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Usability testing on the web; Measuring how design impacts task performance times.

Stefan Eng

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Stefan Eng
atn08sen@lu.se

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Supervisors: John Deer, jdeer@company.com
Don Jeer, djeer@xy.lth.se

Examiner: Jane Doe, jane.doe@cs.lth.se

Abstract

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Contents

1 Introduction **7**
- 1.1 Report goals . . . 7
- 1.2 Usability testing, then and now . . . 7
- 1.3 Literary scope . . . 8

2 Approach **9**
- 2.1 Method . . . 9
  - 2.1.1 Threats to validity . . . 9
- 2.2 Theory . . . 9
  - 2.2.1 Information and color . . . 9
  - 2.2.2 Measuring completion times . . . 9
  - 2.2.3 Representative tasks . . . 9
- 2.3 Implementation . . . 9
  - 2.3.1 Platform software stack . . . 10
  - 2.3.2 Interface creation . . . 10
  - 2.3.3 Variable challenges . . . 10

3 Evaluation **11**
- 3.1 Results . . . 11
  - 3.1.1 Participation, test runs and success ratio . . . 11
  - 3.1.2 Test runs per user and participation activity . . . 12
  - 3.1.3 Test types, test order and task distribution . . . 13
- 3.2 Discussion . . . 13
  - 3.2.1 Possible Improvements . . . 13

4 Conclusions **15**

References **17**

Chapter 1

Introduction

Usability is traditionally done in person with the *over the shoulder* method which gives a good insight of what a participant does during a test. Further more, if the *thinking out aloud - method* is utilized correctly, the test-moderator should have a good insight into the participant thought-process during the test.

TODO: Expand usability-testing introduction.

While effective(?) this method scales poorly with a one to one ratio between moderator and test participant. This project investigates the possibility of alleviating this scale constraint by utilizing a internet based platform to conduct usability tests of user interfaces online.

1.1 Report goals

1. Create a web based platform for usability testing.
2. Run one or several interface tests with real users on the platform.
3. Verify that the collected data shows a significant(?) impact on the studied variable(s) when parameters are changed. **TODO:** Shorten?

1.2 Usability testing, then and now

TODO: Expand this section.

1.3 Literary scope

This report draws and builds on information from the fields of usability testing, web design and interaction design.

Specifically, *Handbook of usability testing : how to plan, design, and conduct effective tests*[1] and *Usability testing essentials. [Electronic resource] ready, set– test!*[2], provide a contrast between traditional and modern approaches to usability testing and how to perform them.

Don't make me think, revisited : a common sense approach to web usability[3] provides a concise and interesting summary of no-nonsense approaches to web design from a usability perspective. Last but not least *The design of everyday things*[4] introduces both *user-centered-* and *interaction-design* together with the concept of *affordances*,

Chapter 2

Approach

2.1 Method

Results by measuring the time and showing graphs + statistical grouping / analyzis.

2.1.1 Threats to validity

network latency? multiple runs with same person?

2.2 Theory

The theory contains color-theory and the experience from managerial positions.

2.2.1 Information and color

2.2.2 Measuring completion times

2.2.3 Representative tasks

2.3 Implementation

Writing a web-application with Flask + python + sqlite3. HTML5 and CSS with a dab javascript.

2.3.1 Platform software stack

2.3.2 Interface creation

2.3.3 Variable challenges

Chapter 3

Evaluation

3.1 Results

3.1.1 Participation, test runs and success ratio

The test-site went live 2020-01-24 and the link was initially shared through Facebook. On 2020-01-27 the link was shared on the MASSIVE internal mailing list, boosting the participation significantly. In a total, 101 participants got past the initial information page over a five day period.

