the Teaching Tech Comm Certificate webpage

Participants' Success Rate for Scenarios

	Scenario 1	**Scenario 2**	**Scenario 3**
Participant 1	Completed Task	Completed Task	Completed Task
Participant 2	Completed Task	Completed Task	Completed Task
Participant 3	Did Not Complete Task	Completed Task	Completed Task

Participants' Time Completion for Scenarios

	Scenario 1	**Scenario 2**	**Scenario 3**
Participant 1	5 minutes	1 minute	8 minutes
Participant 2	1 minute	1 minute	2 minutes
Participant 3	10 minutes	1 minute	6 minutes
Benchmark	5 minutes	1 minute	5 minutes

Participants' Feedback on Difficulty

In the post-task interview, we asked our participants to tell us what they found easiest and most difficult in completing the tasks in each scenario. The table below highlights some points that participants have reported during the interviews.

Scenario 1

	Easiest	**Most Difficult**
Participant 1	Link for the program was at the top of the search results	Scared of getting to the bottom of the page and not finding requirements
Participant 2	Likes that it was the first link on the page	No difficulties reported
Participant 3	Found no part of the task easy	Having two pages for the certificate; Didn't like having to go through multiple pages; Every page had a different name and scheme

Scenario 2

	Easiest	**Most Difficult**
Participant 1	Descriptions were easy to understand	So easy that the task was hard
Participant 2	The task itself was simple	No difficulties reported
Participant 3	It was the first thing on the list	Confused if whether they were even on the right page

Scenario 3

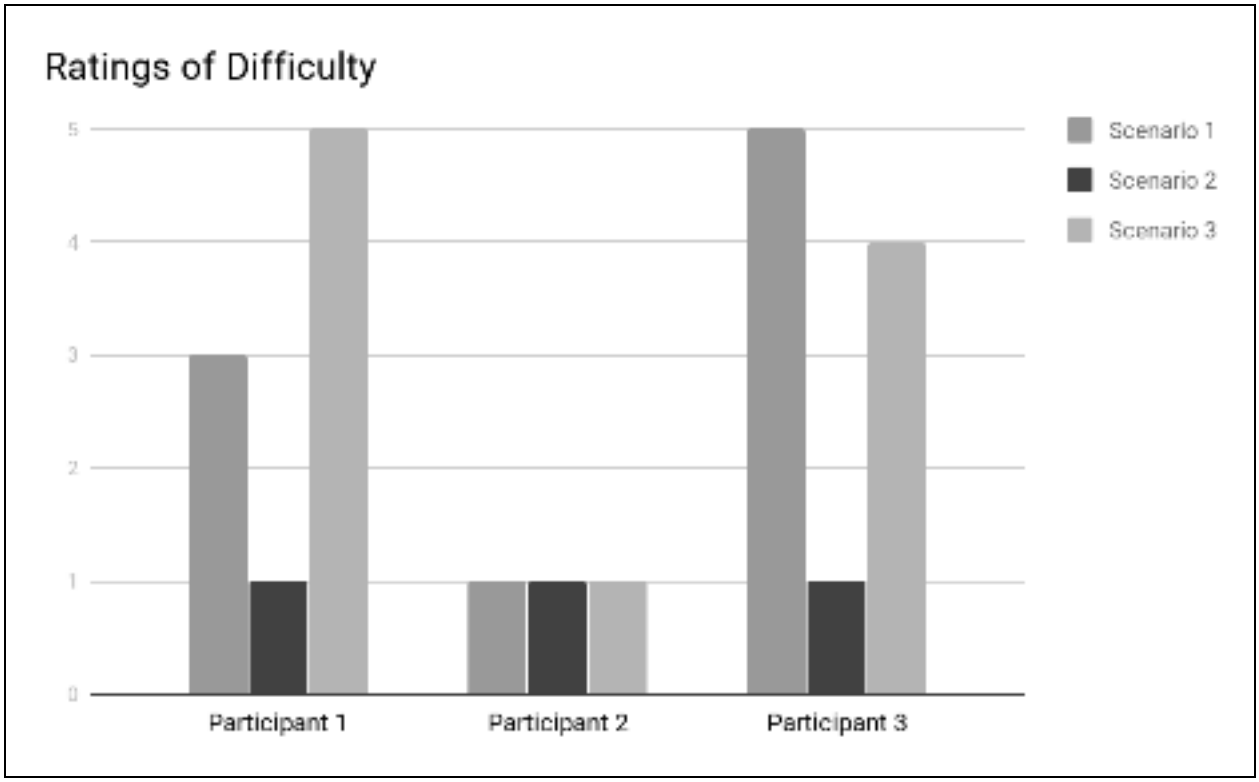
	Easiest	**Most Difficult**
Participant 1	Drop-down menus at the	Actually completing the

	top are nicely labeled; Website is intuitive; Likes that the link for the email is at least 'clickable'.	task was the most difficult
Participant 2	Knew the name of the contact to look for	Too much scrolling; Doesn't like font contrast
Participant 3	Once the link was found, it was easy to find contact email	Contact info was buried in the middle of the webpage with no surrounding information that tells there is contact info; Headings and info that come before the contact are not logically organized; Like finding a needle in a haystack

Participants' Ratings of Difficulty

During the post-task interview, we also asked the participants to rate the difficulty of their task scenarios, with 1 being the easiest and 5 being the toughest. The table below summarizes all participants' rating of the scenarios.

	Scenario 1	**Scenario 2**	**Scenario 3**
Participant 1	3	1	5
Participant 2	1	1	1
Participant 3	5	1	4
Mean Score	2.3	1	3.6



Participants' Responses to Final Debriefing Questions

We asked our participants three questions after all the scenarios about their positive and negative experience with the HCL mobile site, as well as what they would recommend adding to the site. Below are their responses.

	What did you like most about the Teaching Tech Comm Certificate webpage?
Participant 1	Likes that at the top it says the two days when the applications are reviewed
Participant 2	The categories the courses are listed under are in order to show the user which courses they need
Participant 3	That all the info on the page has to deal with the TCR program; Likes that some

	courses are listed; Application section itself is ok once it was found

	Did you find any aspect of the Teaching Tech Comm Certificate webpage frustrating?
Participant 1	Finding contact information was frustrating. It is frustrating not to see application requirements or GRE requirements first.
Participant 2	Doesn't find any aspects frustrating
Participant 3	Hard to find things because everything is all the same color/ font; Headings could be more descriptive; Contact info is in the middle of the page; A lot of courses are listed, which is helpful, but user thinks it would be more helpful to list the application requirements instead, so that he knows what is needed Contact buttons send him to the general TTU contact; it is ridiculous.

	If you could add one thing (perhaps a button or link) to the Teaching Tech Comm Certificate webpage, what would that be?
Participant 1	Wishes there was a sidebar for contact information and various components of the webpage (i.e., application requirements, course requirements, contact information, etc.).
Participant 2	Thinks contact information should be moved closer to the top of the page
Participant 3	Contact link or section on the side or on the top

Participants' Reactions to Teaching Tech Comm Certificate webpage

To get a sense of participants' overall reaction to the Teaching Tech Comm Certificate webpage, we used IBM's Product Reaction Card to collect the participant's views of the site. They were asked to circle the words they felt described the site itself or their interaction with the site. Participants were also given leeway to add their own words to the list if they felt the list was insufficient.

Participant 1:

- Cumbersome
- Easy to Use
- Insufficient
- Time-consuming
- Stupid
- Unhelpful
- Intimidating
- Frustrating
- Complicated
- Discouraging
- Unorganized (added)

Participant 2:

- Reliable
- Easy to Use
- Straightforward
- Simple
- Familiar
- Understandable
- Helpful
- Organized
- Useful
- Informative

Participant 3:

- Boring
- Intimidating
- Cumbersome
- Time-consuming

- Frustrating
- Hard to use
- Wordy
- Dense (added)

Words added: Unorganized, Dense

Words repeated more than once: Intimidating, Cumbersome, Time-consuming, Frustrating

Analysis

Summary of Analysis

- Issue 1.1 Difficulty in Locating Contact Information
- Issue 1.2 Difficulty in Locating Application Information
- Issue 1.3 Repetitive Content
- Issue 1.4 Lack of Speed of Navigation
- Issue 2.1 Broken Links
- Issue 2.2 Unappealing Design

Issue Themes

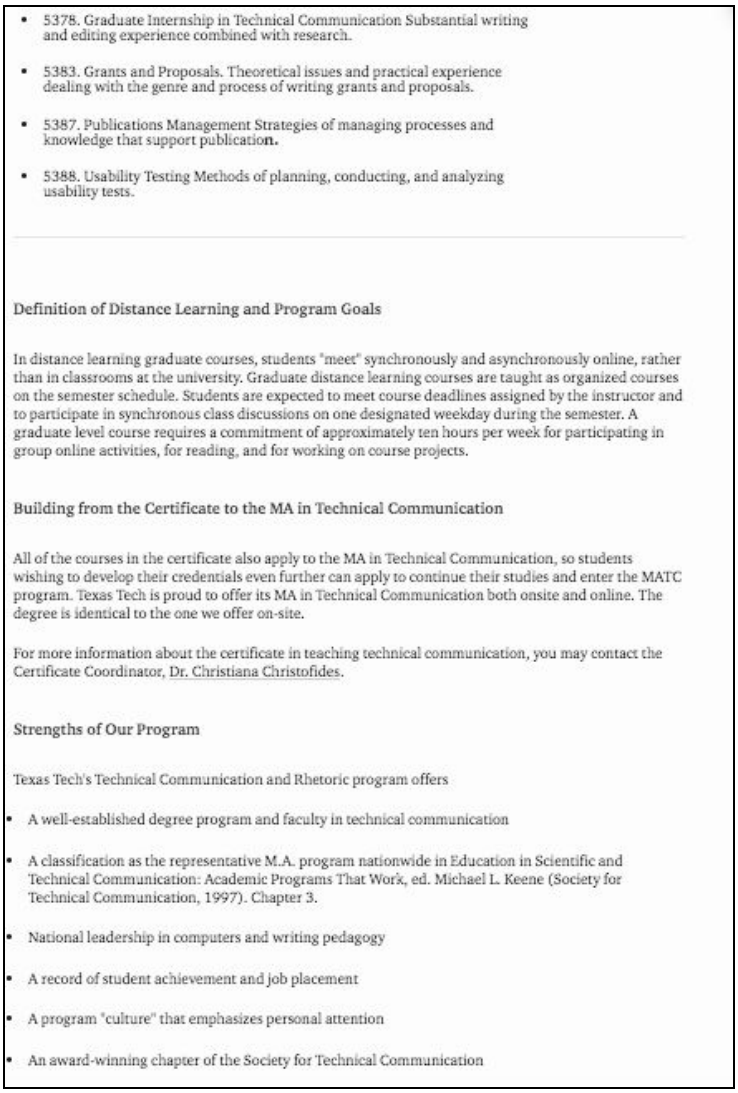
Based on the results detailed above, the testing team has identified the following major issues based on severity and frequency. Two overarching categories listed in descending order of overall urgency. Within these categories, particular issues are ranked in descending order of severity, with consideration given to the webpages ability to address the issue. The issues identified align with those detailed in the heuristic analyses prepared by individual members of the team (see Appendix F).

Severity	**Frequency**	**Issue**
Organization and Navigation		
1	2	Difficulty in Locating Contact Information (contact information located in the middle of the page)
1	2	Difficulty in Locating Application Information (located at the bottom of the page)
2	2	Course information and Application dates listed twice
3	3	Lack of Speed of Navigation - long completion time due to scrolling and reading through paragraphs of information

Aesthetics and Logistics		
1	1	Broken links
3	1	Black and White text, irregularity in visual cues

Issue 1.1: *Difficulty in Locating Contact Information*

The Contact information for help or more information about the Certificate program is located in the middle of the page, underneath a title that does not relate to the task of finding contact information. This information is not listed elsewhere.



- 5378. Graduate Internship in Technical Communication Substantial writing and editing experience combined with research.
- 5383. Grants and Proposals. Theoretical issues and practical experience dealing with the genre and process of writing grants and proposals.
- 5387. Publications Management Strategies of managing processes and knowledge that support publication.
- 5388. Usability Testing Methods of planning, conducting, and analyzing usability tests.

Definition of Distance Learning and Program Goals

In distance learning graduate courses, students "meet" synchronously and asynchronously online, rather than in classrooms at the university. Graduate distance learning courses are taught as organized courses on the semester schedule. Students are expected to meet course deadlines assigned by the instructor and to participate in synchronous class discussions on one designated weekday during the semester. A graduate level course requires a commitment of approximately ten hours per week for participating in group online activities, for reading, and for working on course projects.

Building from the Certificate to the MA in Technical Communication

All of the courses in the certificate also apply to the MA in Technical Communication, so students wishing to develop their credentials even further can apply to continue their studies and enter the MATC program. Texas Tech is proud to offer its MA in Technical Communication both onsite and online. The degree is identical to the one we offer on-site.

For more information about the certificate in teaching technical communication, you may contact the Certificate Coordinator, Dr. Christiana Christofides.

