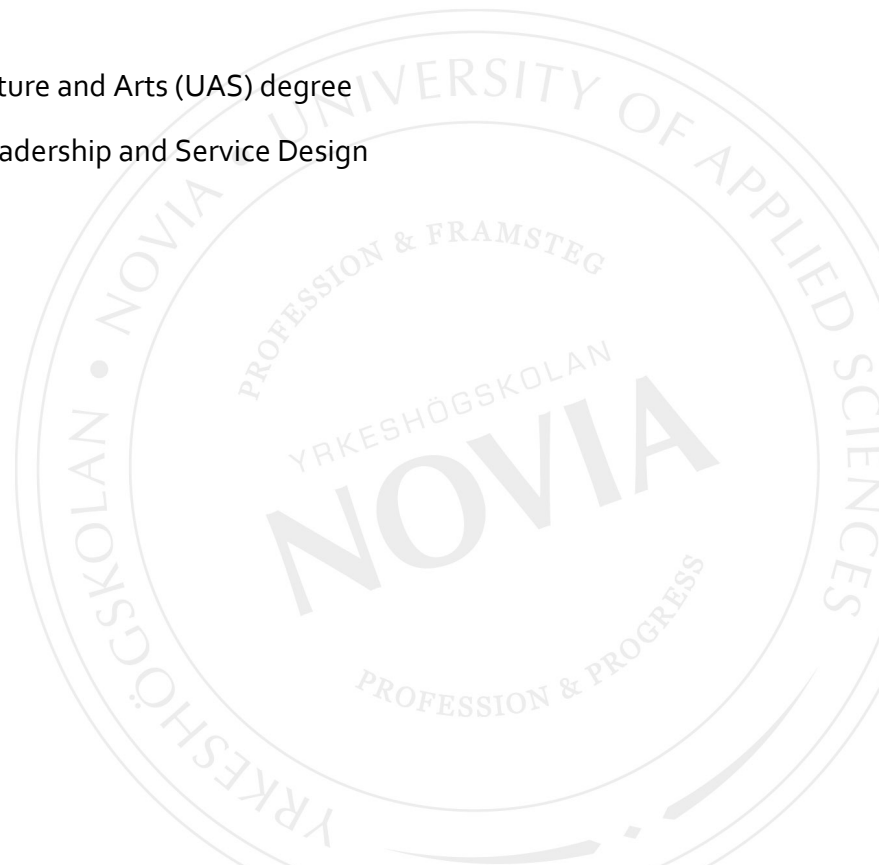# NOVIA
UNIVERSITY OF APPLIED SCIENCES

A Service Design Approach
for Online Learning Service Development

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Thesis for a Master of Culture and Arts (UAS) degree

Degree Programme of Leadership and Service Design

Turku, 2018

DEGREE THESIS

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Degree Programme and place: Leadership and Service Design, Turku
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Title: A Service Design Approach for Online Learning Service Development

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Date 26.11.2018 Number of pages 78   Appendices X

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Abstract

Pedagogy today demands the use of digital tools, and they are widely used in higher education. Students have to adapt to new ways to learn and take a more active role towards independent studies. Online learning services support independent learning and collaboration particularly well.

Skhole offers an online learning platform for healthcare education and continuous studies. The aim of this thesis was to gather customer insights about the Skhole online learning service, to create development ideas and to design a concept for an improved service. The study was focused on users in universities of applied sciences.

The thesis has a service design approach: qualitative research and service design methods were used during the process. The methodology of this study includes interviews and service design methods such as stakeholder mapping, business model canvas, service blueprint, value proposition design, personas and user journey maps. Mind mapping, SWOT analysis, benchmarking, observations to insights, user groups definition also belong to the methods used in this study. Preliminary concepts were created, evaluated and combined into a final prototype.

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Appendices

1 Introduction

The aim of this study is to gather customer insights about the current Skhole online learning service, to create development ideas and to design a concept for an improved service. The thesis has a service design approach: qualitative research and service design methods will be used during the process.

Technology enables new ways of learning. New learning products are being developed by publishing companies, but also by new companies like Skhole. Skhole is a young company that offers an online learning platform for healthcare education and for continuing studies.

Teaching has started to change from traditional teaching methods to providing students with other tools and ways to learn. The focus is shifting from classroom teaching to individual learning, and online learning tools are essential for learners in this change. Online learning tools and the traditional teaching methods need to be suitably combined by teachers. Teachers have to manage with fewer resources these days, but the demand for quality is the same as before. It is vital that students learn the necessary skills during their healthcare education.

The field of nursing is continuously being developed as new data becomes available and practices change with new knowledge. Digital services could be one solution to the need to update the skills of healthcare professionals. Lifelong learning is a necessity for nurses today.

Users interact with Skhole's service mainly through a digital platform, so interface design is one topic of this study. Gamification can be an effective method to enhance learning experiences for users, and Skhole has piloted gamified content as part of the service. The benefits of gamification in online learning services will be discussed.

There are a lot of digital tools that make teachers' and students' lives easier and their studies more effective. However, there are also some drawbacks to digitalization in education. Not all learners are interested in digital tools, and teachers have a lot of work even without the extra work that digitalization brings.

2   Skhole online learning service

Skhole is the name of the platform as well as the company. Skhole is a young company that offers an online learning platform for healthcare education and continuous studies. It is being used in universities of applied sciences and for continuous education. The focus area of this study will be universities of applied sciences.

Skhole commissioned this study, but it is not part of the company's regular service development. Skhole sees the value of having close relationships with users and wants to find out more about its users and their needs and hopes for the service. They have previously gathered some data through surveys, and they are co-operating more closely with users to develop the service further. Co-design with users is a theme of this study.
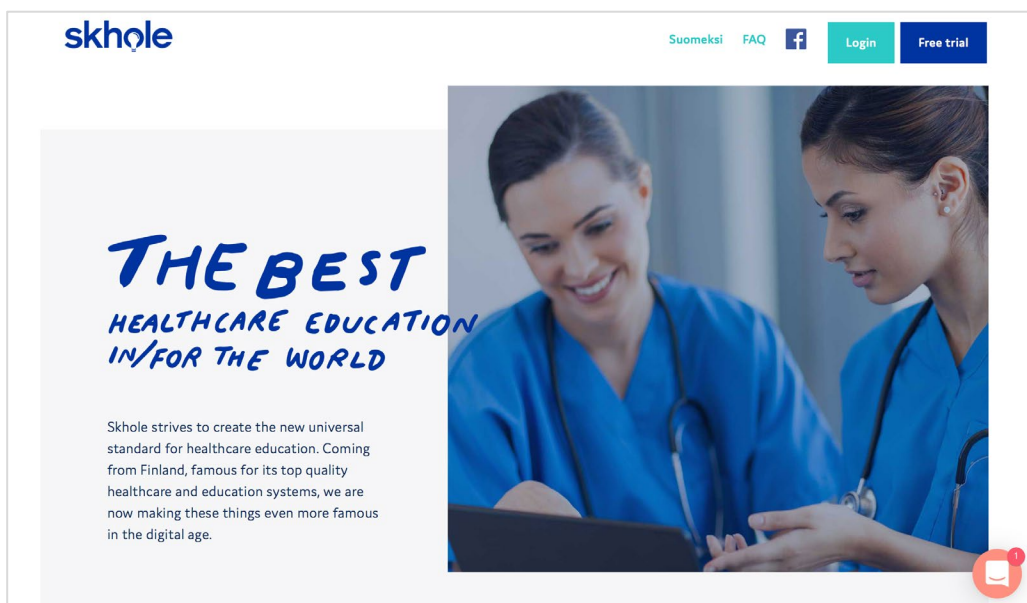
Figure 1. The front page of Skhole, prompting users to try the service (Skhole 2018).

The service is available in Finnish, Swedish and English. New materials are continuously being produced by healthcare professionals. One of the original uses of the Skhole service at universities of applied sciences was as a replacement for lectures from doctors. If a doctor was unable to hold a lecture, it created problems for students. As Skhole is not tied to any time or place, it creates new possibilities for digital learning.

The Skhole service is an HTML-based platform and can be used on all devices, from mobile devices to laptops. There is learning material in video, audio and text formats to

support various learning styles. The service collects some data on the students' achievements. The modular structure of the content makes it suitable for the diverse needs of the users. The courses are divided into lectures, which can be viewed individually.

The users of the Skhole service are both students and teachers. For continuous education, the users are professionals taking online courses, and their managers. Universities of applied sciences pay for their students' use of the service, and the students receive login credentials from the school. Typically, some modules are compulsory in the Skhole service, and they are usually a part of a course being taken. For this study, the focus will be on two customer segments at universities of applied sciences: teachers, and students in youth education.

2.1.1 Teachers

The "teachers" customer segment consists of all the teachers using Skhole service. The teachers plan their courses and can utilize the Skhole service for a whole course or a section of the area being taught. They can tell their students to study one or more modules from the service. Exams can be taken through the Skhole service for most courses, and students can also validate some prior learning through Skhole, which can be useful for teachers.

Teachers work in a fast-paced environment and have to cope with cuts in resources and heavy workloads. They usually teach in their own area of expertise and supervise students' practical training and thesis work. Their work can also include administrative tasks and attending meetings. Teachers need to plan online learning according to digital pedagogy; however, they have varying levels of digital skills and a variety of attitudes towards the online tools.

2.1.2 Students in youth education

The "students in youth education" segment consists of all the students studying full-time on healthcare courses in different parts of Finland. They may be studying for their first degree, or they may have changed careers, and they are at different stages of their studies.

These students have to absorb a lot of knowledge in a three-and-half-year course. The studies include independent study, group work, classroom sessions and practice periods. They study theory and, in the laboratory, and there are simulation exercises as well.

3   Aim of the research

The main aim of this thesis is to develop a concept for an improved service for Skhole. The first objective of the study was to discover users' opinions of the current service. The second objective was to gather ideas for improving the service by creating more value for users.

This study involves some preliminary research to get a better idea of the current situation of the service, to get to know the field of digitalization in education, and to benchmark the use of gamification in other online learning services.

There are interviews with users of the service to gather customer insights about the service and the context, and analysis of these research data. Preliminary concepts for improved features for the service have been created, evaluated and combined into a final prototype. All the stages of the research and ideation are documented and discussed.

3.1   Research questions

Four research questions were formulated to further define the objectives for this thesis. The first two questions focus on the current user experience and value proposition and possible improvement areas for the service. The third question relates to digital learning services in higher education on a more general level and the fourth question concerns gamification in digital learning services.

What are the current strengths and weaknesses of the Skhole online learning service from the users' point of view?

What would create more value for users of the Skhole online learning service?

How can digital online learning services support professional development?

How does gamification support learning in online learning services?

3.2   Frame of reference

The frame of reference illustrates the different aspects of this study as shown in Figure 2. The approach is user-centred, the service is viewed from the users' perspective. The study focuses on users' needs and development areas for the service. Co-design is applied, involving the stakeholders. Universities of applied sciences comprise the main area for this study.

Users interact with the service mainly through a digital platform, so interface design is briefly discussed. Gamification can be an effective method to develop the learning experience the for user, and it is one of the topics in this study.
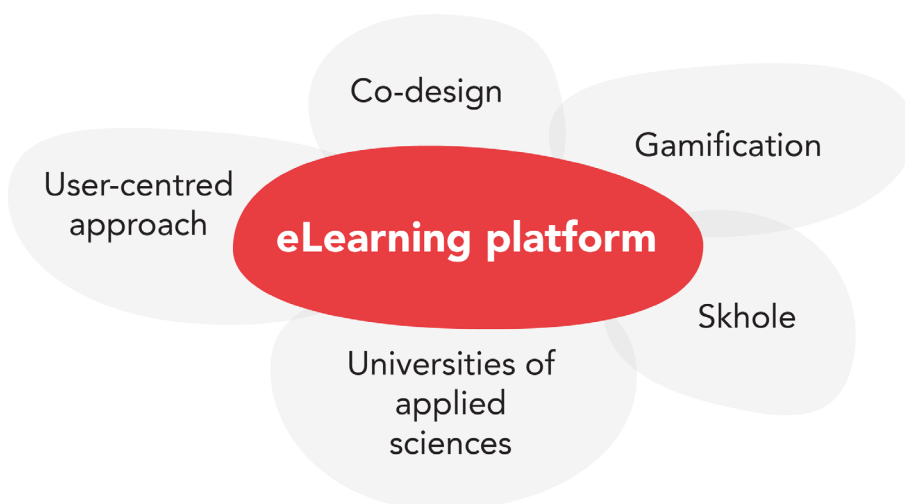
Figure 2. Frame of reference.

4   Process chart

The seven modes of the design innovation process outlined by Vijay Kumar have been adapted for this study (Kumar 2013, 10), with six of the stages being used during the project. The final mode ("realize offerings") has been omitted, as this study will not proceed to the implementation stage.

The stages are presented in numerical order, but the process is not a strictly linear one: previous stages are often revisited when further research and analysis is required. The iterative nature of the process demands many cycles, and multiple iterations lead to better results (Kumar 2013, 9).

The structure of this study is divided into the phases as shown in Figure 3. Each phase has its own chapter. At the beginning of each chapter, the purpose of that phase is explained, and all the methods in that specific phase are described. The description, implementation and results of each method have individual subchapters.

Know context

SWOT Analysis
Stakeholder Map
Benchmarking
Business Model Canvas
Service Blueprint

Frame insights

Observations to Insights
User Groups Definition
Value proposition design

Frame solutions

Concept evaluation
Personas
User Journey Map
Service Blueprint
Business Model Canvas

Sense intent

Literature Review
Mind Mapping

Know people

Interviews with the teachers
Interviews with the students

Explore concepts

Idea gathering online
Preliminary concepts

Figure 3. The six modes of the design process used during this study.

5 Phase 1 – Sense intent
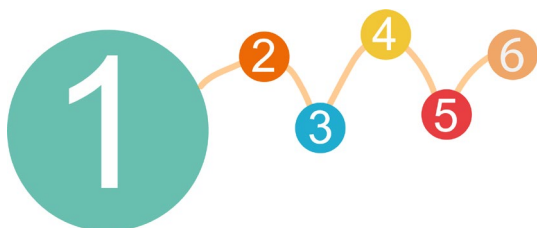
During the first phase, the problem space is framed (Kumar 2013, 15). Before starting a new project, it is helpful to look into the latest developments in the field and their effects. Studying the trends around the subject area will help to create initial awareness about potential innovation areas (Kumar 2013, 10).

5.1   Mind mapping

A mind map is a visual tool for organizing different parts of a problem in one diagram. As complex problems cannot be isolated into clear segments, a nonlinear approach like mind mapping can be helpful in visualizing the connections between the different components of the problem (Martin et al. 2012, 118).

Mind mapping was used in this study to gather all the factors affecting the digital service in a visual format. The purpose was also to identify the separate areas for developing the service.

Aspects around the topic "online learning service" were listed in the form of a mind map as shown in Figure 4. This was done in the early stages of the process to gather general information about the area. It is helpful for identifying different areas that the service could branch into. It can also be helpful for use in combination with other methods like SWOT analysis.

The online learning service environment is affected by current technology, current pedagogy, and the attitudes of teachers and students. These kinds of services are being developed by publishing companies and start-ups, and teachers also produce learning materials themselves. As teachers have a good understanding of the needs of students, a good way to develop services would be for the service providers to involve teachers in the work of developing the service.

Online learning services are used at all education levels, but to a greater degree in higher education than in schools. Online learning services support certain learning methods particularly well, for example collaboration and independent learning, so using online learning services can be beneficial for students. As they are not dependent on time and place, they offer flexible ways to study, and they can also be helpful for students with learning difficulties.
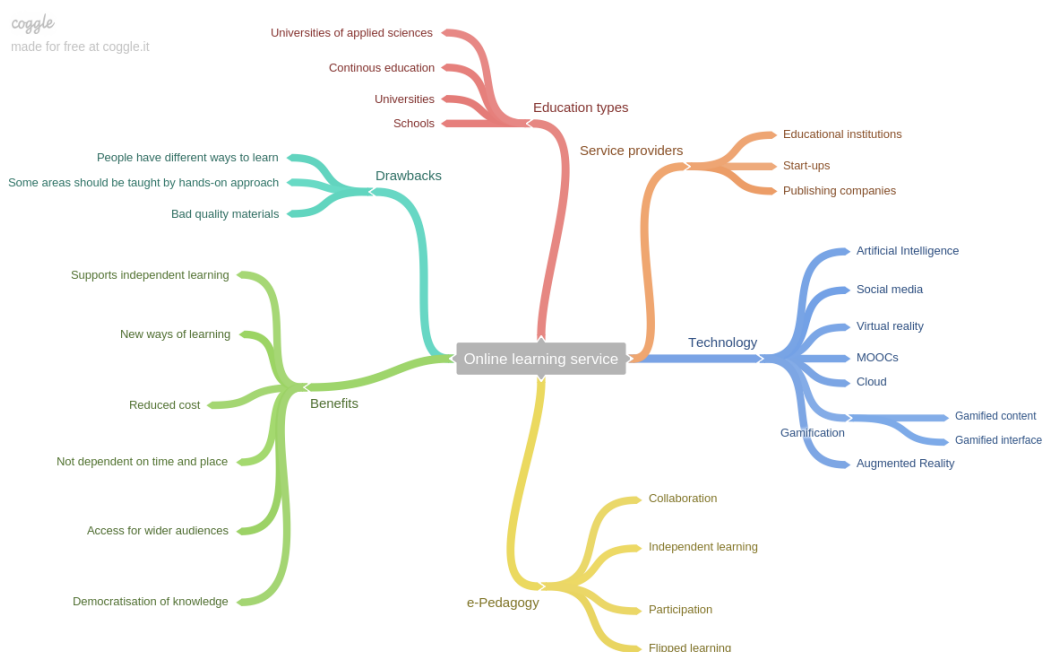
Figure 4. Mind map showing different areas connected to an online learning service.

5.2   Literature review

Literature reviews can be a beneficial part of design projects, providing relevant information from previous research or projects (Martin & Hanington 2012, 112). For this study, the topic of "digitalization in higher education" was reviewed. Many factors and fields that affect the area need to be taken into consideration when developing services for online learning, so it is useful to gather the knowledge necessary to support this process. The aim of the literature review was to gain an overall understanding of the rapidly changing environment the service is operating in.

5.2.1   Technological development

As technology significantly affects the way the students learn today and enables new ways of studying, it is an important aspect of this study. The availability of new digital tools has affected the way teachers today think about learning and education.

Distance learning has its roots in the United States in the late nineteenth century, where universities would send course materials to students via the mail. Since online learning was introduced at the turn of the millennium, many learning initiatives have been launched. Universities in the United States began first with OpenCourseWare, and later with massive open online courses (MOOCs) (Pomerol et al. 2015, 1–4.)

MOOCs launched online learning for larger audiences. As more people were able to attend the courses from a distance, new ways to learn were developed. Students registered for MOOCs and followed the structure of the course through studying materials, and completing exercises, quizzes and evaluations. The role of the teacher became less significant, as the focus shifted more towards the learner. When studying on MOOCs, learners became active participants in the learning process, instead of passive recipients of knowledge (Pomerol et al. 2015, 8.)

The OpenCourseWare and MOOC movements have significantly changed the way the students learn today (Rhoads 2015). Nowadays, teachers in higher education have many tools available to them. Some are more effective than others, depending on the field of study. However, there are some technologies that can be utilized in almost all fields of higher education, such as using cloud environments or social media.

Storing learning materials in the cloud makes it possible to update materials constantly and create materials collaboratively. Social media enables students to discuss with their peers, researchers and other professionals, and it can be used for many purposes, from brainstorming to polls (Matveinen et al. 2016, 119.)

Augmented reality (AR) and virtual reality (VR) are bringing other possibilities for enriched learning (Johnson et al. 2016, 40). So far, they have mostly been used for commercial purposes, but in recent years, these technologies have started to be adapted for education purposes, too.

Augmented reality enables the blending of physical and virtual objects. Users can interact with virtual objects in the physical world. With virtual reality, the user is immersed in a virtual world and interacts with objects within it, isolated from the physical world (McKalin 2014.)

Medical education especially has found successful uses for these technologies (Johnson et al. 2016, 40). Training students by creating scenarios for them can be an effective way for them to learn. The University of Maryland is using AR and VR for surgery and medical training at their "Augmentarium" laboratory (Meyer 2015). Training for nurses and paramedics was using simulation exercises with live actors long before these technologies came along. Today, the use of AR and VR enable simulation exercises that would otherwise be difficult to arrange.

Paramedic students at Kingston University London and St George's, University of London can train their skills during their studies at a clinical simulation centre. It enables the students to gain experience of emergency situations before entering working life. The students can take part in scenarios such as a road accident or a fire in a nightclub. The simulation centre uses virtual reality and 3D technology to simulate real-life situations (EMSWorld 2015.)

5.2.2 Changing ways to learn

New technologies have changed the ways that students learn today. Collaboration with other students, interaction between the participants and learning from one another has overtaken the traditional method, in which knowledge is passed from the teacher to the students. The students can interact with each other in the group, partly creating the course themselves (Pomerol et al. 2015, 6.)

Traditionally, students were given organized and planned information, but today, they have to gather information from different sources on the internet themselves and organize it into a coherent combination. As students have individual ways of learning, this shift towards independent learning is not suitable for everyone. For students with learning difficulties, gathering materials themselves can be difficult (Leppänen et al. 2017.)

The advent of new tools has made some of teachers re-evaluate the way they teach; some teachers have embraced the changes by significantly altering their teaching methods. *Flipped learning* is one of the methods some teachers are using today. Flipped learning refers to studying lectures at home and doing homework in class. Student can watch lecture at home, and in class the students can discuss the topic with their peers and the teacher.

The students take active roles, and the teacher can learn from the students as well (Pomerol et al. 2015, 9.)

The University of Eastern Finland has had a flipped learning pilot project, in which around 43 teachers developed flipped learning methods for 25 subjects (University of Eastern Finland 2016). Markku Saarelainen from the University of Eastern Finland claims that replacing traditional lectures with more active forms of studying brings improved results. Students can first study the required material, lecture videos, and pre-lesson tasks with their student peers online. The classroom sessions are reserved for analysing the data and generating new information (Ronkainen 2015.)

Higher education institutions are increasing the number of online courses that they offer due to having fewer resources and the need to save on expenses, but also to offer students more flexibility with work and family responsibilities. Blended learning combines online courses with face-to-face lectures, offering flexibility and support. Blended learning can include virtual laboratories, massive open online courses, instruction from teachers, and peer interaction (Johnson et al. 2016, 18.)

5.2.3 Demands on institutions in higher education

As the world changes, demands on new graduates also change. Rapidly shifting careers require different kinds of skillset. Employers today require graduates to be able to solve problems together in multi-disciplinary teams. However, the majority of recent graduates lack the skills to be successful, in the opinion of employers (Johnson et al. 2016, 32–33). Higher education institutions have to develop ways to equip students with new ways of thinking and working. Some institutions have taken this into consideration. They are offering programmes and curricula in which students work with peers from different backgrounds to find innovative solutions to problems (Johnson et al. 2016, 10).

Students need to adopt flexible thinking, as technology changes continuously. Recognizing the possibilities of current technology is more important than mastering all the available tools. Learning to learn using the available technologies is one of the key goals in higher education today (UNESCO 2016, 50.)

The changes in technology and pedagogy also demand that teachers adapt, too. It is unrealistic to think that teachers, with all their current tasks and limited time, could adapt

to changing technology and come up with innovative ways to teach (Ravenscroft & Cook, 2007, 212). Scott (2015, 16) states, that extending the roles of teachers to include them being a facilitator, mentor and guide, as well as a creator of learning tools, requires a whole new skillset. Therefore, teacher training needs profound change to address the needs of changing pedagogy and technology.

Teachers may lack skills in ICT tools, and they may also lack motivation and fear new technology. Training should thus also focus on motivating teachers, encouraging them to engage in using the new tools. Continuous training should include the production of online materials as well as the use of digital tools. New tools involve pedagogical issues, which should also be taken into consideration in retraining teachers (UNESCO 2016, 55–56.)

Many rapidly changing careers today demand that skillsets are continuously updated, for example, people who work with IT companies. This creates a need for those people to have continuous training. Learners can receive training from their employers or choose to study online independently. This learning is usually short-term and can take from days to months to complete.

Informal learning, such as "nanodegrees" from online learning institutions, can be helpful in careers that demand new skills are gained continuously. Blending formal and informal ways to learn imposes more demands on higher education institutions. These institutions need to find ways to validate these newly acquired skills. There is a need to develop validation systems that take informal learning into account, as some careers today are fast-paced and demand frequently updated skills (Johnson et al. 2016, 22–23.)

Students spend a lot time using digital devices, and some students suffer from addiction or feel that they waste their time online. There are recommendations for suitable amounts of screen time for children, but there are no such recommendations for students in higher education. Currently, learners themselves have the responsibility to balance their time between online and non-online environments. Institutions, however, have a responsibility to not just replace all activities with technology; they must consider the social impact of how they use technology (Johnson et al. 2016, 30–31.)

