Reading guide

Tessa van de Langenberg

Table of content

The assignment

Context

During this semester, our group will be working on the Joint Efforts (Samen aan Z) project for the Lectorate Interaction Design of Fontys University of Applied Sciences. This project is an ongoing project with healthcare in the Netherlands and in Belgium.

The Healthcare industry has been suffering from a rising staff shortage for the past few years. Job openings aren't being filled and in the short term there is a need for replacement in the current health and care sectors, because one in three Flemish people are 50 years of age. In North-Brabant 36% of Dutch people are 55 years of age and in Zeeland that number is 43%

In order to tackle these issues and get insight from the source (the healthcare professionals) our partner companies created a set of surveys to gather insightful data that could help find the right solutions and create the right working environment for them to keep growing.

The Joint Efforts project is a collaboration between several companies and research institutions. There have already been some things presented to the stakeholders of the project, for instance the dashboard for the researchers.

Goal of the project

The goal of Joint Efforts is to gather as much useful data as possible from surveys, so that researchers can research the data and potentially find solutions to the low healthcare worker retention. By researching with the surveys, the project aims to create a work environment that doesn't stress out the healthcare workers and keeps them motivated an interested in their work while they get the chance to learn and develop themselves. The Joint Effort projects want to connect several organisations to divide the workload between different organisations and thus increase the impact and possibilities of the project, as tried before by organisations during the COVID-19 pandemic.

The goal of the lectorate project is to develop and design a dashboard where healthcare workers can see their data, how it's being used and why they should fill in the surveys.

The assignment

Our assignment is to design a dashboard that makes it appealing for healthcare workers to fill in the surveys as provided by the Joint Efforts project and to give them more information regarding how their data is being used to improve their working conditions.

Description of the process (&results)

Project plan

To start the project we made a project plan. In the project plan we scope our project, look at the risks that can happen in the project as well as the fallback activities. The project plan also has our research questions with the main research question being: 'How can we make the existing program more appealing and engaging to healthcare workers?'.

Research questions

The main research question of the project is: 'How can we make the existing program more appealing and engaging to healthcare workers?'. To answer this question we have made a couple of sub research questions:

1. Sub-question: What are the issues of the current surveys?
2. Sub-question: How do we communicate the importance of the survey to the healthcare workers in the dashboard?
3. Sub-question: What are ways that we can make the program more appealing to fill in?
4. Sub-question: What are ways that we can make the program more engaging to fill in?
5. Sub-question: How can we make an appealing dashboard in terms of design for the healthcare workers?
6. Sub-question: How can we increase the chance that healthcare workers will continue to fill in the surveys?

Group agreement

We also made a group agreement where we specify the rules within our group and what to do when someone breaks the agreement. The goal of this agreement is to remove unspoken expectations and get the group on one line with each other. I was appointed the group leader as well as the reserve contact person.

Personas and customer journey

For the research question 'What are ways that we can make the program more engaging to fill in?' we (Robin and I) first wanted to have our user in view, so we made personas. We based these on previous experiences with healthcare workers. We were planning to update them thought the semester when we got more information about our users. Based on the personas we made customer journeys to see how they would engage with the application to find possible issues and solutions. We also simulate how these different fictional people could use and experience the end product. We now have a better view of who our users are might be and how they might use our application.

Ideation session and storyboards

To promote group bonding and get our creative brain working we did an ideation session. During this ideation session we came up with a lot of ideas, some feasible, some not. From the feasible ideas we made storyboard to see how the idea would work in the environment. This gave us a clearer idea of what we potentially wanted to do and test.

QR codes

For the research question ‘How can we increase the chance that healthcare workers will continue to fill in the surveys?’ Robin and I did a Field Trial with QR code to see if they would work in a working environment. These QR codes had a survey connected to them if you scanned them. We wanted to know how often people would scan it, where they would scan it and if they would fill out the survey afterwards. We put QR codes on different areas, we put codes on the table, on the towel dispenser in the toilets and on places where people would have to wait for a bit or would pass often, like the elevator and the keycard scanner. We used dynamic QR codes to see how often they would be scanned and we used Google Forms to see how often the survey was filled in. The QR codes weren’t scanned a lot, a total of 55 times, if you take into account how many people visit the building. The surveys were filled in even less than that, with a total of 21 times. This means that QR codes likely wouldn’t be the best way to spread the survey in a hospital.