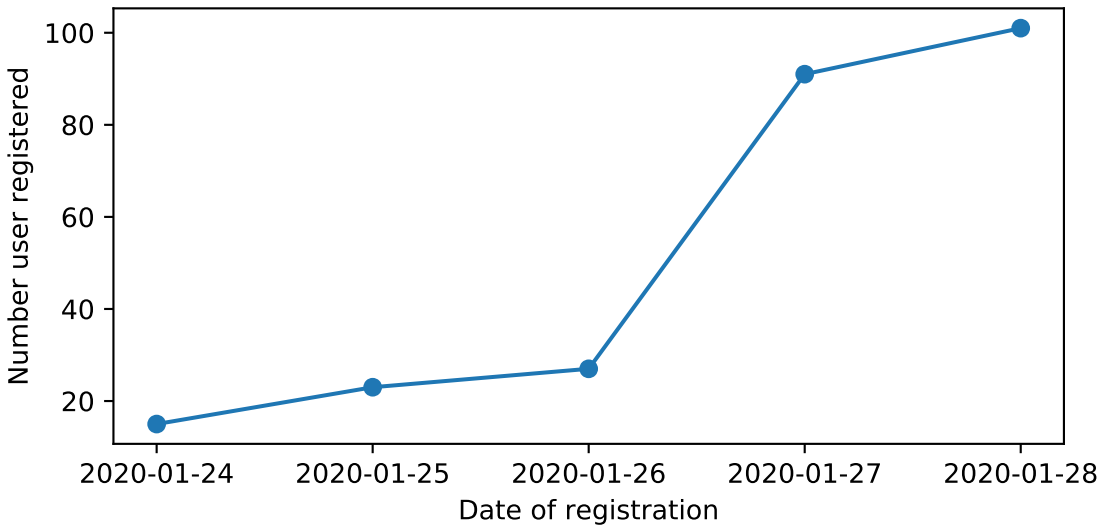

Figure 3.1: Total registered participants over time.

In total 698 tests were run, where 537 were answered correctly, 3 never produced an answer, leaving 158 incorrect answers. Looking only on the test runs without any user- or task-correlation, the chance that any given test run produces the correct answer is ~76.5%.

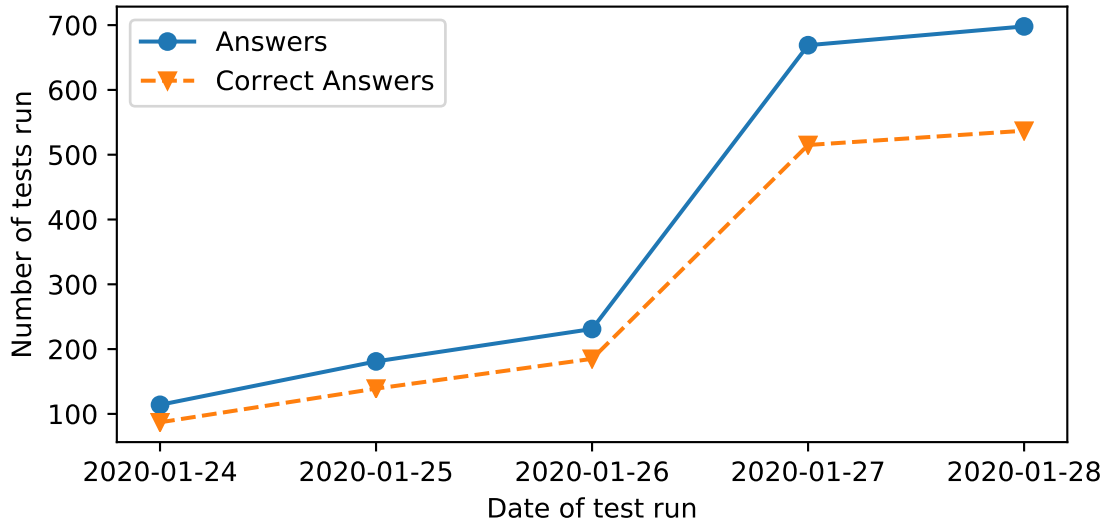

Figure 3.2: Total number of tests run overt time.

3.1.2 Test runs per user and participation activity

The number of recommended test was five, which when completed, allowed the participants to continue to the final survey. However, there was nothing stopping each participant from doing more or less than the suggested number.

