

University of Tampere
Faculty of Communication Sciences
HTIS85 Methods of Human-Centered Design

Tampere3 Student`s Desktop

Design brief

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1 Introduction

1.1 Starting points

Our human-centered design project focused on Student`s Desktop service, which is part of upcoming Tampere3 Common Desktop service for all members of Tampere3 and is expected to be launched in 2019. As upcoming Tampere3 Student`s Desktop is replacing existing student services (POP at TUT and Student`s Desktop and Nettiopsu at UTA), our client from Student`s Desktop development team wanted to have vision what kind of features the students want to see in upcoming Student`s Desktop.

Our team had a kick-off meeting with the client on the 8th February 2018, where the expectations and hopes for the product were introduced and discussed with more detail. As a conclusion, the main hopes from the client was to have vision on what students want and need on the upcoming Student`s Desktop, find out problems with the existing version, find possible solutions to these problems and provide a design of SD (Student`s Desktop) with required features.

We also got research data from research team that helped us a lot. This data was based on research survey focusing on students` expectations towards upcoming SD and it contained information about what students thought was lacking from current Student`s Desktop.

Our project goal was to design a simple but comprehensive Student`s Desktop by which students will be able to do most important activities related to studies based on the analysis of findings of survey data and different human-centered design methods we used during the project. At the same time, we wanted our design to motivate the students use more the SD and that the upcoming version would save time from the students as they don`t need search information from different websites. Also, supported by the analyzed data, we wanted that especially the new users would get help easily when needed.

While the topic area of the project was focusing on educational field as students being the main user group, during the project we noticed that use of product vision template and competitor analysis suited well in this area, while these methods can be often related to more business-related projects. Especially the product vision template helped us to clarify and remember our main design goals in different design phases.

We already had done some projects in other usability and UX-based courses, so our existing knowledge for example about how to do contextual inquiry and usability evaluations and what are the right methods for them helped us stay on a right track from starting to ending our project. During the process, we learned how to utilize our existing UX- and design knowledge during different phases on this human-centered design process.

1.2 Design Brief

The purpose of our design is to provide Student`s Desktop with the most desired features based on the analysis of our research data. We think our design of upcoming Student`s Desktop is comprehensive, because we had come up with the design on the basis of thorough use of user-centered design methods, such as contextual inquiries, interviews and feedback evaluation of the designed solutions by the users.

To find out about students` expectations and possible problems with the current Student`s Desktop, we firstly organized nine contextual inquiries, where students used the existing SD in their daily use going through different features. This method was supported by think-aloud and observation to ensure that we got detailed information about frustrations and possible usability problems during usage. After the CI`s the users were interviewed about the experience. We selected the participants from different study fields, such as journalism and interactive media, to ensure we would have diverse user group with different needs. In addition, we conducted a heuristic evaluation of the existing service to find usability problems, which we should consider in the designs. We decided to summary our research findings in easily understandable form through use of personas, sequence model and interaction model.

Based on the findings and our product vision, we used 8x8 (Lotus Blossom) method for brainstorming to gather possibilities and limitations on key design aspects. After data analysis and brainstorming, we did individual sketches and selected the best one containing most useful features based on the users` needs, with taking features from other designs, which were missing from the selected one. We organized user interviews to justify whether we have been able to meet users` expectations or not regarding their demand for the Student Desktop based on our wireframe designs.

After the evaluation and feedback, we got to know if we missed important features, which we refined our design in iterations. To get detailed information about opinions of the participants, we used user-satisfaction questionnaire, which measured user`s satisfaction with the design by utilizing 5-portal Likert-scale. Furthermore, we used consent form to ensure that the participant is aware of ethical factors in the test situation.

Our findings showed that the students were not satisfied with the existing system, because of some unnecessary links, complexity and visual appearance, which we focused on to improve by our design. One of the key findings was that at the moment SD includes too many external logins and students commented that finding key functions was often difficult, so we wanted to provide easy access to different features without unnecessary searching. Other important goal was to create the design easily customizable and to provide help when needed.

Based on the feedback and research analysis, we iterated our steps and reached the final version of our design for the Student`s Desktop, which would meet the demands of different students.

1.3 Competing systems

While there are not existing visible competitors based on the designs of upcoming Student`s Desktop designs, for example by other development teams or software houses, we wanted to ensure that our design would be more attractive and motivating to use than the existing version. By using various design research models and iterations, we focused that the students won`t miss the previous versions of SD, when updating to new one.

Besides, some international students might have used same kind of services in different universities. If the Student`s Desktop service does not include some important and useful tools, which they have been used to have in their own universities, it can affect their motivation to use Tampere3 Student`s Desktop. The international aspect is useful to consider in further design implementations.

Based on our interview data, some students used other services, such as Google, to access different features on Student`s Desktop, because it was faster to use. In this light, we wanted to make our design easy and fast to use and ensure that different functionalities are clearly visible without unnecessary browsing.

Furthermore, other groups have implemented designs both of Student`s Desktop and SD mobile application as well on the Methods in Human-Centered Design course. Every group had different design solutions, but some similarities were noticed in terms of features, such as enrollment of electronic exams and maps, during the course presentation session. As a difference to other designs, we have added a discussion forum in our design, from where students can be in contact with other students and send messages. We also invented student bulletins and job feeds on the desktop page, which were not mentioned with other designs. While the designs of other groups are not competing against each other, with further iterations it is useful to combine the most useful ideas and design features together to provide most reasonable end-product for the users.

2 Users and context of use

Users of the Student's Desktop consist of students and staff of Tampere³, including University of Tampere, TUT and TAMK. As the user can be both student and researcher or working as university staff, it would be important to give the user a possibility to login into service as different roles. As our group consisted of students of UTA and TUT, we had experience and quick access POP and TUT services, which led to decision to focus on these services with our interviews and contextual inquiries.

In this section, we present user characteristics, user tasks and usage environment based on our contextual inquiries with current Student's Desktop, interviews of the users and survey by the SD design team. We also utilize our personas, sequence and interaction models to present the large amount of research data in easily understandable form.

2.1 User characteristics

As the students are the main user group in our research, they have different needs depending on their daily tasks and phase of studies, such as enrolling to exams. As comparison with new and more experienced students, the new users can need help on finding the lecture rooms and help based on how to use the SD service. With our design, we provided a Help-page, which gives new users hints about how to use the service and tips (often asked questions) to help new student to adapt to university life. In the future iterations it is also optimal to provide a mode for students having disabilities for example with their sight and pay attention to students with specific limitations.

While the students had similar opinions on interactive calendar and possibility to create more and longer notes, they had different kind of needs based on their interests. As example, based on our interview data, the students had different kind of opinions about customization and personalization of the system. Some students considered possibility to change background picture and a change to drag-and-drop different elements on the screen. According to one of our interviewees, she mentioned that it would be nice if she could change the background picture and move the pieces on the site to places that she would like. This kind of possibility would give her such a feeling that she is "in control of her studies". Some of the users also mentioned that discussion forum would be good functionality, as the students could discuss about studies and different topics on the university by their own name.

Here we present three different personas to give a clear picture, what kind of users use the existing Student's Desktop service, how they use the service and what kind of problems appear during their use (pictures 1-3). These personas concentrate on background of the users, their needs and purposes, helping to

identify the key user groups of the Tampere3 Student's Desktop. These personas have fictional identities, but their backgrounds, intentions and opinions are based on our data of the survey, contextual inquiries and interviews of the students.

Jannika
Xtensio



Age: 27
Student in UTA:
Main subject: Journalism
Phase of studies: Master Student

Busy
Artistic
Social

"It would be nice if I could change the background picture and move the pieces on the site. It would give me such a feeling that I'm in control of my studies when I can arrange scheduling."

Bio

Jannika is a 27 year old master student, who studies journalism as her major. She has just started to work with her master thesis and has work among the studies, so she considers that information should be easily accessible, when using Student's Desktop.

As she is busy with her life situation, Jannika doesn't have time to follow for information from different web pages. When she is using the current UTA's Student Desktop, she would like to see the information about relevant events in university, course announcements in the Moodle and what's happening in her subject association in different feeds on the landing page.

Jannika has lot to remember because of her work and studies at the same time. When using the Student desktop after a while, she often forgets that there is a possibility to create notifications, as the feature is difficult to notice, in her opinion. Jannika feels frustrated as she can create only one notification at time with limited marks, as it makes remembering the deadlines very difficult. That's why, she would love to create different notifications and to-do-lists by using graphical post-it notes, which could be dragged in a visible place on the main page.