Strengths of Our Program

Texas Tech's Technical Communication and Rhetoric program offers

- A well-established degree program and faculty in technical communication
- A classification as the representative M.A. program nationwide in Education in Scientific and Technical Communication: Academic Programs That Work, ed. Michael L. Keene (Society for Technical Communication, 1997). Chapter 3.
- National leadership in computers and writing pedagogy
- A record of student achievement and job placement
- A program "culture" that emphasizes personal attention
- An award-winning chapter of the Society for Technical Communication

Located in the middle of the page...

Difficult to see without close reading

Building from the Certificate to the MA in Technical Communication

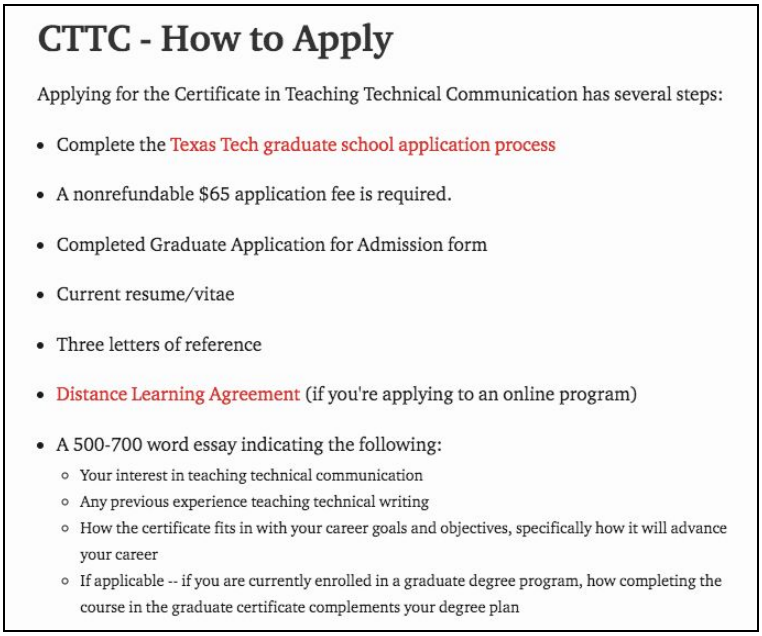
All of the courses in the certificate also apply to the MA in Technical Communication, so students wishing to develop their credentials even further can apply to continue their studies and enter the MATC program. Texas Tech is proud to offer its MA in Technical Communication both onsite and online. The degree is identical to the one we offer on-site.

For more information about the certificate in teaching technical communication, you may contact the Certificate Coordinator, Dr. Christiana Christofides.

See above: "Building from the Certificate to the MA in Technical Communication" as the title.

Issue 1.2: *Difficulty in Locating Application Requirements*

Though application information is mentioned and located in multiple locations throughout the website, actual application requirements that are specific for the Certificate program are listed towards the bottom of the page, but the link to apply is located at the top (the link leads to the general Graduate school application, requires a log-in).



CTTC - How to Apply

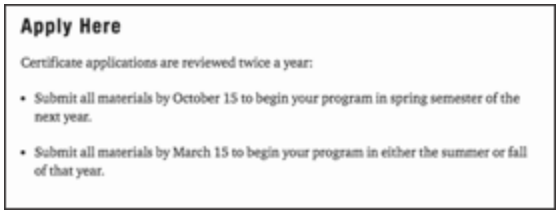
Applying for the Certificate in Teaching Technical Communication has several steps:

- Complete the Texas Tech graduate school application process
- A nonrefundable $65 application fee is required.
- Completed Graduate Application for Admission form
- Current resume/vitae
- Three letters of reference
- Distance Learning Agreement (if you're applying to an online program)
- A 500-700 word essay indicating the following:
  - Your interest in teaching technical communication
  - Any previous experience teaching technical writing
  - How the certificate fits in with your career goals and objectives, specifically how it will advance your career
  - If applicable -- if you are currently enrolled in a graduate degree program, how completing the course in the graduate certificate complements your degree plan

The specific information for the requirements are only listed here.

Issue 1.3: *Repetitive Content*

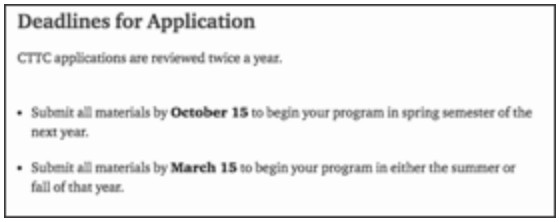
Much of the content is listed in multiple places on the page, for no clear purpose. For example, there are two separate lists of courses and two descriptions of the application due dates.



Apply Here

Certificate applications are reviewed twice a year:

- Submit all materials by October 15 to begin your program in spring semester of the next year.
- Submit all materials by March 15 to begin your program in either the summer or fall of that year.



Deadlines for Application

CTTC applications are reviewed twice a year.

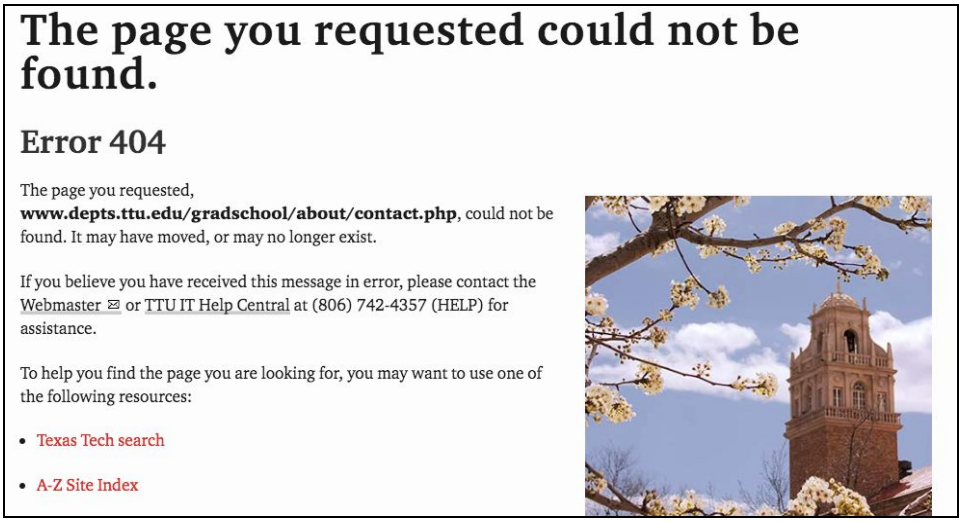
- Submit all materials by **October 15** to begin your program in spring semester of the next year.
- Submit all materials by **March 15** to begin your program in either the summer or fall of that year.

Issue 1.4: *Lack of Speed of Navigation*

Tasks required a long completion time due to scrolling and reading through paragraphs of information. There is no navigational tool at the top of the page, the only way to find information is to scroll and read subject headings.

Issue 2.1: *Broken Links*

Not all of the links on the site link to working pages.



The page you requested could not be found.

Error 404

The page you requested, **www.depts.ttu.edu/gradschool/about/contact.php**, could not be found. It may have moved, or may no longer exist.

If you believe you have received this message in error, please contact the Webmaster or TTU IT Help Central at (806) 742-4357 (HELP) for assistance.

To help you find the page you are looking for, you may want to use one of the following resources:

- Texas Tech search
- A-Z Site Index

Issue 2.2: *Unappealing Design*

Black and White text, irregularity in visual cues

Team Heuristic Evaluation Ratings

Prior to this usability test, all members of testing team conducted a heuristic evaluation of the Teaching Tech Comm Certificate webpage using Jakob Nielsen's ten (10) heuristics adapted for the web. The following table summarizes the ratings (1 being in need of most improvement and 4 being effective usability) each of our members assigned to the heuristic items. Detailed individual reports are attached at the end of this report (see Appendix F).

	C.O.	**T.S.**	**D.B.**	***Mean***
Visibility of system status	3	2	1	*2*
Match between system and world	2	2	2	*2*
User control and freedom	3	1	1	*1.67*
Consistency and standards	2	4	1	*2.33*
Error prevention	2	1	1	*1.33*
Recognition versus recall	3	2	1	*2*
Flexibility and efficiency	2	1	1	*1.33*
Aesthetics and minimalism	2	2	1	*1.67*
Error recovery	1	1	1	*1*
Help and documentation	3	3	1	*2.33*
Total:	*23*	*19*	*11*	

Recommendations

Summary of Recommendations

- Issue 1.1 & 1.4 Provide Navigation
- Issue 1.2 Logically Organize Content
- Issue 1.3 Delete Repetitive Content
- Issue 2.1 Repair Broken Links
- Issue 2.2 Design Intentionally

1. Organization and Navigation

Issue 1.1 & 1.4: *Provide Navigation*

In order to increase users' ability to navigate through the webpage, a navigation bar at the top or along the side of the page should be included. A navigation bar should include a tab for: description and strengths of the certificate, application requirements and deadlines, course requirements, contact information/help, distance learning information, financial aid. A navigation bar will organize information and guide users through the webpage's numerous sections.

Issue 1.2: *Logically Organize Content*

Re-organizing the content of the webpage into clear and logical sections will help to meet user expectations. Beginning the page with a brief section about the certificate and the strengths of the program will effectively introduce users to the certificate. Further, following this description with clear application requirements and deadlines, including a link to the application, will provide users with the information that they need about the specifics of the certificate early in the page. Subsequent sections should include a description of the distance learning agreement, required courses, financial aid, and contact information. Logically ordering the content in this manner will effectively meet user assumptions about the structure of certificate and program web pages they have already encountered.

Issue 1.3: *Delete Repetitive Content*

In order to better meet user assumptions and expectations, repetitive content should be deleted. Information should only be included one time, once the information is more logically organized. Currently, there are two separate lists of course options -- one should be deleted. There are also two descriptions of the application due dates, the one towards the bottom should be deleted.

2. Aesthetics and Logistics

Issue 2.1: *Repair Broken Links*

Current links on the webpage, specifically the "apply here" link and the "financial aid" link, need to be updated in order to navigate users to the correct pages. The "apply here" link currently links to the general graduate school webpage. Instead, this link should navigate users to the application portal. The "financial aid" link needs to be repaired to link to the TTU financial aid webpage, rather than linking to a broken page.

Issue 2.2: *Design Intentionally*

Implementing consistent design will improve the visual readability of this webpage. Including clear headings for each individual section can signal users when a new section begins, in addition to using consistent typefaces and font size across headings, subheadings, and body text will allow for a clean, visually logical organization of content. Further, intentional use of color can highlight links or key dates, or emphasize breaks in sections on the webpage to improve the structure and appearance of the webpage.

Conclusion

This report details the results and analyses of observations made during a usability test of the Teaching Tech Comm Certificate webpage carried out by a three-member team. As part of a graduate seminar in usability and user experience design instructed by Dr. Jason Tham at Texas Tech University, this project concluded after a presentation of findings on December 4, 2019.

The testing team would like to thank all the participants who have made this project possible by volunteering to evaluate the Teaching Tech Comm Certificate webpage. The team would also like to thank Mr. Jason Tham for his assistance throughout the course.

The team hopes that the usability study performed will be helpful for making improvements to the Teaching Tech Comm Certificate webpage at Texas Tech University. Further and ongoing testings are encouraged to enhance the usability of the site.

Appendices

Appendix A: Participant Consent Form and Bill of Rights

Appendix B: Participant Background Questionnaire

Appendix C: Debriefing Interview, Product Reaction Card

Appendix D: Participant Briefing Script

Appendix E: Participant Post-Testing Questionnaire

Appendix G: Individual Heuristic Evaluations

APPENDIX A: INFORMED CONSENT

Title of Study: Teaching Technical Communication Certificate

You are invited to be in a research study in which you are asked to test the ease of use of a particular product: either a web site or a software program. You have been identified as a possible participant because you are a Texas Tech University student, faculty, or staff members. We ask that you consider this research opportunity and ask any questions you may have before agreeing to be in study.

This study is being conducted by students in English 5394: User-Centered Design at Texas Tech University under the instruction of Dr. Jason Tham in the Department of English at Texas Tech University.

Background Information

The purpose of this study is to observe persons interacting with a product to gain information about the ease of use of that product.

Procedures

If you agree to be in this study, your participation will consist of a questionnaire about your experience with the software product, the completion of specified internet tasks using a specified web site or software program, and a short debriefing interview about your experience completing the specified tasks. Your participation will not exceed one hour of your time.

Risks and Benefits

There are no foreseeable risks associated with your participation in this study. Participation in this study may benefit you by encouraging you to think about the ways in which websites and software products could be improved to suit user needs and preferences. Your participation will also help students, program developers, and instructors learn more about product design improvements.

Voluntary Nature of Study

Your participation is strictly voluntary, and you are not required to participate in this study. You can withdraw from the study at any time. Your decision to withdraw will have no effect on your relationship with the university.

Confidentiality

The records of this study will be kept private. In any sort of report that may be published, no information will be included that will make it possible to identify a subject.

Pseudonyms or numbers will be used in place of your real name to protect your identity. If you agree to participate in interviews, your interviews will be recorded (either audio or videotape). Only student researchers will have access to these data.