As technology enables larger audiences to study online, higher education is easily accessible to people around the world. However, access and online materials themselves will not revolutionize the education system. Being able to attend higher education requires

prior education. People also need to be able to have the time to study, as studying for a degree can take years (Matveinen et al. 2016, 121.)

In the future, higher education will be less elitist and available to more people due to having more open education. The role of higher education institutions should be to serve society as a whole and to become centres for knowledge, facilitating content production together with students and providing a centre to develop skills (UNESCO 2016, 66.)

Students today need to collaborate on worldwide political, social and environmental challenges. Collective contributions towards innovative solutions require education to address the needs of today's learners. With programmes for collaboration and networking, working toward solving problems will be easier (Scott C. 2015, 16.)

5.2.4 Pedagogy in the twenty-first century

Learning materials, including digital learning materials, always contain pedagogy. The writers' knowledge and perception of learning affect the materials. The pedagogy in schools changes along with current research about learning and psychology. Central ideas in the current trends are understanding concepts, remembering, and learning to learn. Digital materials should support students' in actively building their knowledge (Mikkilä-Erdmann 2017.)

Pedagogy today should follow three principles: personalization, participation and productivity. Personalization enables learners to have choices and control over the learning process, and lets them make decisions about their own learning requirements (McLoughlin & Lee 2008, 16–17.)

Personalization can mean that learners can use their own devices and applications. Building links between learners' everyday digital tools and the online learning environment integrates the learning experience into personalized technologies, rather than imposing an organizational system (Ravenscroft & Cook 2007, 213.)

Participation refers to students' actively partaking in the learning process, collaborating with their peers and co-creating the materials. *Productivity* implies that students have active roles in creating new knowledge and ideas. Ready textbooks have lost their place as

the only learning material, as students today create their own ideas and content (McLoughlin & Lee 2008, 16–17.)

Working on real-life problems and finding solutions along the way is an effective way to learn, and students are more likely to absorb the information with problem-based learning (Scott 2015, 2–3). In order to stay motivated, the students also need to see the connection between their studies and how their new skills will help them in working life. Through project-based learning, challenge-based learning and inquiry-based learning, students can take more active roles in their studies, finding solutions to real-life problems and also learning about how to implement the solutions (Johnson et al. 2016, 14).

Many digital learning materials that are currently available do not support the current pedagogy. Research shows that digital materials are not necessarily better than printed books: Books are easy to browse through and for creating an understanding of the whole picture. While using a digital interface, users have to browse backwards and forwards on a screen, which is tiring to the eyes and can be frustrating for users (Mikkilä-Erdmann 2017).

The advantage of digital learning materials is that they can demonstrate processes that cannot be perceived in real life. At best, they can explain models and the relationships between various concepts. A mind map instead of a traditional table of contents could help readers to navigate in the text (Mikkilä-Erdmann 2017).

5.2.5   Gamification in online learning

Gamification refers to applying game mechanics and game design into non-game contexts (Kapp et al. 2014). Gamification is one way to enhance the learning experience, and it is particularly suitable for certain types of learning, like language applications or simulations, which can otherwise be difficult to arrange. Some structural elements of gamification can, however, be used in a lot of online materials and, for example, showing users their progress can be a useful feature in any learning application.

Interactive features in learning environments improve the learning experience. As the learner interacts with the application via the interface during independent studies, it is vital that the learning experience is meaningful and positive. Learners can interact with the content, the other learners and the instructor. They all add to the effectiveness of learning (Kapp et al. 2014.)

There are two types of gamification: *structural gamification* and *content gamification*. The best impact can be achieved by applying both types of gamification to the same learning system. Structural gamification can be effective in motivating learners to study through the content through engaging users in the process and providing visual cues about the students' progress. Structural gamification does not change the content of the learning system. Content gamification changes the content of the system into a more game-like experience. The system could include story elements and activities like those that are used in games (Kapp et al. 2014.)

Game elements trigger our motivational mechanisms. For example, points provide instant positive reinforcement. Badges and leaderboards appeal to people with a strong power motive and can promote feelings of accomplishment. Progress bars give feedback and provide clear goals (Sailer et al. 2013, 28–37.)

Three main elements drive intrinsic, internally driven motivation: autonomy, competence and relatedness. When designing a gamified learning system, this can be addressed, for instance, by giving users a sense of control, rewarding them for partial study achievements, and providing ways to connect to other users (Kapp et al. 2014.)

One of the themes for current pedagogy is personalization, which gives the learner control of the learning experience. Gamification can be one way to add features to the online learning system that would add to the users' sense of control.

Simulations work well for systems that are behavioural, which means systems where the user has to do something. The content should be observational: users should be able to see if they are performing the right actions. The system should also have clear consequences, so users can see what the outcomes of their actions are. Simulations offer a low-risk opportunity to practise situations where making errors can be serious, for example flying an aeroplane. Simulations are effective in applying learning, but not as a primary learning tool. Students can effectively practise their knowledge through a simulation game, turning the knowledge they have learned into action (Kapp et al. 2014.)

The Khan Academy has been using gamification features in the online courses it offers to users. Gamification is used to increase engagement among learners. By giving constant feedback about progress and positive responses, learners' commitment is reinforced. Visualizations of progress and encouragement to advance with the process enhance the

learning experience for the students. Gamification methods can also encourage learners to take risks and support unconventional thinking. Taking risks and coming up with new possibilities is easier within game context, thus inspiring innovative ways of thinking (Sherlock 2017.)

6   Phase 2 – Know context
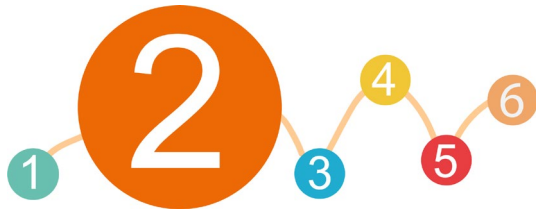
The second phase focuses on understanding the context in which the service operates. There are many affecting factors in technology, politics or organizations that influence the service. Understanding competitors' strategies and the best practices in the field is essential. (Kumar 2013, 51)

6.1   SWOT analysis

The first method for this phase was a SWOT analysis: The strengths, weaknesses, opportunities and threats of the current service were assessed. SWOT is a well-known method and can bring relevant results in an effective way. The purpose of SWOT is to create a clear general view about the state of the company to support strategic decisions (Vuorinen 2013).

The SWOT analysis began during the early stages of the project. More data was gained from the interviews and was added to the SWOT sectors. The interviews with the teachers and students brought slightly different topics to the model. The literary review also helped with identifying important topics.

The SWOT analysis showed that the Skhole online learning service has plenty of points in the strengths sector. The main strengths of the service are that it is domestic with localized materials, and it is seen as a reliable partner by the clients. The service also supports independent learning. Skhole's weaknesses are to do with the different language versions and lack of interactivity in the platform. The opportunities involve expansion into other areas of education and becoming an important partner for the institutions. The threats are mainly international or Finnish competition.

SWOT matrix with eight fields can be used to create actionable strategies (Vuorinen 2013). The strengths and weaknesses were both intersected with the opportunities and threats. The

end result was concrete strategies for supporting the opportunities, preventing the threats and minimizing weaknesses.

6.1.1 Strategies

The strategies highlight the importance of the relationship with the users, the teachers and the students who use the service. By involving the users in developing the service, some opportunities can be achieved, and the threats can be avoided.

The strategies highlight the importance of good relationships with the institutions and the teachers. Becoming a standard validation tool for the institutions could be one approach. Creating standards with the institutions is one way to strengthen Skhole's position in the markets.

Co-creation and designing together as well as having close relationships with stakeholders would give the service advantages compared to the competition, helping to prevent the threats. Fixing the shortcomings identified in the service and creating more interactivity would make use of the opportunities and minimize the weaknesses.
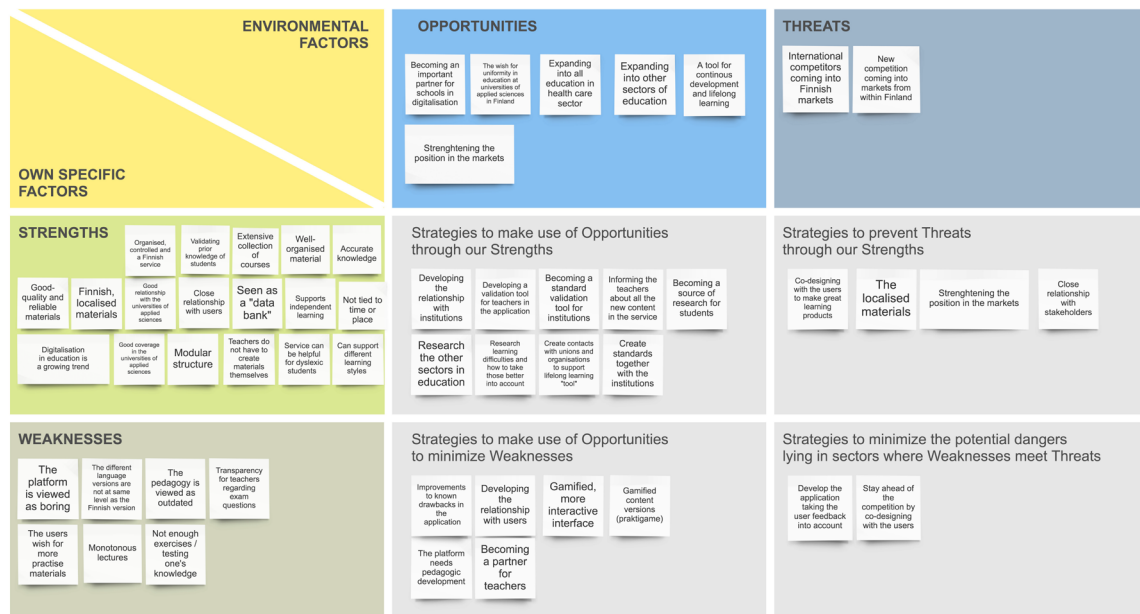
Figure 5. The SWOT model blends the strengths, weaknesses, opportunities and threats into strategies.

6.2 Stakeholder map

A stakeholder map was the second method used in this phase. It shows the different groups that are involved with the service. After listing all the various groups, their relationships and interactions with each other are analysed further (Stickdorn & Schneider 2011–2012, 150). By visualizing the relationships by scale, line and closeness, more information is available for the project team (Martin & Hanington 2012, 166). A stakeholder map is an effective way to show the connections in a visual format and to see which contacts are essential for the service to be successful.

Skhole's clients in the education sector are universities of applied sciences. Private clinics and health organizations are its clients in the continuous education sector. Skhole's service is affected by decision-makers in education and municipalities. Online learning is a rapidly developing area with vast possibilities. The market is expected to grow quickly in the near future. If Skhole develops its service together with users and education providers, it can become an important tool for teachers, establishing its position in online learning markets.
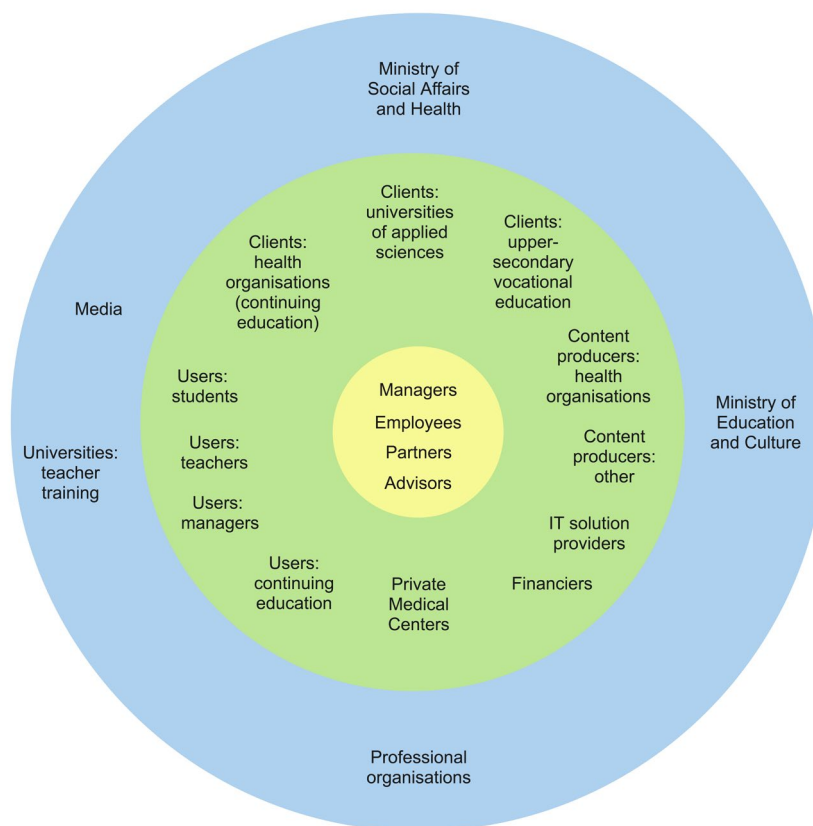
Figure 6. The stakeholder map illustrates the different stakeholders that affect Skhole's operating environment.

6.3   Benchmarking

Through benchmarking, the best practices in the industry can be examined and assessed. It is a system for recognizing the best methods and processes in the industry (Curedale 2013, 208). For this study, the focus was on interface design and gamification. As users interact with the service through a digital platform, the interface is a central tool for the user experience.

The study includes benchmarking best practices in online learning services, with the focus on interface design and gamification features. Skhole and two other digital learning services, Coursera and Duolingo, are briefly assessed.

6.3.1   Skhole

Skhole is an online learning service for healthcare education. The users are in education and continuous education. The courses are divided into lectures, which can be viewed individually. Users can see the level of completion for each course and each lecture. The user can create notes from the lectures to support their revision. The screen captures are taken from the digital service (Skhole 2018).
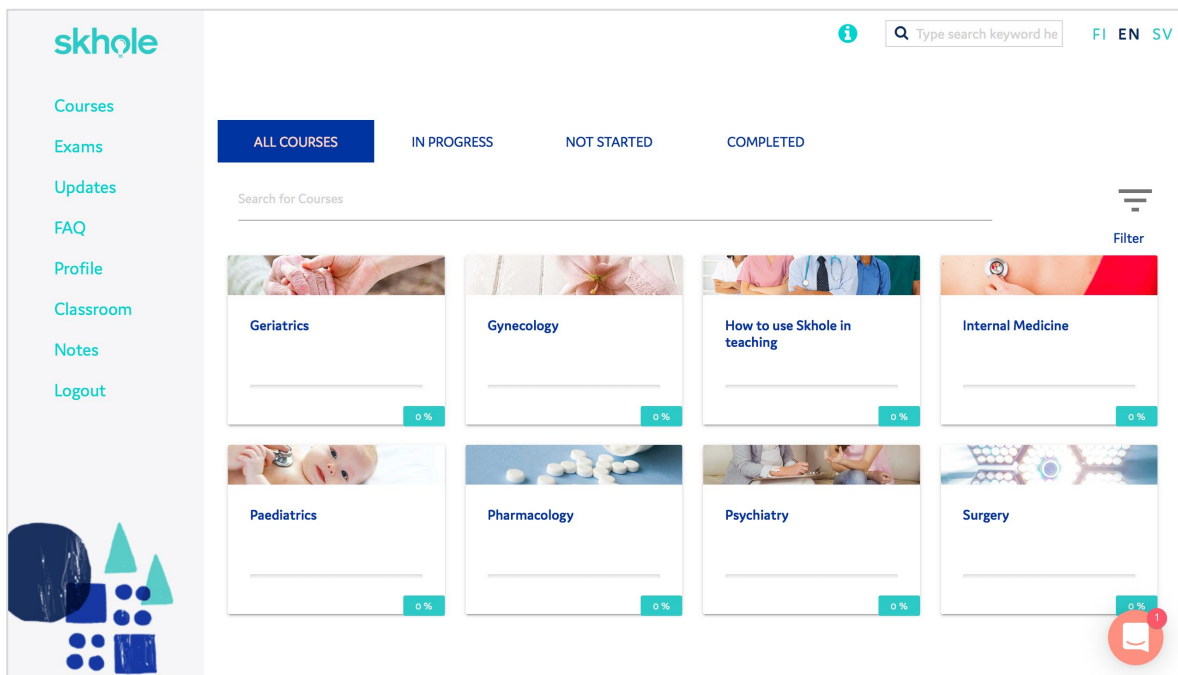
Figure 7. The courses page lists all available courses and their level of completion (Skhole 2018).

Figure 8. All the lectures under the course "geriatrics" are listed. All the viewed lectures are indicated for users (Skhole 2018).

6.3.2 Coursera

Coursera is one of the first and biggest MOOC providers. The courses are offered by many universities worldwide, including top universities. Coursera has a monthly fee, which covers the chosen courses during that time. Coursera offers a diverse range of courses, from psychology to marketing and medical neuroscience. Users can search for courses from the catalogue by topic.

On the introduction page, users can clearly see how much time is needed to take the course, the user ratings, and what is needed to pass the course. From the syllabus on the introduction page, users can see which topics are studied each week. Users get reminders via email when tasks are due. The courses include individual tasks, lectures with questions in-between, and peer evaluation for written assignments. The interface is easy to use, friendly and inspiring. The screen captures are taken from the digital service (Coursera 2017).
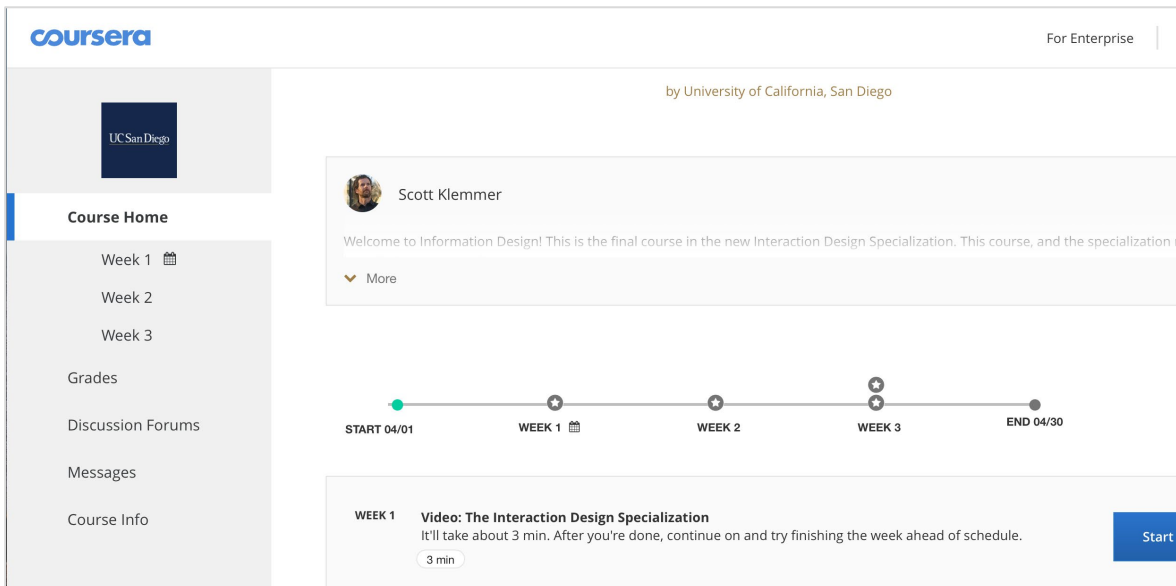
Figure 9. The course introduction page clearly tells users what is needed to pass the course (Coursera 2017).

Figure 10. The progress of the whole course is shown to users (Coursera 2017).

6.3.3 Duolingo

Duolingo is a free digital language-learning service. The lesson structure is arranged around themes, for example "clothing" or "family members". The service uses images, translation from and into the foreign language, and audio. The learning is divided into small chunks of study, each lasting only a few minutes. The screen captures are taken from the digital service (Duolingo 2017).
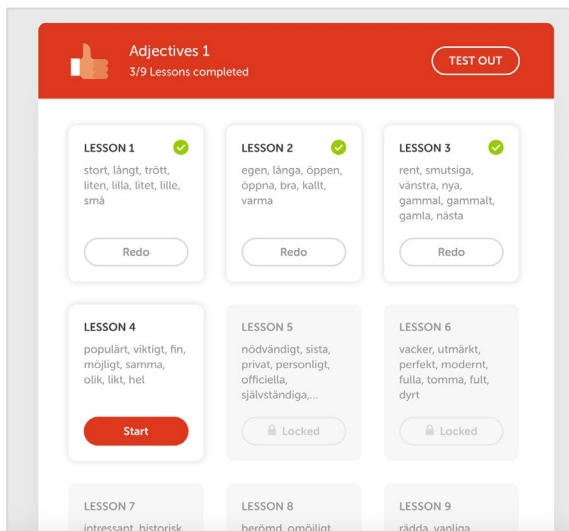
Figure 11. The lessons are divided into small, manageable chunks and are completed in numerical order (Duolingo 2017).

The progress is supported by visual and audio cues. The experience is upbeat and fun, with colourful illustrations and icons. Users receive rewards for completing studies in the game. Email reminders will be sent to users if they do not use the service according to their original plans.
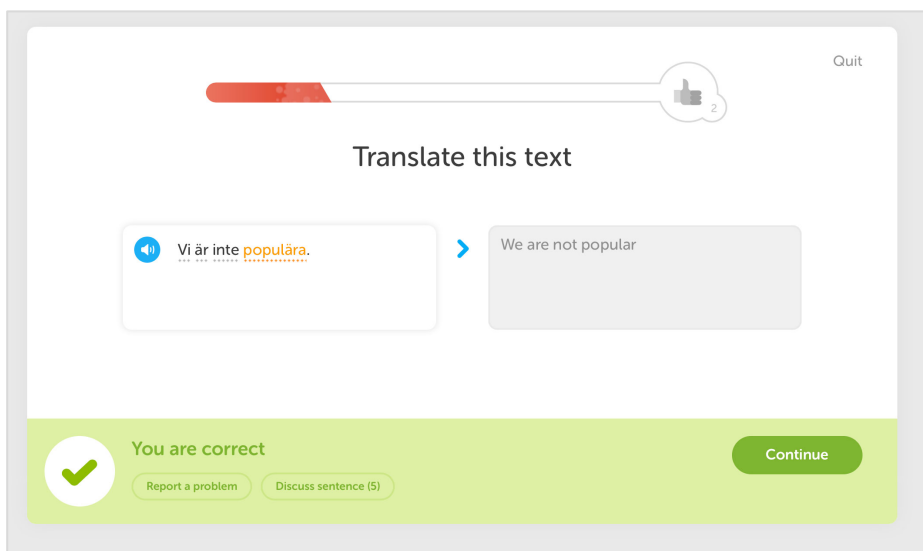
Figure 12. The Duolingo interface gives the user constant visual and audio cues about their progress (Duolingo 2017).
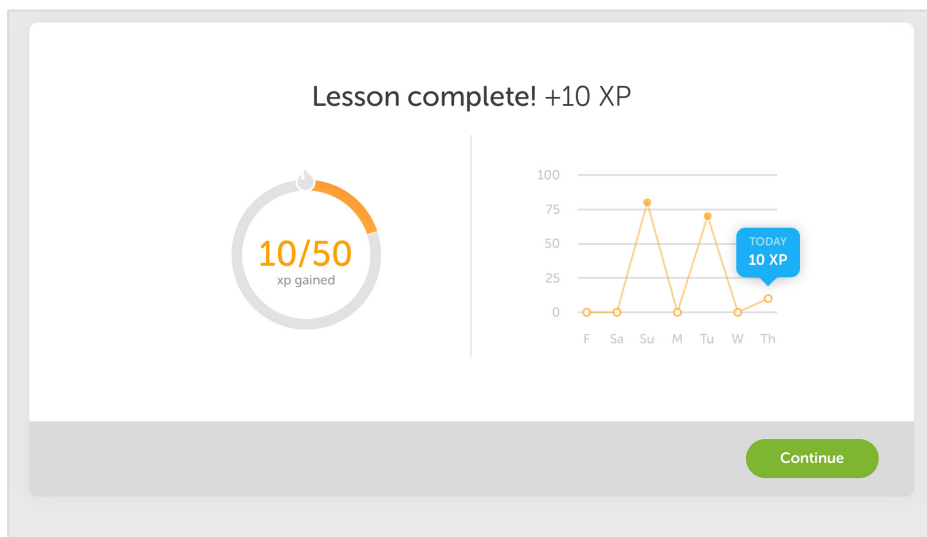
Figure 13. The user is shown statistics about their progress (Duolingo 2017).

Although the three services have slightly different uses, there are some similar features that could be used in all. All users would benefit from clear indication of progress, for example. The Duolingo service is quite heavily gamified, to the extent that some users might even find it distracting. However, as the service provider collects data continuously from users, the design decisions can be modified to suit the preferences of the majority of users.

