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DEVELOPING A LANDING PAGE AND ANALYSING ITS IMPACT ON SMART CAMPUS INNOVATION LAB'S PROJECT REGISTRATION

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ABSTRACT

Ila Sharma: Developing A Landing page and Analyzing Its Impact on Smart Campus Innovation Lab' Project Registration
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Millions of E-commerce websites are running in the hope of selling their services and products online and building relationship with their customers over the internet. At this stage, search engine optimization and e-marketing plays a vital role. This research does not focus on search engine optimization techniques but on a subject, which was designed to acquire leads and increase conversion rates to their website in order to sell their products and service i.e. landing pages. Search engine optimization also plays a very small role, as it will help this study to understand landing pages.

The main purpose of performing this study is to provide evidence that via landing page it is easier and quicker for students to apply for open projects offered by Smart Campus Innovation Lab (SCIL) in comparison to the home page of their official website. Therefore, design process was followed in order to design, test and develop the landing page. It was tested iteratively, first, using guerrilla test on the mock-up of the landing page and then qualitative usability test was run on the landing page.

It was found that participants of usability test were able to find information about Smart Campus Innovation Lab and its open projects much quicker and more easily with the landing page than with the home page. Although, the participants also suggested some features which can be improved in the user interface of the landing page such as the header section and contacts section.

Keywords: Landing pages, Adwords, Organic search, Search Engine Optimization (SEO), User Centric Design, User Experience, Usability, Guerrilla Testing.

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1. Introduction

Buying and selling services and products online has become a common phenomenon. For every enterprise, it is important to build relationship with their customers by strengthening understanding and communication through websites, social media and other channels. This has led them to be a part of digital marketplace. There is an evident amount of competition among these e-businesses, so e-marketing has a significant role to play in order for these companies to sustain themselves. Using websites to facilitate customer leads, sales and managing after sales-service is also part of e-marketing strategies [Chaffey and Smith, 2017, p. 13].

There are also other kinds of e-marketing strategies for example, social media marketing, e-mail marketing, video broadcasting, blogs, publicity campaigns and search engine optimisation [Wynne, 2011, p. 7]. Amongst those, there is an interesting way to focus the customer's attention on a particular product or service: developing a landing page. Landing page is designed in a way that after an organic search or by clicking an Adword, the potential customer will be landed to it. Once landed to the landing page, the potential customer is able to glance upon and read information about a particular service or product they have tried to search. After showing certain interest to attain information about that product or service offered by the company, he or she might be willing to buy that product or service. In order to buy the product or acquire company's services, the potential customer will click on the 'buy product' or 'register buttons, which are referred to as "call to action".

Once the potential customer has reacted to the call to action, the customer becomes a lead, where he or she is directed or transferred to a more descriptive page of the product with a payment option. This descriptive page is usually on the official website of an enterprise. When a lead buys the product or acquires the services, they are converted into buyers. This is the end stage of a potential customer becoming a buyer. When these companies track the transition or conversion of a potential customer becoming a buyer, they consider this transition as a success. Henceforth, they try to create and implement post conversion campaign for these customers to become long-time customers.

In this thesis, landing page is designed for users to focus on the main service offered by the Smart Campus Innovation Lab (SCIL): applying for ongoing projects. In addition, a landing page has as special power to highlight what an enterprise wants to sell, which in

this case is the registration for SCIL open or ongoing projects. This thesis uses that special power and tries to answer the research question *can landing page be an easier and quicker way for a student to find and register for an ongoing project at SCIL in comparison to the home page of their official website?* SCIL is a Tampere³ living lab, which organizes different kinds of live projects for students from all Tampere³ universities to gain practical experience and credits. Like any other institute, SCIL wants more students to participate in their projects. In addition, I would also elaborate about Tampere³ universities. In Tampere city of Finland, there are three universities, University of Tampere, Tampere University of Technology and Tampere University of Applied Sciences. Together, these universities are called Tampere³ universities, which existed as separate institutions until 2018. In 2019, these universities were united under one institution, the Tampere University. Now, these universities act as different campuses of Tampere University. Although, SCIL still provides projects to all the students from these campuses to participate.

SCIL has an official website to communicate its services and other important information about them to the target users. Having a website gives opportunity to an enterprise to convey vast information and structure this information into different pages. SCIL has similar approach. Despite of scattering and structuring information according to different themes, their home page covers plenty of information about them and their projects, also how they help students to achieve their goals, get practical experience and credits. However, there is a significant difference between the home page and the landing page. A home page is a webpage, which a user sees and interacts with first. It consists of an overview of what a company does and what it is. All kinds of information is displayed on the home page about the company, such as, important members of the company, services the company provides and what are the company goals. In addition, media can also be a part of the home page presenting some interesting activities happening in the company and ways a user can stay connected to the company, for example, via an e-mail or social media.

As the home page is the first page of the website, it usually has a top navigation menu leading the users to other important permanent pages, which hold some significant information. A landing page has a different purpose, its purpose is not to just give an overall impression about the company's services or business but to highlight and give overall information about **a particular service or a product** of a company. It shows how the user would benefit from that particular service or product because a user is more interested in what they get from the service. It also displays some amount of information of the company that supports the product. For example, a landing page can

give details about the benefits of the service a customer gets if they take it from this particular company and why. It only tries to build interest of the user by showing relevant information and direct the user to a conversion page after they have responded to the call to action. This call to action is what a company would like a user to take in order to use that service or buy the product. In this thesis, that particular service or option is to take part in ongoing projects at SCIL and “apply” is the call to action.

The thesis comprises seven chapters. Chapter 2 includes background information on user search flow and search engine optimization, landing page and its elements and types. It also briefly explains what user experience, user-centered design and usability is, and justifies the need of usability testing. Chapter 3 describes the research method used for the thesis project. Chapter 4 introduces the user experience design process. It shows how the landing page was designed and developed. It also provides details on how the Guerilla test was conducted and its results. It presents ‘test Landing page design’ using Wordpress and CSS styling approved by Smart Campus Innovation Lab.

