Texas State University EDIT Internship
ITAC Webpage Final
Recommendation Report

Team 2 ITAC Website Final Report

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Results, Analysis, Conclusion, and Recommendations

Results

Heuristic Evaluation Findings

Based on Nielsen's 10 heuristics for user interface design, our group's heuristic evaluation of the ITAC how-to guides yielded the following observations:

Fig. 1 - Heuristic Evaluation of the "How To" Pages

Nielson's Heuristics for User Interface Design/Evaluation	Examples
1. Visibility of System Status: • Clear communication of services, hours, and contact options. • Feedback mechanisms like live chat and phone are present. • Some suggestions to enhance visual appeal and draw attention. • Lack of uniformity in screenshot sizing causes layout issues. • Technical terms or acronyms are not always explained for users who may not be familiar with them.	• Lack of clarity on whether the activation of NetID and setting up DUO should be merged or separated. • Inconsistency in terminology usage like "Microsoft 365" not being clarified properly.
2. Match Between the System and the Real World: • Controls follow real-world conventions. • Users are familiar with the terminology, but some jargon is over-technical. • Lack of result/before-after comparisons for familiarity with real-world experiences.	• Usage of technical jargon like "MSCHAPV2" and "Phase 2 authentication" without adequate explanation, leading to confusion. • The option "don't validate" being counterintuitive and confusing.

3. User Control and Freedom: • Lack of clear instructions or steps beyond certain points, leaving users unsure of their progress or next actions. • Ability to navigate forward and backward using browser arrows. • Lack of discoverable exit links and options for canceling actions. • Users can navigate back by scrolling, but exit links are not clear. • Lack of support for undo/redo actions due to the nature of the page.	• Not clear exit links despite "More Resources" button at the bottom of the page. • Low visibility labeling of "Back to How-To/FAQ/GUIDES" button.
4. Consistency and Standards: • The webpage follows TXST branding conventions but lacks consistency in image sizing and orientation. • Major inconsistency in formatting and explanation, especially regarding technical terms across different articles. • Design choices such as showing conflicting options in text and screenshots leading to confusion. • Consistent use of terminology and visual treatments needed.	• "How to Join TXST-Bobcats using a Chromebook" list terms that are not expanded upon in this article, whereas they were in previous articles, inconsistency of formatting • Lack of consistent sizing/orientation of images throughout guides
5. Error Prevention: • Inadequate explanation or warning about potential errors, such as not specifying the implications of choosing certain options. • Lack of helpful constraints and warning messages listed to prevent errors. • Lack of solutions for slips due to the simplicity of actions.	• Article "How to Join TXST-Bobcats using an Android Device" displays an error in the final screenshot, which is confusing without explanation.

6. Recognition Rather than Recall: • Important information is visible, but there's room for improvement. • Lack of video examples, which could enhance user understanding. • Need for improvement in the clarity and wording of instructions to reduce the cognitive load on users. • More context-sensitive help is required.	• "How to Join TXST-Bobcats using an Android Device" - "don't validate" is confusing and counterintuitive. • Only one mode of following directions throughout guides.
7. Flexibility and Efficiency of Use: • Lack of specific guidance tailored to different user contexts, like specifying the type of mobile device or its operating system. • Limited personalization or customization options. • Compatibility with touchscreen and computer, but no specific accelerators provided, such as keyboard shortcuts.	• Inconsistent sizing and orientation of images throughout articles. • How to Use Teams on Your Mobile Device to Make Calls" does not specify what kind of device or its OS. • Lack of filter options for search how-to guides.
8. Aesthetic and Minimalist Design: • Some articles were deemed visually appealing and functionally easy to use within the familiar iOS environment. • Inconsistent and confusing design elements detract from the overall user experience. • Focus on essential content, but distracting elements need removal. • Suggestions for more engaging visual design to match user energy.	• Inconsistent capitalization in IOS instruction guide. • Inconsistency in screenshot sizing and orientation. • "How to Install Microsoft 365 on a Personal Windows Computer" shows images that do not correspond to instructions.
9. Help Users Recognize, Diagnose, and Recover from Errors: • Lack of clear cautionary messages or guidance on error recovery processes, contributing to user frustration. • Lack of traditional error message visuals and provide immediate solutions. • Immediate solutions or back buttons offered for error recovery.	• Thin lines and slight red used for error messages, low visibility.