6.4   Business Model Canvas

Business Model Canvas is a tool for describing how an organization creates value for its customers (Osterwalder et al. 2014, XVI). The canvas simplifies the organisation's main goals and can help to shift into a more service-focused business (Stickdorn & Schneider 2011–2012, 212). By defining various perspectives of the service, the relationships between the sectors and weak points can be examined further. Business Model Canvas is a useful tool for assessing a business in a user-centred manner.

Two Business Model Canvases were created as part of this study. The first was created at the beginning of the project to assess the current situation and as an aid in defining the development areas. The second canvas was created at the end of the project as a means to describe the improved service.

Project name: Skhole

Key Partners
What are your key partners to get competitive advantage?

- Health organisations (content)
- Other content producers
- Financiers
- Professional organisations
- Vocational education colleges
- Universities of Applied Science
- Governing bodies
- Advisors (expertise in health care)

Key Activities
How will you make your customers' life happier?
- Promotion of service
- Gathering customer insight
- Engaging users in service development, teachers and students
- Continuous development of platform and services
- Troubleshooting for customers
- Knowledge in health education development

Key Resources
What resources do you need to make your idea work?
- Human resources: design, pedagogical expertise, expertise in health care, developers, business
- Networks
- Physical assets (computers, software)
- Intellectual property

Key Propositions
How will you make your customers' life happier?
1. Universities of applied sciences in Finland, adult education
2. University of applied science, youth education
3. Upper secondary vocational education (new)
4. Teachers
5. Managers (continuing education)
6. Professionals in continuing education:
   - Updating skills
   - Developing in her job

All students:
- Study during summer
- Study whenever, wherever
- Graduate faster

All users:
- Accessibility: universal application
- Simple UI
- Easy use of platform
- Assistance in using the service
- Acknowledge different needs and user types for service

Customer Relationships
How often will you interact with your customers?
Clients: Personal service through Account Representative and Community Manager (new)
Users:
- Technical support
- Automated service through Q&A section
- Personal customer service through email
- Community Manager (new)

Channels
How are you going to reach your customers?
- Clients: Through Account Representative and Community Manager (new)
- Users: Some compulsory use during the studies
- Referral through user
- Facebook

Customer Segments
Who are your customers? Describe your target audience in a couple of words.
1. Universities of applied sciences in Finland, adult education
2. University of applied science, youth education
3. Upper secondary vocational education (new)
4. Teachers
5. Managers (continuing education)
6. Professionals in continuing education

Users:
- Students
- Teachers
- Managers

Cost Structure
How much are you planning to spend on the product development and marketing for a certain period?
- Financing acquisitions, strategic partnerships, team growth
- Website development and maintenance costs
- Premises derived costs
- Marketing costs
- Human resources costs
- Administrative costs
- Content producing costs

Revenue Streams
How much are you planning to earn in a certain period? Compare your costs and revenues.
- Clients: x eur/user/month
- Recurring revenue from ongoing payments

Figure 14. A Business Model Canvas was created at an early stage of the project.

6.5   Service blueprint

The service blueprint model can be used to develop new services, to analyse the process of the service, or to identify improvement areas for an existing service (Tuulaniemi 2011, 212). A service blueprint is beneficial in showing all the aspects of the service and process.

The first service blueprint was created to discover how the current service works and to find some improvement areas. It describes the actions of two customer types: a student at a university of applied sciences and her teacher. To find improvement points between the two users, they have been placed in the same document. The improvement points focus on feedback about the content and the information that the teachers receive about the students' use of the service.
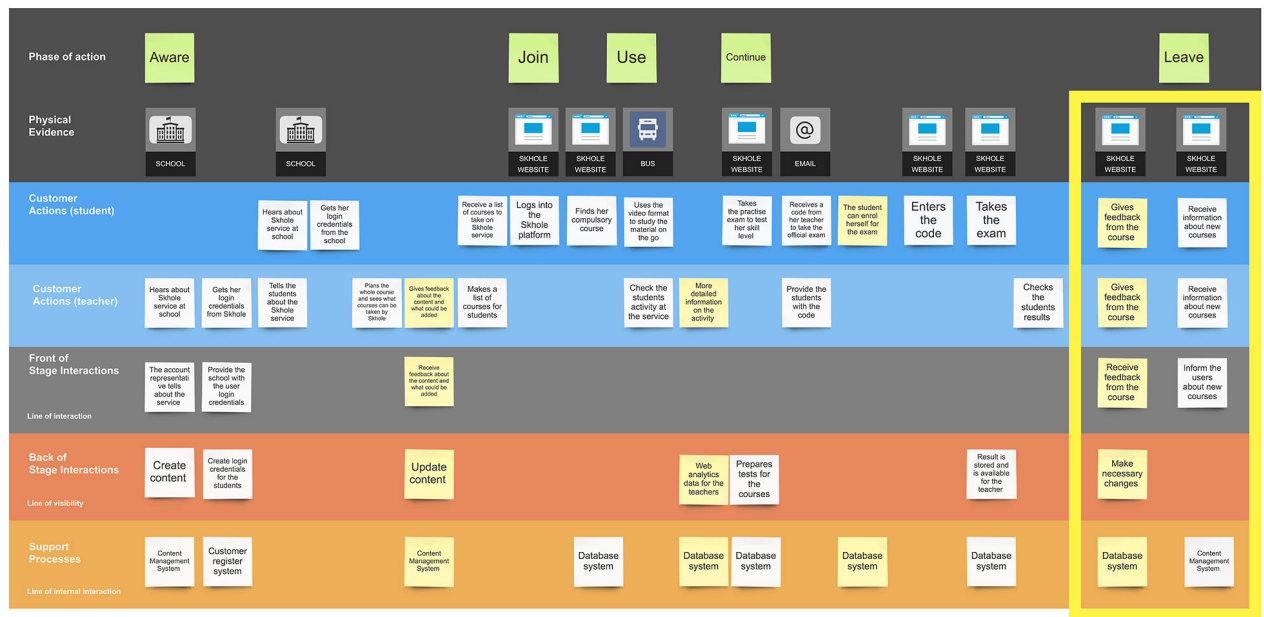
Figure 15. The service blueprint created in the early stages of the project. Improvement suggestions are highlighted in yellow.

7   Phase 3 – Know people

The "know people" phase is an essential part of a user-centred design process. This phase focuses on empathy and is based on people's needs and patterns of behaviour. The idea is to gain understanding of people's problems, tasks and motivations so that genuine value for the users can be created. (Kumar 2013, 51)

Interviews are a primary research method for collecting user experiences and are a suitable way to gather information on users' attitudes and opinions (Martin & Hanington 2012, 102). The main goals for the interviews were to gather information about the customer segments, to collect customer experiences about the current service, to find out how digital services can support professional development, and to seek possible unmet user needs that the service could provide help with.

The interviews were conducted over the phone. They were conducted in a conversational, friendly tone with open-ended questions. Each interview lasted around 30 minutes, and for that duration, ten questions was a suitable amount.

The interview structure had three parts: The first part was designed to gather knowledge about who the user is, to help building knowledge about the teachers and students customer segments. The second part focused on the users' tasks and problems in their work or studies. In this section, it is possible to find improvement areas for the service or identify unmet needs. The third part aimed to discover the users' views and experiences of digital tools and technology, how they use Skhole, and their experiences of the current service.

After creating the transcripts, the material was reduced and summarized. Each interview was reduced by paraphrasing the participant's ideas about the most important themes. The reduced data was then combined and summarized under key themes.

7.1   Interviews with the teachers

For the customer segment of teachers at universities of applied sciences, six teachers were interviewed. The teachers have been teaching at universities of applied sciences between four and 18 years. Some of the teachers are also representatives of the Skhole service at their universities of applied sciences.

They teach many different subjects: surgical nursing, acute nursing, drug prevention, general care, human development, promotion of health and wellbeing, pregnancy, labour, children's nursing, sexual health, clinical nursing, pharmacology, first aid and public health. The students taught by the teachers are youth students and adult students. The languages of the tuition are Finnish, Swedish and English.

As well as teaching, the teachers' work involves other tasks regarding the students: supervising practical training, supervising thesis work, and going through the students' work. Other tasks for teachers include administrative tasks, planning, going to meetings and communicating through email.

Digital pedagogy requires the teacher to do plenty of work as well. Planning and administering the online learning, developing online tools and creating new video materials are some of the tasks of teachers these days.

All the teachers say that their work is very fast-paced. They say that cuts in resources cause the biggest problems, as there are fewer people to do the same work. Some of the teachers say that they have to work overtime continuously, and some of them find the amount of work difficult to control. The teachers have to be well organized in order to be able to manage. Organizational changes and new IT systems also result in extra work for teachers.

Some of the teachers are concerned about the consequences of the cuts in resources. The quality of the education cannot drop even if resources have been cut, due to the importance of nursing work and patients. Resistance to change among fellow teachers can slow down processes, and teachers mention that as one of the challenges.

7.1.1   Changing environment in the universities of applied sciences

These days it is normal to have large groups of 60 or 70 students, which the teachers mention as one of the problems. The ways that students progress with their studies have changed as well, as groups can study their courses through combined local and distance learning. Some students come from other institutions and have their own study paths. They want to receive partial credits for courses they have studied elsewhere, and they have to demonstrate the knowledge that they already have. That causes extra work for the teachers. Some students progress quickly, while others may take some time out for e.g. maternity leave and then return. All in all, the variety of students and study paths have increased.

The changing world requires new skills from teachers. The ability to change and to innovate are among today's requirements. One of the teachers interviewed states there has been a big change in teachers' work since he started ten years ago. Planning and administering online learning take a great deal of time. Classroom sessions have shrunk to a quarter of what they used to be. Teaching has changed from traditional teaching methods to providing students with other tools and ways to learn. Digital learning tools and more traditional teaching methods need to be combined into a suitable blend by the teacher.

Timekeeping and organizing skills are mentioned as essential in the interviews. The professional attitude of colleagues in the same department is mentioned as one of the

things that helps teachers in their work. One teacher emphasized the importance of the foundations of the UAS schools. A good set of rules and instructions, following good practices and broad co-operation with all stakeholders supports teachers' work.

7.1.2 Learning digital skills

One of the tasks that supervisors and teachers face today is choosing digital tools for universities of applied sciences. It can be a big investment for the institution and requires expertise in technology and digital pedagogy. The teachers' skills with digital tools vary. It is clear that all the teachers realize the necessity of continuous learning about the various digital tools available today. One teacher states that she is not an expert in IT, but is willing to learn the digital tools needed in her work. One of the teachers is a digital mentor at her institution, and another is training to become one. Digital mentors support their colleagues in issues related to digital tools. The teachers also assist the students' in using digital services. The IT support teams at the institutions do not necessarily know about all the digital services.

One teacher states that teachers should have an open mind about finding new tools, but should also be critical about which ones to adopt. In his opinion, though, good tools exist, and they are helpful. He thinks that students should be the focus, and learning should be observed from that perspective.

Some of the teachers create their own online lectures and videos. One teacher states that she is involved in a lot of digital developments, such as developing online tools and creating new video materials. They are not necessarily projects, but part of a continuous process. She regularly tries new services, and digital tools are used in all her courses. There is plenty of material on the internet, but it all has to be reviewed to ensure the quality, which is time-consuming, according to the teachers. Some of the teachers prefer digital materials as they are easy for students to access. Students may not be required to buy books for certain courses.

7.1.3 The use of digital tools

In the teachers' opinion, there are a good number of useful tools. One teacher lists tools that he considers mainstream: Moodle, Padlet and Kahoot! He feels that pedagogy today

demands all of these tools. Padlet in particular is helpful in distance learning and in getting students to participate. He thinks that Skhole belongs in the group of mainstream tools.

One teacher describes creating a video with Adobe Connect, a web-conferencing application that allows you record your meetings. Smartboards are also used in creating learning materials. Lecture slides can be created with Microsoft PowerPoint, and audio can be added to the material.

The students study together as a group via collaborative tools online. Competitions and quizzes can be created, and students can take part in them with mobile devices. The teachers have to be clued up to which digital tools the young students use in their private lives. One teacher said that this is what makes online learning possible.

7.1.4 The benefits of the Skhole service

Some of the teachers stress the importance of teaching the same information at all universities of applied sciences. UASs do not all use the same books; the course material may be based on a particular book, and therefore there may be differences in course content between institutions.

Good material should be available so that teachers would not have to create it themselves. The Skhole service is one solution for this need; it could support uniformity in the education across universities of applied sciences in Finland. One of the teachers states that one of the main reasons for choosing Skhole for their UAS was that it is organized, controlled and a domestic service. Another teacher mentions the content of the medical lectures as the main reason. Previously, a doctor or a psychiatric nurse would give the lectures. Today, the teachers pick the courses that their students will study through Skhole. The exam questions are integrated so that some of the material needs to be studied through Skhole. Taking a course could give a student one study credit, for example.

The teachers think that the service idea of Skhole is very good and convenient for the UAS schools. Not having to book lecturers for students saves time and effort for the teachers. The Skhole service, which can be used anytime and anywhere, is useful for the students, and it supports digital pedagogy and andragogy (adult learning). Other good points that the teachers also mention about the service are its potential for helping dyslexic students in

their studies, and the chance to validate the students' prior knowledge is also mentioned as one of the good points of the service.

One teacher explains that Skhole is good for guiding the students towards independent learning, and the teachers then test the learning through exams. Another teacher describes the main purpose of the Skhole service as being to provide accurate knowledge.

7.1.5   Areas of improvement for the Skhole service

The teachers who use the Swedish or English versions of Skhole stress the importance of having all the materials in all the language versions. One teacher uses both the Finnish and the English services, as he teaches student groups in both languages. Having two different levels of service causes a lot of inconvenience for the teachers, so he would like the two versions of the service to be exactly the same, with all the same content and features.

One teacher explains that that due to lack of time, she is not aware of everything available through Skhole. She quickly skims through the text versions of the courses. She finds it problematic that she cannot see which questions will be in the exams and would like the possibility to view the exam questions. If she is creating an exam in Moodle, she wonders if the questions are too similar to the course exam questions in Skhole. Another teacher would like to have more possibilities for the students to test themselves.

One teacher says that in Skhole, the subjects of internal medicine and surgery are in the same course unit. As it is a vast subject area, she feels that some areas are too demanding in the early stages of the studies. She would find it more beneficial if the teacher could choose which areas the student would study at each stage of the studies. For example, she would like the students to study 15 out of 30 lectures in the first year of the studies, and the rest later on. She also feels that sometimes the subject areas overlap, and the students might not have knowledge of the subject yet.

Currently, the main purpose of the Skhole service is to provide accurate information. However, one of the teachers feels that PowerPoint presentations combined with audio is an outdated approach, even if the information itself is proficient. Pedagogically and didactically, the service could be improved a lot, in his opinion. Another teacher suggests that Skhole would benefit from having images or illustrations added to the lectures to clarify the concepts.

Other teachers also hope for a more inspiring interface with interactivity and feedback for the user. One teacher says that classroom sessions would be the best way to learn many areas for the students. Skhole should have something extra to make it more interesting for the students. When you are watching the videos, even ten minutes can be a long time. It can be difficult to concentrate for a long time in her opinion. Dividing the lecture into smaller sections would improve the experience for the students. Interactivity in the lecture and animations livening up the lectures would bring additional value to the student.

7.1.6   Gamified learning

Most teachers would like more interactive lectures. Gamifying the Skhole service interface could be advantageous for the current generation. There are many online learning games available, and they are used by some teachers. Teachers say they make their own learning games with the aid of certain tools, without having to have skills as a developer. One teacher believes gamification can be beneficial in many ways, when it is used well. It is helpful with large student groups as a participating method and can be used to support online pedagogy.

One of the teachers was involved in testing the gamified Skhole service pilot with his students. According to him, Praktigame is a good opening for simulated learning games. It is one solution for learning based on case study scenarios. These scenarios have always been a method of teaching nursing, and when the UAS schools had more resources everyday practice included patient simulations with an actor where the students had to attend to the patient.

The teacher believes that this kind of workshop learning is indispensable for the students. For example, the students need to learn how to take the patient's blood pressure. As there are a great deal of skills to learn, it is impossible to go through them all during the few contact lessons. The students learn skills such as situational awareness, decision-making, controlling the task and teamwork through learning based on case study scenarios. Also, meta-skills of nursing – ergonomics, standard precautions for asepsis, skills in guiding patients and professional interaction – can be practised through the cases. Through studying and playing the gamified version of Skhole, students can learn realistic evidence-based care instructions.

The teacher thinks that the disadvantage of Praktigame is that it is too far behind the look and feel of current videogames. If the simulation learning game had the same quality and graphics as current videogames, then it would be real gamification. However, game development is expensive. The idea of Praktigame is good, but there is room for improvement. New games keep coming, and he thinks that perhaps in five years' time we will see a true gamified service, which could perhaps be presented as a patient's journey.

7.2 Interviews with the students

To find out about the students' experiences with the service and to gather data for the personas, five students who had been using Skhole for their health education courses were interviewed.

The students were between the ages of 21 and 30 and they are studying at four different universities of applied sciences. Most of them are studying to become nurses, but one student is studying to become a paramedic. The students are at different stages of their studies, but all of them have used Skhole during their studies.

The students explain that their studies consist of contact studies, group work and independent studies. The studies include theory, laboratory studies and simulation exercises. There are also seven to eight nursing placements within the three years of study. Each period is about four to five weeks, and it is three-shift-work. The teacher supervises the work on-site.

7.2.1 Changing environment in universities of applied sciences

All of the students mention that biggest challenge in their studies is the lack of a sufficient amount of contact lessons. They also discuss the problem of having large groups of students. One student says that she chose the daytime study mode for the classroom sessions, but she feels disappointed since the studying has changed and there are too few contact lessons these days.

Another student finds it rather alarming how few contact lessons there are in the field of nursing. People have very different ways of learning; she says that she herself learns best by being taught during contact lessons and not by looking for information herself. She

feels as if the current methods do not support her learning. In her opinion, there should be more workshops focusing on learning nursing skills, with more one-on-one guidance.

7.2.2 Challenges in studying

All of the students describe their studies as very demanding. The amount of information the students have to take in is very large. For example, the area of internal medicine and surgery required a lot of information to be absorbed in a short time, as one of the students explained. At times, there are too many assignments and exams at the same time; timekeeping and scheduling can be difficult for the students.

Some parts of the studies are more interesting than others. It is easier to study interesting areas, but areas that are not so interesting have to be studied as well. The students have to push themselves to get through all of it, so perseverance is needed. The students mention that it can be difficult to get hold of the library books, as a lot of students require them at the same time. Other challenges that the students mention are social events and social media getting in the way of their studies. Group work with other students can also be demanding at times, as the students are scattered around Finland, and online collaboration tools do not always function properly.

The students say that motivation, determination and interest in the subjects are needed in their studies, and they stress the importance of taking time to relax between bouts of studying. The support of friends and family is helpful, and support from peers is also important in the students' opinions – the students help each other out during the studies.

7.2.3 Different ways of learning

All of the five students have identified their optimal ways of learning. Some of the students play a lot of games, and one student reports that he learned English through playing videogames. Those students enjoy gamified content learning. Some students identify themselves as pragmatic people and find theoretical studies challenging. They would like to be taught during contact lessons and not have to look for information themselves. They learn by going through things in practice, for example in the laboratory. They wish for smaller groups in teaching as it is difficult to practise in big groups. Some of these students find that reading requires extra concentration.

Some students learn effectively through listening to the audio. The students who think that a traditional lecture supports their learning style find the Skhole service beneficial. One student thinks that real-life cases are good, as the information stays in the mind more easily. Another student prints out all the text and reads the printouts. If the topic is difficult, she will view the slides for that particular section, to have the images as support.

7.2.4 The use of digital tools

The students have varied opinions about the use of digital tools in their studies. Some students approve of the new ways of learning, but some voice strong critiques against it. One student describes her teachers as very competent and enthusiastic people, but also as being very traditional, with a long history of practical work in the field. She cannot see why 40- or 50-year-old people should have to start building games online. She feels that they could provide great contact lessons, but they do not get the chance to give them.

Another student says they have used Baby Baker from Sanoma Pro for training for childbirth and delivery. She found the game interesting, and she enjoyed the learning experience. Through playing the game, she learned about how to treat same-sex couples during childbirth and how to deal with English-speaking patients. She learned how to check the position of the baby and about what to do if somebody goes into labour on an aeroplane. However, she criticises the lack of real practice, and in her opinion, a game cannot provide adequate knowledge.

One student says that she does not use computers much in her private life. She uses the platforms that the studies require. She mentions that one teacher has used Padlet in her classes. She does not like this type of studying at all, and would rather have a simple way to learn. She feels that people do not know how to use these systems. She understands that this type of studying will become more common in the future though.

One student explains that her teacher makes tests in Kahoot!, and the student group has competitions for who gets the most right answers. Other platforms mentioned by the students are Moodle, Yammer, WinhaWille, Duodecim Oppiportti and Terveysportti, and Medic database.

7.2.5   The benefits and areas for improvement for the Skhole service

All the students find the Skhole service beneficial. The students view Skhole as a support tool. They describe the service as a databank where you can study lectures in video, audio and text form. One student describes Skhole as a virtual school or lecture theatre. The advantage of the service is the extensive collection of courses on each subject. The students feel that the material is organized well, and the information is easy to find.

One student says the notes feature in the service is useful for gathering material. He uses the service to search for information and check for references. He also mentions the self-tests as a useful tool.

Some students feel that the content of Skhole is aimed more towards doctors than nurses. The students would like to have more real-life cases, preferably from the point of view of a nurse instead of a doctor. The service could ask how the student would deal with the situation, and how they would care for the patient in that situation. These kinds of cases require real use of knowledge, instead of just remembering information. The cases may be obvious to some nurses, but for recent graduates, they may be things that they have never come across during their studies. The students would also like to have more exercise tests and more questions. One student mentioned that she would like to see the person speaking in the lecture video.

7.2.6   Future use of Skhole

In the students' future jobs, Skhole could be part of continuous studying or extra training. The students say that Skhole could work as a good tool for supporting the memory at workplaces. They could use the service for checking some detailed information, as the material is well arranged, and the information could be acquired when needed. One of the students says that this kind of information checking is already happening in hospitals, as the amount of information is so vast and the recommendations for care change in line with new research. The nurses need to use reliable sources, of course. At the moment, they use Terveysportti, for example.

Usually, recent graduates provide new information to hospitals, as they have the latest knowledge as the field is continuously progressing. The students suggest that nurses who have been working for a while could update their knowledge through Skhole, for example

regarding new research. Skhole could also be used to validate knowledge in workplaces, as suggested by one student. He had to take an exam to prove his knowledge of medicines and their use, and passing the exam was a requirement for employment.

One of the students dreams of working in an ambulance. She would like to use the service in her work, for example to quickly check some information on the way to see the patient. She compares it to Terveysportti and says that in Skhole, the information is easier to find. The students would find it very beneficial if they had continuous access to Skhole. A portal that would include all the illnesses and their care would be really useful. Information that can be quickly accessed would be useful in the students' opinion.

8   Phase 4 – Frame insights

In the "frame insights" phase, the study moves from research and collecting data into turning the data into insights. The collected information is organized, analysed and visualized, and patterns are recognized. All the examined data can then be evolved into new innovation opportunities (Kumar 2013, 130).

8.1   Observations to insights

An insight is our interpretation of the material we have gathered; our understanding of the inner meanings and motivations of people. The insights can be surprising and concealed. Interpretation is made by asking the question "why?" (Kumar 2013, 139)

Bringing the information from research to the design process helps the designers to base their decisions on real data. Affinity diagramming is an inductive method, meaning that the notes are first gathered into clusters, and only after that they are given themes or categories (Martin & Hanington 2012, 12).

For the "observations to insights" method, all the interview material with the teachers and the students was reviewed. The group of teachers and the group of students were examined separately. The interview transcripts were gone through, and individual observations were written on sticky notes. Each interview created around 20 to 40 observations.

The sticky notes were clustered together into groups with similar needs, motivations and problems. After all the notes had been placed, the clusters were given names. Each cluster and the sticky notes within it were then examined more thoroughly, asking the question "why?" The purpose was to discover the essential meaning behind the observations. Some insights were similar to what had come from the interview summary. But some insights appeared with this method that were not clear from the written summary. The insights will be used in the next stages, "Explore concepts" and "Frame solutions".

8.1.1 The teachers

In the teachers' group, the themes of lack of resources and demanding workloads of the teachers arose. The change seems to be a permanent state in universities of applied sciences. Some teachers seemed to embrace the challenge, while others viewed the situation with some distress.

The insights that arose from the affinity diagram were that the teachers need to continuously update their skills related to new digital tools. They have to know about young people's current use of smartphones, what apps they use, and so on.

Pedagogy today demands that digital services be used as part of teaching methods. For teachers, creating their own material is time-consuming, but on the other hand, the digital services can save them time. All in all, it seems that the best results are achieved by combining old methods with new ones. Contact lessons are still the best way to teach some skills, but digital services can be a great tool for independent studies.