Contact and Questions

The researchers conducting this study are Claire Oldham, Taryn Seidler, and Daniela Barron. You may ask any questions you have about the study now. If you have questions later, you may contact any of us through e-mail at claire.oldham@ttu.edu, taryn.seidler@ttu.edu, and daniela.barron@ttu.edu.

> *Dr. Jason Tham is instructor of this class. You can contact Dr. Tham with any further questions at jason.tham@ttu.edu.*

Statement of Consent

I have read the above information. I have asked questions and have received answers to my questions. I consent to participate in the study.

Signature _____ Date _____

Signature of Investigator _____ Date _____

Participant's Bill of Rights

1. **You are not being evaluated**
   The term "usability evaluation" refers to evaluating a software product (an application or Web service), not a person. The usability team considers you a partner in the design of the product. Any difficulties you encounter during this session help us identify which parts of the product need to be improved.

2. **You may leave at any time**
   You are taking part in the evaluation as a volunteer. You have the right to interrupt the evaluation or withdraw from it at any time, for any reason. You do not need to give a reason.

3. **You will be informed that you are being observed**
   You will be observed through a one-way mirror by one or more people on the usability team. Usability team members may include Usability Services staff, technical team staff, and business experts. If you are a University employee, you will not be observed by your supervisor without your knowledge and written consent. You have the right to have any relevant questions answered.

4. **You will be informed if and how you are being recorded**
   During this session the usability team will observe and may record your actions, your voice, your computer screen, and/or where you look on the computer screen. These may be video, audio, or eye-tracking recordings. The equipment we use has been certified by the manufacturers as safe for long-term usage. You have the right to ask and receive answers to any relevant questions about the process, equipment, and recordings.

5. **Your identity will be kept confidential**
   Usability team members have signed Code of Conduct agreements that contain their promise to keep your identity confidential. Any reports resulting from this session will protect your anonymity. Any records from this session which might identify you will be kept confidential by the usability team. These include forms, notes, and recordings which could identify you. You may be recognizable on video or audio recordings, but this session will not be recorded without your written consent. You have the right to be informed what the session records will be used for. The records may not be used for purposes other than those you have agreed to unless your additional written consent is obtained.

6. **Video and Audio Recordings will be destroyed upon request**

When no longer needed for design purposes, any video or audio recordings containing your picture or voice from this session will be destroyed. You have the right to request that the recordings from the session be destroyed, whether or not you complete the session.

7. You will be treated with respect

You have the right to be treated politely and with respect during the evaluation. Humor is allowed, but you are invited to set the tone that you feel most comfortable with.

APPENDIX B: Background and Questionnaire

1. What is your age?

- □ 18-23
- □ 24-30
- □ 30-50
- □ 50+

2. What is your occupation (check all that apply)?

- □ Faculty
- □ Administrator
- □ Student
- □ Community partner
- □ Other _____

3. What is the highest level of education you have completed?

- □ High school
- □ Some undergraduate
- □ Undergraduate degree
- □ Graduate/professional degree

4. How often do you use a computer?

- □ Less than once a month
- □ At least once a month
- □ At least once a week
- □ At least daily

5. Have you used any English Department web services previously?

- □ Yes
- □ No

6. How often do you use the English Department website?

- □ Never
- □ Less than once a month
- □ At least once a month
- □ A few times a month

7. When was the last time you used the English Department website to find specific information?

- □ Never
- □ Over a year ago
- □ Within the last 12 months
- □ Within the last week

APPENDIX C: Debriefing Interview, Product Reaction Cards

Adapted from *Joey Benedek and Trish Miner,*
Microsoft Corporation, 1 Microsoft Way, Redmond, WA 98052
joeyb@microsoft.com and trishmi@microsoft.com

The following table contains all of the words used on the product reaction cards described in the paper Measuring Desirability: New methods for measuring desirability in the usability lab setting.

Entertaining	**Reliable**	**Instructive**	**Slow**
Trendy	**Easy to Use**	**Insufficient**	**Straightforward**
Boring	**Effective**	**Intimidating**	**Stressful**
Cumbersome	**Efficient**	**Intuitive**	**Time-consuming**
Simple	**Familiar**	**Jargon-filled**	**Simplistic**
Complicated	**Fast**	**Stupid**	**Technical**
Confusing	**Frustrating**	**Modern**	**Trustworthy**
Sensory overload	**Hard to use**	**Outdated**	**Understandable**
Difficult	**Helpful**	**Organized**	**Unhelpful**
Discouraging	**Inconsistent**	**Overwhelming**	**Useful**
Distracting	**Informative**	**Robust**	**Wordy**

APPENDIX D: Participant Briefing Script

1. **Introductions:** Thanks for coming in today, were you able to find the lab okay? It may seem weird that I'm reading this to you from a script, but we do this to ensure that consistent direction is given to all participants in our study, so please bear with me.

2. **Agreement Form:** Give form. You just completed our agreement form for usability evaluators. Did you have any questions about anything on the form?

3. **Who I am:** I'm Taryn from the Tech Comm graduate department, and we're helping the English Department webmaster gather feedback to improve the efficiency of the teaching tech comm webpage. One of the webmasters goals is to make the web site as intuitive and easy-to-use as possible. So we bring users in to try out the site and tell us what they think— what's easy to use, what's difficult, etc.

4. **Give intro to design:** Today you'll be trying out the Technical Communication Certificate webpage and helping to evaluate its usability. The Technical Communication Certificate website provides information to users about the TCR program, as well as a Technical Communication Certificate webpage.

5. **Typical tasks / Think out loud:** In order to give you some context for evaluating the site, I'll give you some typical tasks to complete, and while you're doing that, I'm going to ask you to think out loud. What does this mean? I'd like you to tell me what you're trying to do each step of the way. Like if you were playing an online game and explaining your moves to a friend who doesn't know the game. And tell us what you're thinking when something is different than you had expected, or whether it's exactly what you thought it would be. And give us your impressions as you go along—what you like and don't like about the way it looks, or anything that's confusing or hard to use.

6. **Bill of Rights:** Give Bill of Rights. You read your Bill of Rights. Did you have any questions about it?

7. The most important thing is that you are doing the evaluating and you are not being evaluated.

8. We don't expect anyone to know how to use the Teaching Technical Communication Certificate webpage, and nothing you could do would be wrong.

9. If you happen to have any trouble using the web site, any struggles you experience will help us to identify usability issues so they can be fixed and other users won't have to struggle later.

10. Also, please note that you're here voluntarily and may leave at any time, if you need to.

11. The usability team will be observing your session. Your participation is confidential with the usability team, the observations will be kept confidential, and notes and reports about the evaluation will not reveal your identity.

12. Is everything set up okay for you?

13. Claire will provide you with three separate scenarios that ask you to complete specific tasks. For each scenario, follow the direction given to complete the task. You will be observed while you complete the scenarios.

14. So just start with your first scenario, and remember to think out loud.

15. When you finish the scenario, just say that you're done.

[1] *2013 fact sheet.* (2013). In *Hennepin County Library*. Retrieved from http://www.hclib.org/about/

Moderator Script

Scenario 1

1. For your first scenario, you are trying to find application requirements for the Teaching Technical Communication Certificate at TTU. Begin at a search engine page, and say "I'm done" when you find the application requirements.

Scenario 2

2. **For the next scenario, you are trying to find a required course for completion of the Teaching Technical Communication Certificate. Begin at the Teaching Technical Communication Certificate webpage and say "I'm done" when you find it.**

Scenario 3

3. You have a question about the Teaching Technical Communication Certificate program and you are looking for contact information. Starting on the Teaching Technical Communication Certificate page, find the contact information and say "I'm done" when you find the contact information.

APPENDIX E: Participant Post-Testing Questionnaire

Post-task Questions

1. **On a scale of 1 to 5 (1 being easy, 5 being hard), how would you rate the task you just performed?**
2. **What did you find most difficult in completing the task?**
3. **What did you find easiest in completing the task?**

Final Debriefing Questions

1. What did you like most about the Teaching Tech Comm Certificate webpage?
2. Did you find any aspect of the Teaching Tech Comm Certificate webpage frustrating?
3. If you could add one thing (perhaps a button or link) to the Teaching Tech Comm Certificate webpage, what would that be?

APPENDIX F: Individual Heuristic Evaluation Reports

Heuristic Evaluation Memo (Oldham)

To: Dr. Christiana Christofides and English Department Webmaster
CC: Dr. Jason Tham
From: Claire Oldham
Subject: Heuristic Evaluation of Teaching Tech Comm Certificate webpage

This document outlines the outcomes from a heuristic evaluation of the English Department page: Graduate Certificate in Teaching Technical Communication. The evaluation is based on Jakob Nielsen's (1995) "Ten Usability Heuristics for User Interface Design" and the website can be found at https://www.depts.ttu.edu/english/tcr/CTTC/CTTC-overview.php.

For each heuristic in question I provide a screenshot along with a brief description providing the strengths and weaknesses of the website. In some descriptions, exemplary visuals from other websites are used to illustrate my arguments. A summary table is presented at the end of the document to provide an overview of these strengths and weaknesses, as well as ratings for the website under each heuristic.

1) Visibility of System Status (Visibility)

The system should always keep users informed about what is going on, through appropriate feedback within reasonable time.

The main way that visibility and feedback occurs for the user is in relation to the hyperlinks included in the page. There is an inconsistency of how these links react to a user's mouse hovering over the link. For example, the "Apply Here" title on the page does not originally look like a link (see Fig. 1.1) but when one hovers over the text, the text turns red, revealing it as a link (see Fig. 1.2). However, other bolded titles are not links, and all other links are either red to begin with (with no feedback) or grey and underlined (turning red when hovering with the mouse).

Overall, there is not much feedback included in the page, as it is mostly text.

2) Match between System and the Real World (Metaphor)

The system should speak the users' language, with words, phrases and concepts familiar to the user, rather than system-oriented terms. Follow real-world conventions, making information appear in a natural and logical order.

In terms of meeting user's expectations, many aspects of the website that don't follow logical, real-world needs. From my understanding, the ordering of sections does not follow logical patterns in that it is unclear who they are attempting to reach.

Graduate Certificate in Teaching Technical Communication

Apply Here

Certificate applications are reviewed twice a year:

- Submit all materials by October 15 to begin your program in spring semester of the next year.
- Submit all materials by March 15 to begin your program in either the summer or fall of that year.

The Graduate Certificate in Teaching Technical Communication helps students seeking to build their credentials as teachers of technical communication. In particular, it is designed to serve students wishing to retool their English degrees to develop teaching expertise in technical communication and to support international institutions needing to provide faculty and students with instruction in how to teach technical communication. The certificate requires a minimum of 15 hours of either online or onsite courses, including two courses in the theoretical foundations of technical communication and rhetoric and a third course on teaching technical and professional communication. Students choose two elective courses in the Technical Communication and Rhetoric program to complete the certificate—one from the advanced theory courses and the other from advanced practice courses.

Fig. 2.1 - The "apply here" button comes before the description of the certification itself.

Overall, the webpage uses academic language that would be relevant for an audience with an experience with higher education (as the page is for a graduate certificate, this is likely).

3) User Control and Freedom (Navigation)

Users often choose system functions by mistake and will need a clearly marked "emergency exit" to leave the unwanted state without having to through an extended dialogue. Support undo and redo.

Though the majority of the webpage is text with no user interaction, each link that is present on the page allows for the user to click the back button provided by the browser. The links do not pop up as separate windows but do allow for ease of user correction.
Fig. 3.1 and 3.2 show the relationship between clicking on a link and being able to go back to the main page.

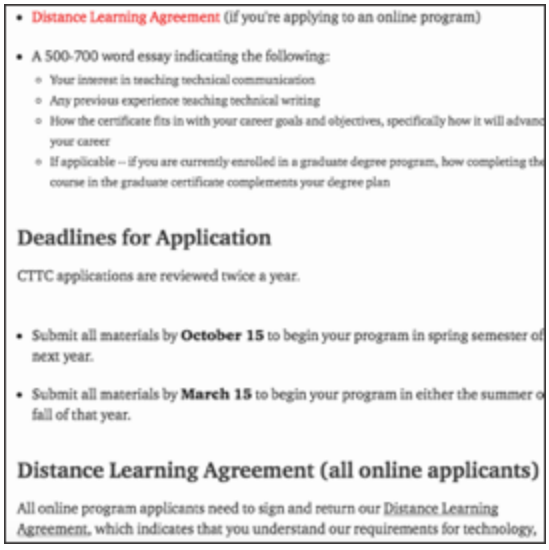
However, the lack of clearly marked links makes it difficult for users to navigate which links will be useful for them to click on, even if it is easy to back out.

4) Consistency and Standards (Consistency)

Users should not have to wonder whether different words, situations, or actions mean the same thing. Follow platform conventions.

The main issue is that the links do not look the same. It is confusing to understand which there 3 different visually representations of clickable hyperlinks. Some links are red as seen at the top of Fig. 4.1 and some are underlined in gray as seen at the bottom of Fig. 4.1.

