Assignment 4

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September 1, 2023

1 Description

In this assignment we will be testing the web page `www.su.dk`. This a web page were you can find information about SU, which is a monthly student grant that students can receive while studying.

1.1 People

The main users of this web page are students who need information about SU, who want to apply for SU or who want to apply for a SU loan. Another important group of users consists of SU guidance counsellors - and people with similar professions - who need to know the facts and rules of SU in order to pass this information on to students.
The page is available to anyone who speaks Danish and English : the default language is Danish but the page also presents users with the option of changing the language to English. The English version, however, is not a complete copy of the Danish site, since the Danish version contains much information which has not been translated into English; therefore, the experience for a non-Danish speaker would be different than for a Danish speaking person.

The general information part of the page is available to everyone who has access to the internet. However, if a person needs more specific details about their SU situation they need to have Nem-ID or MitID to log in.
In general, the web page contains a lot of information about different rules and laws which many users may find difficult to understand and remember. Furthermore, since the web page is solely text based it might be difficult for a person with poor vision to find the information they need since it could be lost in all the other text.

1.2 Activities

The homepage is made to help students. The students can apply for SU, they can apply for a SU loan and they can find out important information such as how much they are allowed to earn while receiving SU. However, some of this functionality is only available for people who has Nem-ID and Mit-ID as mentioned above (Benyon, 2013).

Over all, the web page has a decent design where most of the important subjects have their own tabs or menus which are all easily clickable. Within each menu or tab, there is a lot of descriptive information that makes it easy to find out what is important and what the person needs to do if they want to apply for SU.

1.3 Context

The physical context of this activity mostly takes place inside in front of a computer. However since the web page is also designed to work on mobile devices it could be done anywhere. However, since personal information is only available when a user is logged in, the user might prefer to access the page in a private setting (Benyon, 2013).

For a student counsellor, the web page is a tool to aid the counsellor in helping students get the correct information about SU, or in helping students apply for SU.

1.4 Technology

In order to log in, the user needs to have a keyboard and a mouse if they are using a computer. Otherwise, if they are using a mobile device, they can use the built-in keyboard to enter the needed information. The output is displayed on the screen - i.e. either on the computer screen or on the other mobile device's screen. (Benyon, 2013)

1.5 Task

The purpose of this test was to detect problems with the web page by creating realistic tasks for our test users(Molich, 2003).
For our test, we chose the following tasks:

1. Find out if you can get your SU extended if you have a master degree and are starting a new bachelor's program.
2. As a foreign, non-Danish speaking student, familiarise yourself with the SU law.
3. Find out how much SU you can receive as a foreign, disabled, non-Danish speaking student.
4. Find out how you can get disability allowance as a foreign, non-Danish speaking student.
5. Find the relevant contact information to pay-back your SU loan as a foreign, non-Danish speaking student.

According to Molich (2003), the first task should be so simple that the user can solve the task within minutes. We tried to use this principle and the first task we created is simplest of the five. It is more general than the following tasks, that are very specific about the type of student the tester needs to find information about and therefore it is easier, or should be easier, to solve. For this specific test, we only had to come up with five tasks, but a good additional first task could have been "Go to the web page www.su.dk" to give the test person a great and positive start with a task that was easy to accomplish (Molich, 2003).

In general, we tried creating realistic tasks that did not contain hidden clues such as "In the menu xxx.." or "Click..." that would give the test person hints about how to carry out the task and give information about the task. Instead, we created precise tasks with a description that would give the testers the impression that the tasks could be solved by using the web page (Molich, 2003).

2 Planning and execution

2.1 Choosing the Test Cases

In considering which areas of the `www.su.dk` web site, our test cases should focus on, we were inspired by the tips given in Molich's "User Testing, Discount User Testing" Molich (2003). Thus we put great efforts into tailoring our tests to the relevant test users and made an effort to not include any hidden clues in our tests.

2.2 Recruiting

Thinking about how to recruit our test users, we quickly realised that most people studying in Denmark would be qualified as test users, since `www.su.dk`is a web page built exactly for such an audience. Therefore, we simply asked a number of friends, who fit the specific criteria of our cases, if they would be up for the challenge. Since all test users thus had a perfect match with one of the target audience of the web page, none of these can be classified as either over qualified or under qualified (Molich, 2003).

Since we mainly recruited friends, the act of "informing test users" was a very informal procedure. Basically, all communication with test users prior to the actual conduction of the tests, took place via Facebook's messenger platform. Therefore the agreement between the tests users and ourselves also happened in writing via messenger.