The teachers have to continously develop the digital learning methods	The teachers give and need support in digitalisation	Todays pedagogy demands digital services	It is difficult to predict what is yet to come
Creating digital learning material is time consuming for the teachers	The teachers have to stay clued to what services are available	The materials define what is taught at each course	The continuing change is confusing
The digital services help teachers at their work	The teachers have to stay clued to to what services the young people use in free time	The same materials could ensure uniformity between institutions	
Some subjects demand contact lessons	The best result is achieved by combining contact lessons and digital services		

Figure 16. The 13 insights for the teachers that emerged during the affinity diagramming.

8.1.2   The students

The students also seemed quite overwhelmed by the amount of studies they had to complete. All of the students would have liked to have more contact lessons. They worried about remembering everything they had to learn and knowing the practical skills after graduation.

The students felt that the teaching does not support different learning styles, even though there are great variations between different ways of learning. The students had all discovered their own optimal ways to learn and had tried to find ways to support their own learning styles.

The students had varying attitudes towards digital learning tools. An insight that came up in both groups – among the teachers and the students – was that some skills cannot be learned independently. Another insight that came up in both groups is that digital services are viewed as a great tool when used alongside other teaching methods.
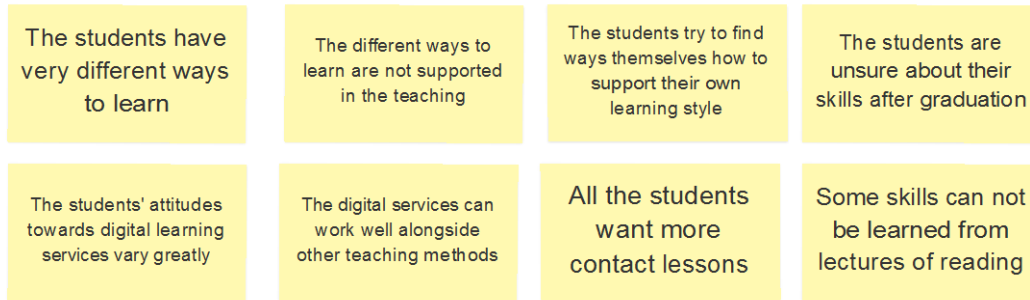
Figure 17. The eight insights for the students that emerged during the affinity diagramming.

8.2   User group definition

The user group definition method helps to define the user groups and to decide which are the most relevant to the project. Attributes relating to the users are gathered from the research material. The most important attributes are chosen, and two attribute scales are created (Kumar 2013, 177).

Placing the user types on the map and deciding which user group the system should be designed for helps the design team to make decisions based on research (Kumar 2013, 177). This method is also the foundation for the customer profile for the value proposition in the "explore concepts" phase.

For the user group definition, the focus was on the students' user group. The two most important attributes that were chosen were the students' attitudes to digital tools and their preferred style of learning. The horizontal attribute scale "uncomfortable with technology" versus "comfortable with technology" evaluates the students' attitudes towards technology. The vertical attribute scale "independent" versus "supervised" measures the students' preferred style of learning. The four areas of the map are defined as user groups and are given descriptive names.
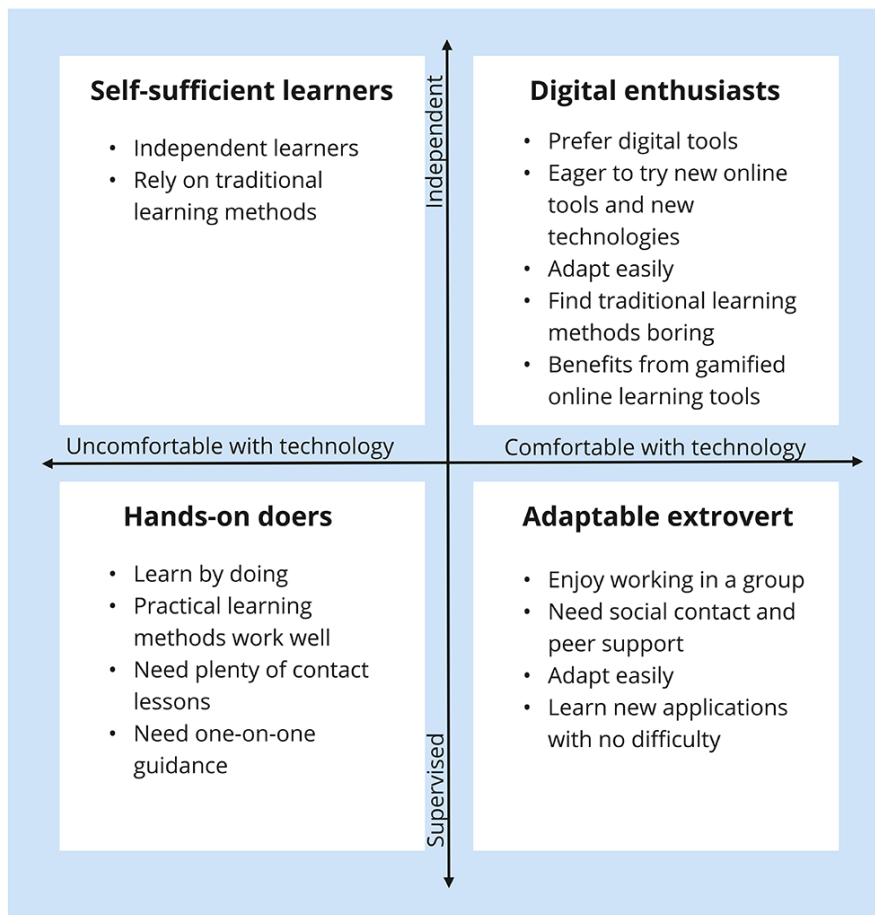
Figure 18. The four user groups and their characteristics.

8.2.1 Self-sufficient learners

Self-sufficient learners are independent in their studies and can study materials on their own without difficulty. They are not keen on using digital tools, relying more on reading and making notes from lectures.

8.2.2 Digital enthusiasts

Digital enthusiasts prefer using digital tools for their studies, and they are eager to try new digital tools and methods. They find it easy to learn new applications and benefit from gamified learning tools.

This user group can find traditional learning methods boring. They might have difficulties focusing on their studies and get distracted easily.

8.2.3 Hands-on doers

Hands-on doers learn by doing. They appreciate lectures where the group is taught by a teacher. They need contact lessons and suffer from the cuts in resources and large student groups.

This user group is sceptical or even opposed to digital learning tools. They do not see the benefit of games online, online group work or gamified learning services. They are pragmatic and would like simple teaching methods, with plenty of workshops, discussions and one-on-one guidance.

8.2.4 Adaptable extroverts

Adaptable extroverts enjoy working with other people and benefit greatly from contact lessons and doing things together. They are comfortable with technology, but crave social contact and peer support. Users in this group are adaptable and can learn new applications with no difficulty. However, they would rather not have to do all their studying through digital tools, preferring to combine face-to-face lessons with digital tools.

8.3 Value proposition design

The value proposition design tool was used for this study to invent new value propositions and to improve the old ones. This involves creating customer profiles for the students and teachers user groups to refine the customer understanding. The value map describes how the product creates value for the user. Subsequently, those two documents are compared to see which parts match in order to discover which features would bring the greatest value for users. This is helpful in designing new features for the service (Osterwalder et al. 2014, 60).

The two user segments that were selected for the value proposition design phase were teachers and students in youth education at universities of applied sciences. The customer profiles were created based on the previous phases.

8.3.1 The customer profiles

All of the student and teacher profiles were reviewed, and suitable labels were created to represent the most common jobs, pains and gains of both customer segments. One master profile was then created for each of the two customer segments, which joined all the different user types into one profile per customer segment (Osterwalder et al. 2014, 116-117).

In order to create the customer profile for students in youth education and teachers, the insights from the previous phases were reviewed. The method "user group definition" was also helpful as a starting point for the customer segment of the students. The jobs were arranged according to how important they are to the customers, the pains according to how extreme they are, and the gains to how essential they are (Osterwalder et al. 2014, 21).
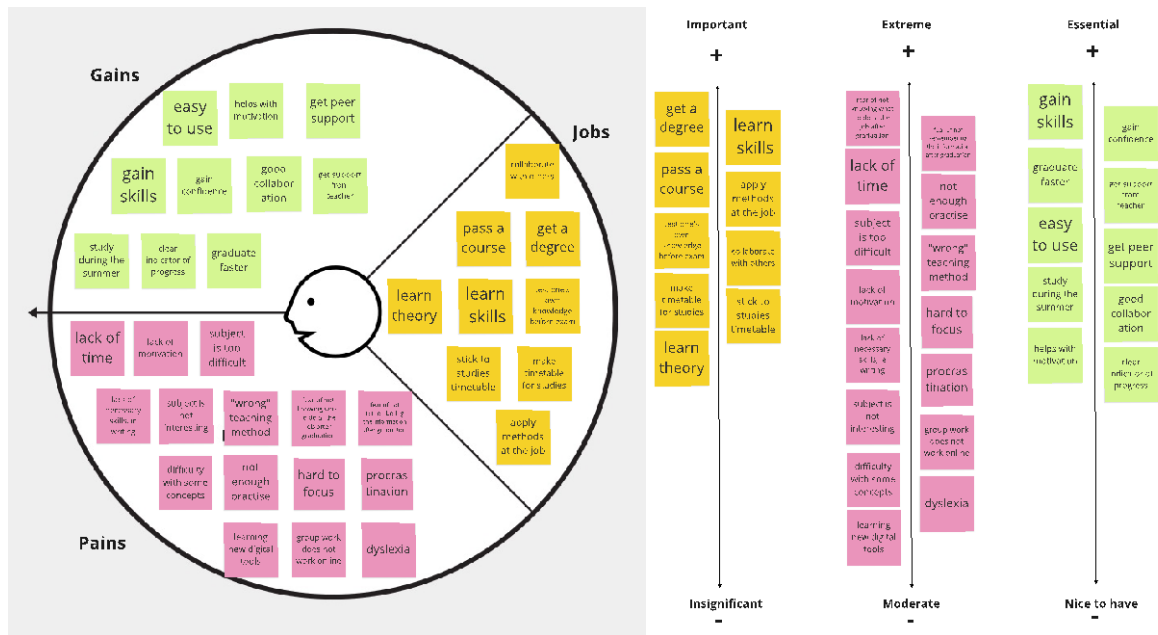
Figure 19. Master profile and ranking of jobs, pains and gains of a student.
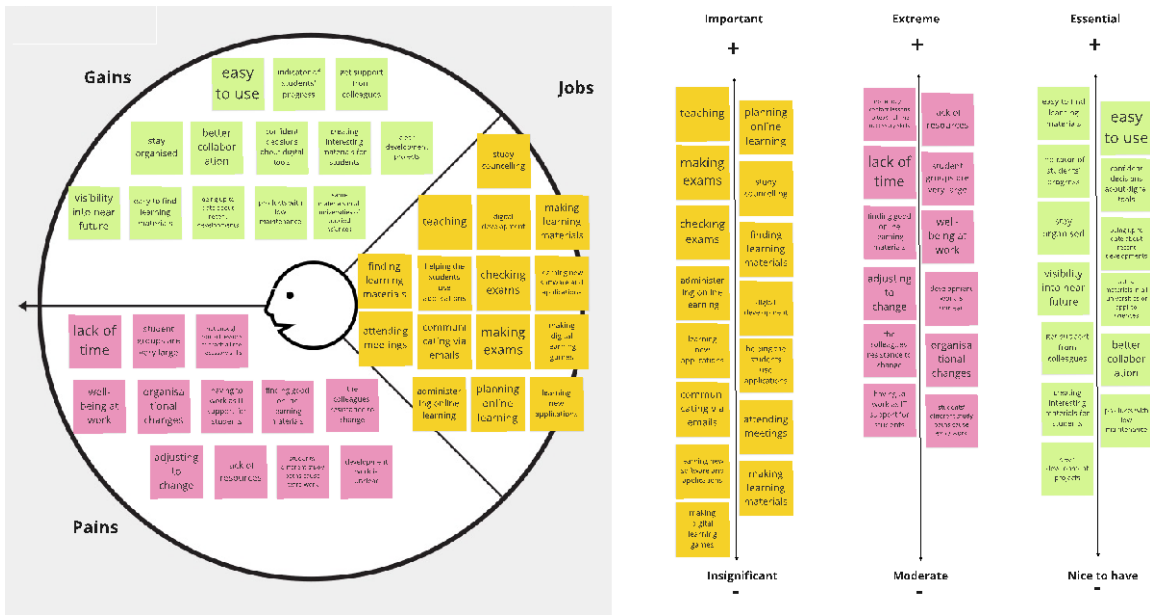
Figure 20. Master profile and ranking of jobs, pains and gains of a teacher.

8.3.2 Value proposition map

A value proposition map shows the products, pain relievers and gain creators that are important to users (Osterwalder et al. 2014, 34). The map in this research was drawn to include the existing value propositions of the Skhole service.

After the products, pain relievers and gain creators were placed on the map, they were all arranged according to how important they are to the customers.
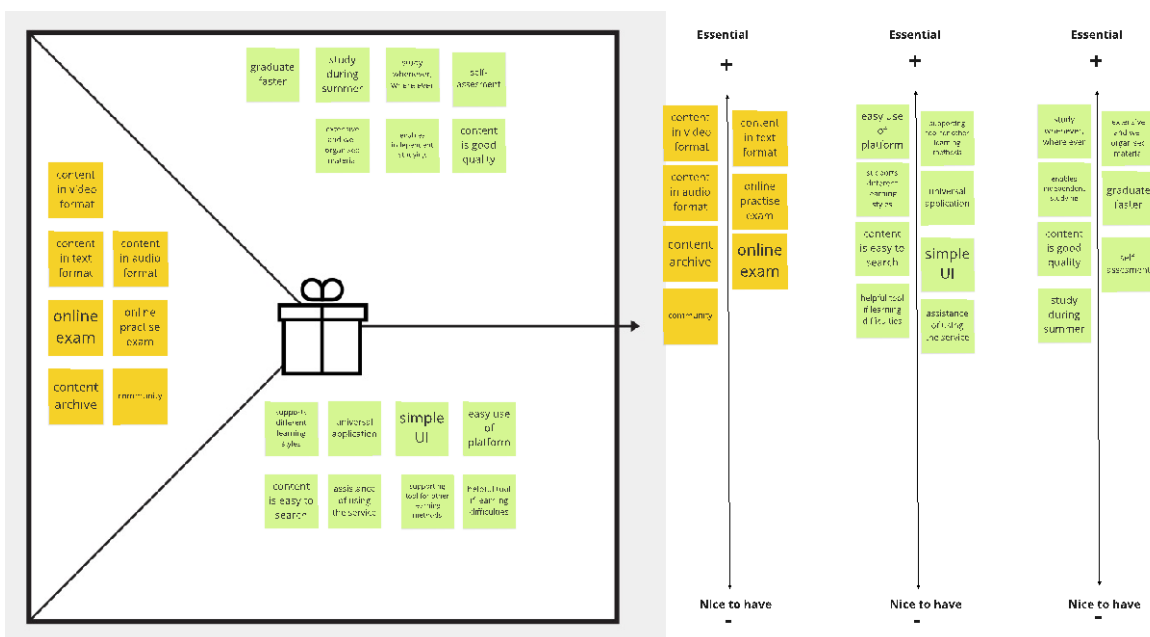
Figure 21. Value proposition map of a student.
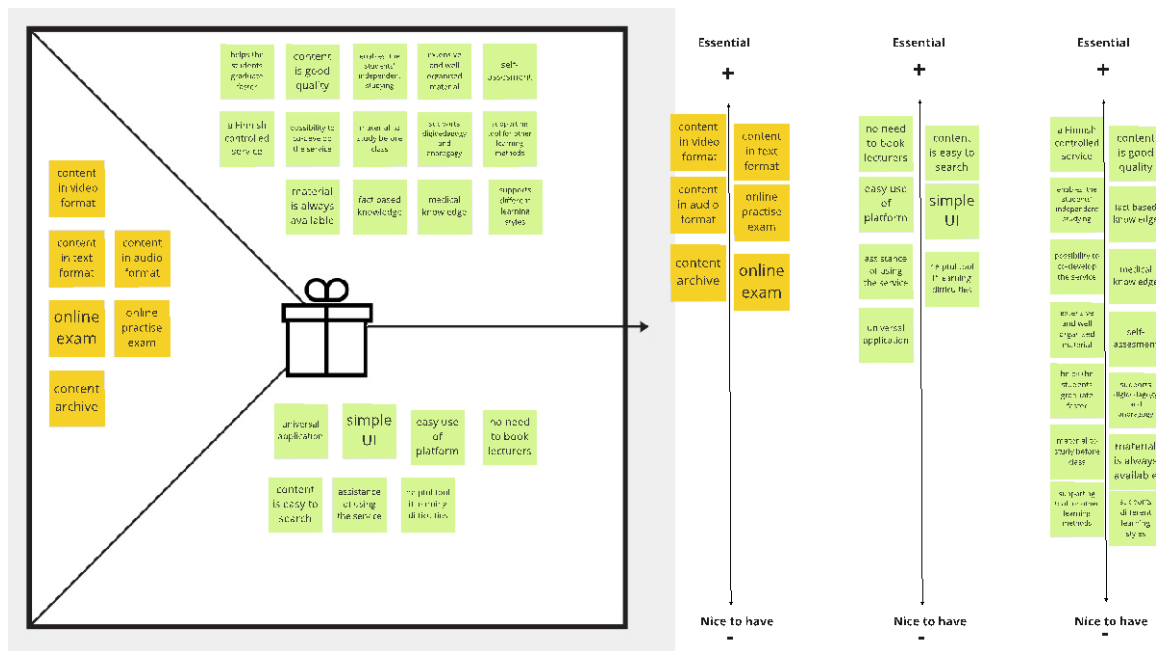
Figure 22. Value proposition map of a teacher.

8.3.3 The fit

After creating the customer profile and the value proposition map, the two were compared against each other. The purpose of the comparison was to make sure that the value propositions offered address the important jobs, gains and pains of the customer (Osterwalder et al. 2014, 42). The pain relievers and gain creators were gone through individually and checked if they fit the customers jobs, pains or gains. It is not necessary for the service to meet all the jobs, pains and gains of the customer (Osterwalder et al. 2014, 47); a service can be successful if it can serve some of the most important jobs, pains and gains of the customer well.

Evaluating the fit between the value proposition map and the customer profile of the students reveals that some important jobs, gains and pains are already addressed. The comparison indicates that Skhole can be helpful in some of the most important jobs of a student, especially in independent learning and in testing one's knowledge. The addressed jobs, pains and gains are indicated with a check mark on black background and the ones not addressed are marked with a cross on red background as shown in Figure 23.

Figure 23. Fit between value proposition and customer profile of a student.

Figure 24. The jobs, pains and gains in order of importance to the student.

The jobs, pains and gains of the student are shown in order of importance in Figure 24. The value proposition of Skhole service is effective in "passing a course", "testing one's knowledge" and "learning theory". It does not meet the job "learn skills" and "apply methods on the job", which also ranked highly.

The value proposition does not meet the students' most extreme pains: "fear of not knowing what to do in the job after graduation" and "fear of not remembering the information after graduation". It does, however, help with "lack of time" and "wrong teaching method", which also ranked highly in the pains section. It is also helpful for "dyslexia", which was ranked as a more moderate pain due to the small number of students suffering from it.

In the gains section, the value proposition meets the gains "graduate faster", "easy to use" and "study during the summer", which are all important points for the customer. "Gain skills" and "gain confidence" (skills which usually develop through practice) are not met by the current value proposition of Skhole.

The fit between the value proposition map and the customer profile for the teachers shows that Skhole is helping the customer in many ways related to online learning as shown in Figure 25.
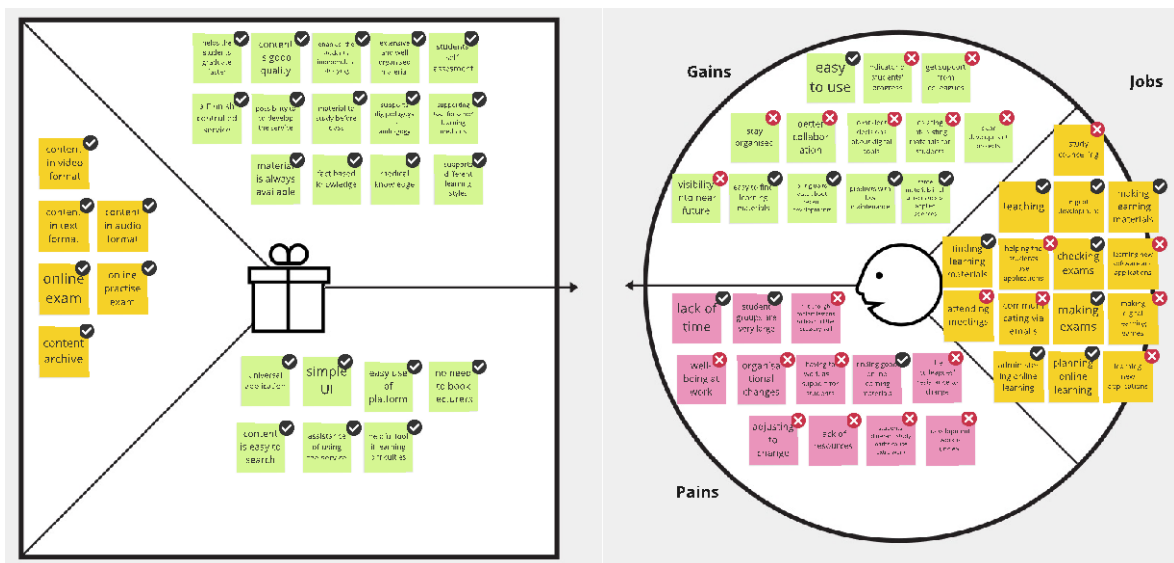
Figure 25. Fit between value proposition and customer profile of a teacher.

Figure 26. The jobs, pains and gains in order of importance to the teacher.

The jobs, pains and gains of the teacher are shown in order of importance in Figure 26. The value proposition of the Skhole service meets most of the teachers' important jobs. "Teaching", "planning online learning", "making exams", "checking exams", "finding learning materials", "administering online learning" and "digital development" all match between the value proposition and the customer profile.

The most extreme pains of the teachers – "not enough contact lessons to teach all the necessary skills" and "lack of resources" – are not met by the value proposition. The service is, however, helpful with the next three pains: "lack of time", "student groups are very large" and "finding good online materials".

The two most important gains, "easy to find learning materials" and "easy to use" are met by the value proposition. Also, "being up to date about recent developments" and "same materials in all universities of applied sciences" are met by the value propositions and were stated as important by the teachers.

All things considered, the teachers customer profile appears to be served quite well with the current value proposition.

9   Phase 5 – Explore concepts
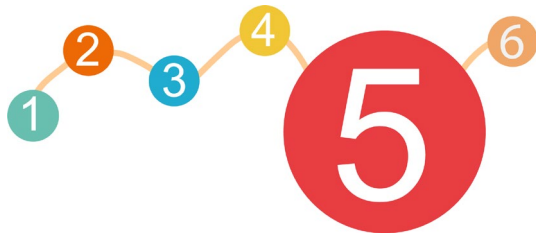
In the "explore concepts" phase, the insights that were gained in the previous phases are developed further and solution concepts are created based on them. The idea is to explore new possibilities by still keeping an open mind. The future is envisioned by prototyping, storytelling and brainstorming (Kumar 2013, 195–196).

Engaging the stakeholders allows the creative input of the users to help the design process (Martin & Hanington 2012, 128). Users can add value to the service when they are included in the design process. If users are involved in the design process, it also increases the chances of them being loyal to and engaging with the service due to co-ownership of the service (Stickdorn & Schneider 2011–2012, 39).

9.1   Idea gathering online with stakeholders

In participatory design, the participants' input is combined with design expertise. The designer puts together the material created, taking into consideration all the requirements of the project (Martin & Hanington 2012, 128).

Idea gathering was arranged online with the students and other stakeholders to collect ideas for how the online learning service could support the users better. At this stage, the focus was on the students' user group. Nine participants took part in the online idea gathering. The participants were healthcare students and teachers, some of whom had used the Skhole service, but this was not a requirement in order to participate the session. Some students of other fields who use digital tools during their studies also took part in this idea gathering. The idea material was gathered via an online form where the participants wrote down their individual responses during the period of two weeks.

The results from previous phases of the project were used as a starting point for the ideation. The participants were shown the results from the "value proposition design" method to familiarize themselves with the subject matter and the needs of the students user group. "Fit between value proposition and customer profile of a student" showed the participants how well the service creates value for the users. The "jobs, pains and gains in order of importance to the student" showed the participants which of the jobs, pains and gains are most important to the student.