10. Help and Documentation:	
• Need for improvement in the wording and clarity of instructions throughout the articles to enhance user understanding and self-help capabilities. • Lack of comprehensive help documentation and ease of search. • Need for providing more contextual help.	• Poor messaging regarding the completeness of Duo MFA (Multi Factor Authentication) setup can confuse non-technical users. • No centralized page for how-to guides. • Many guides link to other guides, increasing clicks and complicating navigation.

Focus Group Results

The following tables summarize the answers provided by participants A, B, and C (Focus Group 1), and Participants D, E, and F (Focus Group 2). For a complete list of the IRB approved questions used in this study, please see the appendix section.

Fig. 2 - Focus Group Results: Focus Group 1	
Name	**Moderator Question/Participant Response**
Topic	**1. Frequency of ITAC How-To Guide Usage:**
Participant A	Never uses ITAC how-to guides.
Participant B	Uses guides approximately once a year.
Participant C	Uses guides a few times a semester.
Topic	**2. Experience Using ITAC How-To Guides:**
Participant A	No experience, but visually appealing at first glance.
Participant B	Experience setting up TXST windows. Enjoy the screenshots and icons because it makes the website easier to navigate.
Participant C	Experience from freshman year Wi-Fi set up and how to use TXST services.
Topic	**3. Most Needed ITAC Services:**
Participant A	Wi-Fi troubleshooting.
Participant B	No answer given.
Participant C	MacBook support for Microsoft Suites.
Topic	**4. Perception of Complication in ITAC How-To Information:**
Participant A	N/A.
Participant B	Simple to use, but sometimes leaves issues unsolved.
Participant C	Uncomplicated, but sometimes hard to find desired information.
Topic	**5. Suggestions for Improvement:**
Participant A	An online chat box to help solve problems directly.
Participant B	Everything is organized well-- but make guides easier to find.
Participant C	A better search bar on the ITAC page.
Topic	**6. Duration of Time Spent on ITAC Website:**
Participant A	N/A
Participant B	As brief a time as possible.
Participant C	Prefer going to google to look up "TXST How to fix (enter issue)" for quick answer.

Fig. 3 - Focus Group Results: Focus Group 2	
Name	**Moderator Question/Participant Response**
Topic	**1. Frequency of ITAC How-To Guide Usage:**
Participant D	Never.
Participant E	Once.
Participant F	Once in undergraduate program.
Topic	**2. Experience Using ITAC How-To Guides:**
Participant D	N/A.
Participant E	How to set up TXST services on a Mac computer.
Participant F	How to set up Wi-Fi Freshman year. It is confusing to find the page but once found it was easy to navigate.
Topic	**3. Most Needed ITAC Services:**
Participant D	Canvas issues, but typically solved within canvas.
Participant E	Wi-Fi and gradebook information.
Participant F	Wi-Fi issues.
Topic	**4. Perception of Complication in ITAC How-To Information:**
Participant D	At first glance, it appears uncomplicated.
Participant E	Uncomplicated.
Participant F	Uncomplicated.
Topic	**5. Suggestions for Improvement:**
Participant D	Cannot think of anything.
Participant E	Easier search capabilities.
Participant F	Cannot think of anything.
Topic	**6. Duration of Time Spent on ITAC Website:**
Participant D	N/A
Participant E	Five minutes max
Participant F	As long as it takes to solve the problem.

Analysis

After compiling our findings from the Heuristic Evaluations, the ITAC Tabling Event, and Focus Groups, our group was able to evaluate the responses and apply them to our research recommendations.

Within our Heuristic Evaluations, our group was able to combine our experience as members of the TXST community that utilize ITAC services, with our knowledge of website usability to determine our recommendations. The observations that were most important toward creating recommendations optimizing the user experience were the need for live feedback through a chat-box or hotline, the lack of a centralized how-to guide page, and overall general and inconsistent quality of information throughout the different guides. Our group determined through these observations that there was a lack of clarity of language for the average user, a lack of uniformity in the layout, and a lack of centralization for how-to guides.

While analyzing the focus group responses, the insights deemed most important to the research into the How-To Guides were determined by its relevance to the previous research done by the group. Participants found themselves using the How-To Guides rarely, if ever. The participants agreed that they enjoyed the aesthetic appearance of the webpage, and that it was familiar due to its alignment with TXST University branding guidelines that are visible on other TXST web pages, applications, and social media. Participant F noted that a How-To guide was "confusing to find, but once found, it was easy to navigate."