Chapter 5 explains what is usability evaluation method, Introduction to Usability test, tasks, questionnaires and interview questions. Chapter 6 reports the results of usability test, errors and suggestions by the users. Chapter 7 contains discussion on the results found and overall experience of the thesis project. Finally, the Chapter 8 includes the conclusion of the thesis.

2. Background

This chapter covers the background on user search flow and search engine optimization in order to understand Landing pages. Section 2.2 covers information on SCIL. Section 2.3 introduces what is a landing page, its key elements and types. Finally, section 2.4 introduces user-centred design, user experience and usability.

2.1. Search flow and search engine optimization

Companies use their websites to sell their products or services or at least advertise their brand through these websites. However, sustaining themselves in this huge cluster of web links can be challenging. This is where search engine optimization serves the need of these companies and or advertisers because “search engine optimization is the process and discipline of improving the quality and visibility of a website in order to increase its ranking in search engines, thereby increasing visitor traffic.” [David, 2011, p. 7].

It is important to understand what exactly happens when a user of these search engines (e.g. Google or MSN) inputs text to the search engine. The input is used as keywords, which are matched with the relevant URLs and are given out as an output to the users. Out of those URLs, one needs to find optimal information that seems appropriate to the user. As simple it seems, this program processes in a complicated manner on the back end because a complex algorithm that finds and collects information about web pages runs to process the information. This information is usually keywords and phrases that are possible indicators of what is: contained in the web page, URL of the page, code that makes up the page, and links in and out of the page. This information is indexed in a database from where the algorithm fetches the information and inputs the collected information [Ledford, 2009, p. 5].

In the fight of ranking top on the search, some companies lose the battle, some get a huge amount of traffic to their web pages, and some are able to convert these leads into buyers of the products they sell. Search engine optimization was easier than it is today because search engine algorithms were easy to crack which helped ranking your site to the top in the search result. The approach that made it easy was to include the keywords you wanted to rank for, on the title and throughout the content of your web page. This increased the chances of ranking your web page to the top in the search. In recent times, due to complexity of search engine algorithms and millions of websites residing in the

database it is difficult to rank top. This situation has forced website owners to use different approach i.e. to outsource firms that are providing services that help rank your website or self-education. [Jones, 2008, p.2]

This struggle has given birth to many online marketing strategies, for example, Adwords, Ad copy, social media marketing, landing pages, banner Ads and marketing through e-mails. In this thesis, I have designed and developed a landing page for SCIL not with the purpose of marketing the brand but to research if a landing page is an easier and quicker approach in finding open projects. In other words, developing a landing page and conveying information about SCIL and displaying their projects making it easier for users to know about them and their projects. In addition, if this is a quicker way for users to apply for the open projects in comparison to home page of their official website.

2.2. Smart Campus Innovation Lab and its Home Page.

SCIL was established in 2010. It is situated at Floworks Living Lab in Tampere University of Applied Sciences. The idea behind creating an innovation lab was to provide a platform to the students of Tampere3 Universities to learn new skills through development projects. There are project coaches who manage these projects and guide students alongside project activities or project phases. Students from all degree programmes can participate in these projects as project work or internship to earn credits and get practical experience.

SCIL has various kinds of projects for students that run in spring, summer and autumn. Students who would like to participate in open projects can select projects of their own choice and submit an application through an application form. After selection, students can decide their own role in the team, which will lead the project. Students are provided with all the material, software support, workspace, guidance and refreshments throughout SCIL projects.

All open projects, depending on the duration of the project and working hours needed to complete the project, are allotted credits. For example, a project can be of 3 credits, 5, or 10. As a result, a student acquires new skills and competencies. Their interpersonal skills such as, time management, work ethics, project management, communication and collaboration, client handling and other similar skills are enhanced. They also gain knowledge in other disciplines. Depending on the requirements of the projects, they

learn new trends for example, social media handling, blog content production, video content creation, video editing, website designing and many more.

Smart Campus Innovation Lab has its own official website (<http://scil.tampere3.fi/>). The home page of their website consists of a top menu, which leads a customer to all other important pages, for example, open and archive projects, practical information, testimonials, blog and contact information. The home page has its default language in Finnish but one can change it into English. The home page has been divided into different sections, for example, open projects, information about SCIL, contact information and finally social media options. The overall look of the home page is appealing and contains information about all the aspects of SCIL from services to student experiences to blog posts.

As a complete website, all the important information about how to join the open projects and other details are visible in different pages according to the titles. For example, practical information page has details, which gives information on participation in SCIL projects, how much credits one can earn and how to enroll in these projects especially if they are not from Tampere University of Applied Sciences. It is effective to design a structure, segregate the information according to the topics, and as a result have separate web pages for a website. However, the landing page designed for this thesis project tries to accommodate all necessary information onto one page. Structure is designed according to topics as sections. Therefore, the idea was to funnel down relevant details from the official website of the SCIL to a landing page.

2.3. Landing pages

Before diving into designing a landing page, it is important to understand fully what is a landing page? Why is it used? What are the types of landing pages? How does it look like? What are the key components or elements of a landing page which differs from home page? The idea behind a landing page is not new because its main idea is to acquire customers and spread awareness about the company and its products. That has been done in many ways before the birth of the landing page. One example is television advertisements, which present the best ability of the products and flash the contact information through which a customer can buy the products. Other examples are banner ads, splash pages sent via e-mail to customers, multimedia messages and radio advertisements.

Users can now access all kinds of information and entertainment on their phones and laptops [Chaffey and Smith, 2013, p. 160]. This enables shoppers to use these devices

to shop online. Therefore, it gives opportunity for e-marketers to develop web pages that will draw the traffic to their website by “keeping visitors longer with relevant material and services that constantly, genuinely, help their customers” [Chaffey and Smith, 2013, p. 161].