The third type of visual link is seen in the “Apply Here” button at the top of the page which has a san-serif font in bold (see Figs. 1.1 and 2.1)

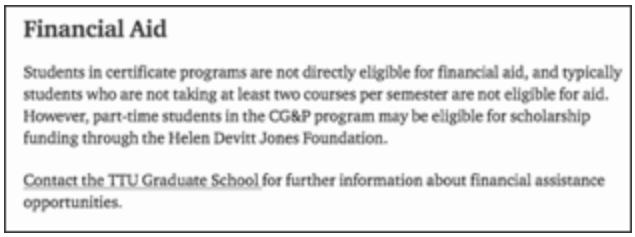


Overall, the webpage follows design conventions of Texas Tech websites and is similar in page design to the Grants and Proposals certificate page (but not the other certificates offered by the English department).

5) Error Prevention (Prevention)

Even better than good error message is a careful design which prevents a problem from occurring in the first place. Either eliminate error-prone conditions or check for them and present users with a confirmation option before they commit to the action.

The webpage does not fully engage in error prevention as the last link on the page goes to an error message page. The link on the page titled "Contact the TTU Graduate School," needs to be updated to a working link (see Fig. 5.1).



Financial Aid

Students in certificate programs are not directly eligible for financial aid, and typically students who are not taking at least two courses per semester are not eligible for aid. However, part-time students in the CG&P program may be eligible for scholarship funding through the Helen Devitt Jones Foundation.

Contact the TTU Graduate School for further information about financial assistance opportunities.

Otherwise, error prevention concerns similar elements to successful navigation in using browser-provided back buttons.

6) Recognition Rather Than Recall (Memory)

Minimize the user's memory load by making objects, actions, and options visible. The user should not have to remember information from one part of the dialogue to another. Instructions for use of the system should be visible or easily retrievable whenever appropriate.

The design of the webpage leads to positives and negatives in memory usability. The webpage is designed as including large amount of text that requires a lot of scrolling up and down. This is of benefit because a simple action (scrolling) is required to locate past information which decreases the user's need for memorization. However, due to the non-logical order of the text itself, scrolling and backtracking may be occurring more often than necessary – hindering rather than helping user recall.
Fig. 6.1 shows an example of a small section of the webpage to visualize the amount of text that is required to scroll through each time the webpage is being used.

7) Flexibility and Efficiency of Use (Efficiency)

Accelerators –unseen by the novice user –may often speed up the interaction for the expert user such that the system can cater to both inexperienced and experienced users. Allow users to tailor frequent actions.

Where the webpage is successful in user efficiency is by using clear typefaces to differentiate various sections. This allows for relatively quick scrolling through large amounts of text. For example, the use of bolding and larger text helps users find section titles quickly (see Fig. 7.1). However, clearer navigation at the top of the page would allow for better and more effective interaction time with the page.

Strengths of Our Program

Texas Tech's Technical Communication and Rhetoric program offers

- A well-established degree program and faculty in technical communication
- A classification as the representative M.A. program nationwide in Education in Scientific and Technical Communication: Academic Programs That Work, ed. Michael L. Keene (Society for Technical Communication, 1997). Chapter 3.
- National leadership in computers and writing pedagogy
- A record of student achievement and job placement
- A program "culture" that emphasizes personal attention
- An award-winning chapter of the Society for Technical Communication

CTTC Requirements

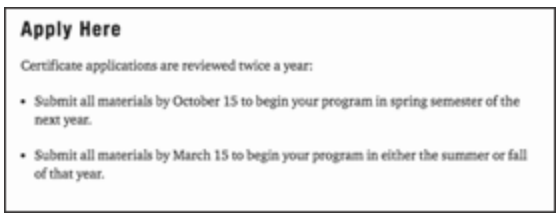
Students enrolled in the Certificate in Teaching Technical Communication take a minimum of 15 credit hours of courses (5 courses). Of these, nine hours are taken in three required (core) courses and six hours are electives chosen from advanced theory and practice courses.

8) Aesthetic and Minimalist Design (Design)

Dialogues should not contain information which is irrelevant or rarely needed. Every extra unit of information in a dialogue competes with the relevant units of information and diminishes their relative visibility.

Though the design is simple in that it is limited to black and white text, there are several instances of repetitive content. For example, the link to the Graduate school admissions is included twice on the page (the "Apply Here" button at the top of the page and as the part of the of the "How to Apply" section lower on the page). The link to the Distance Learning Agreement is also included twice. Though there are more examples of repetition, see Figures 8.1 and 8.2 for an example of the repetition of application deadline information.

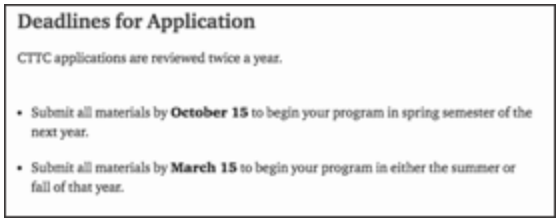
The same information is located in 2 separate instances on the page – one at the top (Fig. 8.1) and one near the bottom (Fig. 8.2).



Apply Here

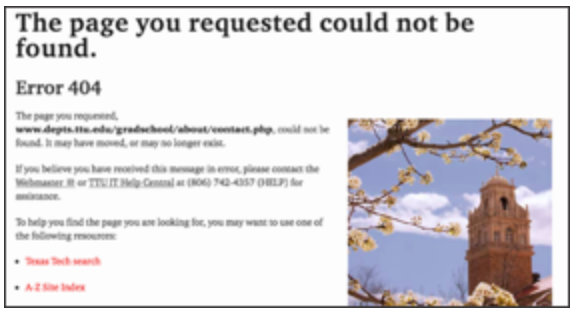
Certificate applications are reviewed twice a year:

- Submit all materials by October 15 to begin your program in spring semester of the next year.
- Submit all materials by March 15 to begin your program in either the summer or fall of that year.



9) Help User Recognize, Diagnose, and Recover from Errors (Recovery)

Error messages should be expressed in plain language (no codes), precisely indicate the problem, and constructively suggest a solution.



Recovery is not effectively represented in this webpage. In the case of a broken link, the resulted error message includes a code (error 404) and no real solution is given.
(See Fig. 9.1)

10) Help and Documentation (Help)

Even though it is better if the system can be used without documentation, it may be necessary to provide help and documentation. Any such information should be easy to search, focused on the user's task, list concrete steps to be carried out, and not be too large.

Though the webpage includes the traditional headers and footers of Texas Tech (which includes help and documentation elements for the entirety of the TTU website), help and documentation for the Teaching Tech Comm Certificate page is not as easily locatable. The webpage provides information to contact of Dr. Christofides if in need of more information (or assistance) but that information is located oddly in middle of the page, almost hidden (see Fig. 10.1). I argue that this information needs to be more easily locatable.

Conclusion Statement

In conclusion, the simplicity of the design allows for positive and negative implications for the usability of the page. If the content was consistent and more effectively organized, the simple design could be useful. However, if the amount of content is still large after deleting repetitive information, more navigation tools would be recommended for easier accessibility and usability.

Summary Table

Below is my final summary table where I rate each heuristic on a scale of 4 (1 being in need of most improvement and 4 being effective usability):

Heuristics	**Strengths**	**Areas to Consider or Improve**	**Ratings (out of 4)**
1. Visibility	Feedback is given for most links when hovering.	Inconsistent in feedback reactions.	3
2. Metaphor	Relevant language and vocabulary	Illogical ordering of paragraphs	2
3. Navigation	Allows for backtracking	Labeling of links leads to likelihood of unnecessary clicking	3
4. Consistency	Consistent information	Link design inconsistent	2
5. Prevention	Allows for backtracking	Broken link leads to error message	2
6. Memory	Simplicity of accessing information	Illogical ordering equals large amounts of scrolling	3
7. Efficiency	Labeled sections	No navigation tool bar	2
8. Design	Minimalist design	Repetitive content	2

9. Recovery		Error code	1
10. Help	Contact information	Location of contact information illogical	3
			Average: 2.3

Heuristic Evaluation Memo (Barron):

To: Dr. Christiana Christofides
CC: Dr. Jason Tham
From: Daniela Barron
Re: A Heuristic Evaluation of the "Certificate for Teaching Technical Communication" Webpage on the English Department Website

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Visibility System Status: 1

Feedback

The webpage provides feedback on the button which states "Apply Here," by allowing the pointer cursor to display and the link to change colors from black to red whenever the user hovers over the link. Feedback is also provided in the hyperlink to the email of the Advisor and Director of Graduate Studies in Technical Communication, Dr. Christiana Christofides, the 'Contact the TTU Graduate School' link, and the second 'Distance Learning Agreement' link by allowing the line under the hyperlink to disappear, the pointer cursor to display, and again the color to change from black to red. Feedback is provided in the link to the 'Texas Tech Graduate School Application Process' and the 'Distance Learning Agreement' link by allowing the cursor to change into a pointer cursor.

Compel Users to Action

There are not many calls to action within the webpage, except for the commanding language within the interactive links. For example, 'Apply Here,' and 'Contact the TTU Graduate School' contain language which sounds commanding, rather than optional. Therefore, a user might decide to hover the mouse over those areas. Every link except for 'Apply Here' provides calls to action by either providing the initial link in a different color—red, or providing an underlined link. By providing something slightly visual contrast from the surrounding text, the user may decide to hover the mouse over those areas.

Trust

The webpage communicates by using plain, non-interactive HTML script text to convey to the user about application deadlines, requirements about the program, and contact information helpful for various situations.

Conclusion

The overall feedback on the webpage is limited. The webpage only contains five interactive links, and the feedback of the links are different, so there is a lack of consistency in the feedback the user may be able to expect. Inconsistency in feedback may increase the time it takes for the user to understand or perform the actions the user wishes to complete. The diagrams below display the instances where feedback on the webpage is possible.

Match Between System and the Real World: 2

Familiar Language

The language for the intended audience is accurate and familiar. The target audience will already have completed a Bachelor's degree. The language is familiar to users who have already been socialized into an academic culture by referencing things such as 'hours' and 'core requirements.'

Leverage Familiarity with Real-World Objects and Activities

There does not appear to be any leverage familiarity or real-world objects and activities presented on the webpage. The entire page consists of bolded text headings, regular paragraphs, and bulleted lists. The 'Apply Here' button presents an issue with leverage familiarity, because the link does not appear clickable, or visually different from the surrounding text unless the user hovers the mouse over it.

Organization/ Layout

The organization of the content on the webpage may not meet the user's needs. If a user would like to gain more information about the program entirely through the webpage without speaking to someone, then the user should not have to take lengthy amounts of time to sift through the information. The information should be presented in a more efficient, accessible format, for example, through a menu or a separate tab within the webpage. A user may want to know the information about the program before having the option presented on the webpage to apply to the program.

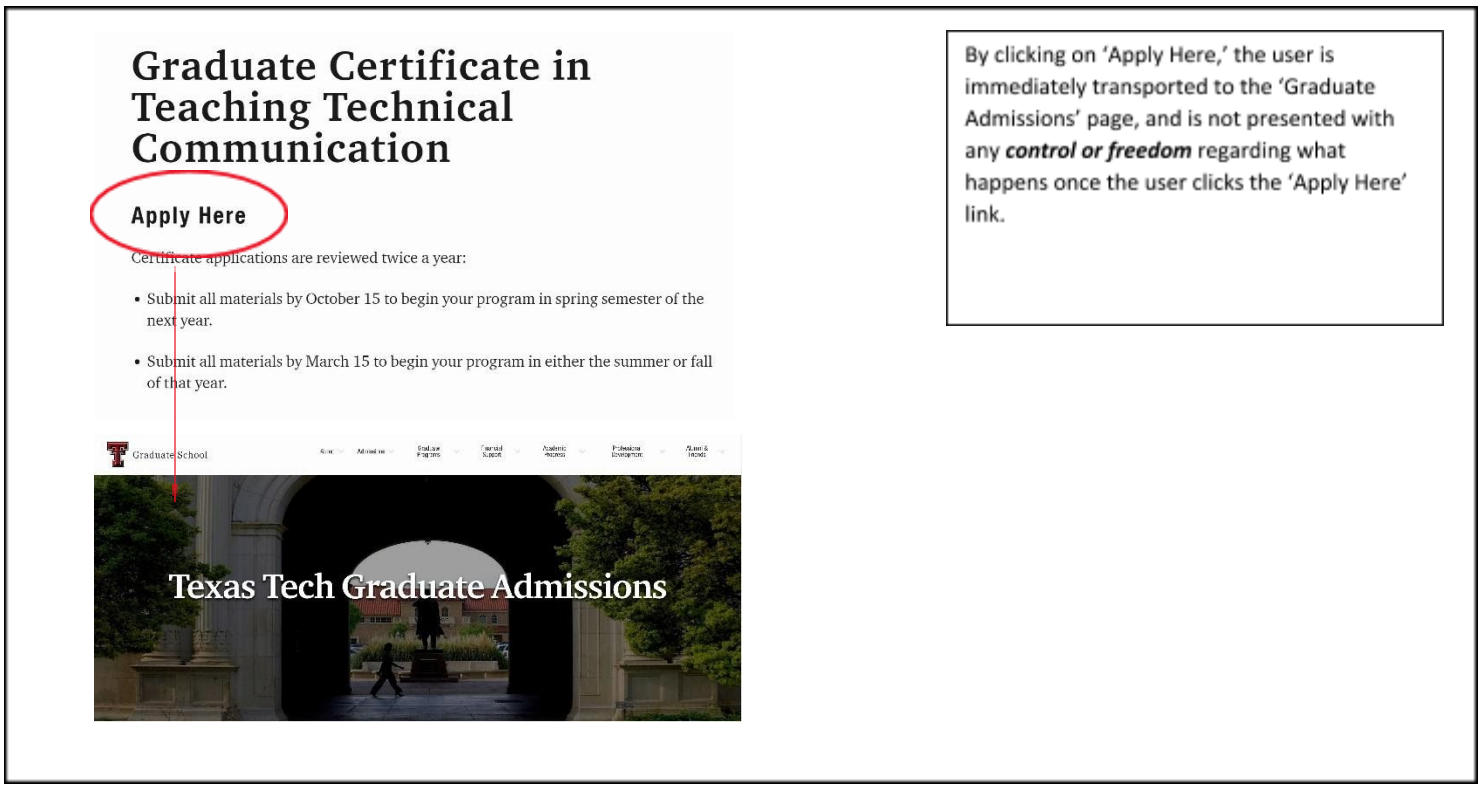
Conclusion

The match between the system and the real world may contend the language for the target audience, but the layout and organization of the webpage content may not. Besides clickable links that provide inconsistent feedback, there is no leverage familiarity presented on the webpage. The organization and layout of the content are also potentially flawed, because the potentially socially anxious or non-social target user who arrives at the webpage seeking more information about the program would most likely expect to see the program information before

the option for program applications. The following figure displays the disconnect between a user's purpose for visiting the webpage and what the webpage presents.