Throughout the focus group sessions, several responses were either repeated or agreed upon by the participants. The technical issues that required the most assistance to solve were issues with the set-up process for TXST services, including Wi-Fi, Windows, and Mac. The brevity of use of the website was also a similarity participants shared. Those who had previously

used the How-To Guides within the ITAC Website all highlighted that they spent only as much time as needed to find a solution.

The responses that were the most surprising came from the desire for more in-depth or easier search capabilities. Participant A responded that “an online chat box to help solve the problem directly” would make the How-To guide experience more effective. Participants C and E both suggested that better search options and capabilities on the website would make the experience more effective.

We shaped our analyses in our Heuristic Evaluations and focus groups by our understanding of an initial observation of an ITAC Tabling event. A representative from our group attended this event and observed the ways in which TXST community members prioritized time-sensitive interactions in solving their specific technological issues. With these analyses in mind, our group drafted a collection of recommendations for improving interaction with the How-To guides.

Conclusion

Through a research process of academic literature review, Heuristic Evaluations, and conducting focus groups, our group was able to develop an understanding of which aspects of the How-To Guides were succeeding, and which allowed for room for improvement. By interacting with primary and secondary research processes, we were assured that the information gained was relevant to our client’s inquiry and current industry standards. Following our research phase, we were able to draft a list of recommendations that would appeal to members of the TXST Community, those with Usability Expertise, and our clients.

The selection of the literature that we evaluated was selected due to our group's need to find recent and relevant information about website usability standards and website usability testing design. Despite our group's initiative not extending to direct design elements of the webpage, we understood that taking a user-centered approach would give us a more complete observation of the issues presented. "User-centered design (UCD) is an iterative design process in which designers focus on the users and their needs in each phase of the design process" (Tham 2022). This mentality encouraged us to participate in the ITAC Tabling event, to allow us to better understand who the end-user of the How-To guides would be.

Focus Groups:

Our focus groups served to provide user insight into the functionality of the How-to sections of the ITAC website. According to El-Firjani "comprehensive evaluation of a product with representative users and tasks designed to measure the usability… of the complete product," helps to support potential recommendations for improvement with real life experience.

Students were familiar with the ITAC webpage and reported that they "sometimes to occasionally" used the site. The website was known to participants and used sometimes or occasionally, finding it mostly easy to use but concluding that other applications like Google.com made it easier to navigate. According to Nielson (1994), "It's best if the system doesn't need any additional explanation. However, it may be necessary to provide documentation to help users understand how to complete their tasks." This means there may be a need for speeding up issue trouble shooting online. Student participants said that some problems were not solved by ITAC and would recommend a chat feature and an improved search bar for streamlining online troubleshooting.

Some of the students found the how-to guides easy to read, but hard to locate. Some students said they would like to see a Mac Support/MS 365 software system for navigating additional technical problems on ITAC's how-to pages, but that they were happy overall with ITAC's service. Most participants thought that the how-to pages were intuitive and simple to follow, but that the issues they experienced of too many clicks and information being hard to find was hindering their experience with the site. Students thought that icons and screenshots were extremely helpful when asked about visual appeal and task efficiency. They would recommend fellow students use it and felt confident to overall in navigating through the how-to pages.

Heuristics Evaluations:

One of the most valuable elements we used in our research was heuristic evaluation, which is an inspection message for finding certain kinds of usability problems in user interface design. It involves having specialists individually examine the interface and judge its compliance with recognized usability standards. Other major universities use similar design techniques in their ITAC departments. To support the recommendations we are advocating for, we use articles on user-centered research, research-based web design, and usability guidelines. These ideas and principles guided us through every step of our report and IRB Approval.

Aligning with these principles, our group conducted heuristic evaluations to assess the current state of the How-To Guides sections. Through these evaluations, we identified significant areas for improvement, including the absence of live feedback mechanisms, a centralized repository for how-to guides, and inconsistencies in content quality and presentation. These observations underscored the need for clarity in language, uniformity in layout, and centralization of resources to enhance user accessibility and comprehension. According to

Nielson, “The design should speak the users' language. Use words, phrases, and concepts familiar to the user, rather than internal jargon” (Nielson, 1994).