A standalone-landing page is designed distinctly from a main website. It is designed with a single focused objective in mind i.e., to promote a service or a product in order to make a visitor into a buyer. In other words, a user will be able to see a web page pointing towards one service and one main call to action. Every other information in the landing page will be in support of that service or a product. For example, a dance studio would like its customers to register for hip-hop dance form classes. They can design a landing page, which promotes their classes. Here the focus of the landing page becomes the dance classes and call to action would be to “register” with a registration form. All the other information in the landing page would be to support the information about the dance classes with intent of provoking a visitor to take an action “register” and become their customer.

The user’s journey from being mere visitor to a buyer or customer has certain stages. First, the user searches for a product or a service via a search engine, this process is known as organic search. When search matches the keywords of a landing page, a user chooses to click on the link of the landing page. They are now perceived to be as visitors who have been landed to the landing page. The whole journey from organic search to landing page is known as click through stage. When a visitor takes the desired call to action on the landing page, they become buyers, also known as conversion stage.

There is another way a user can go to your landing page that is via an Adword. An Adword is simply an advertisement of your website, which has a headline, description and link to your website. These are the main components. An example can be seen in Figure 1. However, “Ads should not be written to please the advertiser. They should not be written to make the CEO smile. Ads should be written to convey to the searcher that you hold the key to their question, and they must first walk through your ad copy to your website before they can find out the answer” [Geddes, 2014, p. 11].

These Adwords are paid advertisements and are ranked in terms of popularity and relevance of user’s search. After getting the output of user’s search if they respond to a keyword or read the description of the Adword then these users to be good-quality leads [Chaffey and Smith, 2017, p. 384].

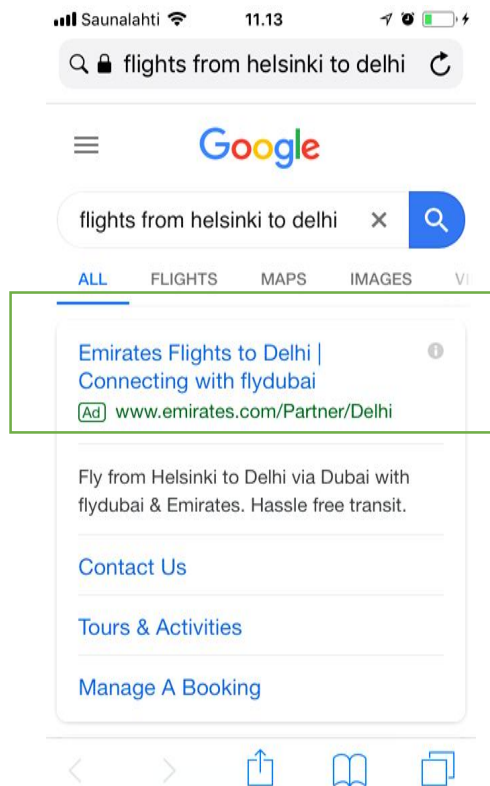


Figure 1. Screenshot of an AdWord.

These Adwords consist, the link to the advertiser's landing page and a searcher or user or visitor is landed to the page where they can get information related to their search. "In order to continue meeting the searcher's expectations, your landing page must be an extension of your ad copy. Since your ad copy informed the searcher about what they would find, the landing page should continue the conversation by assisting them to find their answer." [Geddes, 2014, p. 12].

The question now arises is how many of these visitors are becoming buyers or using your services to accomplish their goal? This is where designing and developing a profound landing page is necessary. Using the key elements of the landing page in order to convey the message of a company and needs of the customer holds significance. In this thesis, producing an Adword for the landing page was not possible and is not the objective. Though using landing page concept to solve the research question was prioritized.

The aim of the thesis is not to draw traffic to registration for open projects of Smart Campus Innovation Lab or to land the traffic to the official website through the landing page but to simply gauge, which page between home page and landing page makes it

easier and quicker to apply for the open projects. As stated by Geddes [2014, p. 442] your landing page convey the necessary information quickly and easily for someone to get the answer to their question and make a conversion decision.

Types of landing page directly reflect their purpose. Landing page as a home page: this is the top-level page of the advertiser's Website. Advertisers simply display their home page as a landing page for their ads, often regardless of the query that triggered the ad. As noted, this is a common approach used by either smaller, less experienced advertisers or well-known brand-name advertisers. Another kind of landing page is a web page which is a part of the main website encountered after going through certain layers of pages also known as category browse type. Other landing pages are stand-alone web page and a micro site. [Becker et al., 2009]

In this thesis, a stand-alone landing page was created. Stand-alone landing page is a single page. The reason stand-alone landing page was selected because it has best way to focus user's attention to one service. Anyway, for a good practice "if your content can't decide on one thing to communicate at a time, your visitors certainly won't want to take the time to figure it out" [Fishkin and Høgenhaven, 2013, p. 248]. So promising one service to the visitors will make them understand for whom the landing page is. Other information in the page revolves around the service provided in the landing page. When producing a stand-alone landing page it is also important to have one main call to action that you would like your visitors to take. The advantage of stand-alone landing pages is that they are targeted [Ash et al., 2012, p. 21].

In this case, targeted users are students of Tampere University. Focus of the landing page is to provide information about open projects and important information about Smart Campus Innovation Lab. Also, one main call to action will be to "apply" for the ongoing projects offered by Smart Campus Innovation Lab.