User Control and Freedom: 1

There does not seem to be adequate user control or freedom within the webpage. If a user decides to click on something, there is no option to cancel the click. The links on the page are also misleading. For example, 'Apply Here' does not transport the user directly to the application, but instead to another page where the user will then again need to decide whether to click on the application link. The only option presented to the user for user control and freedom is the browser scrolling bar and the 'back' button. The following figure presents what occurs on the webpage when or if the user decides to click on the 'apply here' link.



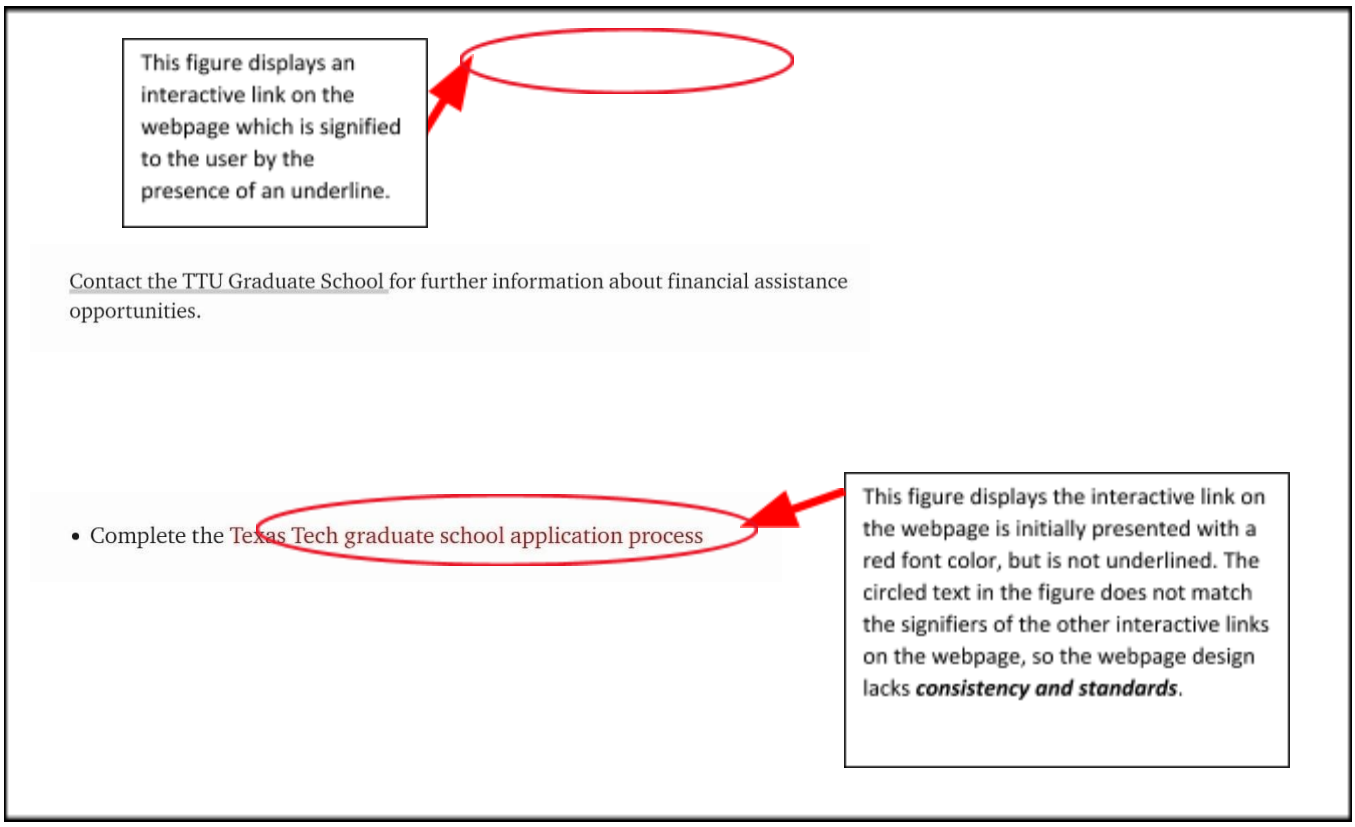
Consistency and Standards:1

Internal Consistency

The webpage does not present consistency with its interactive links. Some links, such as 'Apply Here' present no visual contrast with the surrounding text, while other links, such as 'Texas Tech Graduate School Application Process' and the 'Distance Learning Agreement,' are presented with red text, but not underlined. The hyperlink to the email of Dr. Christiana Christofides, the 'Contact the TTU Graduate School' link, and the second 'Distance Learning Agreement' are black but underlined. The internal inconsistencies may confuse the user about where the links in the webpage are, because the user may need to spend time altering expectations about the expected interactivity of a certain object.

External Consistency

The webpage is not consistent with the outside pages to which the clickable links within the page may lead the user. The outside webpages do not contain large blocks of text, and use more interactive features, such as menus and visual icons. The Certificate for Teaching Technical Communication webpage does not maintain consistency with other program information or program application webpages. The following figure presents how the webpage lacks consistency.



Error Prevention: 1

Helpful Constraints

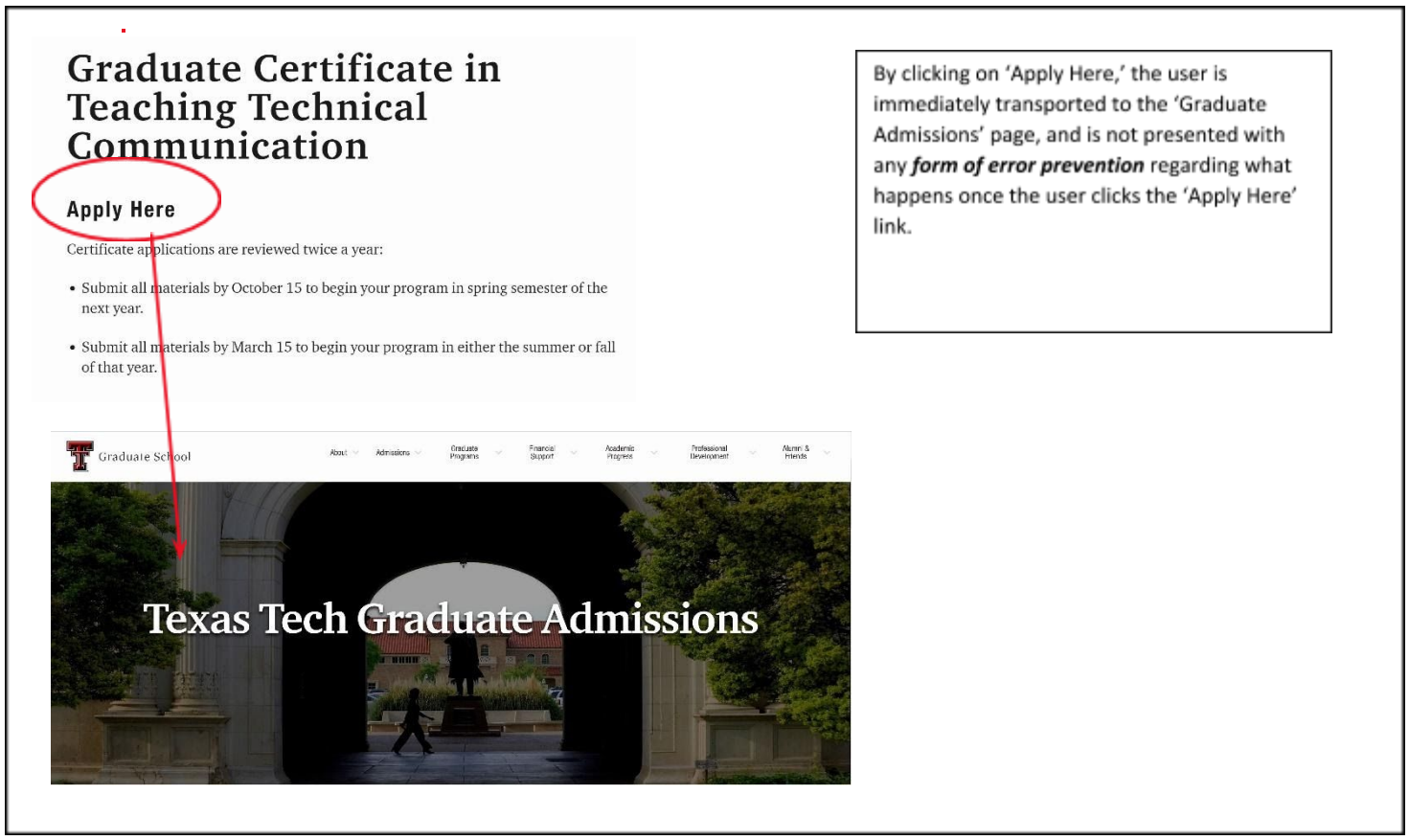
The webpage does not present any constraints to prevent the user from traveling to a separate webpage through a clickable link.

Suggestions

The clickable link, which says 'Apply Here,' does not contain anything to suggest it is an interactive link. The only suggestions made by the webpage are the clickability of all the other links, because—despite the links being inconsistent—the other links in the webpage present an initial visual contrast to the surrounding text.

Forgiving Formatting

There is no forgiving formatting presented within the webpage. If a user accidentally clicks on a link, the only way for the user to come back to the previous page without typing the URL into the address bar is to click the browser back button. The following figure portrays how the webpage lacks error prevention.



Recognition Rather than Recall: 1

Activation of Content

The webpage presents no indication of practice, recency, or context. There is no option for the user to revisit a part of the page using a 'page history' option, and there is no menu.

Recall

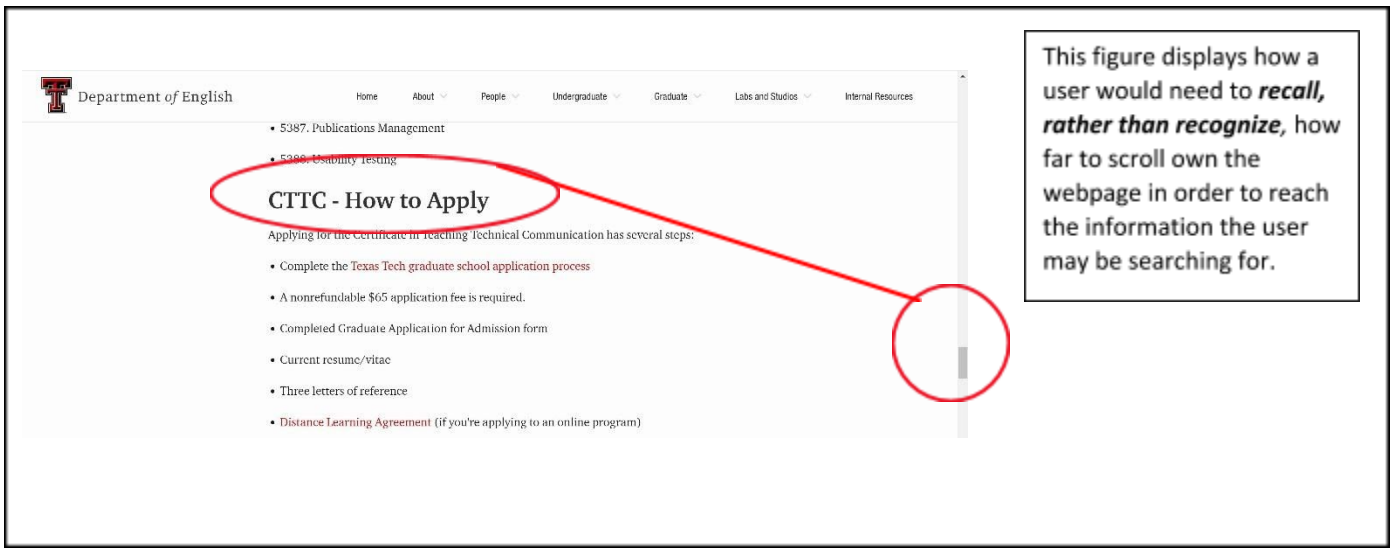
The webpage relies on the user to recall where the browser's scrolling bar is to remember where certain information on the webpage may be. For example, if a user wants to visit the part of the page where the course requirements are, the user must remember how far down the page to scroll to arrive at the information.

