Usability Testing Prerequisites and Procedures

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Abstract
Usability testing involves measuring the performance of users in a controlled environment. Although usability is applicable across many domains of real life but in this research paper author focuses on the usability testing for online applications on PCs. The author has provided a checklist of prerequisites and procedures for usability testing at one place so that conducting usability testing becomes more comfortable.

Keywords: Usability, Usability Testing, Learnability, Memorability, Screen Recorder Software.

Introduction
The ease with which users can learn, remember and use the product defines the usability. Jacob Nielsen has defined Usability by five quality components. These are Learnability, Efficiency, Memorability, Errors and Satisfaction. Nielsen has described these quality components as given below [6].

a) Learnability
Learnability of a product is defined as the ease with which novice users can learn the product.

b) Efficiency
Efficiency is defined as the performance with which expert users can use the product.

c) Memorability
Memorability is defined as the ease with which those casual users, who are away from the product for a certain amount of time, can remember the use of the product.

d) Error
This quality component defines the error rate for errors made by users while using the system.

e) Satisfaction
Satisfaction defines how much users enjoy while using the system.

Pre-Requisites For Usability Testing
a) PCs with pre-installed browsers:
To perform the usability test of online application on PC bookmark the link of online application before start of test so that it becomes easy for the users participating in usability testing to start the application. The time of users should not be wasted in unsuccessful attempts to start the application and concentration should be given in determining the ease and efficiency of use of application i.e. usability of application.

b) Screen Recorder software
Screen Recorder software is used to record screen as well as audio activity on a PC and produce a video file of acceptable standard [2]. It should be ensured that screen recorder software has been installed in all PCs before start of usability testing session. Before users start working on the application, screen recorder software must have been started to record their screen and audio activities. Later on produced recording can be studied and analyzed to understand the users’ behavior i.e. what they did why they did which in turn will help to understand the usability problems in the system.

c) Mike
Mike must have been installed on each and every PC. The users should be requested to speak loudly what they are thinking during usability testing session. The voice of the users should have been recorded using screen recorder software. This will help to understand the cognitive behavior of users.

d) Non Disclosure Agreement Form (NDA)
A Non Disclosure Agreement Form should be prepared, distributed and collected from users before start of session in order to take undertaking from the users that they will not disclose any information about the system publicly which they will see in the usability testing session [4].

e) Permission Form
It is unethical to record screen and audio activity of users without their permission. So a permission form must be prepared, distributed and collected from users before start of usability testing session in order to seek permission from users to record their activities [4].

f) Camera fitted with PC (Web-Cam)
A small camera should be fitted with PC in order to record the Facial Expression of the users to understand the cognitive behavior.
g) Users Selection
Users should be selected very carefully to perform the usability testing session. A user may have good domain knowledge for one domain but may not have for another domain thus an expert user for one system may or may not be expert for another system. If usability testing is being done for any client, characteristics of novice user and expert user should be decided in advance after having discussion with the client [4]. A user with a good knowledge of usage of information systems but lack of domain knowledge about banking domain may not be considered as expert user to perform usability test of systems related to banking domain.

Procedures For Usability Testing
To test various quality components of the usability, appropriate users should be selected depending upon the quality component being tested e.g. novice users should be selected to test the learnability and expert users should be selected to test efficiency. Characteristics of novice users and expert users should be decided in advance depending upon domain of system being tested. Following discussion provides the description to test various quality components of usability

a) Learnability
To test learnability novice users of the system should be picked and average timing to perform the various tasks should be calculated [3]. The calculated timing should be compared with the target value. If average time taken by users to complete the tasks is greater than target time, learnability needs to be improved.

b) Efficiency
To test efficiency expert users of the system should be picked and average timing to perform the various tasks should be calculated [3]. The calculated timing should be compared with the target value. If average time taken by users to complete the tasks is greater than target time, efficiency needs to be improved.

c) Memorability
To test memorability those users of the system should be picked who have been away from the system for a definite period of time and average timing to perform the various tasks should be calculated [7]. The calculated timing should be compared with the target value. If average time taken by users to complete the tasks is greater than target time, memorability needs to be improved.

d) Error
To test errors casual users of the system should be picked and number of errors made by users while performing the various tasks should be calculated [3] [7].

The calculated number of errors should be compared with the target value. If average number of errors made by users to complete the tasks is greater than target value, system needs to be improved.

e) Satisfaction
To test satisfaction feedback of users should be taken and analysed. Users should be observed during usability testing session to get to know the problems being faced by users while using the system [5]. The cognitive behavior of users should be studied later on through recorded videos to understand why users did what they did.

Conclusion
The paper has discussed prerequisites and procedures for usability testing. Correct and efficient usability testing can reveal serious usability problems in the system which in turn can help to improve the productivity of the system. A good usability of the system can lead to better user satisfaction which in turn can help to make the system successful.

References