Key elements of a landing page can vary according to the need, for example, an author of an e-book on the topic of e-marketing wants to sell her e-book online. She would want her users to download the e-book. Now her landing page should have a clear headline "Do you want to know how to market your brand online?" This statement will bring clarity to the visitor that this page is about learning how to market a brand. The landing page can have a sub heading "Get 25% discount on the e-book before Easter." This statement further clears that one can buy an e-book, which teaches how to market your brand, and there is a discount of 25% on original price. The original price can also be shown. Presenting a suitable picture of the e-book will be useful, as a user can know

how the e-book looks like. Finally a form asking for minimal entries, such as, name and e-mail with a call to action: Buy e-book, will enable the user to download the e-book with a payment option.

This can be a starting point or a basic approach to promote or sell your product or services using a landing page. A more elaborate example is shown below in Figure 2, Grammarly's landing page. It has clear headline "Great writing, simplified." with a subtitle "Compose bold, clear, mistake-free writing with Grammarly's AI-powered writing assistant" and nice header image or hero shot with an animation that presents how the tool corrects English grammar when writing a document. There only one main call to action is "Add Grammarly to Chrome" that is sprinkled all over the page so that a potential customer does not forget to add Grammarly to their browser.

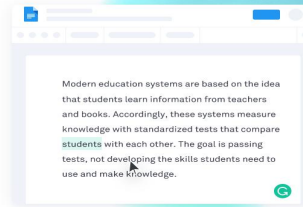
The page displays in how many platforms it helps write content with correct English grammar such as, various e-mailing platforms, kinds of documents and social media platforms. This shows how much a customer is benefited by using their free tool. The page also contains trust indicators, for example, under their 'everyone can be a writer' section; the page provides a positive user feedback. In addition, it displays companies or brands that have recognized Grammarly. In the header section, there is a count displayed of how many people are their present customers, which is 20 million.

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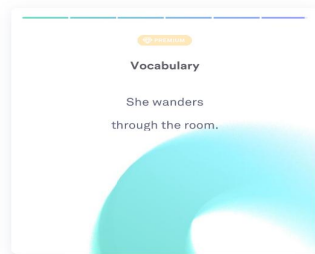
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Figure 2. Landing page of Grammarly.

In this thesis, there are five key elements used to build a landing page:

- **Headline:** Bold and clear message as a Headline hints a user what the page is about because this is the first text a user will notice. By using a headline, you confirm the visitor with the purpose of the landing page. They should immediately know how this page would help them to get what they were searching for [Ledford, 2009, p. 121].
- **Call to action:** Have a clear call to action button, what you want your users to do in order to avail your product or service. For example, Download, Buy, Register, Apply and so on. [Gilbert, 2018]
- **Trust indicators:** Trust indicators are a piece of content, which represents how prior customers or associations have benefited from the product or the service. For example, social media feeds or testimonials or user cases can be used to reflect user satisfaction. If an enterprise has partners or customer, which are popular then that information should be displayed on the landing page. “The goal here is to establish trust quickly. Using positive reviews from well-known and trusted websites like Yelp, Facebook, or LinkedIn can really have an impact” [Smith, 2016, p. 31].
- **Hero Image/Banner Image:** This is the first visual a visitor will get. A nice professional picture/video representing your service/product to give the main idea of the page. [Gilbert, 2018]
- **Benefit statements:** A customer is interested in how can the service or product benefit them. Therefore, reflecting your objective behind your service and what benefits a customer will attain can help the user make a decision. Hence, user from visitor can become a buyer after reading those benefit statements.

2.4. User-Centred Design, User Experience and Usability

When a user interacts with a system, that interaction becomes the user's experience with the system, but to understand whether the experience is good or bad, knowing how well the system is designed keeping the user or different kinds of users in mind is important. This thesis targets, students of Tampere University as the users for the final product i.e. landing page. Therefore, to follow user-centred design approach, it is essential to involve users in the project work.

In recent times, it has become a norm for every company to focus on user experience and demand a user experience specialist or requires a team, which focuses on knowing their customers in a deeper fashion and that is how it should be. This section of the thesis tries to exemplify how important is to touch the essence of user experience and usability evaluation. First, this section tells what is user-centred design approach, user experience, usability and finally, importance of usability evaluation with an example. This section holds key to the motivation of the research method used for the thesis project.

According to International Organization of Standardization (ISO), human-centred design is an “approach to system design and development that aims to make interactive systems more usable by focussing on the use of the system; applying human factors, ergonomics and usability knowledge and techniques” [ISO, 9241-220:2019]. One may call it user-centred design or human-centred design they all refer to the same concept. In other words, user-centred design or human-centred design is an approach that focuses on the **techniques** that considers a system should be built keeping users in mind to make the system usable and useful.

Whereas, user experience is the **actual experience** a user has when they use the system and that experience indicates if the system is useful and usable. ISO defines user experience as “user's perception and responses that result from the use and/or anticipated use of product or system” [ISO, 9241-220:2019]. On the other hand, usability of the product is measured by making users interact with the system for the first time. Usability tests **the performance of the solution** and hence is an output of users' experience [Nichols and Chesnut, 2014, p. 13]. ISO defines usability as “extent to which a system, product or a service can be used by specified users to achieve specified goals with effectiveness, efficiency, and satisfaction in a specified context of use” [ISO, 9241-220:2019]. The concept of user-centred design, user experience and usability go hand in hand to provide user satisfaction. This thesis follows user-centred

design approach by focusing on users while designing the landing page, testing it along with home page with them. Usability is measured by evaluating target users' experience with the landing page and home page.

In order to follow user-centred approach, it is first essential to recognize the target audience or the target customers who will use the product or the service. Customers can be a broad audience. One has to categorize their audience by analyzing what kind of a product is being made. For example, a company wants to develop a website where travelers can write and post their travel diaries with images and video upload feature and share them with their followers or friends. Target audience can be people of age 18 years and above, who like to travel and write about their trips, who have basic knowledge about using the internet and such social media platforms where they are familiar with image/video upload features, who know how to type via computers or mobile phones. By having an idea about your target audience, one builds the bridge of empathy with them.