2.3 Test Location

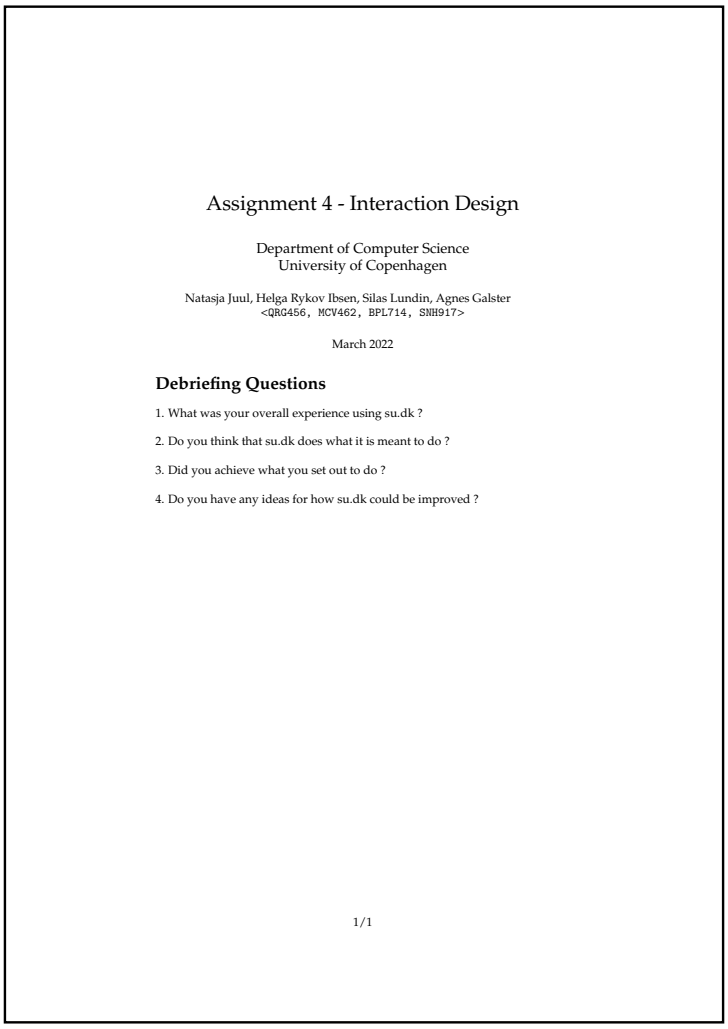
For our test location, we chose the test users' own study environments. This use of a familiar space had the added benefit of the test users feeling more at ease than might otherwise have been the case. For documenting our tests, we used a software tool called "Loom". Loom is a tool which records both the images on the computer's screen and the voice of the person using the computer. In this way, Loom seems the perfect tool for our Think-Aloud tests : it allowed our test users to conduct our tests without having to deal with any distracting microphones, cameras or note-taking (Molich, 2003). This, too, had the added benefit of letting our test users feel more at ease in the test situation than what might otherwise have been the case.

2.4 Pilot Testing

Before actually conducting our tests with our test users, we tested the tests ourselves. In doing so, we gained a rough idea of what to expect when conducting the real tests. Thus we were better prepared for potential problems and questions which might arise during our actual tests procedures.

2.5 Conducting the Think-Aloud Tests

Having chosen our test cases, recruited our test users, chosen our test location and performed our pilot test, we went on to conduct the actual tests. For all tests, the experimenter started off by welcoming our test user and trying to make her feel important and at ease (Molich, 2003). While our test user was performing the think-aloud test, the experimenter kept as quiet as possible, and only intervened when the test user seemed to get stuck. In such cases, the experimenter would ask the test user, what she was experiencing and what her thoughts on it were. In the end, our experimenter had a short list of debriefing questions which she asked the test user.



Assignment 4 - Interaction Design

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March 2022

Debriefing Questions

1. What was your overall experience using su.dk ?

2. Do you think that su.dk does what it is meant to do ?

3. Did you achieve what you set out to do ?

4. Do you have any ideas for how su.dk could be improved ?

1/1

Figure 1: Debriefing questions

2.6 Reflecting on our Think-Aloud Tests

Reflecting on our Think-Aloud tests, it should be noted that we deliberately chose students and not su guidance counsellors for our tests. We did this partly because `www.su.dk` has far more student users than guidance counsellor users, partly because the students fit our test cases better, and partly because students were easier to recruit than su guidance counsellors. Ideally, of course, we would also have conducted tests with guidance counsellors.