Tine expert interview

For the research question ‘What are the issues of the current surveys?’ we did an expert interview with Tine Averens, a researcher at Antwerpen University. During this conversation it became clear that the boundaries in which we were first working were actually a lot broader than anticipated. We had also asked her how the previous trials of the survey went. They didn’t have enough data to have a solid conclusion, but the users did say that a very long survey wasn’t really nice and they would stop filling in the survey without completing it. Tine also said that she would like us to focus on engaging users more with filling in the survey.

Mark Klerkx interview

Dennis wanted to give an update to Mark Klerkx, the person who runs the project in name of the Lectorate Interaction Design. We updated him in the form of a Pitch and Co-reflection. We first showed him what we’ve done thus far. He then gave us some feedback on our ideas on what he liked and what he thought could be beneficial still. Overall he was very positive about what we’ve done thus far and liked the direction in which we’re going.

Ideation and paper prototype

To answer the research question ‘What are ways that we can make the program more appealing to fill in’ and ‘What are ways that we can make the program more engaging to fill in?’ Robin and I did some ideation sessions in the form of brainstorming and sketching. During these sessions we thought of different ideas to show the progress tracker and a reward system. We filtered some of these ideas and made them into a paper prototype. Next we’re going to test them to see if users like the ideas and what they might otherwise think of the ideas.

Test paper prototype

To test the paper prototype Robin and I made a test document where we describe what we’re going to do and how we’re going to do it. We’re going to test the reward systems in a prototyping manner and the progress tracker in an AB test. We could only test the paper prototype with one user. Robin did the test with her mother who is a nursing teacher at Zuid Hoge school and a researcher at Zuyderland. We don’t have a very strong conclusion,

because of the limited testing we could do, so we showed this document to the group to see what could be implemented and improved before we started coding the application.

C4 model application

Robin and I then made a C4 model of the application for both the desktop variant and the mobile variant. We did this to make sure that we don't forget any pages whilst we are coding the application and to have a clear overview of what needs to be in the application.

SurveyJS research

For the research question 'What are ways that we can make the program more appealing to fill in?' Robin and I looked into SurveyJS. This is a library that is being used by the development team to create the surveys. We thought that it would be useful to already use the library, since we can test what users would want with the UI of the surveys. I made a version that had the Likert scale with smileys representing if the user agreed or disagreed with the statement. I also made the survey have 4 different pages with 3 questions on each page to be able to test if users like it better when they have a lot of questions on one page or multiple pages.

Design document

Robin and I then made a design document. In this design document we put our criteria for the application as well as why we made certain design choices. With this design document we made the application, which can be found on https://samenaanz.netlify.app/. We also made certain that the application had version control by the use of GitHub, which can be found here, https://github.com/Lightsilversnow/reward. We used GitHub instead of GitLab, since Robin and I had more experience with GitHub.

Test application

To validate if our ideas about the application were good we made a test document to test the app with nurses. We tested the application a total of 5 times with 6 people via the use of a Field Trial. During these tests we got a lot of valuable information. The main things were that people didn't really like the rewards system in the current style. They would rather have physical rewards or no reward system. They all did find the smileys a good addition to the Likert scale. They found the smileys to have more meaning than numbers and easier to use than number.

Advice document

After having conducted the tests Robin and I made an advice document based on what users had told us. The main thing is that the application needs to be tested a lot more. We sadly weren't able to conduct a lot of test with people, so our conclusions are based on the limited tests we have conducted.

Communication

During the semester I have communicated a lot with stakeholders. The main stakeholder was Dennis Kirsch. We had weekly meetings with him to update him about or progress and to inform him of our findings. We also had a couple of meetings with Tine Averens and

Steven van ‘t Klooster. All our stakeholders were very positive about how the communication went and were also positive about our progress.