To highlight the importance of user experience and evaluating usability, I would like to bring forth, an example from my own experiences. In April 2018, I had participated in a usability test for a university robot known as Pepper at Tampere University of Technology. The usability test was conducted to observe how students interact with Pepper. There were several applications one could use via the screen attached to the robot. These applications enabled a user to interact with Pepper. Those applications were some games, roadmap of the university, quizzes and so forth. Figure 3 shows a glimpse of my experience with Pepper. As a user, I was interested in knowing what Pepper can do for me. The main objective to keep Pepper at the university was to help students find some useful information about the university. The aim of the usability test was to find out what students expect Pepper to do for them and how it can help them.

Although overall experience with Pepper was incredible and I thought, it would be of a great help especially for a new student as they can take Pepper's help in finding classrooms or other places in the university, but there were some problems, which I noticed while interacting with Pepper. For example, while using an application where Pepper hears gesture names, for example, high five and performs gestures in return. I saw that it did not respond in gestures at certain times. I felt a bit agitated when it could not hear me properly. How a user feels, thinks and behaves while interacting with the product shows what kind of experience they had, where did users find the product to be useful and where it frustrated them.

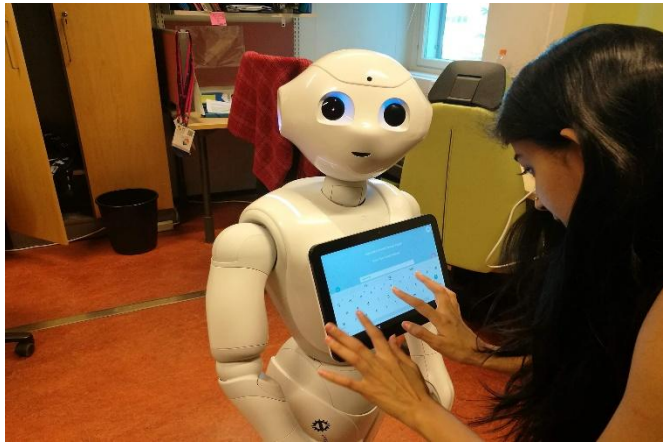


Figure 3. Pepper.

After creating a product, it is necessary to improvise and add functionalities to your product but a producer alone cannot know unless a user or the consumer provides that missing piece of a puzzle. Even if one is starting to create a product or upgrading their products to different versions, it is advisable to test the product with users because “user experience takes a broader view, looking at the individual’s entire interaction with the product. Whereas usability is usually considered the ability of the user to use the product to carry out a task successfully” [Albert and Tullis, 2013, p. 5]. Therefore, observing and testing how a user interacts with your product can give you great user insights and one can improve certain functionalities of the product.

As the complexity of technology grows, it is essential that user experience must be given more attention and importance, and measuring user experience will become a focal point of the development process to make these complex technologies efficient, easy to use, and engaging [Albert and Tullis, 2013, p. 6]. Therefore, testing functionalities of the product and learning from the overall experience of the user while they are using your product for the first time will help product to be more efficient, easy to use and engaging and thus improving the usability of the product.

This is where usability testing or evaluation plays a vital role. Although, usability testing is an iterative process, it should be done in earlier stages to avoid pitfalls afterwards. We all are familiar with the phrase “The sooner the better.” For this thesis project, it is equally important to test the design at initial stage and finally test the final design of the landing page with some users. The home page of the official website of SCIL is also tested in comparison to the landing page. More about the research methodology is elaborated in Chapter 3. In Chapter 4, user experience design process is discussed in detail to put more light on the above discussed topic.

3. Research methodology

Designing the landing page took trials and the user experience design approach was followed. The design advanced from paper wireframes to digital design. However, following user-centred approach and testing your ideas with users is important to upgrade the design in order to satisfy the users. In addition, there is a difference in testing the design, which is yet to be improved, and the final product. Therefore, the mock-up design of landing page and the final design of the landing page was tested. Nielsen in [1994a, p. 170] has described these two as formative evaluation and summative evaluation.

When a design that is a part of the iterative process i.e. the mock-up, an evaluation is done on it to learn which aspects of the design are good and which are bad and how can it be improved then it is a formative evaluation. While summative evaluation is done to assess overall quality of the design or an interface, which in this case is the landing page. Henceforth, to evaluate what aspects are good and bad in the landing page and how the design can be improved, guerrilla usability test was implemented. In addition, guerrilla usability testing was used in order to follow user-centred design process.

Guerrilla test is a straightforward and quick method of testing one's design with users. Once a user has consented to participate after being explained about the purpose of the test, the participants are given a scenario and asked to perform certain tasks with the design or a product. While performing the tasks participants are asked to think aloud and after the tasks, they are asked questions about their experience. Participants are not given any background questionnaire to fill or a feedback questionnaire to fill. Guerrilla usability test is positioned between a contextual inquiry (observing a user in his/her environment/context) and task analysis (observing the completion of a specific task or series of tasks). Guerrilla usability test is a quick, less-formal, low cost method that allows you to test in real world environments and understand real world context of use [Marsh, 2018, pp. 191-193].

While performing the tasks, students were observed, their behaviour and actions towards the mock-up were noted and as they were thinking aloud, their voice was recorded. After the completion of the guerrilla test, they answered few questions related to their experience with the mock-up in terms of its content and visual design of the page. These answers were recorded and were the key findings to determine what changes need to be made and what other ideas can be implemented for the test website

of the landing page. Guerrilla usability test helped understand participant's attitude and thought process towards the mock-up. In addition, how well they are able to relate with the content that has been a part of the prototyping process.