Recognition

The webpage does not appear to present any instances of recognition, because of internal inconsistency with feedback.

Conclusion

The webpage does not present efficient use of recognition instead of recall. Instead, the webpage appears to rely almost exclusively on the user's recall. The following figure displays how the webpage relies on recall instead of recognition.



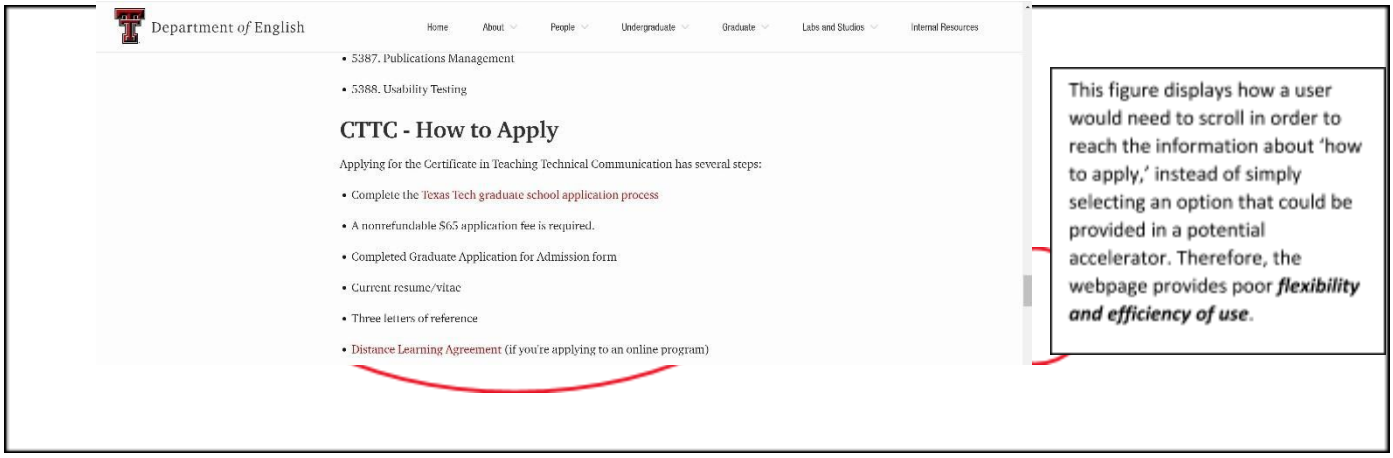
Flexibility and Efficiency of Use: 1

Accelerators

The webpage does not present any accelerators. The user must scroll through the entire block of text presented on the webpage in order to search for and attain popular information.

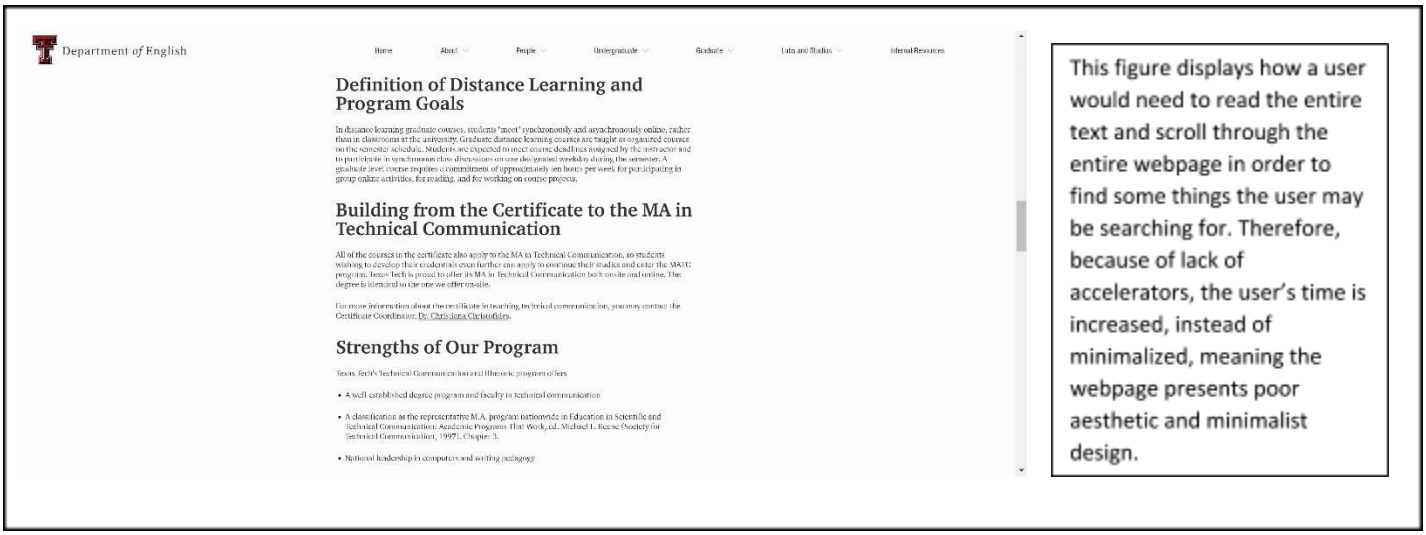
Conclusion

Because of the lack of accelerators and interactive or definitive features, the webpage does not present any efficiency of flexibility for the user. The following figure conveys how the webpage lacks flexibility and efficiency of use.



Aesthetic and Minimalist Design: 1

The webpage presents a minimalist design in the text by not presenting anything besides text. However, because the webpage contains no accelerator or categories to assist readers in sifting through the text, the webpage does not effectively portray an aesthetic and minimalist design. The following figure portrays how the webpage does not present an aesthetic and minimalist design.

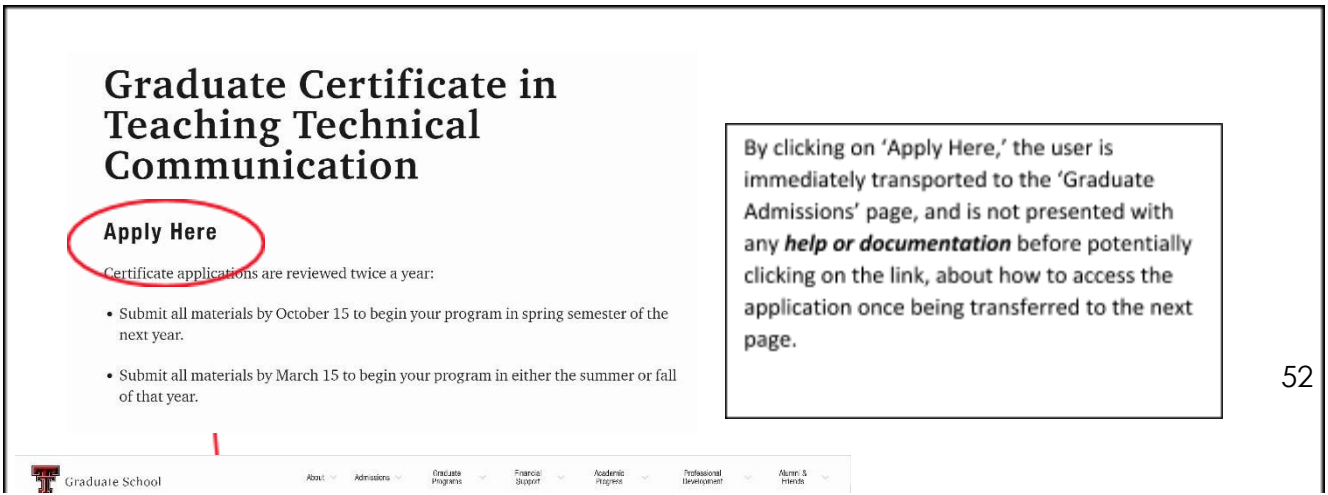


Help Users Recognize, Diagnose, and Recover from Errors: 1

Because the webpage contains no error prevention and inconsistent internal feedback, the webpage does not help users recognize, diagnose, or recover from any potential errors. The following figure presents how the webpage does not allow the user to recognize, diagnose, or recover from any errors made.

Help and Documentation: 1

The webpage does not contain any help features and provides limited documentation features. The 'Apply Here' button does not transport the user directly to the application. Perhaps the 'Apply Here' button is a situation in which it is necessary to list the steps the user must take after clicking the link, in order to reach the application page. The other help and documentation within the webpage are presented as contact information, which may isolate users who did not wish for the need to speak to someone and wanted to find and understand information about the program. The following figure displays how the webpage does not provide any help or documentation whenever necessary.



Conclusion and Overall Assessment:

The overall usability of the webpage is one; very unusable. The webpage scored a one out of four on eight out of the nine heuristics. Visibility system status, user control and freedom, consistency and standards, error prevention, recognition rather than recall, flexibility and efficiency of use, aesthetic minimalist design, helping users recognize, diagnose, and recover from errors, and help and documentation all scored a one, meaning they were either poorly present or not present in the design of the user interface. Match between the system and the real world received a two, because familiar language was presented in the webpage, which would have been familiar to the webpage's target audience. For the webpage to receive a higher score, the user-interface design would need to change. For instance, most of the heuristic elements are not included because of a lack of site engagement and interactivity. Therefore, because of the lack of interactivity on the webpage, the webpage managed to score exceptionally low on every heuristic. The user is most likely to seek elsewhere to obtain information about Texas Tech's Certificate for Teaching Technical Communication program, because looking at the webpage on the English Department website for Texas Tech would take too much of the user's time. Therefore, the overall usability score for the website, guided by a heuristic evaluation, is 'one,' meaning the webpage presents either insufficient usability or no usability.

References

http://www.depts.ttu.edu/english/tcr/CTTC/CTTC-overview.php

Heuristic Evaluation (Seidler)

To: TTU English Department Webmaster
CC: Dr. Jason Tham
From: Taryn Seidler
Subject: Heuristic Evaluation of TTU Graduate Certificate in Teaching Technical Communication webpage:
https://www.depts.ttu.edu/english/tcr/CTTC/CTTC-overview.php

Introduction

In this evaluation, I assess the effectiveness of TTU Graduate Certificate in Teaching Technical Communication webpage found on TTU's Department of English website. This evaluation is based off of Jakob Nielson's "10 Usability Heuristics for User Interface Design", published in 1994, found here. As I discuss each heuristic, I provide Nielson's definition for context, in addition to my own evaluation based on each individual heuristic. Further, I provide screen shots of the page itself for orientation.

1. Visibility of the System Status (Visibility)

The system should always keep users informed about what is going on, through appropriate feedback within reasonable time (Nielsen).

The TTU Graduate Certificate in Teaching Technical Communication website provides ineffective feedback to users. These actions are scattered through the website and are often arbitrarily placed from a user's perspective. The Graduate Certificate website in Teaching TC offers numerous links throughout the page that offer feedback to users. For instance, the website offers more information on the MATC program by including the contact information for the advisor of the program. As depicted below in Figure 1-1, the link is underlined in light gray, but when hovered over, it turns red. This example is hidden in a paragraph, and though it does offer feedback, it is not obvious to users scrolling through the page.

> For more information about the certificate in teaching technical communication, you may contact the Certificate Coordinator, Dr. Christiana Christofides.

For more information about the certificate in teaching technical communication, you may contact the Certificate Coordinator, Dr. Christiana Christofides.

Figure 1-1

There are a few instances toward the bottom of the page that offer feedback only by altering the state of the mouse icon from the cursor to the link pointer, shaped like a hand. This is evident in Figure 1-2 below, where the links are not underlined in dark gray, but are already listed in red.

- Complete the Texas Tech graduate school application process
- A nonrefundable $65 application fee is required.
- Completed Graduate Application for Admission form
- Current resume/vitae
- Three letters of reference
- Distance Learning Agreement (if you're applying to an online program)

Figure 1-2

Further, the inclusion of icons at the bottom of the webpage react in a similar manner, where the only user feedback that is evident is the shift in mouse cursors. The Facebook, Instagram, YouTube, and Twitter icons, depicted in Figure 1-3, offer feedback when hovered, though it is difficult to discern. The top photo includes no mouse hovering, however, the bottom photo includes mouse hovering over the Facebook icon. The feedback on the Graduate Certificate website in Teaching TC offers feedback is ineffective, however, some aspects do allow users to see that their actions have elicited a response from the website.