Choosing to recruit our test users amongst our own friendships groups, has pros and cons. On the one hand, the the bond between the test user and the experimenter might influence the test users to feel at ease in a way that would be hard to achieve otherwise. On the other hand, one could also argue that the friendship risks making the test user feel *more* at ease than what is natural for the situation in question. However, had we been conducting "proper" tests (i.e. tests for the development of a system), we would never have used friends as test users due to the risk of bias.

Again, had we been doing "real life" tests, the communication would have been a lot more formal - taking place via email rather than messenger and utilizing formal contracts rather than a "chat-based" one.

This is important, as an oral presentation of tasks always will contain hidden invariable clues, as stated in Molich 2003. This hurts the experiments credibility, as it becomes difficult, if nigh impossible to recreate the exact same experiment setting.

Molich 2003 also stresses the importance of peer reviewing the entire Think-Aloud process. As with any scientific approach, it is important to grasp the entire spectrum of user experience, and thus only conducting a few experiments may lead to inaccurate results. As stated previously, in an ideal scenario, conducting tests with guidance councillors would help to grasp the picture of the more experienced user. It is also vital that the experimenters performance is subjected to peer reviewing, to ensure that the experimenter does not commit any of the common mistakes.

3 Data analysis

In the following, we are going to evaluate the data collected through the Thinking Aloud Method (Molich, 2003; Nielsen, 1994). For documenting the data, we have used the Loom screen recorder which allowed us to record our test users' interaction with the relevant computer interface while thinking aloud. We have opted for a compromise, or rather a combination of, evaluation approaches proposed by Nielsen (1994) and Molich (2003). As far as the heuristic evaluation in Nielsen (1994) is concerned, the fact that we (the evaluators) were familiar with the domain of research, made it unnecessary to include the first step ("a pre-evaluation training session") into the analysis and therefore we were able to proceed directly to the next step. In terms of the classification of usability problems in Molich (2003), its severity scale from 1 to 3 seemed unfit to properly cover one of our cases, which is why we decided to employ Nielsen (1994) and his five-point rating scale for estimating the severity of usability problems found by heuristic evaluation. The overall results of our analysis of the three cases - based on the combination of two analytical approaches - are presented below in Figure 2.

	Problem Severity					Time to Correct			
	Not a usability problem	Cosmetic problem	Minor usability problem	Major usability problem	Usability catastrophy	> 1/2 hours	> 1/2 days	> 1/2 weeks	Indefinite time
Case 1	☐	☐	☐	☐	☑	☐	☐	☐	☑
Case 2	☐	☐	☑	☐	☐	☑	☐	☐	☐
Case 3	☐	☐	☐	☐	☑	☐	☐	☐	☑

Figure 2: The overall results of the analysis of the three cases

3.1 Case 1: Paying back State Education Loan

We started out stating the following hypothesis: "Foreign students can easily interact with the Danish website `www.su.dk` and succeed in finding information on how to pay their state education loan back". The actual evaluation stage revealed that the user found the relevant section "Paying back to Udbetaling Danmark" under the menu-subsection "State Education Loan" pretty fast, which we evaluated as a positive feature. Yet, she was not able to succeed in reaching her goal because the link provided under that subsection, which was supposed to lead to another web-page that would provide the relevant information, turned out not to exist (cf. Figure 3):

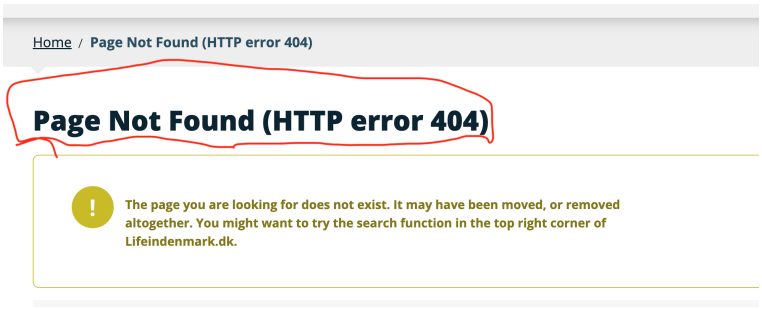

Figure 3: "Page-not-found" problem

In terms of the severity rating, this problem can be qualified as a *usability catastrophy* (Nielsen, 1994) or *serious interface problem* (Molich, 2003). It could be termed as a **User Interface Disaster**

(UID), though, if the case at hand had been carried out with one more motivated and typical user of the interface and revealed similar results. The further inquiry into the menu-tab on the page forwarded to from `www.su.dk` and the user's attempt to find the relevant information by using the Search-option there was not successful either. As the user put it: "I think I'm not gonna go any further from here. I'm kind of stuck here, because there's no item here that guides me to the information on paying my loan back." The debriefing stage carried out immediately after the think-aloud part of the test detected what Molich (2003) terms as *"a serious interface problem"*, because the user stumbled upon a problem that made it impossible for her to proceed without getting help from a human being.