The participants were asked to focus on the seven different jobs, pains and gains that were not supported by the current digital service. Those particular needs were included at this stage based on their importance ranking, which was created earlier in the value proposition stage. The potential of online services was also taken into consideration, since not all jobs, pains and gains can be met through online services. From the jobs section, "collaborate with others" and "make timetable for studies / stick to study timetable" were included. From the pains section, "lack of motivation", "fear of not knowing what to do in the job after graduation" and "subject is too difficult" were included. From the gains section, "get support from teacher" and "get peer support" were included. The participants were asked to create concrete ideas for how the digital service could help with those seven different needs of the users. The seven questions created 148 individual ideas how the digital service could support the students' needs.

9.2   Creation of preliminary concepts

The material from the ideation stage was first organized on individual sticky notes according to the seven jobs, pains and gains of the users. The headings were then removed, and the material was manually arranged into groups of similar ideas. The clustered groups were then given headings and rearranged so that the groups were divided into smaller sections with headings.

The groups were then developed into preliminary concepts so that they could be easily reviewed in the evaluation stage. Concept cards were created with the name, a suitable image and a description of the concept. Five preliminary concepts were created from the seven jobs, pains and gains.

9.2.1 Bridge to pro

The "bridge to pro" preliminary concept responds to the students' pain "fear of not knowing what to do in the job after graduation". The students can be given an opportunity to evaluate their own skills and get more practice in areas they do not feel confident in yet. Connections to working life can be strengthened during webcast events, where students can easily ask questions in a more informal setting. The students can also be offered an opportunity to continue using the online learning service for a period of time after graduation, to revise knowledge when needed.

Bridge to pro

What is it?
Helping students in the transfer from studies to working life by building confidence about working life skills

Evaluation and practice during the studies
Helps students to evaluate their own skills and the areas that still need more practise. The students are offered a "databank" with essential skills and procedures to help the evaluation. The students are offered an opportunity for plenty of virtual practise and to test their own skills through the online service.

Connection to working life during the studies
The service offers real stories about the recent graduates and their first jobs. The service offers webcast events, where representatives from various companies answer the students' questions.

Opportunity to revise during the first job
The students have access to the service for some time after graduation.

Figure 27. The "bridge to pro" preliminary concept helps the students transfer into working life.

9.2.2 Motivation booster

The "motivation booster" preliminary concept responds to the students' pain "lack of motivation". The students' motivation levels can be monitored, and they can receive support when needed. The learning material can be enriched with visualizations and diverse exercises. The student's progress can be boosted with a reward system and clear study goals.

Motivation booster

What is it?
Helping students to keep their motivation levels high

Motivation meter
The students can assess their own motivation and mood on a daily basis, on a numeric scale or with smiley faces. If the results are low, the other students can encourage the student virtually. The student is offered help if he/she is under a lot of stress or has doubts about the studies. The teachers can offer personal help if the student is particularly stuck.

Learning materials and gamification
Mini learning games, dividing the topic into smaller chunks, using visualizations and varying study exercises will enrich the learning experience.

Sponsored rewards
Reward system to boost the studies. When students reach a certain point of their studies, they will receive a small surprise gift, for example a coffee and a bun. Companies can participate this as sponsors.

Study goals and milestones
The studies consist of separate courses but the service helps the student to see the bigger picture. Isolated course content is not motivating to the students. The service helps the students to assess their progress by listing the studied courses and by offering visualizations of the topics that have already been covered.

Figure 28. The "motivation booster" preliminary concept aims to keep the students' motivation high.

9.2.3 Digital assistant

The "digital assistant" preliminary concept responds to the students' job "make timetable for studies / stick to study timetable". Adjustable schedules can help the students to set realistic goals and milestones. The service can support the students' studies with notifications, helping them to submit tasks on time. The students' progress can be made clearly visible at all times.

Digital assistant

What is it?
Helping students to manage their time and schedules

Adjustable schedule
The students are offered a ready schedule which they can edit to suit their own timetable and skills. The student lists typical slots in the week in the timetable for studying.The student reports about the progress during the course and adjusts the original schedule.

Notifications and timing
The deadlines are clearly visible and the service notifies the student about them. The service compares the student's allocated resources to the course timetables and notifies the student if the task is at risk of being late.

To-do lists
The service suggests tasks for the to-do list, for example lectures, deadlines and exercise tasks. The student can add other tasks to the list.

Visualising the schedules
The service encourages creating a realistic schedule and sticking to the timetable by visualising how long it will take to complete the tasks and by gamifying the progress.

Figure 29. The "digital assistant" preliminary concept helps the students manage their time.

9.2.4 Network at your service

The "network at your service" preliminary concept responds to the students' job "collaborate with others" and gains "get support from teacher" and "get peer support".

Collaboration can be organized in form of small study groups formed at the beginning of the studies. The students can receive support from their peers and teachers through the service. Student mentors can also be arranged to give the students more personal guidance.

Network at your service

What is it?
Get peer support fast

Peer support team
Students can click on a "big red button" if they are experiencing difficulties with their studies or have trouble getting started. The peer support team then knows to come to their aid. The team consists of students who are further with their studies.

Mentors
The students who are further with their studies can motivate the other students, as they have more experience of how to deal with problems that might arise during the studies.

Support from the teachers
The students can freely ask questions from the teachers and receive answers through the service. The questions and answers can be viewed by the other students who might be struggling with the same topic. The questions can also be presented anonymously if needed.
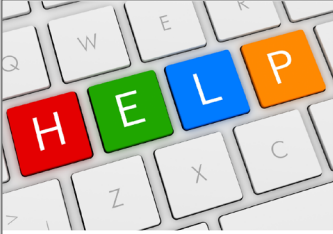
Small study groups
The small study groups are formed in the beginning of the studies. This section of the service includes group exercises where the students are allocated different roles during the exercises. Teachers can support the group better as they can follow and comment on the group discussions.

Figure 30. The "network at your service" preliminary concept relies on support from peers.

9.2.5   Extra help for your studies

The "extra help for your studies" preliminary concept responds to the students' pain "subject is too difficult". The students' level of knowledge can be tested through the service and suitable exercises can be offered to the students. Additional exercises can also be found in this section if a student feels the need to practise more. Students sometimes

require help with basic study skills, so the service can provide access to materials, and the student can improve their foundations. The students can also share study tips through the experience bank.

Extra help for your studies

What is it?
Providing the students with extra material

Testing your level
The service offers a test to review the students' level of knowledge. Suitable materials can then be offered to support the learning.

Basic study skills
If the student requires help with basic study skills, the service offers links to suitable materials.

Extra materials
The students are offered extra materials where the topics are explained in a very simple way. The service also offers additional exercises of different levels. Sometimes course content is too difficult if the student is lacking the required prior knowledge. The service can then help the student by offering access to the content which has been missed out.

"Experience bank"
The students can all add concrete suggestions to the experience bank about their learning experience. They can share study tips and information how to cope if problems arise.

Figure 31. The "extra help for your studies" preliminary concept provides the students with extra materials.

The five preliminary concepts were evaluated by the users in the next phase, "frame solutions".

10 Phase 6 – Frame solutions

The final phase for this study is "frame solutions". In this phase, the concepts are assessed and combined into solutions. Each concept needs to be critically assessed against the required criteria. The solutions should then be clearly communicated and explained (Kumar 2013, 247).

10.1 Concept evaluation

Six of the participants from the interviews and the previous online ideation session were asked to evaluate the five preliminary concepts. The participants were limited to healthcare students and teachers, as it was important to get feedback from people who are familiar with the substance. The evaluation was arranged with an online form where the participants evaluated the needs and the concepts during a period of one week.

The participants were asked to first rate the need (jobs, gains and pains) that the concept is trying to find a solution for. They were then asked to rate the solution. Both ratings were on a scale of one to five, where a score of one meant that the need is not important at all or the solution does not help at all, and five meaning that the need is very important or that the solution helps very much. The participants were also able to give written feedback.
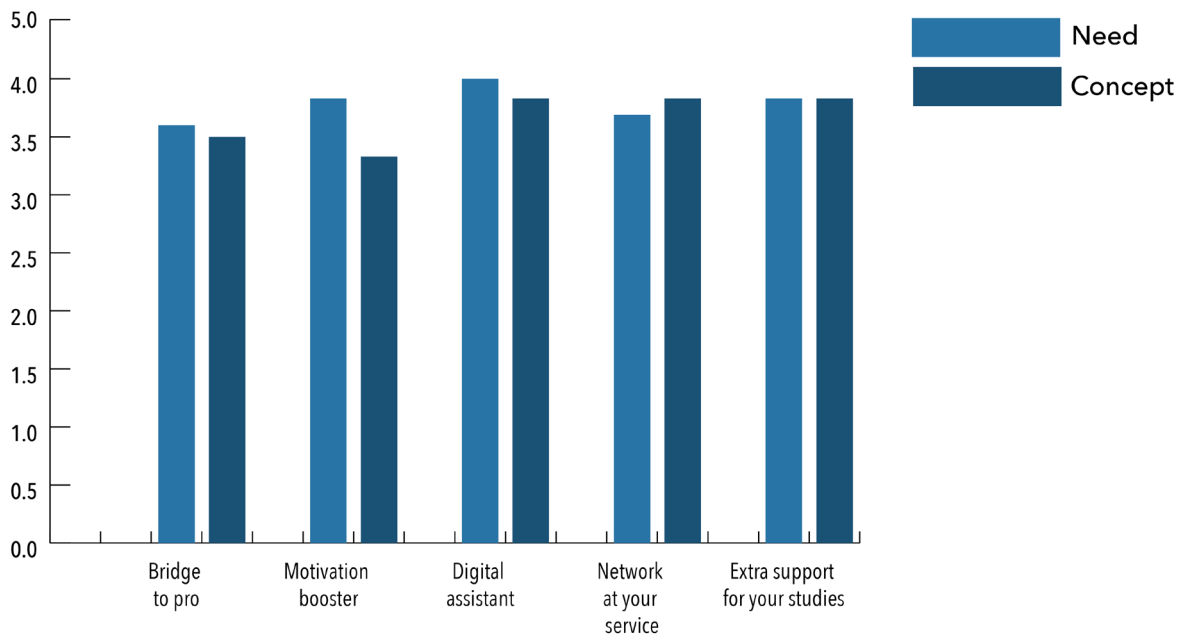
Figure 32. The average scores for the five needs and preliminary concepts.

The average scores for the participants' evaluations of the needs (jobs, gains and pains) of the students were between 3.3 and 4. "Make timetable for studies / stick to study timetable" got the highest average score (4) and was evaluated as the most important job of the students in this group of participants. All of the jobs, gains and pains seemed to be fairly important in the participants' opinion.

In their evaluation, the participants gave the five preliminary concepts average scores between 3.3 and 3.8. The concepts "digital assistant", "network at your service" and "extra support for your studies" got the highest average score (3.8). None of the solutions had an average score that was clearly higher than the others.

10.1.1 Digital assistant

The students' job, "make timetable for studies / stick to study timetable" got the highest average score: 4.0. The participants thought that the "digital assistant" solution would be useful to students if it was implemented well. As planning the studies and sticking to the schedules is the basis of all studies, the participants felt that these features would add real value for users. The average score for the concept was 3.8.
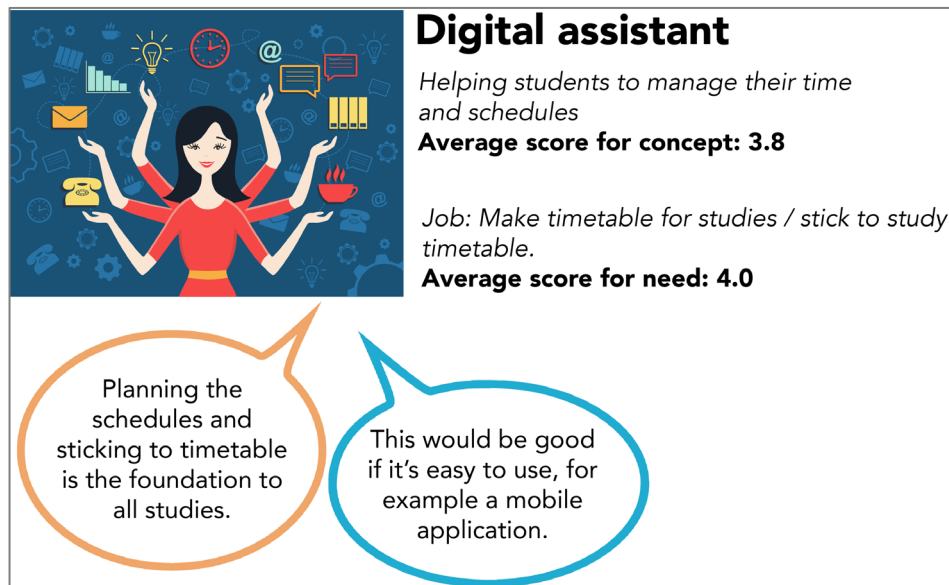
Figure 33. The average scores and some participants' comments for the "digital assistant" need and concept

10.1.2 Network at your service

The students' job "collaborate with others" and the gains" get support from teacher" and "get peer support" received a combined average score of 3.7. The participants commented that this service would require planning and resources from the universities of applied sciences. The participants thought that networking and helping each other out would help the students in their studies and prepare them better for working life. The average score for the concept was 3.8.
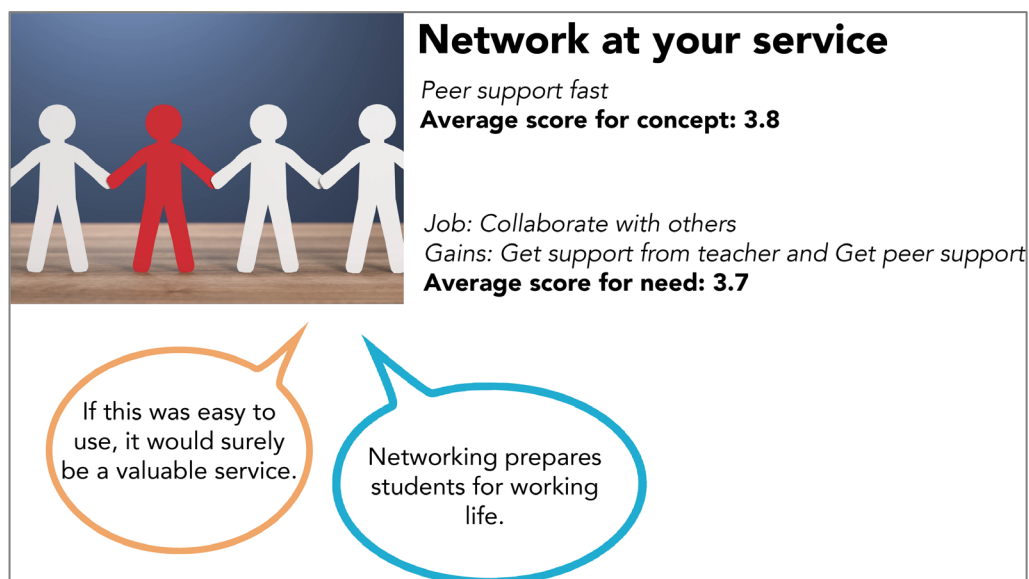
Figure 34. The average scores and some participants' comments for the "network at your service" need and concept

10.1.3 Extra help for your studies

The students' pain "subject is too difficult" was given an average score of 3.8. The participants thought that some features could be taken to the digital service as they are. The concept supports independent studying, which the participants viewed as positive. The average score for this concept was 3.8.
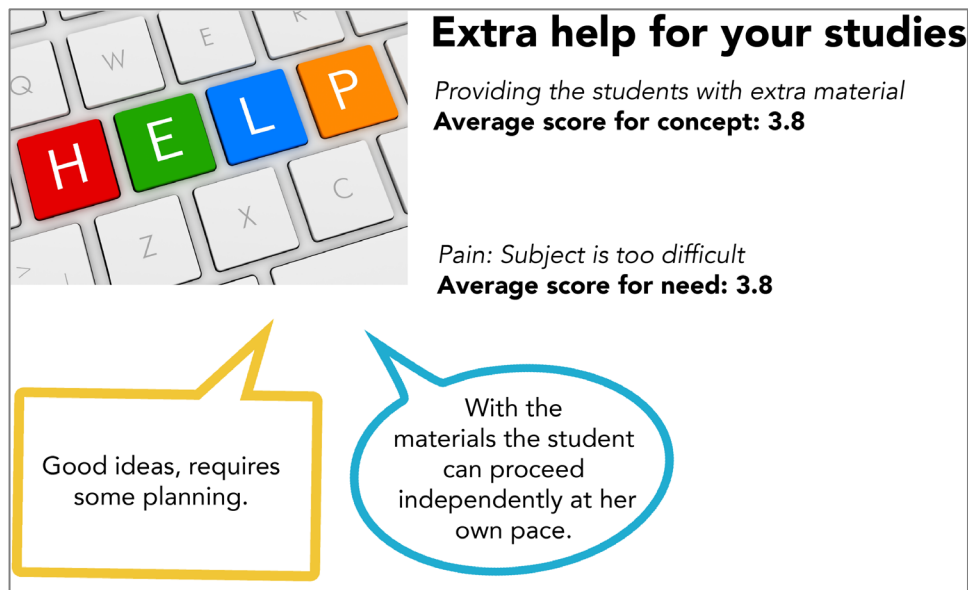
Figure 35. The average scores and some participants' comments for the "extra help for your studies" need and concept.

10.1.4 Bridge to pro

The students' pain "fear of not knowing what to do at the job after graduation" was given an average score of 3.6. The participants commented that concept supports independent inventory of skills and individual practice. The average score for the concept was 3.5.
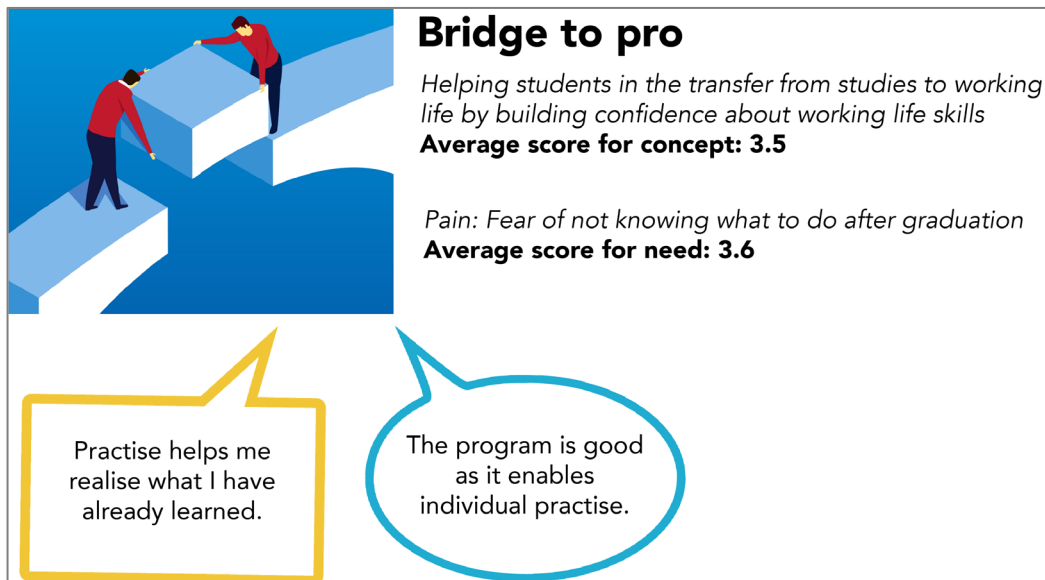
Figure 36. The average scores and some participants' comments for the "bridge to pro" need and concept.

10.1.5 Motivation booster

The students' pain "lack of motivation" received an average score of 3.8. The participants commented that gamification and other means of making the studies more effective would be valuable to the students. It is difficult to increase someone else's motivation, but having a suitable level of difficulty helps. The average score for the concept was 3.3.
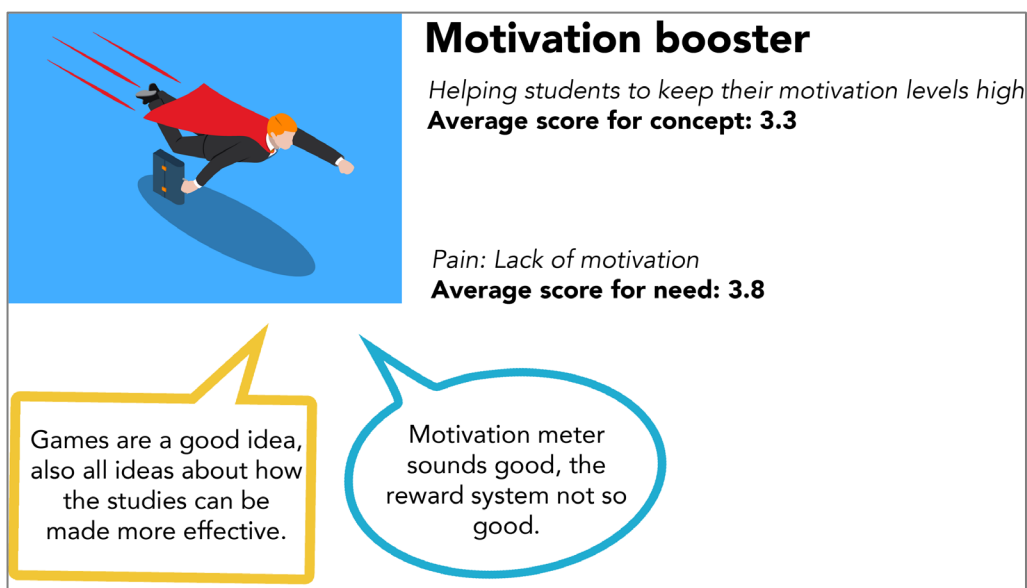
Figure 37. The average scores and some participants' comments for the "Motivation booster" need and concept.

10.2 Personas and user journey maps

Personas should be based on research. They describe behaviour patterns of a certain group of people. Personas are helpful in the developing phase of a project, when testing scenarios and discussing the features with the team. With a user journey map, the experience that these personas have in interacting with the service can be visualized, documenting the positive and negative points of the journey (Martin & Hanington 2012, 132,196).

Two personas were created based on the interview materials and user group definition. Personas based on the user groups "digital enthusiasts" and "adaptable extroverts" were created. Those two user groups were chosen as they would benefit the most from digital learning tools. Both groups are comfortable with technology and can adapt easily to using new technologies. As not all teaching can be transferred into digital services, the two groups who rely most on traditional teaching methods – "self-sufficient learners" and "hands-on doers" – were left out at this stage. "Self-sufficient learners" can study by themselves and benefit from the parts of the service which support independent learning. The "hands-on-doers" group, however, learn by doing and need face-to-face instruction and practice.

The user journey maps describe the journey from signing in to the service to using some of the features that were created for the preliminary concepts. The maps include several lanes to describe the journey. It explains the actions taken by the personas and their detailed descriptions underneath it. The storyboard lane gives visual description of the steps. The emotional journey lane explains the users' emotional state during each step.

10.2.1 Persona: Tim, digital enthusiast

The persona "Tim, digital enthusiast" is based on the "digital enthusiasts" user group. This group represents early adopters in the use of digital tools. Tim's persona is a young nursing student who likes to play games and also learns by playing games. Tim benefits from gamified interfaces and content. He would also benefit from support from the service in regard to timetables and structure, as he sometimes has difficulties with focusing on his studies.

Tim

Digital enthusiast

A nursing student
Age 22

I learn by playing games

Tim prefers using using digital tools for his studies. Tim prefers reading digital books on his laptop to going to the library to collect real books. He finds it easy to learn new applications and likes gamified learning tools.

Tim might have difficulties with focusing on his studies and gets distracted easily. It sometimes takes a while for him to get started with independent studying. Tim finds sitting in lectures boring but enjoys contact lessons.

Figure 38. Persona card for Tim, digital enthusiast.

10.2.2 User journey map for Tim, digital enthusiast

Tim can have difficulties with motivation and focusing on his studies. To support his learning style, a user journey map was created that describes the features of three preliminary concepts: "motivation booster", "digital assistant" and "extra help for your studies".