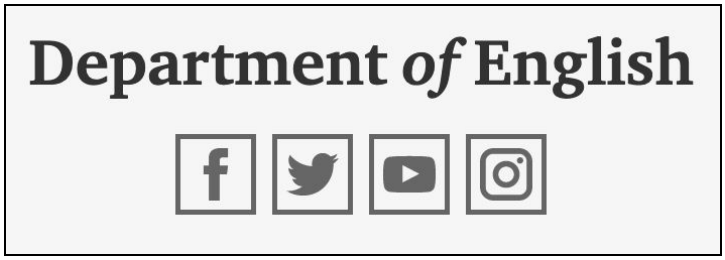


Figure 1-3

2. Match Between System and the Real World (Metaphor)

The system should speak the users' language, with words, phrases and concepts familiar to the user, rather than system-oriented terms. Follow real-world conventions, making information appear in a natural and logical order (Nielsen).

The feedback evident in this page is effective in matching between the system and the real world. The stop of the page includes a link to apply for the certificate, with language familiar to the user in “Apply Here” that offers feedback to a link when hovered over.

Figure 2-1

The Graduate Certificate website in Teaching TC includes ineffective logical order for optimal user experience. The page includes several headings that include paragraphs offering information on the certificate, however, these headings are arbitrarily placed on the page and do not follow a logical order. For example, the link to apply is placed at the top of the webpage (Figure 2-1), but information on application materials is placed close to the bottom of the page, past information on offered courses, distance learning information, information on shifting into the MATC, and strengths of the program. Depicted below in Figure 2-2 in the information on how to apply for the certificate that follows each of these former sections. Here, it is clear that

the information does not follow a logical, clear order, and though the page does include language familiar to the user, the order of the page is confusing and ineffective.

Figure 2-2

3. User Control and Freedom (Navigation)

Users often choose system functions by mistake and will need a clearly marked "emergency exit" to leave the unwanted state without having to go through an extended dialogue. Support undo and redo (Nielsen).

The Graduate Certificate website in Teaching TC offers a number of links that lead to various pages on the Department of English website, with very ineffective support for navigating back to the certificate's page. When clicking the "Apply Here" link, users are navigated to the Texas Tech Graduate Admissions page, with no visible link to return to the certificate's page (Figure 3-1). Additionally, a link to Texas Tech Graduate Admissions page is also included beneath the "CTTC How to Apply" heading.

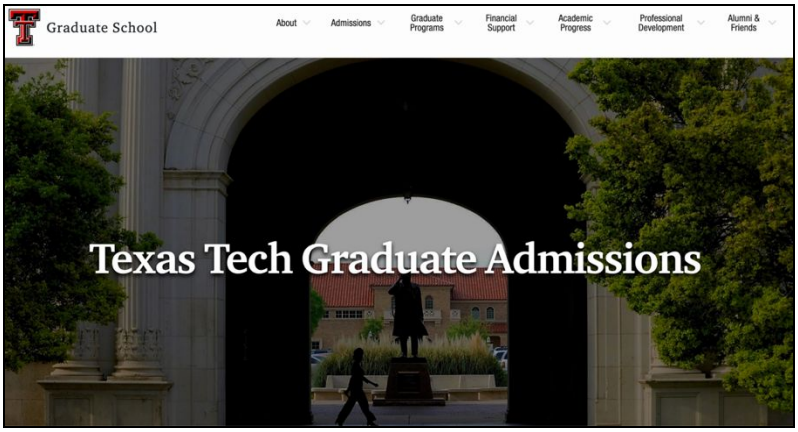


Figure 3-1

Additionally, when selecting the link for “Distance Learning Agreement” link on the certificate’s page, users are navigated to the page below (Figure 3-2). Though there is a navigation bar in the top left of the page (TTU/ Department of English / Technical Communication & Rhetoric), neither of these links navigate users back to the certificate’s page.

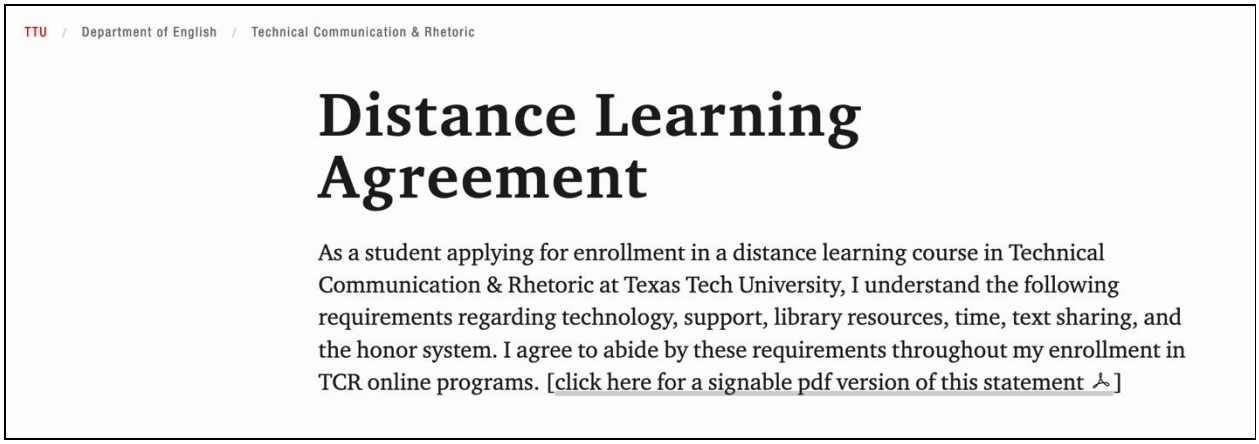


Figure 3-2

Additionally, there are two links that navigate users to the same page for the “Distance Learning Agreement”. Not only is this confusing for users, the two links are located in separate locations on the page, muddling the structure and understanding of navigation for users. As discussed for Figure 3-2, these links both navigate to the “Distance Learning Agreement” page, which provides no proper navigation back to the certificate’s page. User control and freedom is very ineffective for this page, and when users navigate away from the certificate’s page, there is no clear navigation link to return to the page. Towards improvement, designers could include clear navigation bars that link users back to previous pages they have visited, and single links for content instead of multiple links on the page.

4. Consistency and Standards (Consistency)

Users should not have to wonder whether different words, situations, or actions mean the same thing. Follow platform conventions (Nielsen).

The Graduate Certificate website in Teaching TC includes consistency across the page in color, typeface, headings and subheadings, and allows users to have a thorough understanding of the structural layout in the page. The page includes standardized language that is consistent across the page, with formal language that reflects the professionalism of the technical communication program at Texas Tech University. Additionally, the language on the page is well-edited for grammar and syntax issues. Figure 4-1 below depicts consistency across color, headings, and typeface on the certificate’s page. Overall, the page displays very effective consistency and standards.

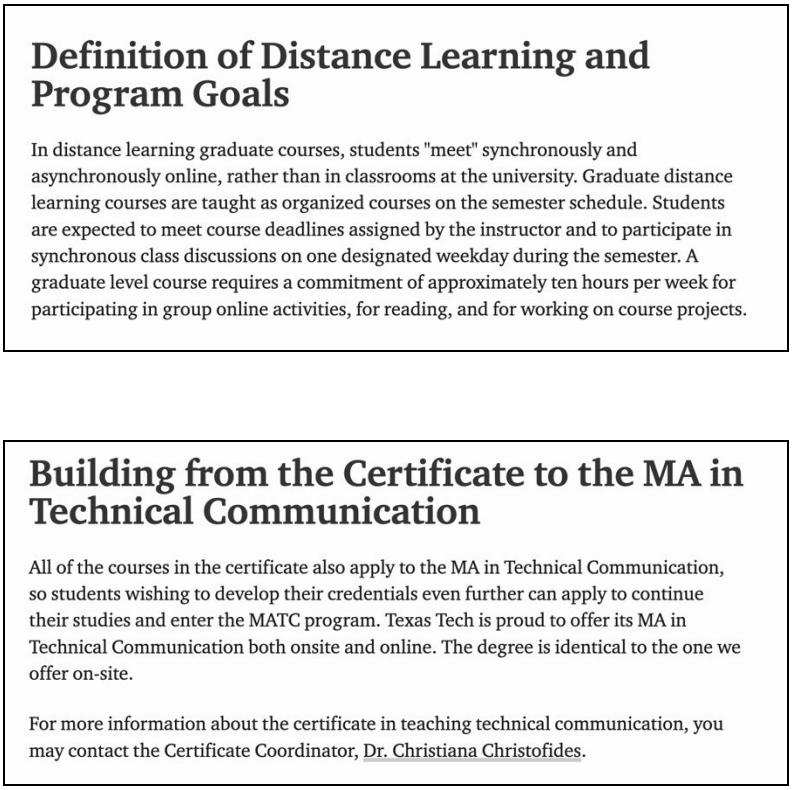


Figure 4-1

5. Error Prevention (Prevention)

Even better than good error messages is a careful design which prevents a problem from occurring in the first place. Either eliminate error-prone conditions or check for them and present users with a confirmation option before they commit to the action (Nielsen).

The Graduate Certificate website in Teaching TC includes several errors in navigation to other pages on the Department of English Website. There are not any help tools to aid users in navigating the page, there are no tools that allow users to understand that certain links will take them away from the certificate's page, like Facebook, YouTube, etc., in the same browser window with no navigation means for returning. In turn, a link at the end of the page that offers further information on financial aid navigates users to a page that no longer exists, with no link to return to the certificate's page, and only includes a link to return to Texas Tech University's official home page, depicted in Figure 5-1 below. Error prevention on the Graduate Certificate website in Teaching TC is very ineffective, and further work on error-prone conditions in navigation are necessary for improvement.

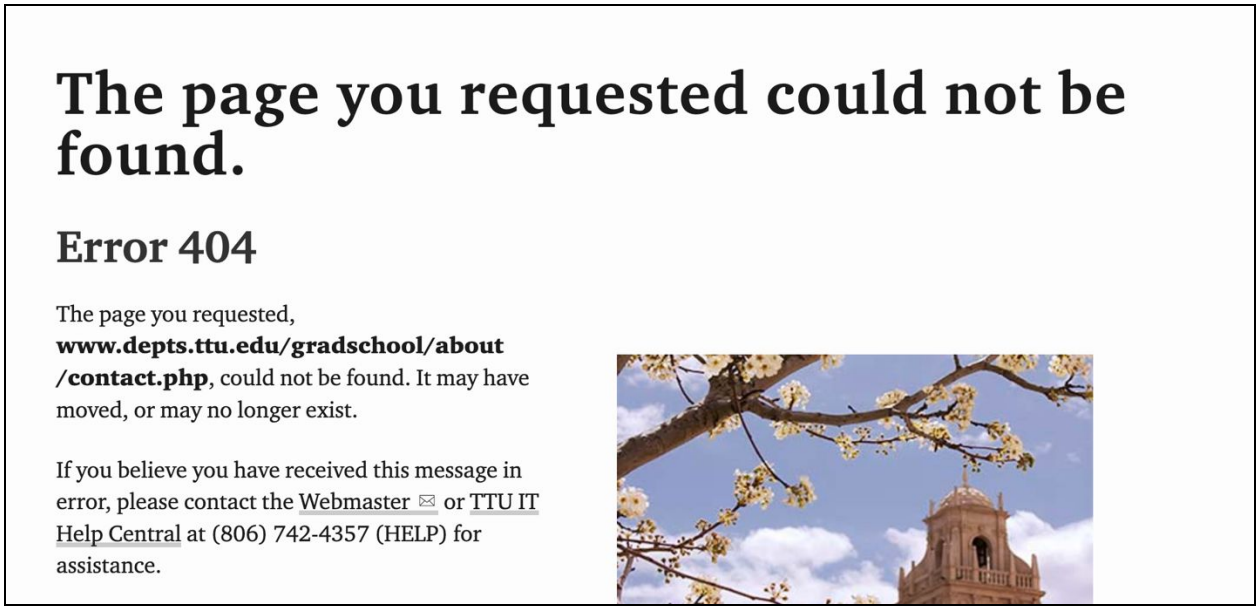


Figure 5-1

6. Recognition Rather Than Recall (Memory)

Minimize the user's memory load by making objects, actions, and options visible. The user should not have to remember information from one part of the dialogue to another. Instructions for use of the system should be visible or easily retrievable whenever appropriate (Nielsen).

The Graduate Certificate website in Teaching TC does not effectively leave users a trail of their navigation on the page, which negatively affects memorability. Due to the structural nature of the page, users will have difficulty remembering what information they have encountered, and when they encountered it, because of the lack of organization of information and lack of user breadcrumbs. Figure 6-1 below illustrates a few of the headings, listed in descending order, as a user scrolls down the page.

Figure 6-1

It is clear that users are unable to see which sections they have already viewed as they scroll down the page because of a lack of effective navigation markers. Towards improvement, including minimalist links that follow users as they scroll down the page will aid in allowing users to remember what information they have already seen. In addition, links will also allow users to jump back toward information they have previously viewed if they wish to backtrack up the page.