In terms of the time it takes to correct the problem on the scale from 1 to 4 (Molich, 2003), we ended up categorizing it as *indefinite time to correct*, because we believe that it might take considerable time to mend an error such as "page-not-found". Even though this case was carried out with a single user, we can make a qualified guess and state that the conduction of multiple tests of the case at hand would reveal similar results : the users of the application in question would not be able to reach their goal. Taking into consideration the limitations of the test, we can conclude, so far, that our initial hypothesis does not hold water and we have to discard it.

3.2 Case 2: Applying for State Education Grant as a graduate

Our initial hypothesis said: "Graduate students who wish to apply for a Bachelor's program can easily find the information on their remaining SU-clips on `www.su.dk`". The actual evaluation stage revealed that the user succeeded in reaching her goal, which is why, on the severity scale from 1 to 5, we evaluated this problem as a *minor usability problem* (Nielsen, 1994). And yet, at the debriefing stage we discovered **a serious interface problem** in the form of Molich (2003) problem of type 2. That is, the user experienced "annoying, irrational behaviour from the application". Namely, such sub-menus (under the SU-menu) as "SU-betingelser" and "Om SU til videregående uddannelser (universitet, journalist, lærer mv.)" seemed very similar content wise, which turned out to be quite a hassle for the user, because she had to spend more time than necessary on going back and forth between similar sections and subsections before she finally reached her goal and found the relevant subsection "Antal SU-klip – den overordnede ramme og din støttetid". Speaking about the time-to-correct-the-problem aspect, it is hard to come up with some definite time frame, but we believe that it would not take long to correct this type of minor usability problem and therefore we evaluated this parameter at less than one to two hours. All in all, our initial hypothesis holds water.

3.3 Case 3: Applying for Disability Allowance

Our initial hypothesis said: "Disabled foreign students can easily find the information regarding the disability allowance on `www.su.dk`". As in case 1, the actual evaluation stage revealed what Molich (2003) calls a *serious interface problem*, in that the user was not able to reach her goal without getting help from a human being. To be more specific, the English version of `www.su.dk` did not contain any information on the inquiry in question, and even the attempt to use the search option did not produce any desirable results, as the search ended up with "Ingen resultater fundet for disability allowance". Had the test been conducted multiple times with similar outcomes, the problem at hand would have been evaluated as a **User Interface Disaster (UID)**. That type of severity problems are really hard to estimate time wise, since a considerable effort might be required to have them solved. We have, therefore, evaluated that it would take "indefinite time" to mend it. So far, our hypothesis does not hold water and has to be discarded.

4 Redesign

Based on our think-aloud tests and our analyses of these, we now go on to consider ideas for redesigns of the `su.dk` web page. In order to do this, we will evaluate the suggestions made by our test persons during the Paying Loan Back and Disability Allowance tests.

4.1 Paying Loan Back

The test person for our Paying Loan Back test, proposed that `www.su.dk` should alter its sub-menus to more specific names which might actually guide the user constructively through the page - see fig. 4. Moreover, our test person suggested that `www.su.dk` should consider including links to pages that actually work, rather than to inactive pages - 5. She further suggests that it would be nice to have some sort of contact information available in English - see fig. 6. This would allow also non-Danish speaking users to get personal help for finding the information they need, or for dealing with frustrating experiences like being taken to an inactive web page.

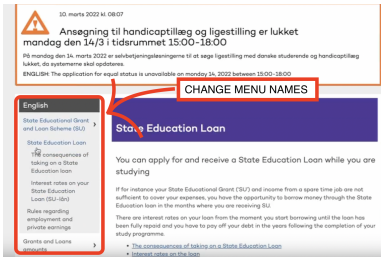

Figure 4: Menu titles

We might consider these suggested improvements in relation to Nielsen (1993)'s notion of *usability*. According to Nielsen, the usability of a system depends on its level of learnability, efficiency, memorability, errors, and satisfaction. Our test person's suggestion of more specific, guiding names for menus and sub-menus seems like a proposal which would increase `www.su.dk`'s level of usability considerably. If the names were more concretely linked to the content they led to, it would be much more intuitive, easy to learn and easy to remember your way around the page. This would entail a more efficient use of the page, with fewer errors and thus probably also a less frustrated and more satisfied user.

