

User Testing

The objective of this assignment is for you to gain the experience of writing a proposal for a usability study and performing a pilot usability study.

The objective of a usability study is to determine what works well or poorly in an interface. It is expected that you will find problems. By finding the problems, you will have obtained information to help you build the next iteration. Trying to demonstrate that you have designed a good interface by performing a usability study is a major mistake. It is through the problems found that this interface is made better.

Assignment Steps

There are four major steps in the assignment. First you will write a proposal for performing a usability study on the paper mockup that you built for the paper prototype assignment. Second you will perform the study on two different test subjects. Third, between each test, you will update your study proposal and make changes to your interface in order to address any critical failures. Forth and lastly, you are to produce a report describing your findings.

1. The study proposal needs to contain:

a. Objective

Though usability studies can have a variety of objectives, for this assignment, your objectives are being assigned to you. These objective are general, you are responsible to make them specific to the interface and tasks.

1. Obtain a qualitative understanding of the users' experience when they attempt to use your system to perform the tasks.
2. Identify issues users will have in attempting to perform the tasks.
3. Determine if users are able to complete the tasks using the interface.

b. Description of system being tested

This is a description of the general function of the interface, the intended users, and what kind of tasks that you expect them to perform.

c. Task environment & materials

This is a description of where you intend to perform the test (the test environment), what is in the environment, and the materials that you are going to use to perform the test and record the results.

d. Methodology

This is a step by step description of how you are going to perform the tests. Be sure to include:

1. the introduction to your test subjects,
2. any training you plan to perform,
3. how you are going to ask the test subjects to perform the tasks,
4. rap-up discussion with the test subject,
5. how you are going to thank the test subject for helping you, and
6. how you plan to record information from the study.

Remember that there are ethical issues in performing a usability study. Be explicit in your methodology on how you are addressing these issues.

e. Tasks

This is a description of the specific tasks you are intending to ask the test subject to perform. Remember that a test subject cannot perform a generalized task. To perform the task, the test subject will need the specifics. Keep in mind that the tasks should go from easy to hard and that you should not take too much of your test subject's time.

f. Test measures

This is a description of what you expect to measure and how you expect to gather the data to make the measurements. For each objective you should have determined how you are going to capture relevant data.

2. Perform the usability study as described in your proposal.

To perform the tests, the members of your team will need to take on different roles. As with the evaluation without users, one team member will assume the role of the computer, and one or more assume the role of observers. The test subject is in the role of the user.

There are two additional roles: greeter and test administrator. The greeter's role is to greet the test subject and give them an introduction about what is going to happen. The greeter also has the role of thanking the test subject at the end of the study.

The test administrator's role is to perform any training and ask the test subject to perform the different tasks. The test administrator can provide clarification about the task, but not clarification on how to use the interface. No one should help the test subject perform the task unless the test is starting to fall apart.

Also, the test administrator should ask the test subject to describe what he/she is doing and why.

This is a pilot study, so you may find problems in the study as well as the interface. Be careful to record the problems with the study, so you can modify the study for the next time it is executed.

The best laid plans of mice and men can fail. Often a usability study does not go as planned. This is not a complete lose, but rather valuable information about the interface or the study.

If part of the test falls apart, it is good practice to make minor modifications to be able to continue. For example, if the test subject cannot determine how to access a major part of the interface, it is appropriate to give instructions. This will enable you to continue to gather meaningful data about other parts of the interface. (Of course, the test subject's failure to find a major part of the interface is a major finding. This finding will need to be addressed in the interface design.)

If some part of a test falls apart, try to go onto some other part of the test. If the whole test falls apart, it can be useful to ask the test subject what was the problem and if he/she can give you suggestions on how to make the interface work better.

Be aware that the test subject will believe that he/she has failed if there is a major problem with the interface. It is an important for ethical reasons to make very clear to the test subject that he/she is not at fault, but it is a problem with the interface.

3. Between each test, you will update your study proposal and make changes to your interface to address any critical failures.

It is likely that you will have found problems with the study and with the interface. The objective of a pilot study is to find the problems with the study. These problems can include unclear instructions, difficulty gathering data, and test subjects finding the tasks not to be meaningful. After the first test, make modifications to the study proposal to correct these issues.

Also, you may have discovered a major problem with the interface. The problem could be so significant that the test subject finds it impossible to complete a task. It may be so major, that it is literally impossible for anyone to complete the task. Instead of wasting your time and the time of your next test subject, correct this problem before going on. Be aware that you should balance the need to get feedback from more than one test subject on a specific interface with how important it is to fix a problem before going onto the next test subject.

4. Report describing the findings.

The study report should include a description of both what worked well and what worked poorly with the interface. The report should address the objectives of the study and be based on what was intended to be measured by the study.

Organize the report based on the criticality of the findings. Place the finding that most impacts the usability of the interface first. Describe the problem that the test subject encountered. If you can, describe what principle that was violated and a possible fix for the problem. Refer to the specific data that was recorded during the test in explaining the finding. It is appropriate to group multiple specific findings, but make sure the reader of the report will be able to find every occurrence of that finding.

At the end of the report, include a section about positive findings. For these findings, describe what went well and if you can explain what principles were followed to make this part of the interface work well. This section helps the designers determine what part of the interface should not be changed.

Deliverables

There are four deliverables for this project: the study proposal, the study report, the description of changes, and the observations from the study.

Study Proposal

The write-up of the study proposal should address every point described above. It should be the version after making changes between the two test subjects.

Be succinct. I expect this document to be about five pages or less. Be careful to fully specify the tasks and address the ethical issues.

Study Report

This write-up should be written from a business perspective. Number each finding. Follow the organization described above.

The size of this document will depend on the number of findings. A single finding should be able to be described in a few sentences, though the references to the observations should be as long as needed.

Changes

Describe each change to your project proposal. Explain why the change was needed.

Observations

You should make an observation at each point at which the test subject has difficulty performing a task, at the completion of a task, and when the test subject answers questions or makes significant comments. Also, each general impression you have should be recorded as an observation. Number each observation so you can refer to them in your study report.

If the test subject appears to be having difficulty during some part of performing a task, record the following:

1. What task the test subject was trying to perform,
2. What part of the interface was being used by the test subject,
3. The test subject's behavior, and
4. Any description given by the test subject about the problem.

If the test subject is not explaining what he/she is doing, you may ask. Be careful not to interrupt the test subject's train of thought. This is the same balancing act you performed in the task analysis assignment.

Ask the test subject to tell you when he/she has completed a task and how he/she knows that the task was completed. Record this information. Also record if the actions taken actually completed the task.

Make notes on the general experience of the test subject. These may include things such as the test subject appeared to be having fun doing a task or seemed to be able to perform the task quickly.

After performing all the tasks, ask the test subject about his/her experience in using the interface. If the test subject appeared to have problems with something in particular, ask about it. Make sure these questions are open-ended. Record the answers.