Jannika considers the current look of Student's Desktop bit dull, which affects her motivation to use it. With the possibility to change the background picture and colors could make a personalized look on the site, which would motivate her to use the service. With these improvements to the service, Jannika thinks that she could be more in control of her studies and scheduling.

Jannika's needs with new Student's Desktop

- Clear information about important events in the university and in her subject association.
- Possibility to create own notifications and to-do-lists on draggable post-it notes.
- Possibility to add pictures and change colors to create personalized feeling on the landing page.

Jannika's frustrations with current Student's Desktop

- The notes-feature is difficult to find and amount of the notes is too limited.
- The information about events and announcements of the university should be seen more easily.
- The look of the landing page would need more personalization options.

Picture 1. Persona 1.

Petteri
Xtensio



Age: 24
Student in UTA
Main subject: Marketing
Phase of studies: Bachelor student

Systematic
Hard-working

Co-operative

"With the student bulletins, it's good that latest news are visible, but it would be nice to see , which newsletters I have already read. Similarly, notifications will not show if I have read the notification in the past. I have to take a look at the dates myself and evaluate when I visited the site last time."

Bio

Petteri is a 24 years old marketing student in UTA. He wants to work hard for good grades and uses university's group work spaces in various course projects. He is systematic and wants to see the upcoming deadlines in a long time frame. Petteri isn't so interested about personalization features on UTA's web services and uses them on studing purposes.

When he uses Student's Desktop, he would like to use the calendar feature to see the upcoming deadlines from the calendar on the main page. He feels that that planning his timetables is problematic as he cannot edit the calendar or see it in a monthly view. Furthermore, Petteri likes to read news bulletins and notifications on the current page, but sometimes he finds difficult to follow, which bulletins and notifications he has already read. He thinks that reading already checked bulletins takes too much time.

As Petteri is having lots of exams on upcoming semester, he would like to see notifications on the Student's Desktop landing page, when the exams of his studies are available. Petteri is co-operative person and likes to spend time on group working spaces in the university. He thinks that at the moment the information of available work spaces in university is difficult to find. He sees that a possibility to reserve spaces in the university straight from the Student's Desktop's main page would be a great feature, which would save a lot of his time.

Petteri's needs with new Student's Desktop

- Possibility to reserve working spaces from university straight from the main page.
- Calendar feature, where he could make instantly notes for a long time-frame.
- Visual indicator, which informs when he has read bulletins and newsletters.
- Possibility to see upcoming exams as notifications on the main page.

Petteri's frustrations with current Student's Desktop

- The calendar functionality is difficult to use and he cannot see it on a monthly view or edit its content.
- It's difficult to see, which bulletins and newsletters he has already read.
- It takes too much navigating to see, when the new exams are available.

Picture 2. Persona 2.

Lara
Xtensa



Age: 20
Student in: TUT
Main subject: Engineering Physics
Phase of studies: Bachelor student

"I think it would be cool to have a forum, where students could discuss about all the courses and other relevant subjects in studies."

Curious about new studies

Uncertain

Eager to learn about "Uni-life"

Bio

Lara is 20 years old Italian bachelor's student of engineering physics, who has just started her studies in TUT. She's also having minor studies in UTA, as she is interested about HTI and history.

As Lara has just started her studies, she is a bit uncertain if she has taken all the necessarily courses, where the lectures are going to be held and about how the web services of the universities work. She has used current Student's Desktop only a few months, so there is still lot of features, that she isn't familiar with.

When she uses the Student's Desktop, she has problems to know what is the function of different icons on the page. As there are a lot of external links, she finds navigation on the site slow and confusing. She likes that there are many necessary features, such as portal to electronic exams and dictionary, but accessing them requires many logins.

As a new student, Lara would like to have information about the lecturers' details (such as email and when they are available to meet) in Student's Desktop as she has many questions related to the course instructions.

She needs to search a lot of information and finds that especially POP has some problems with the search function. As an example, she had written "Basic wireless" in POP's search field to find information about "Basic course on Wireless communication" without any information, which made her confused. Furthermore, Lara considers that possibility to see the menus of university's restaurants and map of the university in Student's Desktop would be helpful in the early phases of her studies.

Lara is having lot of questions related to her studies and wants to have contact to new students of her field outside social media. She would like to have discussion forum on Student's Desktop, where she could discuss about relevant matters of her studies in the service, in addition with visible university's social media links on the main page to keep her on track with the some-news.

Lara's frustrations with current Student's Desktop

- She thinks that accessing features through external links takes lot of time.
- Finding the meaning of different icons of features is problematic.
- It is difficult to find help from the Student's Desktop as a new user.

Lara's needs with new Student's Desktop

- Instant access to different features on the site without external logins.
- Clear icons for the features and some kind of help-section for new student.
- Easier search function in POP.
- University map to help her learn to navigate, restaurant menus and lecturers' details saving her for extra navigation.
- She would like to have a discussion forum for study-related tasks and have social media channels visible on the site.

Picture 3. Persona 3.

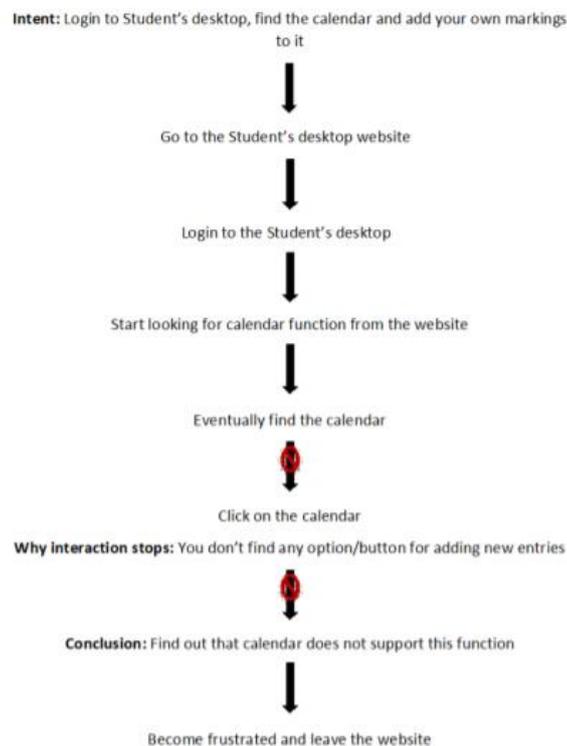
2.2 User tasks

Based on our data analysis, the most common user tasks with the current SD were based on use of calendar, Office, enrollment to electronic exams, student bulletins and Moodle. Users commented that they would like to have instant access to different services through one desktop service, without many external

logins or searching for information elsewhere, for example, from Google, as one of the interviewees mentioned.

Many students commented that the complexity and visual appearance of the current service affects their motivation to use it. Also, shortly, main findings based on the experiences of the users of POP were that the information of the landing page was confusingly organized, social media icons were hoped and the search functionality was seen inconsistent. Based on these key factors, we focused that student would find all the necessary features, when s/he logins to new Student's Desktop. The upcoming design should minimize external logins to different pages and unnecessary navigation to other services, which could take students' time.

As the students want to be aware of upcoming deadlines, exam dates and social activities, the importance of the Calendar feature was mentioned in majority of our interviews. All the users told about difficulties when using the Calendar feature, which was the reason, why most of the them did not use it at all. As example, the interviewees told that they cannot see their schedule classes on the calendar, which can appear in Moodle's calendar. Many of the users felt surprised and frustrated as they could not instantly edit the calendar view, for example by creating notifications to it. Users were also disappointed as they could not view the calendar in a monthly view, which lead to unnecessary browsing between dates. Usability problem with the Calendar feature is visualized in the Sequence model below (Picture 4).



Picture 4. Sequence model, which visualizes usability problem when users try to add their own entries to the calendar of the current Student's Desktop.

Based on the problems found with the calendar, the user should be able to watch it in both weekly and monthly views. Also, the student should be able to make instant notes to calendar or import her/his own calendars to the service to see, how student's goings match with study timetables. Besides, it is important that the calendar updates automatically deadlines of Moodle and upcoming exams to reduce student's memory load. Furthermore, the social activities, which the student is interested in, such as events in subject association, could be visible on the calendar. In our design, the user can select from settings, what kind of information s/he likes to have visible on the calendar.