7. Flexibility and Efficiency of Use (Efficiency)

Accelerators — unseen by the novice user — may often speed up the interaction for the expert user such that the system can cater to both inexperienced and experienced users. Allow users to tailor frequent actions.

The website lacks efficiency and flexibility because of its lack of a navigation bar or links that bring users to different sections of the page, which makes the page navigable only by scrolling up and down. Though the page does include a scroll bar for users to discern how far up or down on the page they have navigated, the lack of clear markers, structure, and effective links contributes to the ineffectiveness of the page. Figure 7-1 below illustrates the top of the webpage, with no clear aid in user navigation. The following sections of the page include similar headings and body font, with no effective way for users to navigate through with the exception of scrolling up and down. I recommend including a clear navigation bar that includes useful links to sections of the webpage, in addition to a button at the bottom of the document that links back to the top of the page.

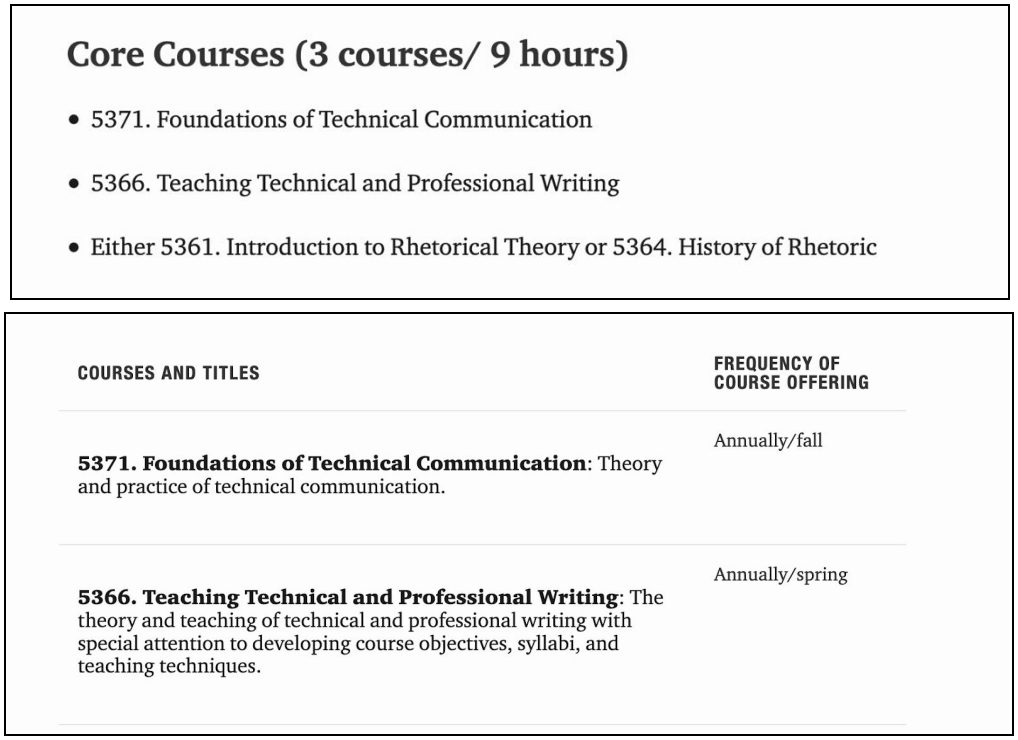
Figure 7-1

8. Aesthetic and Minimalist Design (Design)

Dialogues should not contain information which is irrelevant or rarely needed. Every extra unit of information in a dialogue competes with the relevant units of information and diminishes their relative visibility (Nielsen).

Though the design of the page is minimalist with a black, white, and red color palette, and the typeface and structure of content is uniform, the information included is excessive and repetitive. As seen in Figure 8-1 below, course offerings and core courses are listed twice in vastly different sections of the webpage. This information is repetitive and confusing for users.

Further, deadlines for submission of applications are included twice in the website; once at the start, and once at the end of the page as depicted in Figures 8-2. Additionally, the Distance Learning Agreement, required for online students, is included twice on the site in different locations that act to confuse users, once more. I recommend including all necessary components of the application in one location, with one link to each component that requires it. Additionally, I recommend including course listings in one location to decrease confusion among users, and all deadlines in one, single location.

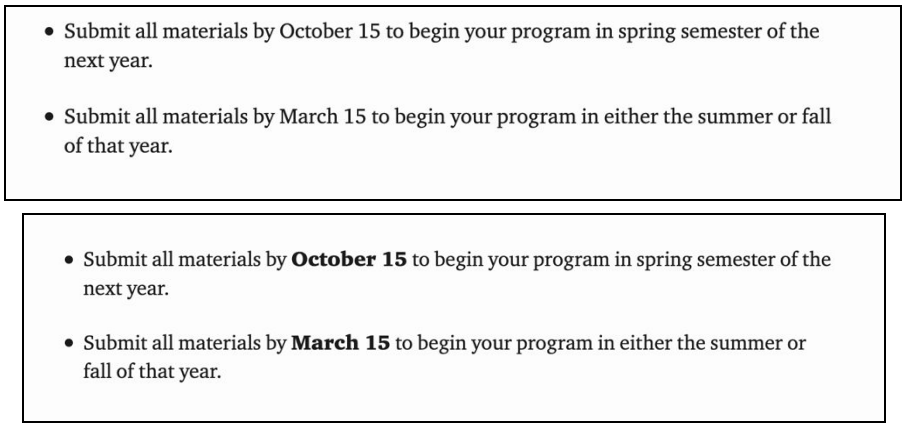


Core Courses (3 courses/ 9 hours)

- 5371. Foundations of Technical Communication
- 5366. Teaching Technical and Professional Writing
- Either 5361. Introduction to Rhetorical Theory or 5364. History of Rhetoric

COURSES AND TITLES	FREQUENCY OF COURSE OFFERING
5371. Foundations of Technical Communication: Theory and practice of technical communication.	Annually/fall
5366. Teaching Technical and Professional Writing: The theory and teaching of technical and professional writing with special attention to developing course objectives, syllabi, and teaching techniques.	Annually/spring

Figure 8-1



- Submit all materials by October 15 to begin your program in spring semester of the next year.
- Submit all materials by March 15 to begin your program in either the summer or fall of that year.

- Submit all materials by **October 15** to begin your program in spring semester of the next year.
- Submit all materials by **March 15** to begin your program in either the summer or fall of that year.

Figure 8-2

9. Help Users Recognize, Diagnose, and Recover From Errors (Recovery)

Error messages should be expressed in plain language (no codes), precisely indicate the problem, and constructively suggest a solution (Nielsen).
In addition to the heuristic for Error Prevention, the link that offers further information for students to discover financial aid opportunities is broken. The page that users are directed to is depicted in the Figure 9-1, where users can see the "Error 404" message and language that reads "the page you requested could not be found", and "may no longer exist". The inclusion of this language, and the "Error 404" message, is not understandable to users that do not have any experience with coding language or common struggles with website design. I recommend that designers include language that does not involve codes or complex language, and rather, explain the problem to users and offer an avenue to find the webpage users are looking for.

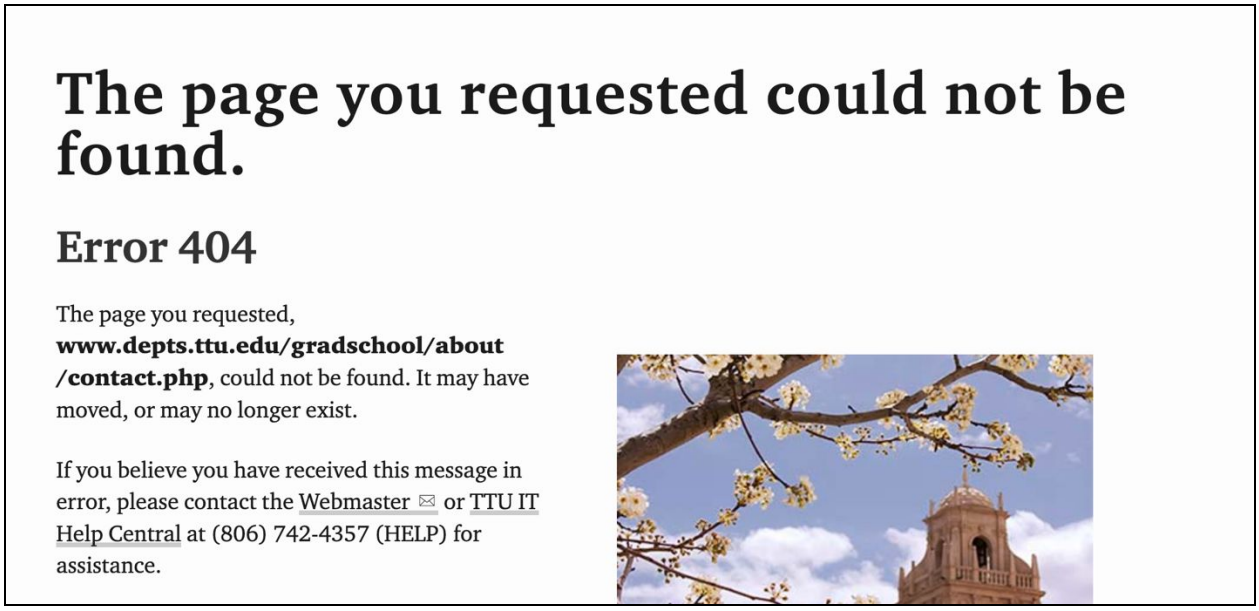


Figure 9-1

10. Help and Documentation (Help)

Even though it is better if the system can be used without documentation, it may be necessary to provide help and documentation. Any such information should be easy to search, focused on the user's task, list concrete steps to be carried out, and not be too large (Nielsen).
The Graduate Certificate website in Teaching TC does not effectively offer direct help to users with an "ask us" button or a "help" button. Rather, the page includes a link to the email address of the graduate advisor of the certificate's program, which when clicked, prompts the computer itself to open the primary app for email with the advisor's address included (Figure 10-1). Additionally, the page offers a link for more information on financial aid (Figure 10-2) and a link to contact Texas Tech University as an institution, rather than the English Department (Figure

10-3). Further, as Figure 10-4 depicts, information to contact the English Department is included with an address, phone, email, and social media information.

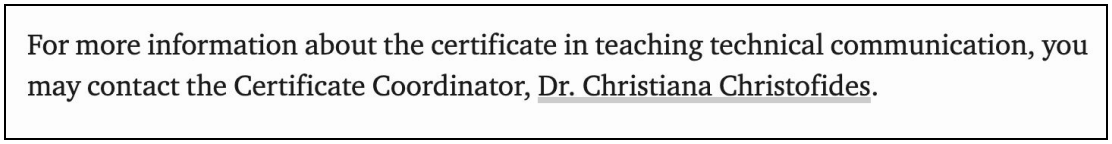


Figure 10-1

Figure 10-2

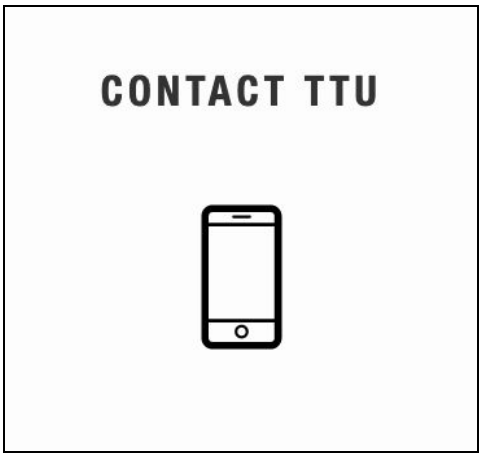


Figure 10-3

Figure 10-4

Though this information is useful for offering users the ability to contact the department, it does not include any information that offers aid in understanding how to navigate the website, understand the application process, or even find the application portal. I recommend including useful links that are applicable to the website or a search bar that offers users the ability to find key terms. Additionally, these improvements would aid in eliminating user error.

Conclusion

Overall, The Graduate Certificate website in Teaching TC is ineffective in accomplishing a majority of Nielsen's heuristics. There is room for improvement in a number of areas, however, the website reveals strengths in visibility, metaphor, and consistency. Major problems in the website include issues with structure and effective content organization, in addition to a lack of navigation tools, broken links, and repetitive information. Below is a table that includes my overall evaluation of the website based off of Nielsen's 10 heuristics, which also offers columns for strengths and necessary improvements.

Heuristics	Strengths	Improvements	Score
Visibility	Includes some feedback icons and links	Include additional feedback icons and appropriate links	2
Metaphor	Recognizable language	Lack of content structure and organization	2
Navigation	N/A	Include navigation bar and useful links	1
Consistency	Consistent, reliable color, structure, typeface, etc.	N/A	4
Prevention	N/A	Include solutions for broken links and errors in content	1
Memory	N/A	Incorporate links as users scroll and a navigation bar	2
Efficiency	N/A	Lack of useful links and aid in navigating page	1
Design	Minimalist design	Exclude repetitive information	2
Recovery	N/A	Explain broken webpages clearly and in lay terms	1
Help	Offers useful email addresses and helpful links	Include search bars for search terms	3
Average			**1.9**