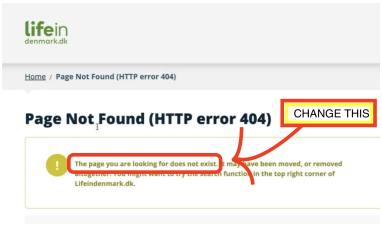

Figure 5: Invalid page

Our test person's suggestion of including only links that actually work, would increase the efficiency of the web page, since users would have a genuine chance of obtaining the information they need. Moreover, this would make the system much less irritating to use since the user gets her "reward" in the end and therefore does not feel like she has wasted her time completely.

Finally, the notion of including contact information for non-Danish speaking users, would provide a help-line for teaching the user how to navigate her way through the `www.su.dk`. This might also help her overcome some of her errors and difficulties in using the web page, and having someone to complain to might reduce her level of irritability.

However, if the user makes the decision to call an official number in order to get help, this is usually a sign that there are some major issues with the web page she is using. In this way, the idea of including contact information might not enhance `www.su.dk`'s level of usability - rather it might help to diminish the user's feelings of frustration slightly.

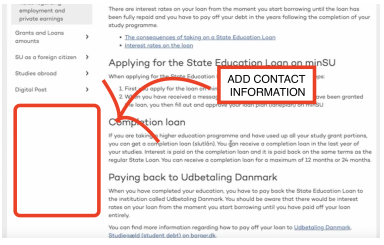

Figure 6: Contact information

Considering Bargas-Avila and Hornbaek (2011)'s notion of "user ex-

perience", we might make some further observations. The concept of user experience deals mainly with the user's subjective interaction with the system, and in this regard, our test user seemed to experience a fair bit of frustration. Her suggestions for a redesign of the web page - making the site more intuitive and guiding - would presumably increase her chance of attaining a sense of joy or satisfaction in her use of `www.su.dk`. Other than this, it is difficult to see how `www.su.dk` might evoke any kind of aesthetic or stimulating experience for its users.

4.2 Disability Allowance

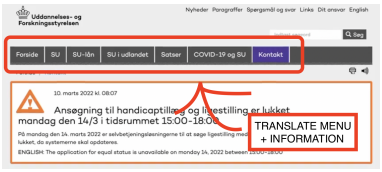

Figure 7: Translate menu tabs

The test person for our Disability Allowance test proposed that the English version of the `www.su.dk` web page should be extended - see fig. 7. She experienced some frustration in finding out that pressing the English button on the web page did not translate the whole web page. Instead it took her to a sub-page in English which presented only a limited selection of sub-menus. None of these sub-menus seemed to have any information about studying with a disability - our test person suggested that such information should be included in an additional sub-menu 8. Moreover, she also proposed that the `www.su.dk` web site should include relevant contact information for non-Danish speaking users.

These suggestions for improvement can be viewed in relation to Nielsen (1993)'s usability concept. Having the whole web site translated - rather than presenting the user with a very limited part of the page - would most likely raise the user's level of satisfaction. However, if the user finds out that all this newly available information actually concerns only Danish speaking students, this satisfaction might quickly turn into disappointment. Moreover, since they Danish version of the web page has so messy and confusing a structure, merely translating all this into English will probably not help our test user to learn, be efficient, remember, avoid errors or feel satisfied.

Viewed in relation to Bargas-Avila and Hornbaek (2011)'s understanding of user experience, it is hard to see how `www.su.dk` has anything to do with beauty, joy of use, stimulation, or personal growth(Bargas-Avila & Hornbaek, 2011). However, by implementing our test user's suggestions for improvement, we might decrease the user's sense of frustration thus making room for a slight increase in her joy of using `www.su.dk`.

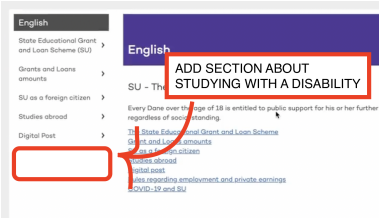

Figure 8: Add "Disability" section

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