The users also noticed some problems with the Notes functionality. They said that it felt bit unnecessary feature, as they could write just one note at time. One of the users commented that notification of 2000 marks can be too short for study purposes. He said that because of the limitations, he uses rather Word to make notifications. Other user said that she would like to have also a possibility to drag notes on the view, like with Tablet and Mac, as visual post-it papers. Also, she mentioned that it would be useful to have option to make "To do" lists and mark completed tasks to notes. These usability problems are considered in our designs, where the students can make many notes at the same time and set notifications to them, as well as create to-do-lists.

There were some differences in users' opinions about visual look of the desktop. Three of the users considered the current visual look clear as they liked its neutral design, one user describing that the service "should not be too flashy". In contrast, other users considered the look of the service dull and wanted to have more appealing design, for example with fresh color palette and possibility to change the background photo. The users wanted to have options to customize and personalize the visual design. For example, the users mentioned that it would be nice to be able to drag the "pieces" (functionalities) on the website to places they liked.

One of the users mentioned that the notes-functionality is located too down on the site, so it is easy to be left unnoticed. Instead, she would like to drag it to visible place. The user also commented that it would be a nice feature to be able to change the background photo as now it is difficult to see almost anything from the existing photo. She said that these kind of customizing features, would give her a feeling, that she is "in control of her studies". Other user commented that possibility to change the background colors would be nice, but thinks that possibility to add photos is not necessary for him. This affected to our design, as we created optional possibility for the user to change the background picture to create personal and more motivating atmosphere.

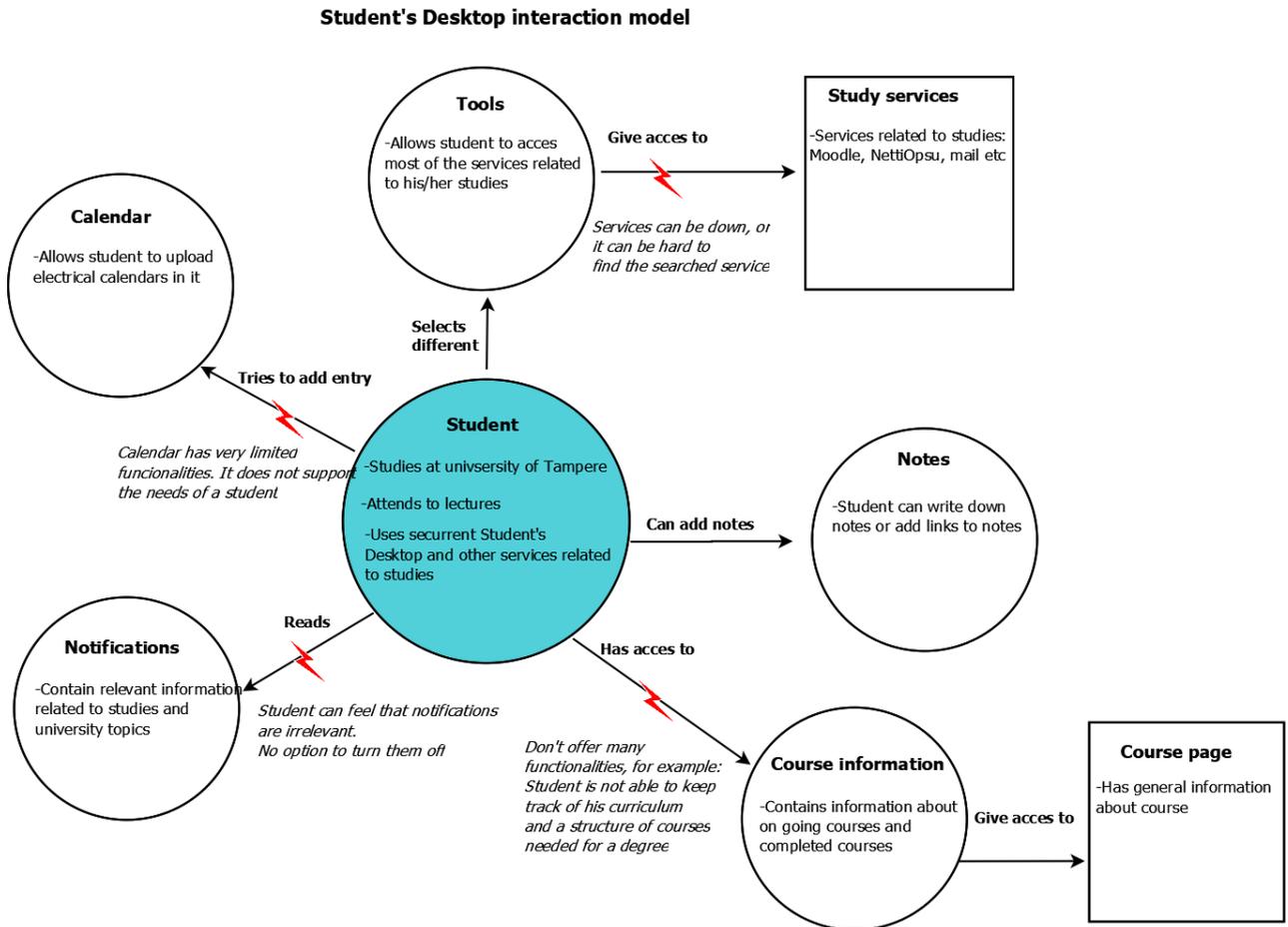
One of the interviewees mentioned that he would have liked to have more information and help, when he was using the Student's Desktop service the first time. He described that many of the icons and functionalities were unfamiliar and not clearly explained for new user, as there is no help available on the service. As solution, we created a Help-page for new Student's Desktop, where the user can

watch video about how to use Student`s Desktop and read answers to most common questions.

When the students described their options about the potential social features, many of the students commented that it would be nice to see messaging about studies and comments in Moodle also in the Student`s Desktop view. Students commented that social media style real-time chatting is not necessary feature as there are lot of other social media apps for that, but for example, forum to discuss about relevant studies was seen useful. Also, some users mentioned that there should be a link to University`s social media pages, like Facebook and Instagram. Besides, the students asked for a possibility to see the social events of the subject association in the calendar view, like in Facebook, so they should not follow emails just to see possible events. In our design, we implemented social media

links and discussion forum to serve the need of the students, who are interested in social activities.

Problems with different tasks are presented in a visual form in the Interaction model below (Picture 5).



Picture 5. The interaction model visualizing student's key interaction and problematic parts of using current Student's Desktop.

2.3 Environment

There are multiple physical usage environments for the Student's Desktop, which are mainly focused on university area and home of the student, but the interaction can happen in all places, where using laptop or computer is physically possible. While the Student's Desktop is focused on computer-based use, other groups of the Methods in Human-Centered Design course focused on Student's Desktop mobile version/application, which is more focused on travelling and fast-phased usage, for example on a bus or while walking and navigating the right lecture room on the university.

When analyzing the Student`s Desktop from social and organizational view, some of the functionalities can include organizational and university-based names, which meaning can be difficult to understand for new or international students. Based on our data, functionality of some tools, such as Andor, could be firstly difficult to understand for new or international students. These names are common in university context, but to make understanding their meaning easier, the help-page can help to learn about meanings of different functionalities. In further iterations, the logos of different features can be created to be more informative for new students.

Studies are strongly related to social activities of the students, so it was important to include social features to design, such as possibility to set news of subject association visible in Student bulletins and see events in calendar view. Furthermore, there was a need for a link, where the student could find details of her/his own subject association and to get familiar with other ones as well.

The social/organizational elements are also implemented through discussion forum and possibility to find links to university`s social media fast, follow research projects and read university`s magazines Aviisi or Aikalainen through our links on the site, which help students to keep on track what is happening in their university. As our design is based on the view of UTA student, same kind of design ideas can be implemented to TUT or TAMK students` view as well.

Also, as organizational feature, there was a need for People/Staff page, where the students could find easily contact details of the teachers, who are responsible of different courses. We also analyzed the daily behavior of the student, as eating on university restaurant is one of the vital actions during the day in the university, the restaurant list was important to include to our designs to save time from external searching.

When creating our design, we paid attention on most asked features and what kind of actions are common, when students spends a day on the university. For example, student can need details of registrar`s office, when she/he needs a new student card or to handle organizational matters in her/his studies, or the student can lose property, such as clothes to university, when s/he needs to report about the lost item. This makes reasonable that we have included features for these situations into our design. Also, as organizational detail, it is important that the student can give feedback easily about functionality of the service and organizational matters.