ITAC Tables:

When we consider our survey results as a whole, in conjunction with opinions we heard students express at the ITAC table events, we are able to pick out some patterns in the attitudes held by this cross section of ITAC clients. Most of the community members we engaged with have used ITAC’s How-To services in one form or another at some point in their time at TXST, so we were encouraged that our subject of study is a form of service that is actually being used by the community at large and we speculate that this level of engagement could improve the user experience through the incorporation of services such as artificial intelligence chatbots. Though this idea may seem like a great undertaking, college students are utilizing AI capabilities in all aspects of their education, according to a study conducted by Inside Higher Ed, “Nearly half of college students are using AI tools” (Coffey 2023) to enhance their education experience. It is because of this that the How-To guides would be an excellent starting point to being incorporating this technology, because “When used strategically, chatbots represent an opportunity for brands to effectively and efficiently interact with consumers.” (Kull, 2021).

Our study participants understand the How-To guides to be uncomplicated, but we also recognize that if any given end-user is only accessing these articles/webpages occasionally, then they would likely not have a very nuanced understanding of them as a form of document. We also noticed a potential need for input and support from the TXST Network Services group, in

that many community members mention issues with wi-fi on campus. This is something that ITAC can only address in a tertiary way at best. An important theme running through all comments we were privy to is the overall low levels of engagement our community members have with ITAC at the present time. We believe that there are valid and concrete steps that ITAC can take as an organization to counter this trend.

In integrating and relating the provided research and analysis, we find a convergence of key principles and observations aimed at enhancing the usability and effectiveness of the How-To Guides section on the Texas State University ITAC website. When we consider contemporary design theory, it becomes evident that successful design of ITAC's how-to sites hinges upon several key factors: accessibility, ease of comprehension, consistency in navigational cues, clear organization of information, and iterative usability testing. According to El-Firjani, "The success of a product is based mainly on user satisfaction. Many products have been proved ineffective even though they met all scientific and technical design aspects" (El-Firjani, et al, 2017). These principles emphasize the vital importance of prioritizing user experience through intuitive design and content presentation, minimizing user effort in accessing and understanding guides for troubleshooting technological issues. Throughout the analysis of the mechanics of the user experience, our group also kept in mind that "in addition to relating the usability characteristics of a website to the specific purpose targets, it is also necessary to keep a close eye on the desired aesthetic of the website" (Springer, 2007). We drafted our recommendations by considering both function and aesthetics, as they go hand in hand when determining the user experience.

Our group determined that the How-To guides within the ITAC website were generally well received by members of the TXST Community, but that the confusing elements were

enough to frustrate users. With all our research in mind, we concluded that for ITAC to achieve their desired user experience, designers should take measures that will ultimately customize the how-to guides in a centralized format in a way that conforms to industry standards and user-reported needs.

Recommendations

Based on the results of our study, we have a set of recommendations that we would advise ITAC to implement in their support pages (and on their websites in general), which we believe will improve the user experience as well as helping to streamline ITAC's interactions with the TXST community that they are bound to support. Additionally, we believe that these recommendations, if adopted, would decrease the amount of time and effort that ITAC support workers spend inadvertently (and often unknowingly) dealing with systemic internal communication issues and provide them more time to address community members' actual technical problems. We offer these suggestions as a wholistic approach to improving the effectiveness of ITAC in their core mission of assisting TXST community members with technical problems and decreasing the anxiety and stress end-users experience not only from those technical problems, but from frustration that arises when the end-user is unable to find a solution to their problem in ITAC's existing systems.

- We recommend that ITAC implement a 'chatbot' system that is available on all their support pages, if not every webpage that they administer. These systems are becoming ubiquitous on websites that hold information or, more commonly, have products that they are trying to sell, where an instant message window shows up in

the lower right-hand corner of the webpage. These IM windows will frequently have prompts from a Large Language Model (LLM) or some similar AI (Artificial Intelligence) system that are meant to guide a user towards answers to common questions and can greatly cut down on the time a user spends searching for the relevant 'answer' to their queries (whether this take the form of "here is the URL for the shoe in the color and size you are looking for" or "here is the help article that addresses the issue you are having"). A locally administered LLM that is fully literate in all pages under the itac.txst.edu domain and would be able to route users to solutions directly, should be responsible for operating the system we are proposing.