The user journey map describes how Tim has motivational problems and receives support for this, how he benefits from visualized progress in his studies, and how he uses extra materials to overcome the difficulties during his course.
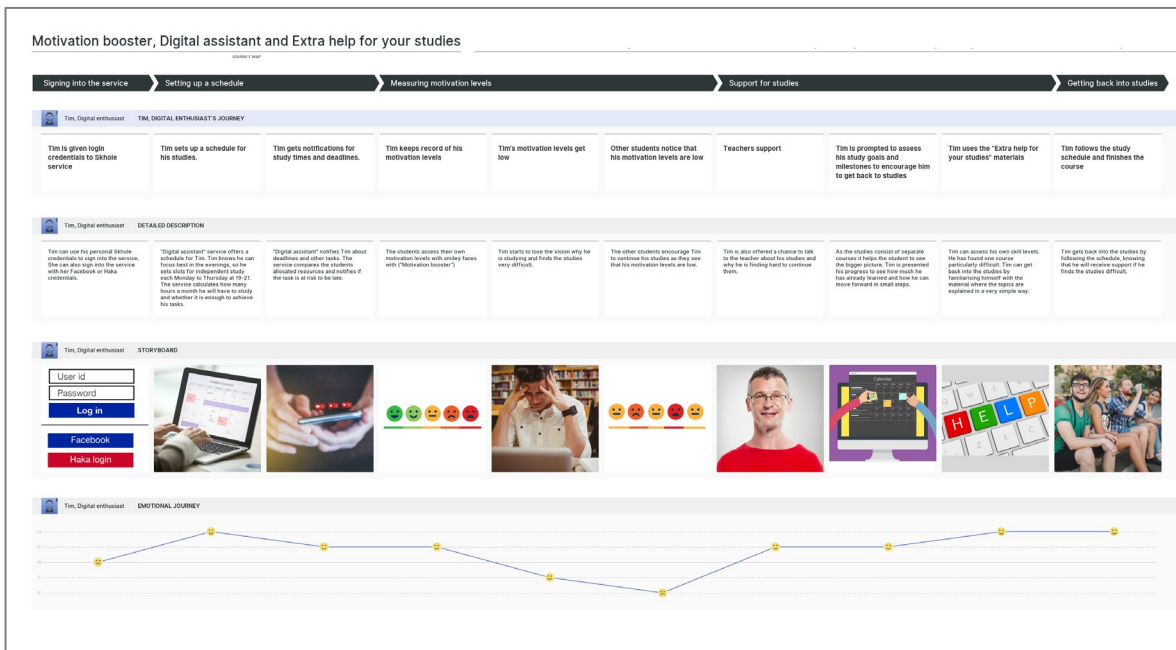
Figure 39. User journey map for Tim, digital enthusiast

10.2.3 Persona: Anna, adaptable extrovert

The persona "Anna, adaptable extrovert" is based on the "adaptable extroverts" user group. This group represents students who enjoy the company of other people and working in groups. They can adapt to new situations easily and are comfortable with learning new technologies. Anna's persona is a young nursing student who likes to study in a group. She benefits from the possibility of working in small student groups, as well as from peer support and student mentors.

Figure 40. Persona card for Anna, adaptable extrovert.

10.2.4 User journey map for Anna, adaptable extrovert

Anna likes to feel that she is part of a group. She does not want to be left alone to only do independent studies. To support her learning style, a user journey map was created that describes the features from the preliminary concept "network at your service".

The user journey map describes how Anna finds the coursework difficult and how she asks for peer support. She receives support without delay from a student who is further along with their studies. She is able to go through the difficult points online and carry on with her studies. The user journey map ends with Anna taking the exam and doing well in it.
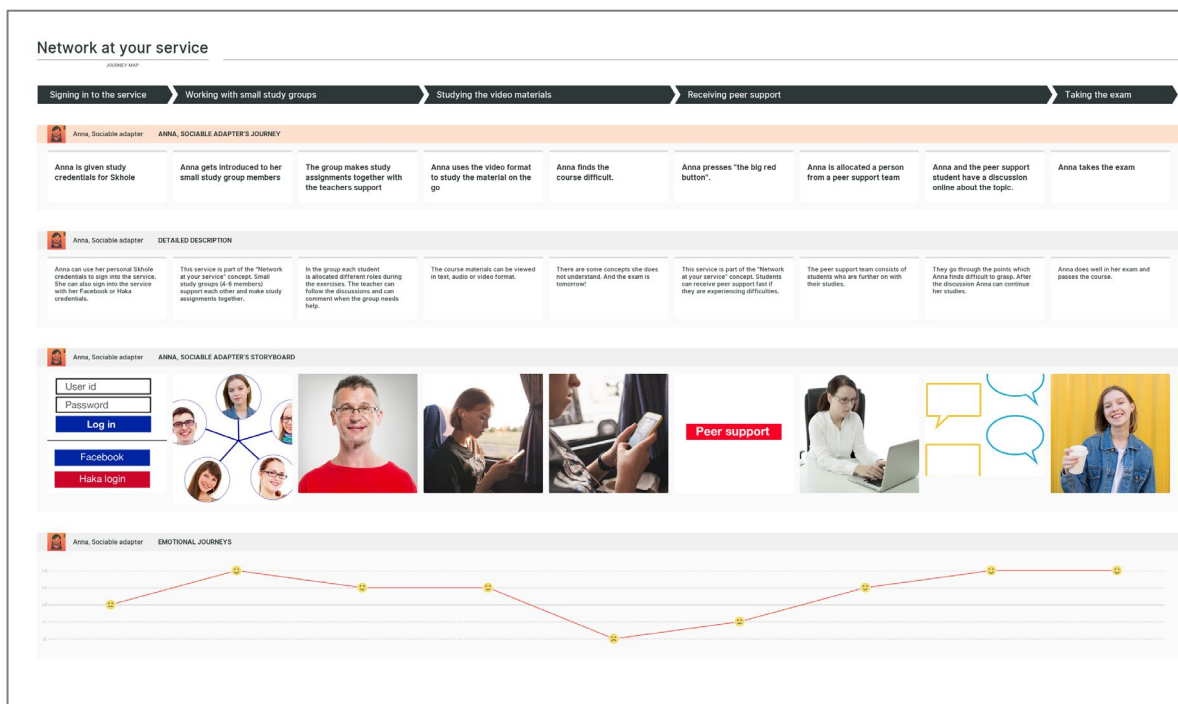
Figure 41. User journey map for Anna, adaptable extrovert.

10.3 Service blueprint

The second service blueprint was created at the end of the project to describe the improved service, to illustrate how the service could work with the suggested new features. The improvement suggestions are based on the preliminary concepts that were created during the project.

In the customer lanes, there are three users: two students and their teacher. It also describes the interactions that would take place between Skhole, the teacher and the students. The added features of the service are described in each customer lane.
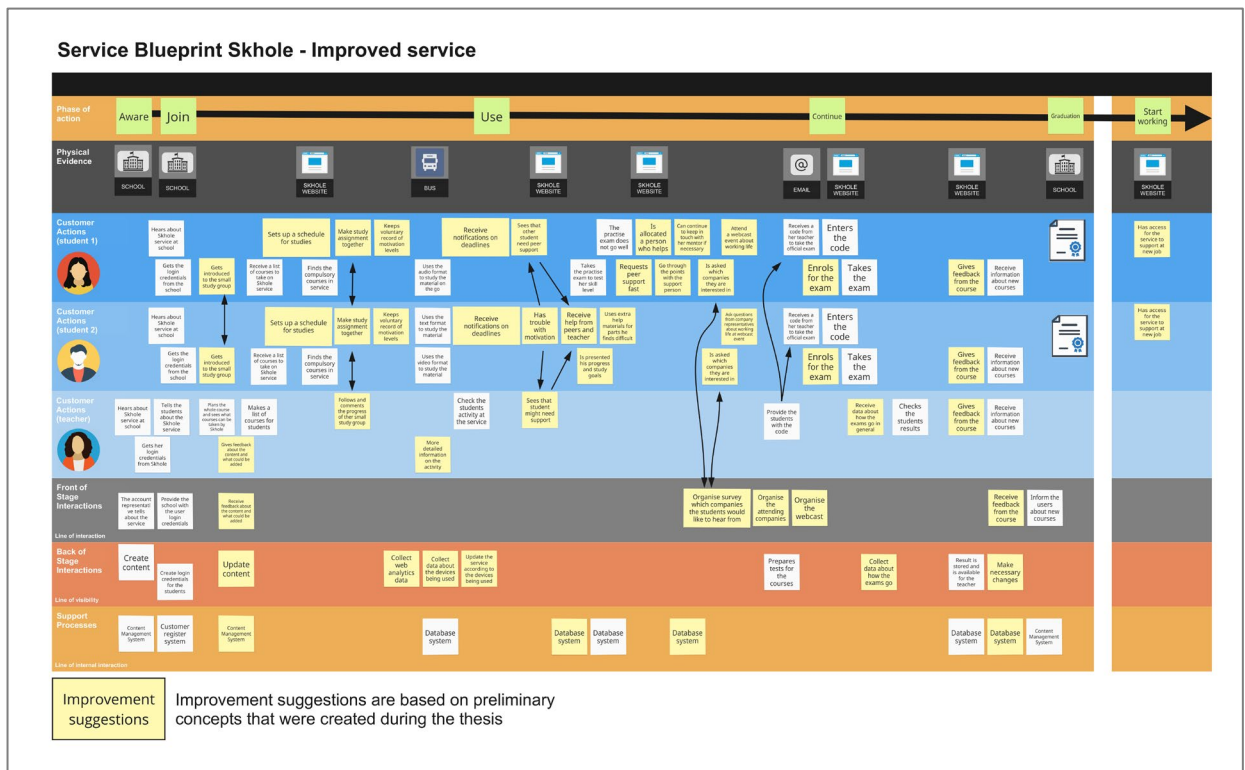
Figure 42. A service blueprint for improved service was created at the end of the project.

10.4 Business Model Canvas

The second Business Model Canvas was updated towards the end of the project. Most of the new information that was added to the canvas concerned customer value, as it was one of the main areas that was examined during this study. The user groups of students in youth education and teachers, which were in the focus during this study, have different key value propositions. The information that was gathered in the interviews and developed by the value proposition design tools clarified the value propositions of the two user groups.

Business Model Canvas: Skhole, Improved Service

Key Partners	Key Activities	Key Value Propositions		Customer Relationships	Customer Segments
• Universities of Applied Science • Health organisations • Other content producers • Financiers • Professional organisations • Governing bodies • Advisors (expertise in health care)	• Promotion of service • Gathering customer insight • Engaging users in service development, teachers and students • Continuous development of platform and services • Troubleshooting for customers • Knowledge in health education development	Universities of applied sciences in Finland: **Students:** • Study during summer • Study whenever, wherever • Graduate faster • Self-assesment • Extensive and well organised material • Enables independent studying • Content is good quality • Supports different learning styles • Supporting tool for other learning methods • Helpful tool if learning difficulties	**Teachers:** • Helps the students graduate faster • Self-assesment of students • Extensive and well organised material • Enables students' independent studying • Content is good quality • a Finnish controlled service • Co-developing the service • Supports digipedagody and andragogy • Supporting tool for other learning methods • Material is always available • Fact-based knowledge • Medical knowledge • Supports different learning styles	Clients: Personal service through Account Representative Users: • Technical support • Automated service through Q&A section • Personal customer service through email	**Universities of applied sciences in Finland:** Students • Youth education (daytime study) • Adult education (blended learning) Teachers
	Key Resources • Human resources: design, pedagogical expertise, expertise in health care, developers, business • Networks • Physical assets (computers, software) • Intellectual property	**All users:** • Accessibility: universal application • Simple UI • Easy use of platform • Assistance in using the service • Acknowledge different needs and user types for service • Enables independent studying • Content is easy to search		**Channels** • Clients: Through Account Representative • Users: Some compulsory use during the studies • Referral through user • Facebook • Bloggers	**Continuing education:** Managers Professionals
Cost Structure • Financing acquisitions, strategic partnerships, team growth • Website development and maintenance costs • Premises derived costs • Marketing costs • Human resources costs • Administrative costs • Content producing costs				**Revenue Streams** • Clients: x eur/user/month • Recurring revenue from ongoing payments	

Source: Strategyzer.com

Figure 43. The second Business Model Canvas was created at the end of the project.

11 Conclusion

The aim of this study was to gather customer insights about the current Skhole online learning service, to create development ideas and to design a concept for an improved service. To find answers to the research questions about the strengths and weaknesses of the current Skhole service and how digital learning services can support professional development, interviews with the teachers and students who use the service were conducted. During the interviews, it became apparent that the teachers and students in healthcare education in universities of applied sciences face big challenges today. The student groups are large, and the teachers have to manage with fewer resources. The quality of the education, however, has to remain high.

New technologies present new possibilities for learning. Pedagogy today demands the use of digital tools, and they are widely used in higher education. Students have to adapt to new ways to learn and take a more active role towards independent studies. As students have different ways to learn, this can be difficult for some. Students' attitudes to digital tools also vary and can cause problems during the studies. Most students would like more contact lessons, but they have to cope with the reduced number of these lessons.

Online learning services support independent learning and collaboration particularly well. Simulation exercises can be utilized in areas that would be otherwise difficult to arrange. Some skills cannot, however, be taught with digital tools or independent study. Combining

contact lessons with digital tools is the best approach, as stated by the teachers and the students.

Creating online materials is time-consuming for the teachers. There are services available that offer ready tools to support teaching, like Skhole. Choosing ready digital learning tools is a big investment for higher education institutions and requires expertise in technology and digital pedagogy. The teachers need support in the new tasks that have emerged along with digitalization.

Skhole is seen as a reliable and controlled domestic service provider with good-quality materials. The Skhole service supports digital pedagogy and andragogy, and guides the students towards independent learning. It saves the teachers' time from booking lecturers. The teachers mentioned that there is a wish for uniformity between the universities of applied sciences. Using the same materials in all universities of applied sciences could ensure uniformity, and Skhole could be part of this solution.

For the students, it is beneficial that the Skhole service can be used anytime and anywhere. The students see the service as a databank and a supporting tool for their studies. The service can be used to search for information, as it has an extensive collection of courses. It is also useful for students to test their knowledge.

The teachers and students would like a more inspiring interface and more interactivity from the Skhole service. Images and illustrations could clarify some of the difficult concepts, and dividing the lectures into more manageable chunks would make studying easier for the students.

To further examine the strengths and weaknesses of the Skhole service, the SWOT method was used as part of the study. Strategies for supporting the opportunities, preventing the threats and minimizing the weaknesses were created by intersecting the strengths and weaknesses with the opportunities and threats. The importance of co-creation with the users and close relationships with the stakeholders became apparent when examining the strategies. For the service providers, co-designing the online services together with the stakeholders ensures truthful value propositions. Only by validating the value propositions with the real users can effective solutions be found. As digital tools will have an even bigger role in education in the near future, it is important that the stakeholders take part in developing these tools.

One research question was about how gamification supports learning in online services. A very brief assessment of gamification methods and best practices in the industry was made via the benchmarking method. The Skhole, Coursera and Duolingo services were assessed, with a focus on the interface design and gamification features. All of the services used progress indicators. All of the interfaces have a friendly appearance and are easy to use. Skhole and Coursera are similar services with longer courses, so visualizing progress is an important feature. Gamification supports the learning process by making it easier for students by dividing the bigger tasks into smaller chunks and giving notifications about when assignments are due. Gamified learning services give users a sense of achievement and control, therefore making the experience positive.

The remaining research question was about creating more value for Skhole's users. After creating the main insights from the interview materials, the teachers' and students' value propositions were examined. For the teachers, the Skhole service seemed to already address many of the jobs, pains and gains that a digital service can address. For the students, there seemed to be some important jobs, pains or gains that could be addressed with a digital service. At this point, the students user group was chosen to be the focus when designing improvement suggestions for the service.

An idea gathering session was arranged online to collect ideas to improve the service. The ideation was based on the seven jobs, pains and gains of the students user group that a digital service could provide help for. The participants were asked to create concrete ideas for how the digital service could help in those needs. Based on the materials from the ideation gathering online, five preliminary concepts were created.

The "bridge to pro" preliminary concept responds to the students' pain "fear of not knowing what to do at the job after graduation". It gives students an opportunity to evaluate their own skills and to practise more if needed, to strengthen connections to working life, and to continue using the online learning service after graduation.

The "motivation booster" preliminary concept responds to the students' pain "lack of motivation". The students can receive support if their motivation levels are low. The visualization and diverse exercises enrich the learning material. A reward system and clear study goals boost the students' performance.

The "digital assistant" preliminary concept responds to the students' job "make timetable for studies / stick to study timetable". The students are able to set realistic goals and milestones through editable schedules. Notifications help with handing tasks in on time, and the study progress is clearly visible at all times.

The "network at your service" preliminary concept responds to the students' job "collaborate with others" and the gains "get support from teacher" and "get peer support". Small study groups are formed at the beginning of the studies to enable collaboration. Support from peers and teachers is available quickly through the service.

The "extra help for your studies" preliminary concept responds to the students' pain "subject is too difficult". The student can access additional exercises through the service. Students can also find help to improve their basic study skills. Study tips can be shared via the experience bank.

The preliminary concepts and the seven needs (jobs, gains and pains) were then evaluated by users of the Skhole service on a scale of one to five. None of the needs or solutions clearly rose above others in the evaluation. The needs (jobs, gains and pains) received average scores of 3.3 and 4. All of the jobs, gains and pains seemed to be fairly important in the participants' opinion. The five preliminary concepts received average scores of 3.3 and 3.8.

A user groups definition map was created based on students' preferred style of learning, and their comfort levels with technology. The four user groups formed were "self-sufficient learners", "digital enthusiasts", "hands-on doers" and "adaptable extroverts". From those four groups, two were chosen to create personas to represent the group. Those two groups were seen to benefit the most from the new features in the digital service.

User journey maps were created for two personas: "Anna, adaptable extrovert" and "Tim, digital enthusiast". For Tim's persona, a user journey map was created to suit his learning style and possible problems. Features from three preliminary concepts ("motivation booster", "digital assistant" and "extra help for your studies") were used in the user journey map. For Anna's persona, a user journey map was created that suited her needs. Features from the preliminary concept "network at your service" were used in her journey map.

Finally, to present the prototype of an improved service, a service blueprint was created to illustrate how the two students and their teacher could use the service. It demonstrates the utilization of features created for the preliminary concepts.

12 Discussion

The starting point for the study was the research questions. The end result was to be a prototype for an improved service. What was not clear at the beginning was which stages would be needed to achieve the end result: the concept of an improved service. As service design is iterative in nature, during the project, it became evident that some stages had to be added in order to proceed. The results led the project forward.

During the "sense intent" phase, especially through the literary review it became evident that digital learning is continuously evolving. The digital learning services today should follow the current pegagogy. The literary review was a helpful method for acquiring a general view of the difficulties that the teachers face today but also of the areas that designers should further examine, when designing digital learning tools.

The "know context" phase generated information about the context the service operates in. Benchmarking was beneficial in finding out best practises in the area of gamification in digital learning services. If the project proceeded further, it would be valuable to examine the gamification features more in detail.

The interviews in the "know people" phase generated essential information for the project. Dividing the interviews according to the information that was required proved to be an effective way. Semi-structured interviews worked well for this purpose.

In "frame insights" phase the insights were further examined and analysed. The "user groups definition" was helpful for understanding different user groups within the group of students. To create these user groups in a more reliable way, a survey could be conducted with a larger group of students. It would generate more information on learning styles and attitudes towards digital tools. "Value proposition design" method was effective in further examining the needs of the students and the teachers. The "value proposition design" method turned the collected information into concrete needs and was an effective tool in designing the service.

The initial plan was to arrange a design workshop with the students in the "explore concepts" phase. However, as it proved too difficult to organise, an online ideation was arranged instead. Since there was no interaction between the participants, the results were different from what the design workshop would have created. Still, the online ideation worked quite well with the specific questions and tasks. The method created 148 individual ideas for how the service could help the students, bringing the planning to a concrete level.

In "frame solutions" phase the preliminary concepts were evaluated by some of the teachers and students. The concepts received somewhat similar results. A discussion with the stakeholders might have been more suitable than collecting the data with an online form.

This study involved real users in real contexts. It was, however, not part of a genuine commissioned development project. Had it been part of a real development project, the design and the work would have been done in close co-operation with the party who commissioned it. That would have affected the chosen development areas according to their business potential and the required resources. Not being part of a development project enabled a freedom not typical in service design projects. It is, therefore, a study of real users and their needs, and of how those needs could be better met.

As technology and the way people use it changes, online learning services need to evolve as well. Combining real user needs with new possibilities is one way to keep evolving in a successful way.

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List of figures

Interview questions – teachers

Who Are You

1. What is your role at your school? What do you teach?
2. How long have you been teaching and how old are you?
3. Describe yourself in one sentence
4. What is a typical day like on your job?

- Anything else related to the role or typical tasks that came up in discussion.

Problems at work

1. What are the top 3 challenges you face in your job?
2. How do you deal with these problems?
3. If you could wave a magic wand and instantly have a solution to any of those problems, what would the solution be?

- Anything else related to the role or problems or solutions at work.

Digital tools and Skhole

1. What kind of digital tools or online services do you use at your job or in private life?
2. How long have you been using the Skhole service? How do you use it at your job?
3. What do you wish you could do with the service, that is not currently possible?
4. Which one (of the mentioned) would be the most important feature?
5. If you did not use Skhole service any more, what would you miss most?

- Anything else related to digital tools or Skhole.

Interview questions –students

Who Are You

1. What do you study?
2. At which stage are you at your studies and how old are you?
3. Describe yourself in one sentence
4. What is your typical study day like?

- Anything else related to the role or typical tasks that came up in discussion.

Problems at studies

1. What are the top 3 challenges you face in your studies?
2. How do you deal with these problems?
3. If you could wave a magic wand and instantly have a solution to any of those problems, what would the solution be?

- Anything else related to the role or problems or solutions at the studies.

Digital tools and Skhole

1. What kind of digital tools or online services do you use at your job or in private life?
2. How many courses have you studied through Skhole? How do you use Skhole in your studies?
3. What do you wish you could do with the service, that is not currently possible?
4. Which one (of the mentioned) would be the most important feature?
5. If an older colleague during your training asked you what Skhole is, what would you answer?
6. Imagine that you have already graduated and have been working for a while. In what way could Skhole be part of your life?

- Anything else related to digital tools or Skhole.