The best part about guerrilla usability test is that it does not have to be performed in a confined room or in a lab. It can be performed in a café or library or any place where you can find your users. It enables the participants to be in their comfort zone and the results received are more real because the environment is not structured or controlled. The only difference was that guerrilla test was not performed with random students but with students who were recruited before guerrilla test. Otherwise, the test was held in different areas of the University of Tampere, like a café and common room. Chapter 4 explains how guerrilla test was conducted, what were the tasks given to the participants and what kinds of questions were asked to them post participation. It also shows the results of the guerrilla test.

As summative evaluation implemented for the landing page and home page to answer the research question was qualitative usability testing. Qualitative usability testing helps gauge usability aspect of a product. The definition of usability mentioned in Chapter 2.4, indicates that a product can be anything and a user interacts with it to accomplish a goal by completing an action or a task. Therefore, testing usability aspect which is effectiveness, efficiency and ease of use of a product can only be achieved by formulating some tasks a user can perform with the product and how a user interacts can be analysed to have a clear vision of whether the user is satisfied with the product or not.

In other words, users do real tasks to fulfil the primary goal i.e. improve the usability of the product. These users are observed while performing the task and their behaviour is recorded for further investigation. Recordings and outcomes of questionnaires and interviews taken of the users after the tasks are analysed in order to diagnose real problems, and recommend changes to fix those problems [Dumas et al., 1999]. In this thesis, the product is a landing page but it is compared with another existing product that is the home page of SCIL. Therefore, usability test was run on the two websites, the test landing page and home page of SCIL's official website. Their comparison in terms of appearance, ease of use, and quickness in finding projects were specifically examined.

As mentioned above that recordings and outcomes of questionnaires and interviews are taken for analysis to diagnose real problems, after running tasks with participants and

therefore their facial expressions, voice, monitor screen were recorded for further investigation and analysis. The participants were given questionnaires and interview was taken from the participants after they had filled out the questionnaires. The questionnaires used were modified from a standardized questionnaire known as Standard Universal Percentile Questionnaire (SUPR-Q) that can be seen in Appendix 3.

This was chosen because it has ability to test certain factors of a web page or a website that are usability, trust, appearance and loyalty. These factors helped in knowing which of the two web pages was better in usability, appearance, reliability in terms of information provided and loyalty to return to which of the pages in future. Same questionnaire was designed for home page and landing page in order to measure factors mentioned above which can be seen in Appendix 4 and 5. The questionnaires were handed over to them shortly after doing the tasks with the home page and landing page, as answers are more useful if they had been answered shortly after using the system [Nielsen, 1994a, p. 209]. Chapter 5 presents, in depth details on how the questionnaires were conducted and results can be referred in chapter 6.

Following the questionnaires, interviews were taken of the participants in order to understand their answers of the questions stated in the questionnaire. These answers were given rating from 1-5 (strongly agree- strongly disagree), 1-5 rating for last question which was directly connected to the loyalty factor was measured as (most unlikely – most likely). When given significantly more rating to one page or less rating to another needed some direct answers as to why one page was favored in comparison to another and these were asked as questions for the interview. More direct questions were also asked in the interviews that were related to the infographic used in the landing page, information about SCIL and contact information. These were asked directly because questions related to these features or aspects in the web pages were not asked in the questionnaire and idea was to draw more insights about them from the participants. Interview questions can be seen in Chapter 6.3.

In summary, questionnaires help quantify the results in number or rating scale as in interview it is harder to analyze quantitatively [Nielsen, 1994a, p. 210]. Questionnaire for the landing page and the home page helped validate certain aspects in comparison to each other as participants in the usability test gave answers with respect to rating scale(1- 5). Comparing these numbers directly asking the participants why they have given certain score to landing page in terms of certain aspect in comparison to home

page. For example, “I found projects with landing pager quicker.” This was an interview related to the questionnaire. However, there was another short interview followed in which few more questions were asked from the participants as elaborated in Chapter 5.4. Usability test helped collect their insights, suggestions and usability issues found when users did tasks with the landing page and home page. Usability problems found with home page and landing were reported to SCIL.

3.1. Participants

Guerrilla test had 3 participants whereas, for usability test there were 7 participants. Amongst the 7 participants, 2 helped in pilot test and 5 participated in the actual usability test. The participants were students from Tampere University and Tampere University of Applied Sciences. Irrespective of their level of studies, they were chosen because they were falling in the category of the target audience for the project.

The target audience was intentionally kept concise because of the availability of participants and time. Therefore, it was only possible to recruit participants from Campuses of University of Tampere and Tampere University of Applied Sciences. The usability test was conducted at usability lab residing in campus of University of Tampere. Background information was taken from these participants. Table 1 shows their demographics and Appendix 1 shows the background questionnaire used to collect these demographics in the usability test. Occupations for all the participants were students. This reflects that only students were the target participants for the thesis project. All five participants used internet daily and chose Google Chrome as their preferred browser and some added Mozilla Firefox and Safari as their second preference.

<i>GENDER</i>	<i>AGE</i>	<i>EDUCATION</i>	<i>COMPUTER SKILLS</i>	<i>PURPOSE OF USE OF INTERNET</i>
<i>FEMALE</i>	24	University Degree	Good, I use computers often and fluent	Information retrieval, Banking, reading and sending e-mails, electronic shopping, reading the news, socializing, entertainment.
<i>FEMALE</i>	29	High School	Good, I use computers often and fluent	Information retrieval, Banking, reading and sending e-mails, electronic shopping, reading the news, socializing, entertainment.
<i>FEMALE</i>	18	High School	Good, I use computers often and fluent	Information retrieval, Banking, reading and sending e-mails, electronic shopping, reading the news, socializing, entertainment.
<i>FEMALE</i>	20	University Degree	I can use basic functions such as email	Banking, reading and sending e-mails, , reading the news, Entertainment.
<i>FEMALE</i>	20	University Degree	Good, I use computers often and fluent	Banking, reading and sending e-mails, electronic shopping, reading the news, socializing, entertainment.

Table 1. Demographics of the participants for usability test.