- We propose a wide-ranging auditing project of the language used on all ITAC support pages with the goal of editing it to be consistent and understandable to the lay user. Currently, there is a wide range of terms and levels of technical language used on the pages we audited, which can only contribute to a user's confusion and frustration. By using terms that do not confuse the average user and having a consistency in the terms used, we believe that this will streamline user experience and lower the aggregate level of stress for users. This type of attention to language shows respect for the end-user and helps them understand the greater scope of technical support, which helps everyone involved in the end.
- We similarly propose another auditing project on the scope of each individual How To help article on the ITAC website. These pages/articles should be examined to determine if they are either too broad (for example, from introducing too many concepts) or too narrow (for example, from there not being enough contextual information about the subject of the article) in their subject matter, with the goal of a

consistent ‘style guide’ for how to both edit existing articles and for how to write new ones. We understand the project in this proposal to be critical to the success of the balance of How To articles as a whole ‘document,’ in that it will ensure that whenever a user has a new technical issue, they will be going to a resource that is familiar and consistent, thus making the entire process for user and ITAC less painful and more predictable.

- We strongly recommend that ITAC houses all How To articles in one central virtual location that is easily accessible from not only the front page of ITAC’s site, but from most TXST sites. This repository should have some level of branding applied to it, possibly with support from the Department of Marketing and Communications, so that it has a specific and easily recognizable name and imagery associated with it. Currently, the only way to access How To articles is by searching from ITAC’s front page, which provides an unwieldy amount of non-sortable results. By having all these help articles in the same place ITAC would be able to group them by subject and ‘popularity,’ which will facilitate further quickening of accessing solutions for end-users. The link to this page should integrate with as many other sites at TXST as possible, again with input from the ‘in house’ marketing department. We propose the URL to be itac.txst.edu/howtoguides (which should aim to reflect the name chosen for the resource if that name is short enough).
- We propose that ITAC improve and expand its sorting options in all search results on its pages. Currently, when an end-user who is having a technical issue searches for How-To articles the only two sorting options offered to them are “sort by relevance” and “sort by date,” neither of which empowers the end-user to be able to parse the

results any better than if they are displaying in alphabetical order. In other words, if a freshman were trying to figure out how to enable DUO on their phone and searched for a solution to that problem, how would sorting the results by date help them? The answer to this question is that it would not. Similarly, if that same freshman were to sort the results "by relevance," how would they know what was "relevant" and what was not? Again, the answer is they would not know. This effort would require a similar audit to our other proposals. By offering sorting terms like "most viewed," "just added," "similar to," and "videos," we can empower the end-user to 'triangulate' their search results in a way that makes sense to them and assists them in finding a solution to their issues.

- We recommend that ITAC create and install a self-service computer kiosk in the lobby of the ITAC service desk (an area shared with the Alkek One technology center) that connects directly to the LLM proposed in one of our other recommendations. This kiosk would be a touchscreen enabled computer system that has an interface that provides access to the How To article repository, in addition to visual links to the top 25 solutions to technical issues that community members experience (as determined by how often articles receive visits and by what issues come up the most on phone calls/emails/chats requesting assistance). This would provide an empowering resource for users who are 'on the go' as they study or research in Alkek and would decrease the load on ITAC frontline agents who must respond to these requests. Again, we recommend the Division of Marketing and Communications be involved in the design of the physical station and its electronic interface.

Finally, we wholeheartedly recommend that ITAC institute a series of ‘service pop-ups’ on the quad which would serve the dual purposes of helping students with technical problems as they move between classes and buildings, as well as creating a community engagement resource for the organization. We suggest that these pop-ups occur twice a month; small groups of technicians specializing in a specific list of, for example, the top 10 technical issues that the community is currently dealing with, should serve at these events. This list of issues should change and evolve over time to reflect the shift in whatever the current 10 issues experienced by community members are. In addition to the technicians, we recommend that ‘community engagement’ people dedicate themselves to interfacing with the public, inform them about current issues/solutions to same, and hand out drinks and snacks. This will raise the profile of ITAC and offer them an excellent input resource for tracking trends in technical issues as well as acting as a type of ‘early warning’ system for collecting information about potentially new issues. This type of community engagement ensures a higher level of goodwill towards ITAC as an organization and can function as a valuable source of technical issue monitoring to assist with the overall mission of helping TXST community members use their technology successfully.

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