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Online learning service

Technology
- Artificial Intelligence
- Social media
- Virtual reality
- MOOCs
- Cloud
- Gamification
  - Gamified content
  - Gamified interface
- Augmented Reality

Service providers
- Educational institutions
- Start-ups
- Publishing companies

Education types
- Universities of applied sciences
- Continous education
- Universities
- Schools

Drawbacks
- People have different ways to learn
- Some areas should be taught by hands-on approach
- Bad quality materials

Benefits
- Supports independent learning
- New ways of learning
- Reduced cost
- Not dependent on time and place
- Access for wider audiences
- Democratisation of knowledge

e-Pedagogy
- Collaboration
- Independent learning
- Participation
- Flipped learning

OWN SPECIFIC FACTORS

ENVIRONMENTAL FACTORS

STRENGTHS

- Good-quality and reliable materials
- Finnish, localised materials
- Digitalisation in education is a growing trend
- Organised, controlled and a Finnish service
- Good relationship with the universities of applied sciences
- Good coverage in the universities of applied sciences
- Validating prior knowledge of students
- Close relationship with users
- Extensive collection of courses
- Seen as a "data bank"
- Modular structure
- Well-organised material
- Supports independent learning
- Teachers do not have to create materials themselves
- Accurate knowledge
- Not tied to time or place
- Can support different learning styles
- Service can be helpful for dyslexic students

WEAKNESSES

- The platform is viewed as boring
- The users wish for more practise materials
- The different language versions are not at same level as the Finnish version
- Monotonous lectures
- The pedagogy is viewed as outdated
- Not enough exercises / testing one's knowledge
- Transparency for teachers regarding exam questions

OPPORTUNITIES

- Becoming an important partner for schools in digitalisation
- The wish for uniformity in education at universities of applied sciences in Finland
- Expanding into all education in health care sector
- Expanding into other sectors of education
- A tool for continous development and lifelong learning
- Strenghtening the position in the markets

Strategies to make use of Opportunities through our Strengths

- Developing the relationship with institutions
- Research the other sectors in education
- Developing a validation tool for teachers in the application
- Research learning difficulties and how to take those better into account
- Becoming a standard validation tool for institutions
- Create contacts with unions and organisations to support lifelong learning "tool"
- Informing the teachers about all the new content in the service
- Create standards together with the institutions
- Becoming a source of research for students

Strategies to make use of Opportunities to minimize Weaknesses

- Improvements to known drawbacks in the application
- The platform needs pedagogic development
- Developing the relationship with users
- Becoming a partner for teachers
- Gamified, more interactive interface
- Gamified content versions (praktigame)

THREATS

- International competitors coming into Finnish markets
- New competition coming into markets from within Finland

Strategies to prevent Threats through our Strengths

- Co-designing with the users to make great learning products
- The localised materials
- Strenghtening the position in the markets
- Close relationship with stakeholders

Strategies to minimize the potential dangers lying in sectors where Weaknesses meet Threats

- Develop the application taking the user feedback into account
- Stay ahead of the competition by co-designing with the users

Essential + — **Nice to have**

gain confidence

get support from teacher

get peer support

good collaboration

clear indicator of progress

gain skills

graduate faster

easy to use

study during the summer

helps with motivation

Extreme + — **Moderate**

fear of not remembering the information after graduation

not enough practise

"wrong" teaching method

hard to focus

procrastination

group work does not work online

dyslexia

fear of not knowing what to do at the job after graduation

lack of time

subject is too difficult

lack of motivation

lack of necessary skills, ie writing

subject is not interesting

difficulty with some concepts

learning new digital tools

Important + — **Insignificant**

learn skills

apply methods at the job

collaborate with others

stick to studies timetable

get a degree

pass a course

test one's own knowledge before exam

make timetable for studies

learn theory

Jobs

Gains

Pains

collaborate with others

get a degree

test one's own knowledge before exam

make timetable for studies

apply methods at the job

pass a course

learn skills

stick to studies timetable

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lack of motivation

subject is not interesting

difficulty with some concepts

lack of time

lack of necessary skills, ie writing

Essential + ... **Nice to have**

- easy to use
- confident decisions about digital tools
- being up to date about recent developments
- same materials in all universities of applied sciences
- better collaboration
- products with low maintenance
- easy to find learning materials
- indicator of students' progress
- stay organised
- visibility into near future
- get support from colleagues
- creating interesting materials for students
- clear development projects

Extreme + ... **Moderate**

- lack of resources
- student groups are very large
- well-being at work
- development work is unclear
- organisational changes
- students' different study paths cause extra work
- not enough contact lessons to teach all the necessary skills
- lack of time
- finding good online learning materials
- adjusting to change
- the colleagues' resistance to change
- having to work as IT support for students

Important + ... **Insignificant**

- planning online learning
- study councelling
- finding learning materials
- digital development
- helping the students use applications
- attending meetings
- making learning materials
- teaching
- making exams
- checking exams
- administering online learning
- learning new applications
- communicating via emails
- learning new software and applications
- making digital learning games

Jobs

- making learning materials
- learning new software and applications
- making digital learning games
- learning new applications
- study councelling
- digital development
- checking exams
- making exams
- planning online learning
- teaching
- helping the students use applications
- communicating via emails
- administering online learning
- finding learning materials
- attending meetings

Gains

- clear development projects
- get support from colleagues
- creating interesting materials for students
- same materials in all universities of applied sciences
- indicator of students' progress
- easy to use
- confident decisions about digital tools
- products with low maintenance
- better collaboration
- being up to date about recent developments
- stay organised
- easy to find learning materials
- visibility into near future

Pains

- the colleagues' resistance to change
- development work is unclear
- finding good online learning materials
- students different study paths cause extra work
- not enough contact lessons to teach all the necessary skills
- having to work as IT support for students
- lack of resources
- student groups are very large
- organisational changes
- adjusting to change
- lack of time
- well-being at work

Essential + — Nice to have

extensive and well organised material
graduate faster
self-assesment
study whenever, where ever
enables independent studying
content is good quality
study during summer

Essential + — Nice to have

supporting tool for other learning methods
universal application
simple UI
assistance of using the service
easy use of platform
supports different learning styles
content is easy to search
helpful tool if learning difficulties

Essential + — Nice to have

content in text format
online practise exam
online exam
content in video format
content in audio format
content archive
community

self-assesment
content is good quality
study whenever, where ever
enables independent studying
study during summer
extensive and well organised material
graduate faster

easy use of platform
helpful tool if learning difficulties
simple UI
supporting tool for other learning methods
universal application
assistance of using the service
supports different learning styles
content is easy to search

content in audio format
online practise exam
community
content in video format
content in text format
online exam
content archive

Essential + ... **Nice to have -**

content is good quality
fact based knowledge
medical knowledge
self-assesment
supports digipedagogy and andragogy
material is always available
supports different learning styles

a Finnish controlled service
enables the students' independent studying
possibility to co-develop the service
extensive and well organised material
helps the students graduate faster
material to study before class
supporting tool for other learning methods

Essential + ... **Nice to have -**

content is easy to search
simple UI
helpful tool if learning difficulties

no need to book lecturers
easy use of platform
assistance of using the service
universal application

Essential + ... **Nice to have -**

content in text format
online practise exam
online exam

content in video format
content in audio format
content archive

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self-assesment
supporting tool for other learning methods
supports different learning styles
extensive and well organised material
supports digipedagogy and andragogy
medical knowledge
enables the students' independent studying
material to study before class
fact based knowledge
content is good quality
possibility to co-develop the service
material is always available
helps the students graduate faster
a Finnish controlled service

no need to book lecturers
easy use of platform
helpful tool if learning difficulties
simple UI
assistance of using the service
universal application
content is easy to search

content in audio format
online practise exam
content in video format
content in text format
online exam
content archive

Jobs

- collaborate with others
- get a degree
- test one's own knowledge before exam
- make timetable for studies
- apply methods at the job
- pass a course
- learn skills
- stick to studies timetable
- learn theory

Gains

- get peer support
- get support from teacher
- helps with motivation
- good collaboration
- easy to use
- gain confidence
- graduate faster
- gain skills
- clear indicator of progress
- study during the summer

Pains

- fear of not remembering the information after graduation
- procrastination
- dyslexia
- fear of not knowing what to do at the job after graduation
- hard to focus
- group work does not work online
- "wrong" teaching method
- not enough practise
- learning new digital tools
- subject is too difficult
- subject is not interesting
- difficulty with some concepts
- lack of motivation
- lack of time
- lack of necessary skills, ie writing

Products & Services

- content in video format
- content in text format
- content in audio format
- online exam
- online practise exam
- content archive
- community

Gain Creators

- graduate faster
- study during summer
- study whenever, where ever
- self-assessment
- extensive and well organised material
- enables independent studying
- content is good quality

Pain Relievers

- supports different learning styles
- universal application
- simple UI
- easy use of platform
- content is easy to search
- assistance of using the service
- supporting tool for other learning methods
- helpful tool if learning difficulties

Jobs

Important
+

get a degree ❌

pass a course ✓

test one's own knowledge before exam ✓

make timetable for studies ❌

learn theory ✓

learn skills ❌

apply methods at the job ❌

collaborate with others ❌

stick to studies timetable ❌

Insignificant
-

Pains

Extreme
+

fear of not knowing what to do at the job after graduation ❌

lack of time ✓

subject is too difficult ❌

lack of motivation ❌

lack of necessary skills, ie writing ❌

subject is not interesting ❌

difficulty with some concepts ❌

learning new digital tools ❌

fear of not remembering the information after graduation ❌

not enough practise ❌

"wrong" teaching method ✓

hard to focus ❌

procrastination ❌

group work does not work online ❌

dyslexia ✓

Moderate
-

Gains

Essential
+

gain skills ❌

graduate faster ✓

easy to use ✓

study during the summer ✓

helps with motivation ❌

gain confidence ❌

get support from teacher ❌

get peer support ❌

good collaboration ❌

clear indicator of progress ❌

Nice to have
-

Jobs

- making learning materials
- learning new software and applications
- making digital learning games
- learning new applications
- study councelling
- digital development
- checking exams
- making exams
- planning online learning
- teaching
- helping the students use applications
- communicating via emails
- administering online learning
- finding learning materials
- attending meetings

Gains

- clear development projects
- get support from colleagues
- creating interesting materials for students
- some materials in all universities of applied sciences
- indicator of students' progress
- confident decisions about digital tools
- products with low maintenance
- easy to use
- better collaboration
- being up to date about recent developments
- stay organised
- easy to find learning materials
- visibility into near future

Pains

- the colleagues' resistance to change
- development work is unclear
- finding good online learning materials
- students' different study paths cause extra work
- not enough contact lessons to teach all the necessary skills
- having to work as IT support for students
- lack of resources
- student groups are very large
- organisational changes
- adjusting to change
- lack of time
- well-being at work

- students self-assesment
- supporting tool for other learning methods
- supports different learning styles
- extensive and well organised material
- supports digipedagogy and andragogy
- medical knowledge
- enables the students' independent studying
- material to study before class
- fact based knowledge
- content is good quality
- possibility to co-develop the service
- material is always available
- helps the students graduate faster
- a Finnish controlled service
- no need to book lecturers
- easy use of platform
- helpful tool if learning difficulties
- simple UI
- assistance of using the service
- universal application
- content is easy to search

- content in video format
- content in text format
- online exam
- content in audio format
- online practise exam
- content archive

Important

+

- teaching ✓
- making exams ✓
- checking exams ✓
- administering online learning ✓
- learning new applications ✗
- communicating via emails ✗
- learning new software and applications ✗
- making digital learning games ✗

- planning online learning ✓
- study councelling ✗
- finding learning materials ✓
- digital development ✓
- helping the students use applications ✗
- attending meetings ✗
- making learning materials ✓

Insignificant

−

Extreme

+

- not enough contact lessons to teach all the necessary skills ✗
- lack of time ✓
- finding good online learning materials ✓
- adjusting to change ✗
- the colleagues' resistance to change ✗
- having to work as IT support for students ✗

- lack of resources ✗
- student groups are very large ✓
- well-being at work ✗
- development work is unclear ✗
- organisational changes ✗
- students' different study paths cause extra work ✗

Moderate

−

Essential

+

- easy to find learning materials ✓
- indicator of students' progress ✗
- stay organised ✗
- visibility into near future ✗
- get support from colleagues ✗
- creating interesting materials for students ✗
- clear development projects ✗

- easy to use ✓
- confident decisions about digital tools ✗
- being up to date about recent developments ✓
- same materials in all universities of applied sciences ✓
- better collaboration ✗
- products with low maintenance ✓

Nice to have

−

Motivation booster, Digital assistant and Extra help for your studies

JOURNEY MAP

	Signing into the service	Setting up a schedule	Measuring motivation levels			Support for studies			Getting back into studies

Tim, Digital enthusiast — TIM, DIGITAL ENTHUSIAST'S JOURNEY

Tim is given login credentials to Skhole service	Tim sets up a schedule for his studies.	Tim gets notifications for study times and deadlines.	Tim keeps record of his motivation levels	Tim's motivation levels get low	Other students notice that his motivation levels are low	Teachers support	Tim is prompted to assess his study goals and milestones to encourage him to get back to studies	Tim uses the "Extra help for your studies" materials	Tim follows the study schedule and finishes the course

Tim, Digital enthusiast — DETAILED DESCRIPTION

Tim can use his personal Skhole credentials to sign into the service. She can also sign into the service with her Facebook or Haka credentials.	"Digital assistant" service offers a schedule for Tim. Tim knows he can focus best in the evenings, so he sets slots for independent study each Monday to Thursday at 19-21. The service calculates how many hours a month he will have to study and whether it is enough to achieve his tasks.	"Digital assistant" notifies Tim about deadlines and other tasks. The service compares the students allocated resources and notifies if the task is at risk to be late.	The students assess their own motivation levels with smiley faces with ("Motivation booster")	Tim starts to lose the vision why he is studying and finds the studies very difficult.	The other students encourage Tim to continue his studies and notice that his motivation levels are low.	Tim is also offered a chance to talk to the teacher about his studies and why he is finding hard to continue them.	As the studies consist of separate courses it helps the student to see the bigger picture. Tim is presented his progress to see how much he has already learned and how he can move forward in small steps.	Tim can assess his own skill levels. He has found one course particularly difficult. Tim can get back into the studies by familiarising himself with the material where the topics are explained in a very simple way.	Tim gets back into the studies by following the schedule, knowing that he will receive support if he finds the studies difficult.

Tim, Digital enthusiast — STORYBOARD

Tim, Digital enthusiast — EMOTIONAL JOURNEY
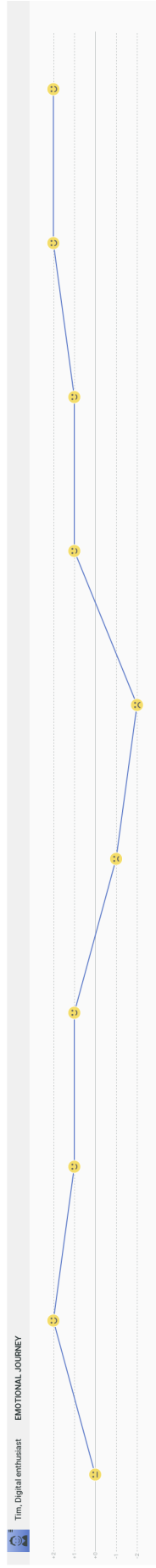
Network at your service

JOURNEY MAP

Signing in to the service	Working with small study groups	Studying the video materials	Receiving peer support	Taking the exam

ANNA, SOCIABLE ADAPTER'S JOURNEY

Anna, Sociable adapter

| Anna is given study credentials for Skhole | Anna gets introduced to her small study group members | The group makes study assignments together with the teachers support | Anna uses the video format to study the material on the go | Anna finds the course difficult. | Anna presses "the big red button". | Anna is allocated a person from a peer support team | Anna and the peer support student have a discussion online about the topic. | Anna takes the exam |

DETAILED DESCRIPTION

Anna, Sociable adapter

| Anna can use her personal Skhole credentials to sign into the service. She can also sign into the service with her Facebook or Haka credentials. | This service is part of the "Network at your service" concept. Small study groups (4–6 members) support each other and make study assignments together. | In the group each student is allocated different roles during the exercises. The teacher can follow the discussions and can comment when the group needs help. | The course materials can be viewed in text, audio or video format. | There are some concepts she does not understand. And the exam is tomorrow! | This service is part of the "Network at your service" concept. Students can receive peer support fast if they are experiencing difficulties. | The peer support team consists of students who are further on with their studies. | They go through the points which Anna finds difficult to grasp. After the discussion Anna can continue her studies. | Anna does well in her exam and passes the course. |

ANNA, SOCIABLE ADAPTER'S STORYBOARD

Anna, Sociable adapter

EMOTIONAL JOURNEYS

Anna, Sociable adapter

Project name: Skhole

Key Partners
What are your key partners to get competitive advantage?

- Health organisations (content)
- Other content producers
- Financiers
- Professional organisations
- Vocational education colleges
- Universities of Applied Science
- Governing bodies
- Advisors (expertise in health care)

Key Activities
- Promotion of service
- Gathering customer insight
- Engaging users in service development, teachers and students
- Continuous development of platform and services
- Troubleshooting for customers
- Knowledge in health education development

Key Resources
What resources do you need to make your idea work?

- Human resources: design, pedagogical expertise, expertise in health care, developers, business
- Networks
- Physical assets (computers, software)
- Intellectual property

Key Propositions
How will you make your customers' life happier?

1. Universities of applied sciences in Finland, adult education
2. University of applied science, youth education
3. Upper secondary vocational education (new)
4. Teachers
5. Managers (continuing education)
6. Professionals in continuing education:
   - Updating skills
   - Developing in her job

All students:
- Study during summer
- Study whenever, wherever
- Graduate faster

All users:
- Accessibility: universal application
- Simple UI
- Easy use of platform
- Assistance in using the service
- Acknowledge different needs and user types for service

Customer Relationships
How often will you interact with your customers?

Clients: Personal service through Account Representative and Community Manager (new)
Users:
- Technical support
- Automated service through Q&A section
- Personal customer service through email
- Community Manager (new)

Channels
How are you going to reach your customers?

- Clients: Through Account Representative and Community Manager (new)
- Users: Some compulsory use during the studies
- Referral through user
- Facebook

Customer Segments
Who are your customers? Describe your target audience in a couple of words.

1. Universities of applied sciences in Finland, adult education
2. University of applied science, youth education
3. Upper secondary vocational education (new)
4. Teachers
5. Managers (continuing education)
6. Professionals in continuing education

Users:
- Students
- Teachers
- Managers

Cost Structure
How much are you planning to spend on the product development and marketing for a certain period?

- Financing acquisitions, strategic partnerships, team growth
- Website development and maintenance costs
- Premises derived costs
- Marketing costs
- Human resources costs
- Administrative costs
- Content producing costs

Revenue Streams
How much are you planning to earn in a certain period? Compare your costs and revenues.

- Clients: x eur/user/month
- Recurring revenue from ongoing payments

Business Model Canvas: Skhole, Improved Service

Key Partners

- Universities of Applied Science
- Health organisations
- Other content producers
- Financiers
- Professional organisations
- Governing bodies
- Advisors (expertise in health care)

Key Activities

- Promotion of service
- Gathering customer insight
- Engaging users in service development, teachers and students
- Continuous development of platform and services
- Troubleshooting for customers
- Knowledge in health education development

Key Resources

- Human resources: design, pedagogical expertise, expertise in health care, developers, business
- Networks
- Physical assets (computers, software)
- Intellectual property

Key Value Propositions

Universities of applied sciences in Finland:

Students:
- Study during summer
- Study whenever, wherever
- Graduate faster
- Self-assessment
- Extensive and well organised material
- Enables independent studying
- Content is good quality
- Supports different learning styles
- Supporting tool for other learning methods
- Helpful tool if learning difficulties

All users:
- Accessibility: universal application
- Simple UI
- Easy use of platform
- Assistance in using the service
- Acknowledge different needs and user types for service
- Enables independent studying
- Content is easy to search

Teachers:
- Helps the students graduate faster
- Self-assessment of students
- Extensive and well organised material
- Enables students' independent studying
- Content is good quality
- a Finnish controlled service
- Co-developing the service
- Supports digipedagody and andragogy
- Supporting tool for other learning methods
- Material is always available
- Fact-based knowledge
- Medical knowledge
- Supports different learning styles

Customer Relationships

Clients: Personal service through Account Representative

Users:
- Technical support
- Automated service through Q&A section
- Personal customer service through email

Channels

- Clients: Through Account Representative
- Users: Some compulsory use during the studies
- Referral through user
- Facebook
- Bloggers

Customer Segments

Universities of applied sciences in Finland:

Students
- Youth education (daytime study)
- Adult education (blended learning)

Teachers

Continuing education:

Managers
Professionals

Cost Structure

- Financing acquisitions, strategic partnerships, team growth
- Website development and maintenance costs
- Premises derived costs
- Marketing costs
- Human resources costs
- Administrative costs
- Content producing costs

Revenue Streams

- Clients: x eur/user/month
- Recurring revenue from ongoing payments

Service blueprint — Skhole

	Aware	Join	Use	Continue	Leave
Phase of action	Aware	Join	Use	Continue	Leave
Physical Evidence	SCHOOL	SCHOOL; SKHOLE WEBSITE; SKHOLE WEBSITE	SKHOLE WEBSITE; BUS; SKHOLE WEBSITE	EMAIL; SKHOLE WEBSITE; SKHOLE WEBSITE	SKHOLE WEBSITE; SKHOLE WEBSITE
Customer Actions (student)	Hears about Skhole service at school; Gets her login credentials from the school	Receive a list of courses to take on Skhole service; Logs into the Skhole platform; Finds her compulsory course	Uses the video format to study the material on the go; Takes the practise exam to test her skill level; Receives a code from her teacher to take the official exam; The student can enrol herself for the exam	Enters the code; Takes the exam	Gives feedback from the course; Receive information about new courses
Customer Actions (teacher)	Hears about Skhole service at school; Gets her login credentials from Skhole	Tells the students about the Skhole service; Plans the whole course and sees what courses can be taken by Skhole; Gives feedback about the content and what could be added; Makes a list of courses for students	Check the students activity at the service; More detailed information on the activity	Provide the students with the code	Gives feedback from the course; Receive information about new courses
Front of Stage Interactions *(Line of interaction)*	The account representative tells about the service; Provide the school with the user login credentials	Receive feedback about the content and what could be added		Checks the students results	Receive feedback from the course; Inform the users about new courses
Back of Stage Interactions *(Line of visibility)*	Create content; Create login credentials for the students	Update content	Web analytics data for the teachers; Prepares tests for the courses	Result is stored and is available for the teacher	Make necessary changes
Support Processes *(Line of internal interaction)*	Content Management System; Customer register system	Content Management System; Database system	Database system; Database system; Database system	Database system; Database system	Database system; Content Management System

Service Blueprint Skhole - Improved service

Improvement suggestions: Improvement suggestions are based on preliminary concepts that were created during the thesis

1 — Pelko siitä, että ei osaa asioita valmistuttuaan — **Bridge to professional life / Becoming a pro.**

2 — Motivaation puute — **Motivation booster**

3 — Opintojen aikatauluttaminen ja aikataulussa pysyminen — **Digital assistant**

Opettajan tuki

4 — Vertaistuki — **Network at your service**

Yhteistyö toisten opiskelijoiden kanssa

5 — Opiskeltava aihe on liian vaikea — **Extra support for your studies**

Bridge to professional life / Becoming a pro.

Opiskelun aikana

- oman käsikirjan laatiminen työskentelyn tueksi
- Riittävä mahdollisuus testata taitojaan jo opiskeluvaiheessa "testaustehtäviä"
- mahdollisuus runsaaseen virtuaaliharjoitteluun
- Uusia toistoja erilaisissa tehtävissä

- "Pankki" jossa tiivistetysti keskeisiä osaamisalueita ja esim toimenpiteitä jonka voisi tallentaa itselleen verkkotiedostoksi
- Verkkokoulutuspalvelu voisi mahdollistaa lyhyen kertauksen tai jonkin testin erilaisista aiheista
- Verkkokoulutuspalvelu voisi nähdä kaiken mitä on oppinut, niin opiskelijöle muistuksi, kuinka paljon tämä on jo oppinut
- Epävarmoja asioita / taitoja on mahdollista kerrata verkkokursilla

Yhteys työelämään opiskeluaikana

- Koulutuksen aikana tehdyistä tehtävistä voisi saada anonyymisti palautetta työelämän edustajilta.
- Verkkopalveluun voisi järjestää webcast tyyppisiä tilaisuuksia jossa eri yritysten edustajat vastaavat kysymyksiin
- Palvelussa voisi olla real time kertomuksia siitä, mitä muut ovat tehneet ensimmäisten viikkojen/kuukausien/vuoden aikana valmistumisesta.

Kertauksen mahdollisuus työelämän alussa

- verkko-opintoihin palaaminen työssäolon aikana
- Verkkokoulutuspalveun materiaalit voisivat jäädä opiskelijan käyttöön valmistumisen jälkeen
- Kun verkko-oppiminen menetelmänä on tuttu ja hallinnassa, opiskelua voi jatkaa itsenäisesti myös valmistumisen jälkeen

Motivation booster

Oppimateriaalit ja pelillistäminen

- Opiskeltavaa aiheta voisi visualisoida ja muotoilla ymmärrettävämpään muotoon
- Opiskeltavan aiheen voisi pilkkoa pieniin osiin
- Varmistamalla laadullisen materiaalin, joka on sovellttua kyseisen alan opiskelijoille eli materiaali pitä olla riittävän suppea
- Kuvat, kaaviot, kuvat, esimerkit, videot, tapausselostukset (mikäli sertyyppinen asiakokonaisuus) ym
- Oppimateriaalin kuvitus ja kerronta tärkeää sjrta että jaksaa kuunnella
- Erilaisia työtehtäviä ei pelkästää kirjoittamista
- työskentelyn vaiheistaminen, helpoimmista aloittaminen
- Verkkokoulutuspalvelussa voitaisiin kannustaa opintojen etenemiseen erilaisten pelillistämisen menetelmien avulla

Sponsoroidut palkinnot

- Palautejärjestelmä joka kannustaa opiskelemaan
- Kun saavuttaa tietyn pisteen niin saa esim. ilmaisen kahvin ja pullan tms. Pian nauretaavaa sinänsä
- yrityksiltä saattaisivat varsinkin lahjoituksia piian

Motivaatiomittari

- Verkkokoulutuspalvelussa voisi olla mahdollista jutella muiden opiskelijoiden kanssa motivaation puutteesta ja saada vertaistukea
- Välillä kuntoilua tai kyykkyhyppyä
- Huumoria myös pelin

Tavoitteet ja välitavoitteet

- Kurssin sisältön tulee vastata opiskelun muuta etenemistä. Irrallinen suoritus, jota opiskelija eiosaa sijoittaa kokonaisuuteen ei ehkä motivoi
- Palvelu arvioistelee kurssin suorittamisesta saatavat hyödyt sopivasti kullekin opiskelijalle riippuen siitä missä vaiheessa kurssin suorittaminen on.
- Kurssin tavoitteet ovat selkeät. Sllöin opiskelija tietää mikä hän opiskelee ja mitä hänen pitäisi oppia
- Verkkokoulutuspalvelussa voisi näkyä kaikki jo opetut aiheet ja käydyt kurssit tms. niin että opiskelija näksi, kuinka pitkälle tämä on jo edennyt opinnoissaan

Digital assistant for timetable

- Muistutukset, ajastukset
- Verkkokoulutuspalveussa a voisi luoda to-do listoja
- tehtävien täsmälliset palautusajankohdat

Network at your service

First aid team

- kun asia tuntuu tiian vaikealta voi painaa "Isoa punaista painiketta" ja joku toinen opiskelija tai opettaja voi rientää apuun
- "Ensiapuryhmä": Pidemmälle opiskelleiden tai samassa vaiheessa olevien kanssa sovittu apuryhmä joka auttaa eteenpäin ongelmakohdassa
- Vertaistukea saatavilla nopeallakin aikataululla, esim. jos on ongelmia päästä vauhtiin.