Answers to research questions:

The main research question of the project was: ‘How can we make the existing program more appealing and engaging to healthcare workers?’ We unfortunately didn’t manage to fully answer the question due to the limited testing that we were able to do.

We did make the surveys easier to fill out via the use of an application. However, we did notice that healthcare workers might be hesitant to use an app. We don’t know exactly why this is, but this needs to be researched further.

We also had sub-questions to answer the main research question.

What are the issues of the current surveys?

The issues of the current surveys were that the surveys weren’t filled out a lot or that people quit filling them out. We found that the surveys were too long and the results aren’t communicated on time.

How do we communicate the importance of the survey to the healthcare workers in the dashboard?

To communicate the importance of the surveys it’s important to convey that something is actually being done with the data. They want actual actions instead of just data collecting.

What are ways that we can make the program more appealing to fill in?

We did this by using SurveyJS and having the Likert scale have smileys instead of numbers. Users found that the smileys were more meaningful and understandable in comparison to numbers. It’s also important to have the surveys be short. The application should also not have too much information aside from the surveys and the results and the implementation of the surveys.

What are ways that we can make the program more engaging to fill in?

We tried to see if a reward system would engage healthcare workers to fill out more surveys. They didn’t like the current version of the reward system. They would rather have physical rewards or no rewards at all. It’s also important to have the whole department participate in the surveys.

How can we make an appealing dashboard in terms of design for the healthcare workers?

This question was made when we didn’t know if we wanted to make the application a desktop application or a mobile application. Later we made both, so this question became redundant, because we already answered it in making the program more appealing to fill in.

How can we increase the chance that healthcare workers will continue to fill in the surveys?

We tried to see if QR codes would help with keep filling out the surveys. Sadly the QR codes weren’t scanned a lot and from the times it was scanned, more than half didn’t fill out the

survey after it. What is important is to have the users know that actions are being taken based on the data from the surveys.

Individual project

Project plan

To start my portfolio I made a project plan. In this project plan I scope the project, look at what risks can happen and the fallback activities. The project plan also has my research questions.

Research questions

The main research question for my portfolio was: 'How can I make an interactive portfolio website?'
To answer this research question I also made a couple of sub-questions. These were:

- How can I make the portfolio easy and intuitive to navigate?
- What should always be easy to find, no matter which page you're on on the website?
- How can I make my portfolio personal to me?

Research other portfolios

For the research questions 'How can I make the portfolio easy and intuitive to navigate?' and 'What should always be easy to find, no matter which page you're on on the website?' I did some research to different portfolios. I looked at the similarities, the differences, what I liked about the portfolios and what I disliked about the portfolios. I found that a navigation bar is used a lot and I found it very useful as well.

Research libraries

For the research question 'How can I make my portfolio personal to me?' I wanted to add some animations when you scroll down the page. I first did some Library research about different libraries that I could use. I ended up liking Animate On Scroll a lot, since this library is easy to use as well as it it's JavaScript, which I like working with. I sadly wasn't able to implement the library due to the troubles that I experienced with the group project.

C4 portfolio

After getting some feedback from the teachers I made a C4 model of my portfolio to have a better understanding of how my portfolio is structured and which pages should be added. This way I ensure that I don't lose sight of what I want on my portfolio and don't forget to add a page.

Design document

Before starting the coding process I first wanted to have my criteria of the portfolio clear. I did this by making a design document and making mock-ups in this design document. After getting the criteria clear and the mock-ups I started coding my website. The website can be found on, https://portfolioadvmed.netlify.app/. I also ensured that I had good version control via the use of GitHub. I wanted to have version control for myself as well, because if I accidentally break something I will always have an older version to fall back on.
Design document and git

International week

During the semester we also had an international week. During this week we visit Dutch Design week with a Canadian. It was a lot of fun to visit Dutch Design week and to see everything there. It was also really nice to get to know someone from a different country. It was very interesting to see the cultural differences.