In cultural context, the features of our design are strongly linked to university life and to strengthen student`s identity as Tampere3 student and student of her/his home university. When thinking from the cultural view, books, previous courses and other students are all important factors, which needed to be implemented to our design. The cultural and social context is also needed to be taken into account, when creating discussion forum: To avoid unconventional discussion it`s important that the students discuss correctly with their own names, in contrast to free time chats or social media.

3 Quality goals

In this section we describe the quality requirements of our service and associated goals.

3.1 Usability / UX goals

Based on the analysis of our research data, we have defined our UX goals as:

3.1.1 Increasing user`s confidence:

The users would get a sense of confidence from the (nature of) information on our final prototype design.

3.1.2 Seamless and pleasantness:

That the final prototype design will be easy and pleasant to use as well as effortless.

3.2 Other goals

Based on our analysis, we also created following supporting goals for our project:

1. Freedom and customization: To give users possibility to personalize the system through different options and possibility to change the background picture.
2. Motivation: As the most desired features can be found on the upcoming Student`s Desktop, it should motivate the students use the service, instead of external ways to different features, such as Google.
3. (Optional) sociality: To give users, who are interested in social aspects, a possibility to discuss about studies and easy access university`s social life through events and social media.
4. Give help when needed: If the user is new or has a problem with the service, s/he should get help quickly and without unnecessary searching.

4 Design details

In this chapter we present our vision for our Student’s Desktop project and different functionalities and features of interactive mockups, which we developed.

4.1 Vision

 TAMPERE3 STUDENT'S DESKTOP VISION Our vision is to design a new shared Student's Desktop service for the Tampere3 university and this vision aims to bring students from TUT and UTA under same the same service. Students are going to have profiled desktops according to where they study. Also, our aim is to design this service around features which students have hoped to have in the new Student's desktop.			
 TARGET USERS Current and future students of the Tampere 3 univesity Staff: Teachers and other employees of the Tampere3 university Students who are not using the current (old) Student's Desktop	 NEEDS At the moment students of TUT and UTA use separated services. With new Student's Desktop this problem is solved! New service brings users from all universities under one service With new Student's Desktop students are able to make their own school timetables: Add courses in it and keep track of lecture times etc Students are able to keep better track of their curriculum, completed courses and on going courses New Student's Desktop will have links to all other websited related to studies	 PRODUCT It is a service which brings all Tampere3 students under one platform It will be profiled according to where student is studying. UTA and TUT students can have slightly different links and options Most importantly, it is a service meant to help students in many ways. Such as to keep better track of lectures and studies in general Front page wil contain all the main content and functionalities Has links and tabs related to other student services	 BENEFITS End goal is to help and motivate students Motivated students --> They will graduate faster In terms of "bussiness" and image, it is beneficial for university to have good student services It saves a lot of time, since users could user calendar and they dont have to search information from many places

Picture 6. Product vision board concentrating on product, users, needs and benefits.

After gathering and analyzing our data, we had a clear product vision for Tampere 3 Student’s Desktop and understanding on what functionalities and benefits it should offer to its users. The vision board was based on design by Roman Pichler [1]. As seen in the picture 6, we concentrated on the product, its users, user’s needs and benefits that it would provide. Thus, our vision for Tampere 3 Student’s Desktop was to design a service which brings students from TUT and UTA under one platform. The aim of this new Tampere 3 Student’s Desktop platform is to function as a central hub which would contain all the important tools, links and functionalities which would support students in their studies. All the main content and functionalities will be located in the front page of the service.

What we found out from the data as one of the main problems of the current Student’s Desktop was that it doesn’t offer many reasons for students to use it due to lack of distinct functionalities or benefits of using it. Most frequent wishes among users of the current service were that calendar functionalities should be vastly improved, ease of

keeping track of curriculum, ongoing courses and the new Student's Desktop would be one clear and uncluttered website. Our vision and main goal was to design the new service around these wishes and give students many good reasons to use the Tampere 3 Student's Desktop.

4.2 Functionality & features

With new Tampere 3 Student's Desktop, students should not have a need to use any other study service. New Student's Desktop contains all the needed functionalities for students, such as links to other related services (Moodle and mail for example), tools related to studies, calendar, way to keep track of curriculum and completed courses. After analyzing our data, we had five top priority functionalities which we focused on in our designs:

4.2.1 Improved calendar

User query data that we got from our contact person of the Tampere3 and as well data from our interviews and CI's indicated that calendar has been one of the main usability issues in current Student's Desktop. At the moment the calendar in the current service won't keep track of lectures, exams and other important events.

Our design goals for Tampere 3 Student's Desktop calendar was that it automatically updates itself and includes times and dates of lectures and exams. Students would also able to add in new entries to the calendar and customize it.

4.2.2 My studies section

In the new Student's Desktop there would be dedicated section for students to keep track of their studies, completed courses and ECT's. This section is called "My Studies" and it is separated from the front page. This section would also contain student's curriculum course structure to help students to keep track of all the different courses needed to complete for a degree. If student completes a course in curriculum, that course will be highlighted with green color.

4.2.3 Course suggestions

New Student's Desktop would also give course suggestions to students. Suggestions are made based on what student is studying, what courses he/she has completed and what courses students have to complete in order to get a degree. Suggestions are given in "My Studies" section and in "Courses" section in the Student's Desktop

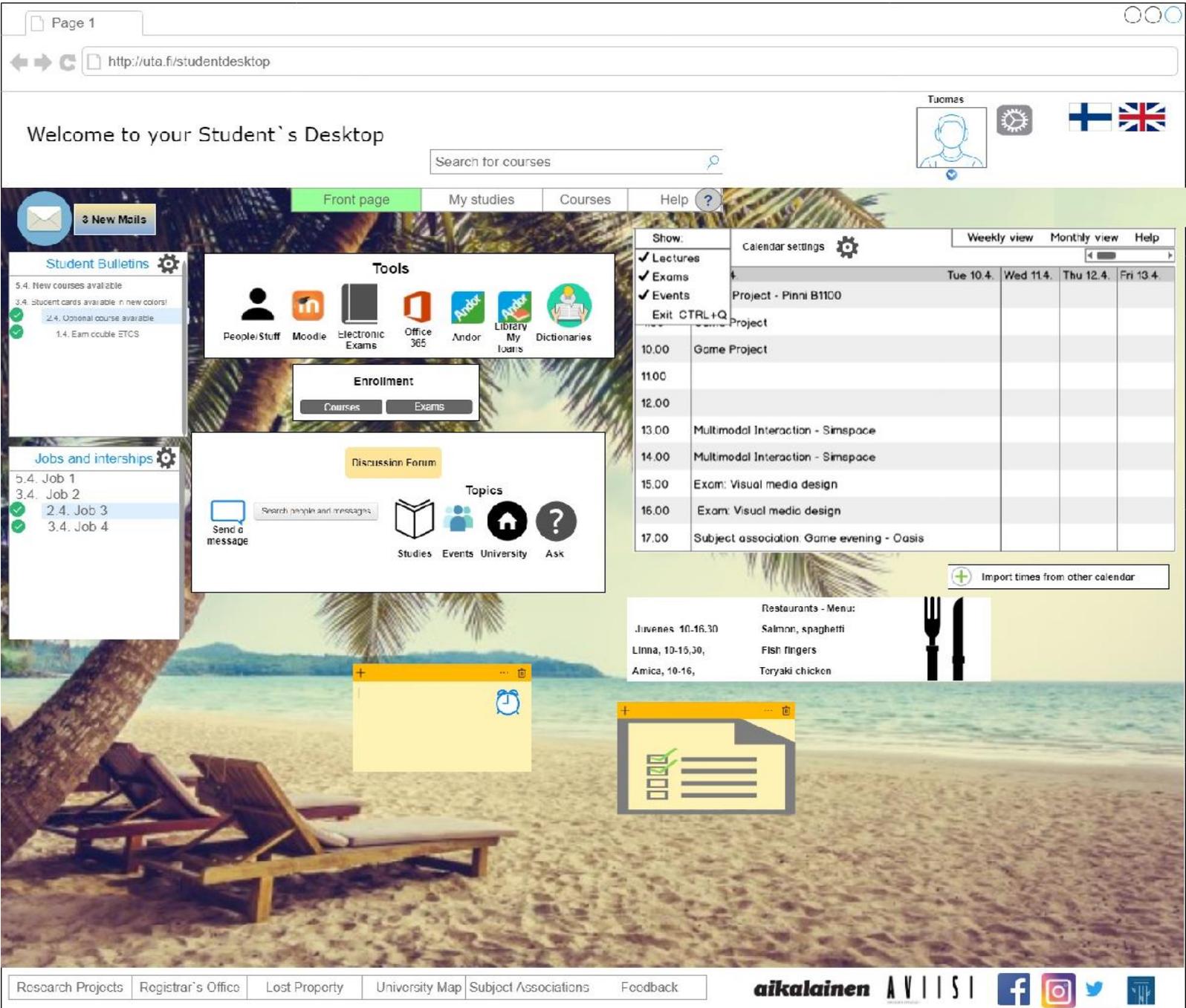
4.2.4 Front page

All of the main content will be located in the front page, such as calendar, links to services and different tools. Front page will be the main hub of the Tampere 3 Student's Desktop. It will be the most frequently used part of the new service. The front page can be seen in picture 7.