3.2. Software tools

The software tools used for the thesis project were selected according to their purpose. Adobe Experience Design (XD), version 13 was used to produce mock-up of the landing page. Adobe XD is a design and prototyping tool used for user interface designing of web and mobile applications [Adobe XD, 2018]. In addition, InVision application [InVision, 2018] helped in generating hot spots on the design. After guerrilla test, the design was improved in Adobe XD as a prototype and MarvelApp [MarvelApp, 2016] was used to generate hot spots on the prototype of the landing page.

Finally, landing page that can be seen in Figure 8 in Chapter 4 was designed using Wordpress [Wordpress, 2017] and Divi visual builder tool [Divi, 2018]. Wordpress and Divi visual builder were used specifically because clients of this thesis project were well equipped with these tools and will be able to administer the landing page in future. In addition, while interning with SCIL in 2017, I learned to use these software tools to re-design and re-structure their official website, so I was familiar with these tools and it helped me to design with ease.

4. User Experience Design

Knowing your customer needs, requirements, practices, behavior, limitations and values help shape the product/service one may want to create to satisfy their customers. However, the process is not as simple as it sounds. It takes time and research in order to understand customer behavior. This is when a user experience designer uses research methods, collects information, starts sketching a wireframe of the product, tests the wireframe with users. After receiving significant amount of insights from users and client, a designer begins designing a product, tests the product with the users and then the final product is launched for customers to use. After the product/service is launched, collecting feedback for further improvements also brings significant change in the product and new versions of it are brought out in the market. All these methods stated above are divided into phases of user experience design process.

4.1. User Experience Design Process

User experience (UX) design process focuses on user-centred approach where it is important to know the customers or users for whom an enterprise produces products and services. If they are not happy with the product or the service, it clearly indicates that the enterprise has not properly researched the kind of services or product its customers want and the problems they face while using the product also, why they face such problems. “User-centric approach to problem solving can lead to innovation, and innovation can lead to differentiation and a competitive advantage.” [Gibbons, 2016].

User experience design process can be split into three parts: insight, ideation and implementation. It is at the ideation step that UX design (solution phase) takes over from UX Strategy (problem phase): In UX design the problem is matched with a solution [Domingo, 2018]. Once identified and empathized with users by collecting data through user research methods, a user experience designer can define the problem area, which needs to be fixed or solved. Following step would be to innovate and create such solutions, which will help solve the problems.

The solutions are sketched into mind maps and wireframes of the probable product that can be tested with some users in order to realize if those ideas are suitable for the problems. “In this phase you begin to weigh the impact vs. feasibility of your ideas through feedback on your prototypes.” [Gibbons, 2016].

Producing wireframes is also an economical solution; a designer only needs a pencil and paper to draw them. Testing the wireframes at earlier stage provides an opportunity to cross out the ideas, which confuses or agitates the user while performing the tasks with the wireframes. After collecting the errors and learning from the user's behaviour a designer can build a better solution and jump to the implementation phase. This is when the actual product is developed. These phases can be followed for a new product from scratch or for an existing product to improvise and upgrade into better versions.

4.2. Design Process of the Landing page

After realizing the main key elements of landing page discussed in Chapter 2.3 and discussion over requirements with SCIL, it was easier to picture the design, content structure of the landing page and sketch it out on a paper. A design process may or may not include three stages of design: low fidelity design, medium fidelity design and high fidelity design of the product. "The fidelity of the prototype refers to how closely it matches the look-and-feel of the final system. Fidelity can vary in the areas of: Interactivity, Visuals, and Content and Commands." [Pernice, 2018].

Before producing and publishing the landing page all three design stages were carried out. Firstly, sketching a paper wireframe of the landing page (low fidelity design), Mock-up using Adobe XD and InVision application (medium fidelity design), Prototype using Adobe XD and MarvelApp (High fidelity). It is important to understand as to why a designer takes these steps before the final product is launched.

Sketching a wireframe on a paper helps a designer to encapsulate the structure of the web site or in this case, a web page, content placement, information hierarchy, functionality of the interface and behaviour as to how it behaves with the user. A designer uses this technique to explore ideas of how the final design will look like. In other words, it is a design thinking technique. Sketching wireframes can result into some throwaway wireframes and then into an evolutionary wireframe. This evolutionary wireframe is taken forward for better fidelity design. "A throwaway wireframe is more appropriate when the team faces uncertainty, ambiguity, incompleteness, or vagueness in the requirements, or when they have difficulty envisioning the system from the requirements alone." [Wieggers and Beatty, 2013, p. 299].

To summarize the benefits of sketching wireframes on a paper in points would be, [Greenberg et al., 2011]

1. One can think openly and creatively about their ideas without worrying about the quality of their wireframe.
2. Invent and explore concepts by being able to record ideas quickly.
3. Record ideas that you come across; discuss, critique, and share ideas with others; choose ideas worth pursuing; archive your ideas for later reflection
4. Have fun creating while designing.

In short, wireframes are the blueprints of any kind of product; it can be a blueprint of an apartment plan by an architect or design of an electrical panel or a design plan of a website. Below in Figure 4, is the sketch of the wireframe for the landing page.

