

Team Project
Usability Study Report
Worth: 17% of your overall course grade
Due: April 27 by 11:59 p.m.
Team member assessments due: April 30 by 11:59 p.m.
Last modified: 1 April 2018

Overview

In this phase of the project, your team will conduct a usability study of the chosen fully-developed interface. You will formulate a list of representative tasks, and recruit three to five participants to perform those tasks as you videotape them. By analyzing the videotapes, you will identify usability problems, and you will propose design changes to remedy those problems.

Note: As discussed in class, your team is invited to run your studies in the state-of-the-art usability lab in EME 228. In order for your team to do this, (a) at least one of your team members must have already attended the orientation session, and (b) your team must reserve blocks of time to use the lab through OSBLE (create an event in the “Events & Deadlines” area). The EME 228 Primer document (see Project folder in OSBLE) can be used as a reference for running your studies in EME 228. A copy of it is also available in EME 228.

Steps

1. **Update study materials.** In the previous project deliverable, you created all materials necessary for your study. If necessary, update those materials based on the feedback.
2. **Prepare interface environment.** Make sure to prepare your environment in order to run your usability study on the chosen interface. Be sure to choose an environment with which study participants can directly interact with the interface/technology.
3. **Recruit three to five participants for each user group and run them through the study.** (*Five participants are highly recommended to increase the reliability of your study results.*) Start each study session by having the participant read and sign your informed consent form. Then have the participant fill out the background questionnaire. Third, have the participant (a) read the instructions aloud, or (b) follow along as you read the instructions aloud. Fourth, start recording the session. (*Note: Whatever recording method you use, be sure to record audio as well as video.*) Fifth, have the participant complete the exit questionnaire. Finally, thank the participant for participating; if you agreed to give out an enticement (cookies, candy, etc.) as a “thank you” for participation, this would be the time to do so. *Note that you should design your study session so that it lasts no more than one hour; 30 to 45 minutes ought to be sufficient in most cases.*
4. **Analyze your data.** As you review your recording of each participant session (or as you observe each participant session), create a list of “critical incidents” that occur; organize these incidents into logical categories that correspond either to the task, or to components of your interface. The critical incident spreadsheet (attached to this assignment) should be used to compile and organize your critical incidents (notice there's a separate sheet for each participant); it must be handed in with your report. Next,

synthesize your critical incidents into usability problems. For each usability problem you identify, indicate the number of participants who encountered the problem, the counter location(s) at which the problem occurred in each session, the estimated severity and scope of the problem, and a possible design change to remedy the problem. The usability problem spreadsheet (see Project folder in OSBLE) should be used to compile your usability problems. (It must be handed in with your report.) Use the following guidelines to assess severity and scope:

- **Severity.** Severity is an assessment of a problem's impact on user performance. The following scale is derived from Dumas and Redish (1993):
 - Severity 1 problems prevent users from completing a task. Participants give up after a few tries or they need a hint to continue. For example, users consistently select an incorrect dialog option and do not know what else to do.
 - Severity 2 problems create significant delay and frustration. Participants continue to get lost or to use inefficient methods to accomplish a goal. For example, the lack of feedback to users confirming what they have just done causes them to do the task over to make sure they did it correctly.
 - Severity 3 problems have a minor effect on usability. For example, an unusual term in a dialog causes users to hesitate for a moment before making the correct choice.
 - Improvements. While not problems per se, improvements will make the task even easier to perform or learn. The interface doesn't hamper users but there is something that could make it even better.
- **Scope.** Scope is an assessment of how frequently users will encounter a problem. The more users that a problem affects, wider its scope. The following scale is derived from Dumas and Redish (1993):
 - Scope 1 problems will affect almost all users.
 - Scope 2 problems will affect many users.
 - Scope 3 problems will affect few users.

5. **Assess whether usability study results satisfy your usability and user experience goals.** Compute the average time it took participants to complete each task, the number of errors made, the average questionnaire question ratings, and any other data relevant to gauging your prototype with respect to your original usability and user experience goals. In the "Overview" subsection of the "Findings" section, present this data in a table of the following form:

Usability or user Experience Goal	Relevant Empirical Results	Commentary
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- **Write up usability report.** The usability report template (see Project folder in OSBLE) resembles the format used by some industrial usability labs. Use it as a starting point for your report, which is to be written as a memo to your instructor (your "boss"). Before you start writing, please consult the exemplary usability report (see Project folder in OSBLE), which is based upon a report that received an A in a previous offering of this course.

Notes:

- I have interspersed comments in the exemplary report to highlight important features of the report, and to give you hints on how to write a good report. Be sure to read my comments, in addition to the report itself, before you write your own report. **While you may use any of the existing prose in the usability report template verbatim and without attribution, you may NOT copy the prose of the exemplary report verbatim. I will treat such copying as plagiarism, and grade it accordingly.**
- The requirements of this deliverable have changed somewhat since the exemplary usability report was written. In particular, this exemplary usability report does not include the table described in (5) above, and this exemplary report does not provide a diagnosis of each problem.

Specific Requirements

Through OSBLE, assemble the following documents into a **single PDF file**:

- The report itself
- Informed consent form
- Participant instructions and tasks
- Screening and exit questionnaire results
- Critical incidents log
- Summary of usability problems

In addition, create a **narrated highlights video**, post to YouTube as “unlisted,” and **provide link to the video within your report**. Your video should present the key video clips from your study. A title screen at the beginning of the video should display the following, centered and in large letters:

[Name of your team’s Software]
Usability Study Highlights Video

[Team member names]

Your video should be partitioned into five separate sections, each corresponding to a task completed by participants. At the beginning of each section, a title screen should describe the task. Next, you should present evidence of each usability problem that occurred within that task. For each such problem, present a title screen with a description of the problem, along with the severity and scope rating you gave it. The video should then go on to present all video clips that provide evidence of the problem; narration and video overlays should be used to enhance and clarify the presentation. If, for a given task, no usability problems were detected, you should instead present video evidence of one participant’s successful task completion. **Post your highlights video to YouTube as “unlisted.” In the designated place at the beginning of your usability report, provide the URL for your video.**

Assessment

Your instructor will assess your usability report and highlights video using the grading rubric available through OSBLE.

Assessing Team Members' Contributions to Project Deliverables

All team members are expected to contribute equally to all project deliverables. Early in the process of completing each deliverable, I recommend that your team devise and agree upon a plan that equally distributes the work across team members, and that your team leader take the initiative to ensure that each team member performs the work that was assigned to him or her. To ensure that all team members get credit for the work that they do and that team members do not "free load," I require that team members assess each other's (and their own) contributions toward each project deliverable. You are required to submit this assessment through OSBLE within 24 hours of each project deliverable resubmission deadline. For further details on how to do this, please carefully read the TeamMemberAssessment document available in the Project folder in OSBLE. For this project deliverables, submit your assessment through the "Team Evaluation for TDP#4" assignment.