4.2.5 Personalization of the service

Students are able to personalize the new Student's Desktop by adding their own wall-papers and adjusting the look and feel of the front page. New Student's Desktop is supposed to be one clear and uncluttered website with clear affordances

4.3 Overview of the UI



Picture 7. Tampere 3 Student's Desktop main view (front page)

Picture 7 displays the front page of the new Tampere 3 Student's Desktop. Front page serves as the main UI view for the service and it contains all the main content of the service, as described in section 4.2.4. We relied heavily on Nielsen's 10 usability heuristics [2] in our design for the main view. Our main goals for design was to offer good affordances, give users appropriate feedback, elements should be in balance and related elements should be grouped together in order to create a relationship between them (proximity). Link to functional mockup and YouTube video of the mockup can be found in the References and Link to Mockup section, in the end of the document.

4.4 Detailed views & interactions

New Student's Desktop has four tabs. First tab contains the front page, as seen in the picture 7. Front page contains calendar, tools, views for job listings and settings. Calendar will automatically update itself on lectures, exams and include them in. This saves valuable time from students and they can easily remember where lectures and exams are held by checking the calendar. Also, the front page contains information about job listings and internships, because this was one functionality which our test users wanted to see in the new service. If user wants to eat a dinner in university, front page contains menus from the restaurants located at the campus. Mail is located in the top left corner of the front page and it is linked directly to students Outlook.

Second tab is called "My Studies" where students can keep track of completed courses, get course suggestions and see their curriculum course structure, this is explained more in detail in section 4.2.2. Third tab contains information about available courses and it is called "Courses. Fourth tab is called "Help" and it contains information about the service and helpful tips and guides for using the service.

A Web Page

http://uta.fi/studentsdesktop/mystudies

Front page **My Studies** Courses Help ?

Bachelor's Degree Programme in Computer Sciences

+ General Studies in Bachelor's Degree Programme in Computer Sciences 40 ECTS

- Basic Studies in Computer Sciences 25 ECTS

TIEP1 - Introduction to programming 5 ECTS

TIEP2 - Introduction to interactive technology 5 ECTS

TIEP3 - Data bases 5 ECTS

TIEP4 - Introduction to information system development 5 ECTS

TIEP5 - Introduction to programming II 5 ECTS

+ Intermediate Studies in Computer Sciences 60 ECTS

+ Optional Studies in Bachelor Degree Programme in Computer Sciences 55 ECTS

Info: Completed courses highlighted with green !

Available courses

TIEP7 - Data Mining 5 ECTS +
Lecture: 05.04 14:00 - 16:00

ITIS15 - Information Structure Development 5 ECTS +
Lecture: 01.05 10:30 - 13:30

ENG1 - Academic English 4 ECTS +
Lecture: 17.04 12:30 - 15:00

TIEP10 - Advanced Programming in Haskell 10 ECTS +
Lecture: 10.04 12:00 - 15:00

Info: Press "+" button to add course information to calendar

Research Projects Registrar's Office Lost Property University Map Subject Associations Feedback

aikalainen AVIISI f i t

Picture 8. Tampere 3 Student's Desktop, My Studies.

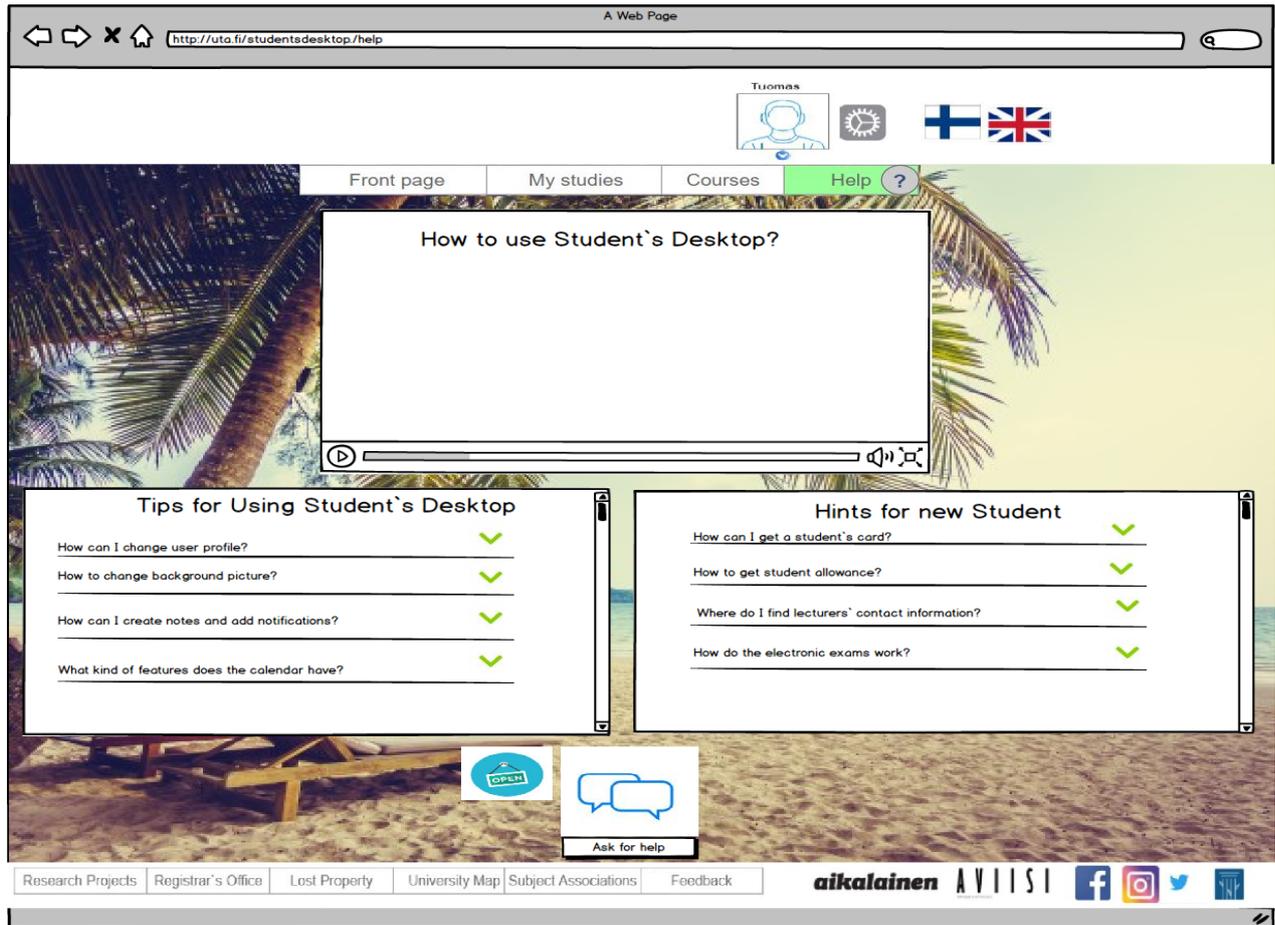
"My Studies" section can be seen in picture 8 and it is highlighted with green color in the tab selection to indicate that it is the active tab. The picture displays that our user is studying computer science and he has completed three out of five courses from basic studies in computer sciences. Completed courses are highlighted with green color to indicate user if course is completed. User can also shrink or enlarge to open drop down view of course modules and courses in the curriculum structure. Current Student's Desktop does not contain information about curriculum course structure and it was one of the most frequent wishes in our data. Students in our data wanted to be able to keep better track of their studies and courses needed for a degree, because previously they had used word or excel to keep track of their completed courses and curriculum. Available courses and course suggestions can be seen in the right side of the picture. If user presses the "+" button next to a certain course, information about that course will be added into calendar in the front page (picture 8).

