TigerPrint Usability Project Meta-Analysis
Interoffice Memorandum

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From Kaitlin Coyle
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Introduction
This memo addresses the MTPC Portfolio Committee's request for a meta-analysis of my TigerPrint Usability Project conducted in Dr. Whittemore's ENGL 7010: TPC Issues & Approaches course. The project consisted of designing and implementing a usability test with multiple research methods and writing a Findings and Recommendations Report. The analysis discusses the audience, context, purpose, design process, and theories in our project.

Audience, Context, Purpose
Our test's goal was to evaluate the usability and usefulness of Auburn RBD Library's TigerPrint printers and printing instructions. Several students complained about the lengthy printing process and the lack of helpful instructions, thus, our test's audience was Auburn printer users; our report's audience was the Office of Information Technology (OIT). We tested MobilityPrint — which allows students to print from mobile devices—because it is students' preferred printing method. We recruited 3 first-time and 2 existing users to assess if learnability affected the instruction's usefulness. Our primary test goals measured 1) time on task, 2) user pain points, and 3) user sentiments while printing. Our tests occurred on Auburn RBD Library's third floor.

Project Management & Workflow
I created and implemented this test with two classmates: Colleen May and Anna Mathis. We followed "waterfall" project management which has six steps—Plan, Define, Design, Develop, Deploy, and Extend—treating each as "separate...phases," requiring approval before the next begins (Unger & Chandler, 2009, p. 63). The waterfall method was best suited for this project because usability tests often require certain materials (e.g., moderator scripts, task scenarios) to be completed before testing can begin. I served as project manager, creating task scenarios (Design); conducting a pilot test—which Barnum (2021) calls "the test of the [usability] test" (p. 242)—(Develop); assembling our tests and tools (i.e., DSLR camera, lavalier mic); and serving as moderator (Deploy) and document designer in the "Extend" stage where we drafted our recommendations report (Unger & Chandler, 2009). Colleen and Anna designed test materials (e.g., consent forms, questionnaires), served as writers, data analyzers, and observers.

Design Process & Theory

Our test measured usefulness—whether users find a product "meaningful" to their goals—and usability—an artifact's ease of use, accessibility, learnability, and navigation (Mirel, 2013, p. 287). To measure these, we conducted a field test in users' "real context of use,"—Auburn's Library where the printers are located (Barnum, 2021, p. 42). We also used the following evaluation methods: four task-based scenarios with a think-aloud process, a post-test questionnaire, and a Product Reaction Cards assessment, discussed below.

Task-Based Scenarios & Think-Aloud Process

Scenarios simulate "real" use cases while tasks are things users do "to achieve a goal" (Barnum 2021, p. 125,173). We knew users' ultimate goal was printing quickly, so we designed our scenarios around these factors. In each, users were told 1) they were AU students in an English course 2) they had 30 minutes to print before class started, and 3) they had forgotten their laptop and needed to print from a mobile device. To assess where the instructions succeeded/failed in guiding users (i.e., paint points), the four scenarios asked users to designate different print settings (i.e., double- vs. single-sided, color vs. black). Users also engaged in a think-aloud process which instructs them to voice their thoughts aloud during interaction, letting testers better understand their experiences (i.e., pain points, frustrations, rationales for actions) (Barnum, 2021).

Post-Test Questionnaire

Post-test questionnaires allow users to "rate" their "overall experience" via questions relating to study goals (Barnum, 2021, p. 227). Although there are standard post-test questionnaires (e.g., System Usability Scale [SUS]), we created a custom one to better capture our users' complex experiences. Six questions used a Likert-type scale to gather quantitative data; the first two asked users their confidence level using the instructions; the next two assessed the instructions' ability to guide them through tasks (i.e., downloading the Ricoh profile, sending documents to printer); the next two asked them to rate their printing experience. Our last four were open-ended to capture users' sentiments while printing, one of our test objectives.

Product Reaction Cards

The Product Reaction Cards were developed by Microsoft UX Researchers to measure a product's "desirability" with a set of 118 words in a 60% positive to 40% negative/neutral ratio (Barnum, n.d.; Bendek & Miner, 2002). In our study, we asked participants to select 3-5 cards they felt described their experience, allowing us to easily capture their feelings quantitatively. Of the 118 words, participants chose "useful," "usable," "confusing," and "time-consuming" the most, suggesting mixed emotions towards the printing experience and instructions.

Findings and Recommendations Report

Our usability test revealed several high priority findings regarding the instructions: 1) it did not specify what happened in users' systems during certain steps, 2) it had too many QR codes, 3) it had inconsistent wording, and 4) it had too many words. Our recommendations included significant revisions to steps #2 and #4, and the addition of a fifth step, which would solve the above problems.

Conclusion

Through our usability test, we were able to better understand users' experience interacting with the instructions and printers in Auburn's Library. This allowed us to serve as user advocates while writing our subsequent report for developers of the printing system. Overall, this project reinforced our roles as mediators advocating for users in their complex contexts of use.

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