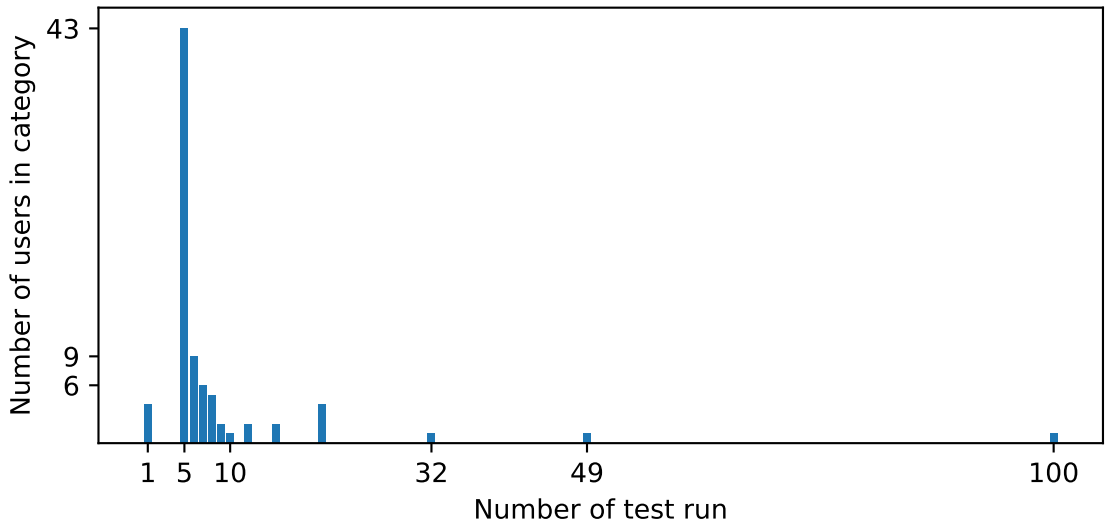

Figure 3.3: Number of users that performed a specific number of tests. *(Tabulated data available in appendix.)*

Of the 101 number of participant sessions started, 81 of them ran at least one test, which means 20 ran no tests. Further more, 47 completed between five and nine tests, and 12 completed ten or more.

3.1.3 Test types, test order and task distribution

Since the participants were free to choose any combination of tests, it's interesting to know which of the tasks were run the most.

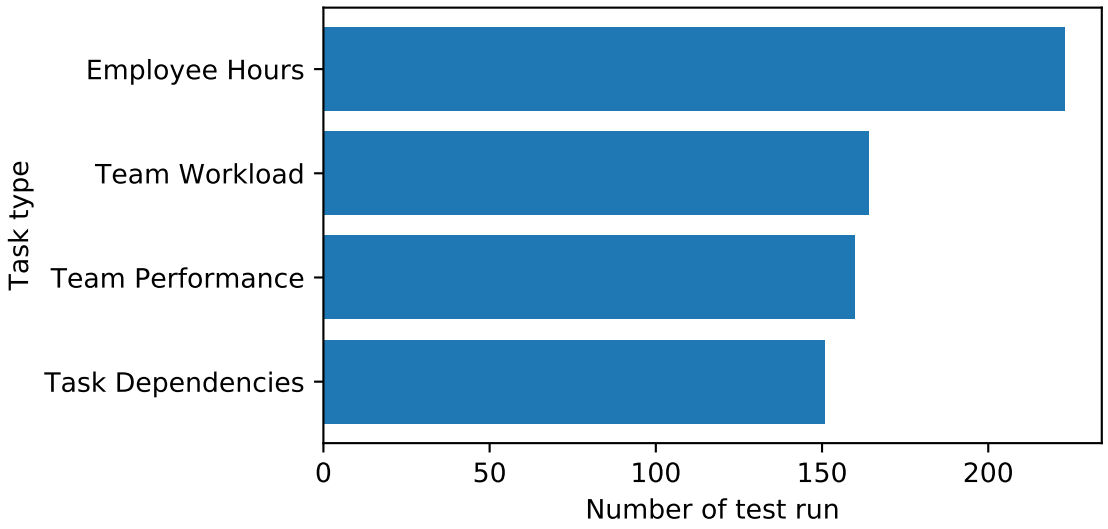

Figure 3.4: Test run distributed on task-types.

TODO: Continue exploring the data, time distribution? Which task was failed the most? Are there thresholds in the variables where tasks start to fail more often? Is there a most preferable order to do the tasks? Which task is the most popular in the 5-run category? ...

3.2 Discussion

3.2.1 Possible Improvements

Chapter 4

Conclusions

Did it have an significant impact? Was the web the correct platform? What could be done better over the internet? Recording screen and voice? (Javascript, since it's already used, pull up some statistics?)

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