“Courses” section can be seen in picture 9. This section contains all courses that are held in university and important information about them. Course code is displayed first, then name of the course, amount of ECT’s and period when the course is held.

Course code	Name	cp	Period
KIE-11010	Suomen kielen etappi 2	2	3
	Next event: Työpaja 1 Tue 31.7.2018 - 16:00		
KIE-11110	Suomen kielen etappi 3	2	4
	Next event: KIE-11110 Suomen kielen etappi 3/O/01 Tue 17.4.2018 12:00 - 14:00 PB224		
TIE-41206	Human-Centered Product Development	5	3 - 4
	No upcoming events		
TIE-41306	User Experience: Design and Evaluation	5	2 - 3
	No upcoming events		
TTA-62010	Teknologia- ja innovaatiojohtaminen	4	3 - 4
	No upcoming events		
TTA-62016	Technology and Innovation Management	4	1 - 2

Picture 9. Tampere 3 Student's Desktop, Courses

View can be arranged by course code, name, ECT'S and period. If user wants to know more about a certain course, user can click the course to open more detailed view of it. Also, events from a course can be added to calendar in the front page by pressing the “+” button under each code of the course. By having all the course information in the Student's Desktop, students don't have to search information separately from university's page of other related services. This saves time and users easy and fast access to find information about courses.



Picture 10. Tampere 3 Student's Desktop, Help view.

"Help" section is the last tab in the Student's Desktop as seen in the picture 10. This section is meant to give helpful advices and general information about the service to users. "Help" section will also contain guides and hints for newer users who are not yet familiar with the service. Users are able to ask help from technical support by sending a message, if they have difficulties in using the service. One of our visions was to add general in guidance videos about the different functionalities and options in the new Student's Desktop for all users. These videos would be step by step videos showing how different tools can be used, calendar for example.

5 Open issues and ideas for the future

For further development of our project, we would extend our research area, with more interviews and contextual inquiries to provide larger amount of user research data. If more interviews are conducted, probably new ideas would come along with current features. On the other hand, we managed to combine well quantitative survey data and qualitative data based on our interviews and CI's to provide comprehensive research data in the time frame of the project.

As mentioned earlier in this document, in this project our focus was mainly on UTA's Student's Desktop and TUT's POP, as we had instant access to these services and we had experience of the services, which helped us to do heuristic evaluation. As we have taken the interview of the nine people who are TUT and UTA students, in further interviews there could be students from TAMK involved as well, as it is the joint project of three universities.

Besides, as we had strong emphasis on our user research and background research, the mockups were created in a relatively short time frame. Thus, we could iterate the functionalities of our interactive mockup further and more in detail, and create more interactive paths for future iterations. While we are satisfied that based on the user tests and user satisfaction questionnaires our design was clear and included all necessary features for students, some features, such as Discussion forum with different sections could be designed further. Discussion forum can be a useful feature for gathering feedback from the students for later iterations.

As a future idea, the use of gamification could be possible way to motivate students to use actively Student's Desktop and complete their studies. Gamification could be used for example on the My Studies -page with progress bars, which could indicate, how many percentages the student have completed from her/his studies or a possible study module. The amount of completed courses could be presented as a graphical bar combined with increasing XP-level based on completed courses (example sketch in picture 11).



25 % of study module of Basics of HTI completed.]

Picture 11. Sketch for possible progress bar of the completed studies.

Another interesting feature could be a possibility to rate courses, which the student has completed, on My Studies page. The rating method could be based on clicking "Thumbs up"/"Thumbs down" based icons, focusing on key aspects on the course,

such as level of education, usefulness and content (as an example, picture 12). This way students could see how many other students have rated the course positively or negatively. While these aspects need further research analysis and iteration, we asked students` opinions about use of these gamification elements, which were found interesting and relatively positive features.



77 percentages of the students, who have completed this course, recommend it/ 23 % percentages of students, who have completed this course don`t recommend it.

Picture 12. Sketch for social feature to recommend completed courses.

6 Methodology

In this chapter we summarize the methodology we used in our project, including our research, analysis methods and design methods in different design phases.

6.1 User research

As described earlier, our purpose was to create a comprehensive Student desktop with all necessary features for Tampere3 Students.

In the beginning phases of the project, our target was to identify the needs of the students as main users of the upcoming Tampere3 Student's Desktop. On the basis of our goal we did contextual inquiries, where we observed the participant interacting as usually with the Student's Desktop to get data about the use context. This method was supported by think-aloud method to help to understand different motives and problems of the users. During the contextual inquiry, the users could also freely comment their opinions on the features of SD during their usage. After the CI and observation, we interviewed the participants about their experiences with current SD and hopes for upcoming service.

Overall, we had nine interviewees aged between 23 and 29, who studied in UTA and TUT. As described earlier, to have diverse data, our students were from different fields, such as journalism, engineering physics and interactive media (picture 13). Example of the interview questions based on current SD can be found as appendix in the end of the document (appendix A).



Picture 13. The interviewees using current Student's Desktop (CI).

In addition, we analyzed the data of the Tampere3 Student Desktop survey, which the development team had sent to students of UTA, TUT and TAMK in January 2018. To support data from survey, CI's and interviews and to find relevant problems, which are important to take into account in our next phases of the design process, we conducted a heuristic evaluation based on existing Student's Desktop (Example in a picture 14).

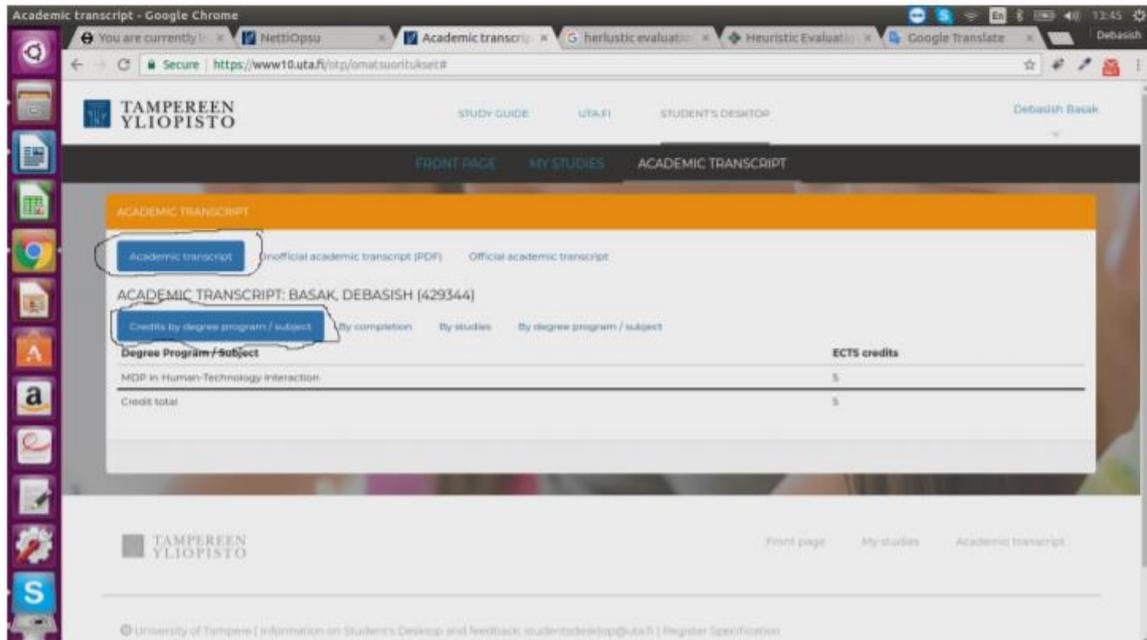


Figure 9. The user can consider button as a link, but it doesn't have any functionality.

Picture 14. Screenshot from a problem found during our heuristic evaluation.

6.2 Analysis and modeling user data

We decided to analyze the data through personas created with Xtensio, sequence model and interaction model, which are analyzed more in detail in chapter 2. As we had large amount of data, personas (pictures 1-3) helped us to create a clear picture what kind of users use the existing Student's Desktop service, how they use the service and what kind of problems appear during their use. The personas clarify how different background and personal opinions and motives can affect the usage of the service and helped to remember different needs of the students when designing the service.