Answers to research questions

My main research question was: 'How can I make an interactive portfolio website?'. I made my website be

I also had sub-questions to answer my main research question.

How can I make the portfolio easy and intuitive to navigate?

It's important to not deviate too much from already existing portfolios. This way you don't confuse the user with too much new information. It's also important to have a navigation bar. This way users can quickly see where they can go and what's on the portfolio.

What should always be easy to find, no matter which page you're on on the website?

It's important to have a home button, so people can always go back to the beginning. It's also important to have your most important pages visible in a navigation bar. For me this would be the reading guide, the product pages for the group project and my portfolio and the learning outcomes.

How can I make my portfolio personal to me?

I can make my portfolio personal to me via the use of colours, font, my design choices. I for instance made it more personal to me by having the framework of my portfolio be a monochrome grey.

Reflection

During the semester I learned how to handle problems in a professional manner. There was some trouble with the project, the group and the hospitals. The project started a bit troubled with not knowing exactly the project is about. It took a while and many conversations for us to figure out what the project is about exactly. This is something that I would handle differently next time. Next time I would ask all the contact information of the stakeholders in the project to the main stakeholder, so that we don't have to wait until a meeting to get contact information.

There were some problems within the group as well. These problems persisted throughout the semester and were only solved just before Christmas break. The problems kept persisting throughout the semester, because there weren't any real consequences for breaking rules within the group. The only thing we could do was a warning and informing our semester coach. Robin and I informed our semester coach a lot during the semester. What I would have liked for next time is that there are quicker real consequences to breaking rules. This way we can make the rules very clear in the beginning and not drag it out through the semester.

During the testing with the hospitals Robin and I also ran into a problem. The head nurse who we had contact with expected something different than testing an application. We didn't understand exactly why the expectations were different, but we think it might have something to do with the internal communication and a lot of time passing between the first initial contact and the talk with them. What we could have done was keep them better informed of the project and what we expect from them. We could have done this via keeping them informed via email. We could also have done a phone call beforehand, so that it was quicker to communicate to them. With a call they could also have asked us any questions that they would have had instead of having to wait for an email. We could also have had a first meeting with just the head nurse to talk to her and show her what we expected from them. This is something that I'll definitely do the next time I have to get in contact with testers to remove any uncertainty from what the expectations are and that the expectations from both parties are the same.

Evidence (table)

Appendix: Evidence

Learning outcome	**Proof**
User interaction (analysis and advice) *You analyse the user, the interaction, and the user experience, also taking state of the art interactive technologies into account. You select a suitable design process to be able to advise on UX interventions based on a validated UX design.*	Tine expert interview, Personas and user journey, Ideation session and storyboard, Ideation session and paper prototype, Research other portfolios, QR code test, Design document project, Design document portfolio
User interaction (execution & validation) *You execute and evaluate the user experience of an interactive product. You document the development process for the stakeholders.*	Paper prototype test, Test application, Design document project, Design document portfolio, Ideation session and paper prototype, Advice document
Software development *You create & design software with existing components or libraries using predetermined quality criteria and version control.*	C4 model, SurveyJS research, C4 model portfolio, Research libraries, Design document project, Design document portfolio, GitHub project, GitHub portfolio
Future oriented organisation *You carry out a problem analysis and on that basis, you determine the definitive problem and elaborate on this in a project plan.*	Project plan, Portfolio project plan, Tine expert interview
Investigative problem solving *You formulate sub-questions pertaining to the primary question and answer these using relevant research methods. You use the conclusions of the sub-questions to justify (design) choices.*	Project plan, Project plan portfolio, Reading guide, Design document project, Design document portfolio
Personal leadership *You methodically reflect on your professional identity and personal development.*	Reading guide, Group agreement, Advice document, Test application
Goal-oriented interaction *You communicate with different stakeholders and team members about the ICT assignment, taking into account an international context.*	Group agreement, Tine expert interview, Mark Klerkx interview, Advice document, Communication document, International week