Mentorit

- opiskelijalla voisi olla esim. vanhempi opiskelija mentorina, jonka puoleen voisi kääntyä
- Mentoriopiskelija (opinnoissaan edellä oleva) pystyy usein motivoimaan kurssin suorittajaa. Opettaja voi järjestää tällaisen mentorin

Verkosto

- Verkostoitaapaamiset
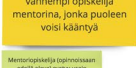- Muiden opiskelijoiden yhteystiedot on helposti saatavilla, kuten myös jokaisen opiskelijan vahvuudet.
- Kun kaipaa apua, tietää kenen puoleen voisi kääntyä ja toisaalta, jokainen oppii hahmottamaan omia vahvuuksiaan samalla.
- Helppo tapa tutustua toisen opiskelijan osaamisalueisiin, tämä helpottaisi yhteistyötä

Pienryhmät

- Opiskelu voisi edetä pienryhmissä heti alkujaan
- Aikataskuja ryhmille.
- Voisi olla käteväa jos sellaiset kurssiin liittyvä keskustelu verkkokoulutuspalve lussa.
- yhteinen ideointi verkkoalustalla itse kullekin parhaiten sopivana ajankohtana
- Tekoäly löytää sopivat "sähmmät" opiskelijatkave rit
- Kurssien tehtäviä voisi tehdä yhdessä toisten kanssa.
- vertais-palaute eri henkilöiden välillä
- yhteinen työskentely
- Tietty ajankohta milloin kaikki opiskelijat voivat olla on-line

Opettajien tuki

- jos avoimuus on ongelma, haasteen voi myös esitellä anonyymisti, johon opettaja vastaa niin, että muutkin näkevät.
- Omia ajatuksia voidaan laittaa myös anonyymille kanvalle
- Verkkoastaanotto
- Tulisi järjestää myös henkilökohtainen ohjaus
- - opettajan tuki ajankohdasta riippumatta
- - opiskelijan tuki työskentelyn eri vaiheissa
- saatavilla yksilöllistä ohjausta ja tukea

Keskustelupalstat

- Opiskeltavasta aiheesta voisi keskustella muiden opiskelijoiden ja opettajien kanssa
- Verkkoastaanotto
- Mahdollistaa online keskustelut
- Chattikanava tms. fleep kanava
- Helppokäyttöisyys!!

Materiaalin kerääminen ja jakaminen

- Voi helpommin tsempata ja jakaa materiaaleja

Extra support for your studies

- Palvelu tarjoaa kurssin yhteydessä eri tasoista tukimateriaalia opiskelijalle. Esim, kolmiportaista tasoilla.
- Palvelussa on ennakkotasoa testaava kysely, johon vastaamalla palvelu osaa ehdottaa sopivia aineistoja oppimisen tueksi.
- Tekoäly ymmärtää opiskelijan ta son ja tekee ylimääräisiä kannustavia tehtäviä
- saatavilla eritasoisia tehtäviä
- mahdollisuus harjoitella oman tarpeen mukaan
- Tasotesti
- Vinkkejä mistä saa apua perusteiden opiskeluun mikäli pohjatiedot puutteelliset
- Opiskeltavan kurssin linkit aiheeseen liittyviin tuikkurssihin, lisämateriaalit. "Rautalangasta väännetyt selvitykset"

Verkkopalvelut ammatillisen kehityksen tukena - osa 1

Tervetuloa mukaan ideoimaan ihanteellista verkkokoulutuspalvelua! Tämän online työpajan tehtävään menee aikaa noin 10-15 minuuttia ja voit tehdä sen silloin kun se sinulle parhaiten sopii, 27.8.-13.9. välisenä aikana. Työpaja liittyy palvelumuotoilun opinnäytetyöhön, jossa kartoitetaan miten verkkopalvelut voivat olla ammatillisen kehityksen tukena.

Työpaja on jaettu kahteen osaan. Tässä ensimmäisessä vaiheessa (27.8.-9.9.) ideoidaan verkkokoulutuspalvelulle uusia ominaisuuksia. Käytämme opinnäytetyön aikana syntynyttä materiaalia taustamateriaalina.

Kerään osallistujien sähköpostiosoitteet, jotta voin lähettää kutsun ideoiden evaluointiin toisessa vaiheessa. Sähköpostiosoitetta ei käytetä mihinkään muuhun tarkoitukseen.

1. **Email address** *

_____

2. **Olen**
   Mark only one oval.

   ( ) Terveydenhuollon opiskelija

   ( ) Muu opiskelija

   ( ) Opettaja

   ( ) Other: _____
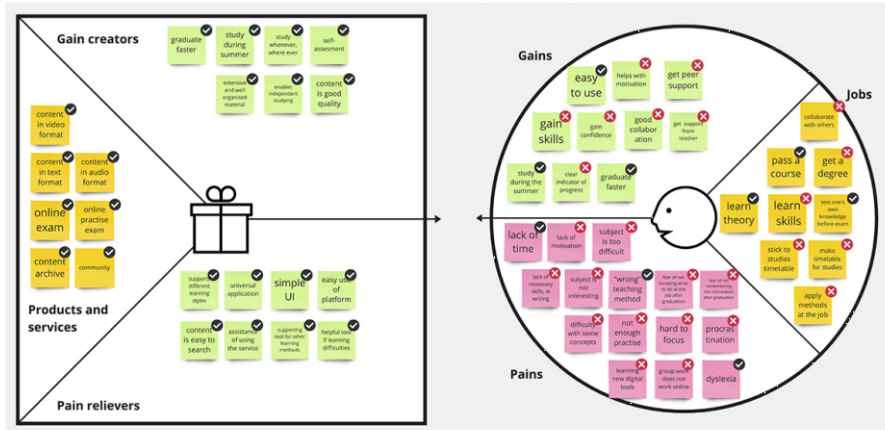
3. **Olen käyttänyt Skholen verkkopalvelua**
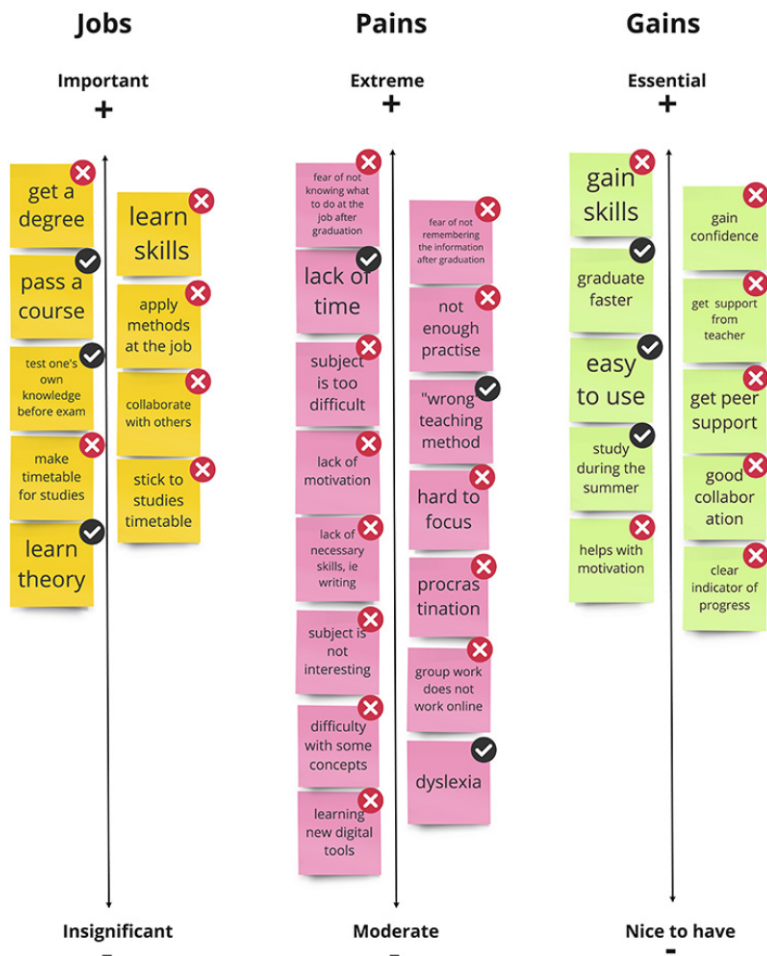   *Mark only one oval.*

   ( ) Kyllä, opiskelijana

   ( ) Kyllä, opettajana

   ( ) En ole käyttänyt Skholea

   ( ) Other: _____

Digitaalisen palvelun (Skhole) ja opiskelijan profiilit

Vasemmalla laatikossa on asioita, joita digitaalinen oppimispalvelu (Skhole) tarjoaa. Oikealla ympyrässä on listattu opiskelijoiden tärkeitä tehtäviä (jobs), ongelmia (pains) ja hyötyjä (gains). Kaavion tulokset on kerätty opiskelijoiden haastatteluista. Ne kohdat, joita palvelussa voisi vielä kehittää, on merkitty rastilla. Tässä työpajassa on tarkoitus ideoida, miten digitaalinen oppimispalvelu voisi vastata näihin tarpeisiin.

Opiskelijan tehtävät, ongelmat ja hyödyt listattuna tärkeysjärjestyksessä

Jobs
Important
+

- get a degree
- learn skills
- pass a course
- apply methods at the job
- test one's own knowledge before exam
- collaborate with others
- make timetable for studies
- stick to studies timetable
- learn theory

Insignificant
-

Pains
Extreme
+

- fear of not knowing what to do at the job after graduation
- lack of time
- fear of not remembering the information after graduation
- subject is too difficult
- not enough practise
- lack of motivation
- "wrong teaching method
- lack of necessary skills, ie writing
- hard to focus
- subject is not interesting
- procrastination
- difficulty with some concepts
- group work does not work online
- learning new digital tools
- dyslexia

Moderate
-

Gains
Essential
+

- gain skills
- gain confidence
- graduate faster
- get support from teacher
- easy to use
- get peer support
- study during the summer
- good collaboration
- helps with motivation
- clear indicator of progress

Nice to have
-

Miten digitaalinen oppimispalvelu voisi vastata näihin tarpeisiin?

Tarkoitus on siis ideoida, miten ihanteellinen digitaalinen oppimispalvelu voisi vastata näihin tarpeisiin. Ideat voivat olla "hulluja" tai realistisia, tässä vaiheessa ei kannata olla liian kriittinen ideoiden suhteen.

Esimerkki:

Tarve: Yhteistyö toisten opiskelijoiden kanssa (collaborate with others)
Idea: Digitaalisessa palvelussa voisi pitää joka kuukausi online chat-tapaamisen, jossa keskustellaan jonkun tietyn kurssin aiheesta.

Yhteistyö toisten opiskelijoiden kanssa (collaborate with others)

Listaa ideat, miten verkkokoulutuspalvelu voisi auttaa tässä

4.

_____

5.

_____

6.

_____

Opintojen aikatauluttaminen ja aikataulussa pysyminen (make timetable for studies and stick to studies timetable)

Listaa ideat, miten verkkokoulutuspalvelu voisi auttaa tässä

7.

_____

8.

_____

9.

_____

Motivaation puute (lack of motivation)

Listaa ideat, miten verkkokoulutuspalvelu voisi auttaa tässä

10.

_____

11.

_____

12.

_____

Opettajan tuki (support from teacher)

Listaa ideat, miten verkkokoulutuspalvelu voisi auttaa tässä

13.

14.

15.

Vertaistuki (support from peers)

Listaa ideat, miten verkkokoulutuspalvelu voisi auttaa tässä

16.

17.

18.

Pelko siitä, että ei osaa asioita työpaikalla valmistuttuaan (fear of not knowing what to do at the job after graduation)

Listaa ideat, miten verkkokoulutuspalvelu voisi auttaa tässä

19.

20.

21.

Opiskeltava aihe on liian vaikea (the subject is too difficult)

Listaa ideat, miten verkkokoulutuspalvelu voisi auttaa tässä

22.

_____

23.

_____

24.

_____

Verkkopalvelut ammatillisen kehityksen tukena - kokeelliset konseptit (opinnäytetyö)

Tervetuloa mukaan arvioimaan oppimispalvelun kokeellisia konsepteja! Konseptit on luotu osana palvelumuotoilun opinnäytetyötä ja ne pohjautuvat haastatteluihin sekä työpajaan, jossa ideoitiin, miten oppimispalvelu voisi parhaiten tukea opiskelijoiden tarpeita.

Arvioimiseen menee aikaa noin 10 minuuttia ja voit tehdä sen silloin kun se sinulle parhaiten sopii, 26.9.-3.10. välisenä aikana. Tämä kysely tehdään osana palvelumuotoilun opinnäytetyötä, joka käsittelee digitaalista oppimispalvelua ammatillisen kehityksen tukena.

1. **Email address** *

    _____

2. **Olen**
   Mark only one oval.

   ◯ Terveydenhuollon opiskelija

   ◯ Opettaja

   ◯ Other: _____

3. **Olen käyttänyt Skholen verkkopalvelua**
   Mark only one oval.

   ◯ Kyllä, opiskelijana

   ◯ Kyllä, opettajana

   ◯ En ole käyttänyt Skholea

   ◯ Other: _____

Arvioi alustavat konseptit numeroasteikolla ja sanallisesti

Alustavissa konsepteissa esitetään miten digitaalinen oppimispalvelu voisi konkreettisesti vastata opiskelijoiden tarpeisiin. Konsepteja on 5 ja ne on esitelty kukin omalla sivullaan.

Tarve 1/5 : Opiskelijan pelko siitä, että ei osaa asioita työpaikalla valmistuttuaan

Alustava konsepti: Silta työelämään

Mikä se on?
Autetaan siirtymässä opiskelusta työelämään lisäämällä varmuutta omasta osaamisesta

Kartoitus ja harjoittelu opiskelun aikana
Autetaan opiskelijaa kartoittamaan omaa osaamistaan ja asioita mitä ei koe vielä osaavansa. Tarjotaan opiskelijalle "tietopankki" jossa tiivistetysti keskeisiä osaamisalueita ja toimenpiteitä, joista voi kartoittaa omaa osaamistaan. Annetaan mahdollisuus runsaaseen virtuaaliharjoitteluun. Mahdollisuus testata omaa osaamistaan palvelussa.

Yhteys työelämään opiskeluaikana
Palvelussa on oikeita tarinoita siitä mitä aiemmin valmistuneet ovat tehneet ensimmäisinä kuukausina työpaikassaan. Palvelussa järjestetään webcast tilaisuuksia, missä eri yritysten edustajan vastaavat opiskelijoiden kysymyksiin.

Kertauksen mahdollisuus työelämän alussa
Opiskelijoilla on mahdollisuus palata palveluun vielä jonkun aikaa työssä aloittamisen jälkeen kertaamaan asioita.

4. **Arvioi, onko "opiskelijan pelko siitä, että ei osaa asioita työpaikalla valmistuttuaan" mielestäsi todellinen ongelma ja tärkeä ottaa huomioon. Asteikolla 1 "ei lainkaan tärkeä", 5 "erityisen tärkeä"**
Mark only one oval.

	1	2	3	4	5
	◯	◯	◯	◯	◯

5. **Arvioi, auttaisiko ratkaisumalli "Silta työelämään" mielestäsi opiskelijan tarpeeseen. Asteikolla 1 "ei auta lainkaan", 5 "auttaa todella paljon"**
Mark only one oval.

	1	2	3	4	5
	◯	◯	◯	◯	◯

6. **Mitä mieltä olet "Silta työelämään" ongelmasta ja ratkaisumallista? Onko mallissa jotain erityisen hyvää tai huonoa tai lisäisitkö siihen jotain?**

Tarve 2/5 : Motivaation puute

Alustava konsepti: Motivaation "tehostaja"

Mikä se on?
Autetaan opiskelijaa säilyttämään motivaationsa

Motivaatiomittari
Opiskelija voi päivittäin arvioida omaa motivaatiotaan ja fiilistään palvelussa, esim numeroin tai hymynaamoin. Jos tulos on huono, muut opiskelijat voivat virtuaalisesti tsempata opiskelijaa. Opiskelijalle tarjotaan apua, jos uhkana on uupuminen tai hän alkaa epäillä opiskelualan valintaa. Opettajan henkilökohtainen tuki auttaa erityisen "jumissa" olevaa opiskelijaa.

Oppimateriaalit ja pelillistäminen
Piristävät minioppimispelit, aiheen pilkkominen osiin, visualisoinnit ja vaihtelevat työtehtävät auttavat oppimisessa.

Sponsoroidut palkinnot
Palautejärjestelmä, joka kannustaa opiskelemaan. Kun saavuttaa jonkun tietyn vaiheen (esim saa valmiiksi laajan kurssikokonaisuuden), saa yllätyksenä jonkun pienen palkinnon, vaikka kahvin ja pullan. Näissä sponsoreina yrityksiä.

Tavoitteet ja välitavoitteet
Kurssin sisältö on osa kokonaisuutta ja autetaan opiskelijaa hahmottamaan tämä. Irrallinen kurssisuoritus ei motivoi. Palvelussa näytetään jo suoritetut kurssit ja opitut aiheet, jotta opiskelija näkee mitä kaikkea on jo oppinut ja miten pitkälle on päässyt opinnoissaan.

7. **Arvioi, onko "motivaation puute" mielestäsi todellinen ongelma ja tärkeä ottaa huomioon. Asteikolla 1 "ei lainkaan tärkeä", 5 "erityisen tärkeä"**
Mark only one oval.

1	2	3	4	5
◯	◯	◯	◯	◯

8. **Arvioi, auttaisiko ratkaisumalli "Motivaation tehostaja" mielestäsi opiskelijan tarpeeseen. Asteikolla 1 "ei auta lainkaan", 5 "auttaa todella paljon"**
Mark only one oval.

1	2	3	4	5
◯	◯	◯	◯	◯

9. **Mitä mieltä olet "Motivaation tehostaja" ongelmasta ja ratkaisumallista? Onko mallissa jotain erityisen hyvää tai huonoa tai lisäisitkö siihen jotain?**

_____

_____

_____

_____

_____

Tarve 3/5 : Opintojen aikatauluttaminen ja aikataulussa pysyminen

Alustava konsepti: Digitaalinen avustaja

Mikä se on?
Auttaa opiskelijaa opintojen aikatauluttamisessa

Muokattava aikataulutus
Opiskelijalle tarjotaan valmista aikataulua, jota voi muokata omaan opiskelun aikatauluun ja taitoihin sopivaksi. Opiskelija raportoi kurssin edetessä, miten on pysynyt laatimassaan suunnitelmassa ja tarvittaessa korjaa alkuperäistä suunnitelmaa. Opiskelija kartoittaa itselleen parhaat opiskelutavat ja -ajat. Opiskelija listaa tyypillisimmät ajankohdat, jolloin voi opiskella. Palvelu näyttää visualisoinnin siitä, kuinka kauan kurssien suorittamiseen menee aikaa.

Muistutukset ja ajastukset
Kurssien tehtävien deadlinet ovat selvästi esillä ja palvelu muistuttaa deadlineista. Palvelu vertailee opiskelijan ilmoittamaa työmääräresurssia tehtävän aikatauluun ja ilmoittaa, mikäli tehtävä on vaarassa myöhästyä.

To-do listat
Palvelu tarjoaa ehdotuksia to-do listalle, esim. luennot, deadlinet ja tehtävät. Opiskelija voi lisätä itse tehtäviä to-do listalle.

Aikataulujen visualisointi
Verkkokoulutuspalvelu voisi kannustaa realistisen aikataulun luomista ja aikataulussa pysymistä pelillistämisen avulla, esim visualisointi siitä miten paljon mikäkin vaihe vie aikaa.

10. **Arvioi, onko "opintojen aikatauluttaminen ja aikataulussa pysyminen" mielestäsi todellinen tarve ja tärkeä ottaa huomioon. Asteikolla 1 "ei lainkaan tärkeä", 5 "erityisen tärkeä"**
    Mark only one oval.

	1	2	3	4	5
	◯	◯	◯	◯	◯

11. **Arvioi, auttaisiko ratkaisumalli "Digitaalinen avustaja" mielestäsi opiskelijan tarpeeseen. Asteikolla 1 "ei auta lainkaan", 5 "auttaa todella paljon"**

    Mark only one oval.

	1	2	3	4	5
	◯	◯	◯	◯	◯

12. **Mitä mieltä olet "Digitaalinen avustaja" ongelmasta ja ratkaisumallista? Onko mallissa jotain erityisen hyvää tai huonoa tai lisäisitkö siihen jotain?**

    _____

    _____

    _____

    _____

    _____

Tarve 4/5 : Opettajan tuki, vertaistuki ja yhteistyö toisten opiskelijoiden kanssa

Alustava konsepti: Verkosto apunasi

Mikä se on?
Vertaistukea nopealla aikataululla

Ensiapuryhmä
Jos joku asia tuntuu liian vaikealta voi painaa "isoa punaista painiketta" ja joku verkoston jäsen voi tulla apuun. Pidemmälle opiskelleiden tai samassa vaiheessa olevien kanssa sovittu apuryhmä joka auttaa eteenpäin ongelmakohdassa. Vertaistukea saatavilla nopeallakin aikataululla, esim. jos on ongelmia päästä vauhtiin.

Mentorit
Mentoriopiskelija (opinnoissaan edellä oleva) pystyy usein motivoimaan kurssin suorittajaa.

Opettajien tukikanavat
Opiskelija voi palvelussa avoimesti esittää ohjaustarpeen matalalla kynnyksellä opettajalle. Yleensä sama kysymys pyörii muidenkin mielessä. Jos avoimuus on ongelma, haasteen voi myös esitellä anonyymisti, johon opettaja vastaa niin, että muutkin näkevät.

Pienryhmät
Opiskelu voisi edetä pienryhmissä heti alkujaan. Tämä osio sisältäisi myös ryhmässä tehtäviä harjoituksia, joissa opiskelijoilla olisi erilaiset roolit. Opettaja voisi tukea paremmin ryhmää askarruttavissa kysymyksissä, jos pystyy seuraamaan ja kommentoimaan keskustelua.

13. **Arvioi, onko "opettajan tuki" mielestäsi todellinen tarve ja tärkeä ottaa huomioon. Asteikolla 1 "ei lainkaan tärkeä", 5 "erityisen tärkeä"**
    Mark only one oval.

	1	2	3	4	5
	◯	◯	◯	◯	◯

14. **Arvioi, onko "vertaistuki" mielestäsi todellinen tarve ja tärkeä ottaa huomioon. Asteikolla 1 "ei lainkaan tärkeä", 5 "erityisen tärkeä"**

    Mark only one oval.

1	2	3	4	5
◯	◯	◯	◯	◯

15. **Arvioi, onko "yhteistyö toisten opiskelijoiden kanssa" mielestäsi todellinen tarve ja tärkeä ottaa huomioon. Asteikolla 1 "ei lainkaan tärkeä", 5 "erityisen tärkeä"**

    Mark only one oval.

1	2	3	4	5
◯	◯	◯	◯	◯

16. **Arvioi, auttaisiko ratkaisumalli "Verkosto apunasi" mielestäsi opiskelijan tarpeeseen. Asteikolla 1 "ei auta lainkaan", 5 "auttaa todella paljon"**

    Mark only one oval.

1	2	3	4	5
◯	◯	◯	◯	◯

17. **Mitä mieltä olet "Verkosto apunasi" ongelmasta ja ratkaisumallista? Onko mallissa jotain erityisen hyvää tai huonoa tai lisäisitkö siihen jotain?**

    _____

    _____

    _____

    _____

    _____

Tarve 5: Opiskeltava aihe on liian vaikea

Alustava konsepti: Tukimateriaalit

Mikä se on?
Auttaa opiskelijaa tarjoten tukimateriaaleja tarpeen mukaan

Tasotesti
Palvelussa on ennakkotasoa testaava kysely, johon vastaamalla palvelu osaa ehdottaa sopivia aineistoja oppimisen tueksi. Tekoäly ymmärtää opiskelijan tason ja tekee ylimääräisiä kannustavia tehtäviä

Tukea perusteisiin
Palvelu tarjoaa linkkejä mistä saa apua perusteiden opiskeluun mikäli pohjatiedot ovat puutteelliset.

Lisämateriaalit
Opiskeltavaan kurssiin linkit aiheeseen liittyviin lisämateriaaleihin: "Rautalangasta väännetyt selvitykset". Palvelussa on myös tarjolla eritasoisia tehtäviä. Kurssisisällöt saattavat tulla opiskelijalle "väärässä" järjestyksessä. Silloin on harkittava miten opiskelija voisi opiskella ensin perustietoja, joille pystyy rakentamaan uutta.

Kokemuspankki
Käyttäjien kokemuspankki jossa konkreettisia ehdotuksia opiskeluun.

18. **Arvioi, onko "opiskeltava aihe on liian vaikea" mielestäsi todellinen ongelma ja tärkeä ottaa huomioon. Asteikolla 1 "ei lainkaan tärkeä", 5 "erityisen tärkeä"**
Mark only one oval.

1	2	3	4	5
⬭	⬭	⬭	⬭	⬭

19. **Arvioi, auttaisiko ratkaisumalli "Tukimateriaalit" mielestäsi opiskelijan tarpeeseen. Asteikolla 1 "ei auta lainkaan", 5 "auttaa todella paljon"**
Mark only one oval.

1	2	3	4	5
⬭	⬭	⬭	⬭	⬭

20. **Mitä mieltä olet "Tukimateriaalit" ongelmasta ja ratkaisumallista? Onko mallissa jotain erityisen hyvää tai huonoa tai lisäisitkö siihen jotain?**

_____

_____

_____

_____

_____