Our personas have fictional identities, but their backgrounds, intentions and opinions are based on our data of the survey, contextual inquiries and interviews of the students. As the backgrounds of the personas are based on real users of the system, we wanted to avoid common mistake, that the personas and their needs are based on completely fictional characters and assumptions of the companies. Besides, we also wanted to highlight needs and frustrations of the users supported by a personal quotation, to make concentration on key problems more easily.

Sequence model (picture 4) and Interaction model (Picture 5) helped us to keep track and present problematic features with usability problems. These models were clear method to visualize problematic parts for the user groups. Overall, these methods saved time, when we knew the key design problems and needs without going through the text-based data all over again in later phases, such as when we created sketches. Besides, the visual models are easy way to present key problems and needs towards the new service to persons, who are not familiar with the research project. Based on

the findings of the analysis, we created a product vision board (picture 6), to help us create clear vision for what kind of functionalities we wanted to focus on.

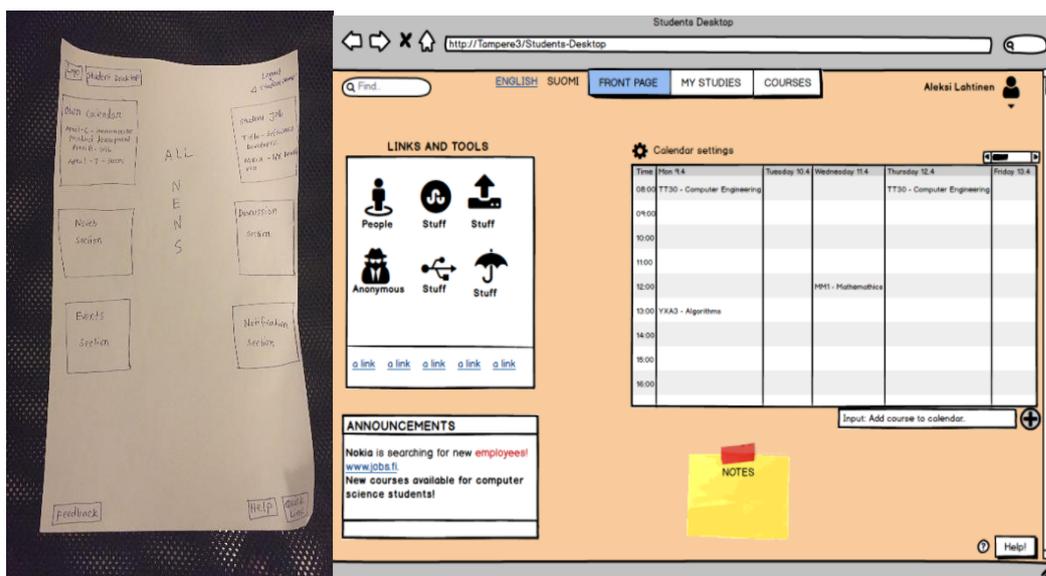
6.3 (Re)design

After the data analysis, we used 8x8 (Lotus blossom) method for brainstorming to gather possibilities and limitations on key design aspects (Picture 15). This method was seen useful, as we could quickly ideate new features based on most desired tools. Also, if some idea was not ideal for our later designs, we could easily drop them out.

Possibility to change the colors of notes - for example, to divide notes based on different themes	Possibility to create alarms on the notes	Possibility do many notes
Option to create "to-do- lists" (was hoped) -> possibility to mark, which tasks are done	Notes	Longer notes (more marks) Give the option to write more than one note
Possibility to add links to notes	"Notes as post-it stickers"	Possibility to drag-and-drop the notes

Picture 15. Brainstorming focusing on Notes-function by using 8x8 method.

After data analysis and brainstorming, we did individual sketches and selected the best one containing most useful features, based on usability problems of the existing Student`s Desktop and hopes of the students. As we created the sketches individually, we were also able to easily combine different design ideas together. One of our sketches and a wireframe from further design phase are presented in pictures below (picture 16).



Picture 16. Early sketch and wireframe based on key features of Student`s Desktop.

In the next phases we organized test and interview sessions with participants for the

evaluation of the wireframe version, created with Balsamiq. Based on the feedback, we iterated and refined the selected version, which is described in more detail in chapter 6.4.

6.4 Prototyping & evaluations

For the evaluation of our prototype we designed a feedback questionnaire form that consists of most useful questions regarding our UX goal based on their experience, such as pleasantness of the usage, important features and visual look (picture 17).

UTA

Methods in Human-Centered Design

USER SATISFACTION QUESTIONNAIRE

Below are some statements related to the Students Desktop you tested. Please select the option that best matches your level of disagreement and agreement with the statement.

Evaluate the following statements	Strongly disagree	1	2	3	4	5	Strongly agree
The service meets all the requirements for the students.	1	2	3	4	5		
It was hard to understand all the functionality.	1	2	3	4	5		
The service was pleasant.	1	2	3	4	5		
I was able to find what I needed quickly.	1	2	3	4	5		
The service included unfamiliar terms.	1	2	3	4	5		
The visual look and places of the elements was pleasing.	1	2	3	4	5		
Prototype provides all your expected features.	1	2	3	4	5		

If you missed features, what kind of features they were?
 ~

Which overall grade would you give to the service (on a scale from 1=poor to 5=very good)?
 4

Thank you! Your responses will be processed confidentially.

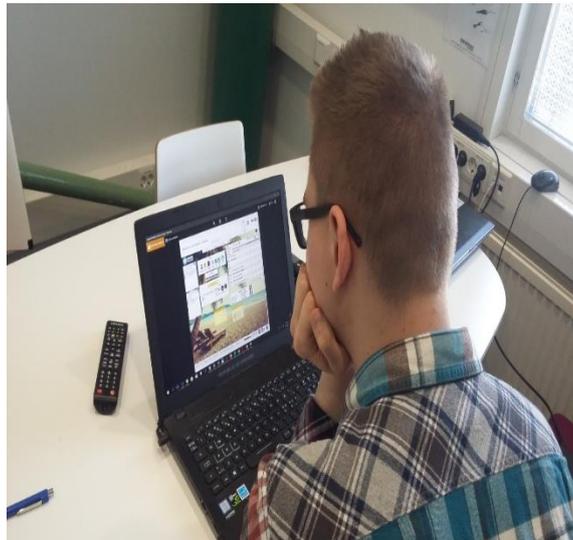
Test team fills in:

Group name: _____ Participant ID: _____

Picture 17. User satisfaction questionnaire, which was utilized to get feedback based our mockup.

We evaluated our design by the participants, who tested the earlier versions (picture 18). We made this choice, because as the participants were familiar with the concept and design ideas, they were more eager to give design ideas and feedback. This also saved our and participant`s time as the concept was already familiar.

Based on their filled feedback questionnaires we got to know that the average rating to our design was 4 out of 5. Based on their feedback we can say that our goal has achieved and we have been able to meet the expectation of student regarding the features of Student`s Desktop. To help us iterate the concept, we also conducted interviews based on the design and iteration ideas for the future. Example of the mockup interview questions and one sample answer is as appendix in the end our document (appendix 1).



Picture 18. User test for our mockup design.

Due to ethical reasons and rights of the participants, we also gave them consent form before the evaluation process had been began (appendix 2). We also told the user to think aloud while going through different features. This was because sharing their thinking and feeling with us during action helped us to come up a decision whether the design prototype has reached our goal, which means whether it has fulfilled the demand of the students or not. Overall, the user satisfaction questionnaire helped us to confirm our design ideas and it was fast and effective tool to provide feedback.

6.5 Reflections and lessons learned

Overall, the process helped us to understand main steps in human-centered design process and to select right tools during different design phases. We learned about different methods during the process, such as contextual inquiry, data analysis, brainstorming methods, designing wireframes, evaluation and interaction model. With the designed prototype, we got to know useful tools, such as Balsamiq and Invision, for

making clickable prototype. As now these tools are now already familiar, the creation of visual iterations will be probably faster to do in the future.

Use of personas, sequence model, and interaction model helped us to analyze and present large amount of research data in easily understandable form. As there was much of data, it took time for us to analyze, but the knowledge learned from the course helped us to visualize the key information in clear and visually pleasing form, for example with Personas.

Use of Product vision board helped to clarify and remember our main goals during the design phases. In addition, thorough user research helped us to understand different needs of the user group, which saved time when designing sketches, when we knew about required features and which areas we should focus on with our design concepts.

References and link to mockup:

[1] Pichler, Roman: Vision Board. <https://www.romanpichler.com/tools/vision-board/> . 2018.

[2] Nielsen, Jacob: 10 Usability Heuristics for User Interface Design. <https://www.nngroup.com/articles/ten-usability-heuristics/>, 1995.

Mockup links:

Link to interactive Student`s Desktop mockup on Invision: https://invis.io/T9HIZK8WH47#/291745132_Student_Desktop_Drafting_-4-

Student`s Desktop mockup project YouTube video (hidden link): <https://www.youtube.com/watch?v=2nZgPD2V-tY>

Appendix A: Interview questions for testing the existing SD service and for the mockup testing

Here is example of the interview questions and one sample answer based on the user testing of existing Student`s Desktop:

What kind of feelings you have when using Student`s desktop/Pop?

“It looks like it like it's still in development stage, it's not very handy. There`s couple of useful features, such as notifications, bulletins and tools, but I wouldn't visit here daily. There is a lot of potential in the calendar, but there should be important study dates and events, Moodle tasks and way to add your own timetables.”

What kind of features you see as most useful with the current Student`s desktop/Pop application? Are there some unnecessary features?

“Targeted notifications/bulletins related to jobs of your own field or or what happens at the university and such are nice. Also possibility to enroll straight to courses is nice.

I hope that the Student`s Desktop would have own logo, so it wouldn`t be transposed with other services. This logo could be seen in browser tab, so it would help to notice the page, if there are many tabs open.

The calendar feels unnecessary, it`s pretty bad to use. And also notes are not handy to use, I don`t use it at all. First of all, the notes are at the bottom of the site and with gray color, so it`s hard to notice. It also looks awkward if I write a lot of text on the display and I cannot save other notes than one, so it`s not convenient. “

Are there some features missing that you would like to have?

“The calendar that would be more convenient. I also would like I could move the pieces on the site and I could make them look personal. It would be great if I could make notes, such as with Mac computer with labels that can be moved on the desktop, just like post-it tags/papers that can be done and moved with Mac. Also, it would be nice if you could mark that you have completed the task. Besides, possibility to make To do -list would be great.

I would also like the page to be more dynamic and have a view/access to courses in Tamk and Tut. It would be also nice addition to use search/case words in search bar that could recommend courses based on my (earlier) studies, for example based on algorithms, what kind of courses I have taken previously.

What kind of feelings the current visual look of Student`s desktop/Pop arises?

“It`s too dull. Firstly, it`s difficult to see anything from the background picture, I guess there`s a woman smiling there. It looks bit bleak, I miss colors and freshness. I would like fresher color scheme and common graphical/visual style with the tool logos. There`s no need for “rainbow colors”, but I would like to have simplistic but more stylish outlook.”

What kind of expectations you have towards the visual look of the upcoming desktop?

“Fresher color scheme and common visual style with the tools. It would be nice if I could change the background picture and move the pieces on the site. It would give me such a feeling that I’m in control of my studies when I can arrange scheduling, and so on.”

Have you faced problems with the usability of current Student’s desktop/Pop? If yes, what kind of usability problems?

“There’s problem that I cannot do anything with the calendar, it’s just static. Then scalability, I cannot reduce or enlarge pieces. It irritates me that Nettiopsu is separate feature, the same information that appears there are in the current Student’s desktop too. I miss Moodle compatibility, so I could see immediately new Moodle tasks. There could be a feature, so I could decide whether I could see the new Moodle deadlines.

I haven’t needed help how to use the service, but I’m not motivated to use the service at the moment. There have not been technical problems. There could be more ways to customize the service, but it could still remain simple to use. “

What do you think about the current personalization/setting options in current Student’s desktop/Pop?

“They are very limited. I cannot personalize the view or move the features. I can select which bulletin/notifications I want to see, which is good, but I cannot do anything to visual look of the site or move/create new pieces on the site.”

Should there be more options to personalize the page and what kind of content is shown in the future?

“It would be nice to create my own appearance by customizing the look of the page and dragging pieces to personal places. It shouldn’t be mandatory, but on Moodle there is a possibility to add a picture and other personalized details, so it would be nice feature in here too. So the same profile could be seen on e-mail, Moodle and here. “

What kind of social features you would like to see with the upcoming Student’s desktop?

“I wish the notifications of Moodle discussions would be visible in Student desktop, so I would be more aware of the actions on courses. E-mail would be also nice to have in its own bar/place, so I could scroll if there something new. At the moment there isn’t any sociality in the desktop.

Student bulletins about what is happening on subject association would be useful feature, as the associations have their own e-mail lists. If I could see what is happening in them straight away, it would save my time as now I need to open my e-mails. There could be separate bar/place for bulletins about what’s happening in different subject associations.

I have used chat-features at work in similar desktop views and at the moment I’m using Alma-Media’s (journalistic) Valma-service, as I do work along studies. I can put pictures in there and discuss with other employees. It’s quite handy but I use it rarely. With myself, the social chatting happens on Facebook and other social media services, so it’s not necessary here in University service.”

Here is example of the interview questions and one sample answer based on our mockup.

What kind of feelings you have of new Student`s Desktop?

It looks good. The most important feature is the calendar is also up to date. It shows the course that I have enrolled in an academic period. I think almost all the features are there.

Do you think there are all the necessary features in the new Student`s Desktop that you need in daily studies?

I think all the features are important for the students.

Are there some features that you consider unnecessary?

I did not find any unnecessary features.

Is the meaning/functionality/naming in some functions difficult to understand? (why?)

In the footer "Subject association" link was not clear to me.

Is the placing of the features/the visual look clear?

The visual look is quite clear to me although there are a lots of features.

Do you have thoughts or opinions about what kind of elements there should be on the Student's Desktop`s My studies/Courses/Help -views?

I really don't have any idea. I only want to have a user friendly student desktop.

What would you think about use of gamification elements in My studies -page?

Progress bar of the study is a good idea but if this link contains how many courses a student has taken in a particular period then it would be better. How many credits a student has completed can be shown in this link as well.

Appendix B: Consent to record and participate to test, background questionnaire and user satisfaction questionnaire.

Methods in Human-Centered Design University of Tampere

CONSENT TO RECORD A USABILITY TEST

We ask you to participate in a usability test that is part of our project work on the Methods in Human-Centered Design course at the University of Tampere. By participating in the usability test you will help us to evaluate the new version of the usability of the Student's Desktop web service.

You will be asked about user experience of the new application designs and to think out loud while doing the tasks. In addition, we will ask you to fill in questionnaires and we will interview you about the use of the service. The test will be recorded and few photographs taken for test reporting purposes.

The materials recorded during the test will be used to evaluate the usability of the service in our course project work. In addition to our test team, the instructors of the course will view the materials from the test.

The results of the test will be reported anonymously. A summary of the main results will be delivered to the developers of the service. Recordings or participants' personal data will not be revealed.

You can stop participating in the usability test at any point.
We are happy to answer, if you have any questions.

By signing this form, you will accept the above terms.

Date and place: 12.4.2018 Tampere

Signature: 

Name clarification: Oskari 

01
Test team fills in:

Group name: _____

Methods in Human-Centered Design University of Tampere

BACKGROUND QUESTIONNAIRE

Background Information

Age: 23

Gender: Male Female

Occupation:

Student
 Teacher / lecturer / professor
 Researcher
 Else: _____

Education (highest finished degree):

Comprehensive or elementary school
 High school
 College / University degree
 Else: _____

Background questions of use of Student`s Desktop

How often you use current Student`s Desktop?

Every Day
 2-3 times a week
 Weekly
 2-3 times a month
 Once in a month
 Less than once in a month

Test team fills in:

Group name: _____ Participant ID: 3

USER SATISFACTION QUESTIONNAIRE

Below are some statements related to the Students Desktop you tested. Please select the option that best matches your level of disagreement and agreement with the statement.

Evaluate the following statements	Strongly disagree	1	2	3	4	Strongly agree
The service meets all the requirements for the students.	1	2	3	4	5	
It was hard to understand all the functionality.	1	2	3	4	5	
The service was pleasant.	1	2	3	4	5	
I was able to find what I needed quickly.	1	2	3	4	5	
The service included unfamiliar terms.	1	2	3	4	5	
The visual look and places of the elements was pleasing.	1	2	3	4	5	
Prototype provides all your expected features.	1	2	3	4	5	

If you missed features, what kind of features they were?

Which overall grade would you give to the service (on a scale from 1=poor to 5=very good)?

4

Thank you! Your responses will be processed confidentially.

Test team fills in:

3