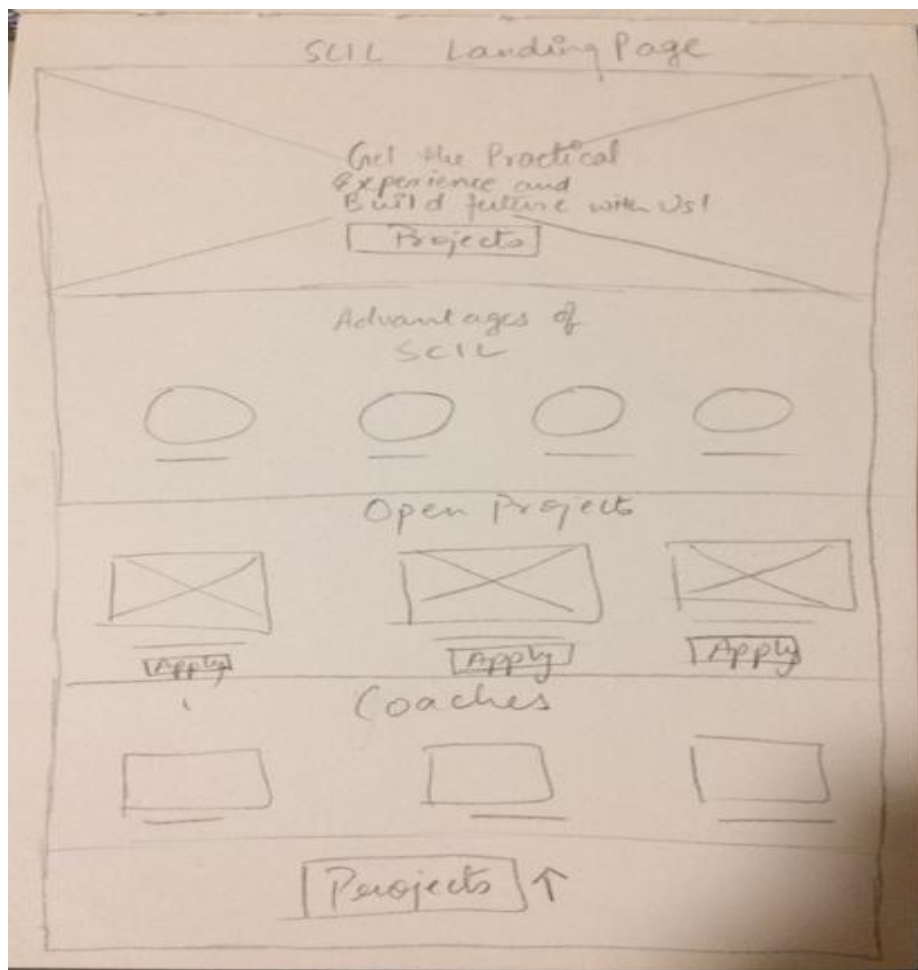


Figure 4. Wireframe of the landing page.

After sketching few throwaway wireframes an evolutionary wireframe of the landing page resulted in above image. Landing page had to have the key elements discussed in

Chapter 2.3: a catchy and clear headline about what the service is, a hero shot and call to action. Benefit statements that can convey the users about the advantages or benefits one has when they participate in SCIL projects. What are the open projects with call to action i.e. apply. Whom a user can contact to, for example in this case, coaches of SCIL who organizes and guides students in the projects. Another call to action was also added to the landing page i.e. represented with arrow with text ‘come and join us’. This can be seen in Figure 5 in Section 4.3.

This second call to action at the bottom of the page is pointing to the projects, which was sketched keeping in mind about the users being involved in the content and after seeing this option of going back to the projects will remind them about the projects once they have read all the information. The low fidelity design of the landing page had to develop more; hence, a medium fidelity design was prepared using the sketch as a blueprint with Adobe Experience Design tool. The medium fidelity or the mock-up of the landing page was more elaborate in terms of visuals, content structure and hierarchy. The mock-up can be seen in Figure 5. Mock-up was shown to SCIL. The aim to produce or create the mock-up was to get feedback about the overall design and functionality of the mock-up.

Feedback was the only way to get clear picture about what SCIL really wanted their landing page to look like and function. Another way of getting a feedback but from the users was to test the mock-up with users. Therefore, guerrilla usability testing was used as a device to gather user feedback and improve the mock-up.

4.3. Guerrilla Testing

Guerrilla testing does not consume time more than 10 – 15 minutes [Babich, 2017]. Therefore, it is a quick way to get user feedback. For guerrilla usability test, there were 3 participants. A scenario was given to the students and they were asked to perform some tasks with the mock-up. It was easier to choose a method, which is cheap and easy to implement. Thus, scenarios are cheap to design and implement and a great tool to get quick feedback from the users [Nielsen, 1994b]. In addition, for participants it took about 10-15 minutes of their time. The scenario given to the participants was “Imagine that you are looking for an open project to participate in order to earn study credits and gain practical experience.” The objective to device the scenario was to find whether users are able to resonate with the information given about SCIL on the mock-up of the

landing page and most importantly, are they able to find and apply for the open projects at SCIL.

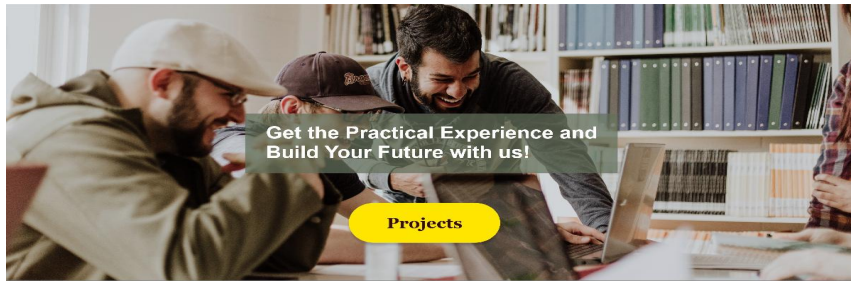
Scenario also helped participants to visualize the situation and then perform the tasks. After visualizing the scenario given to participants, they had to perform 4 tasks. The tasks were as follows:

1. Find the projects and apply for the one of your choice.
2. Read about what benefits and skills you get when you participate in the SCIL projects.
3. Find information on how students feel about SCIL.
4. Find and Read the information about the coaches.

Participants were carefully observed and their voices were recorded while they performed the tasks. This was followed by a short interview to collect some insights that could improve the design. There were four interview questions asked to the participants:

- Q1. What is the first thing you would like to see in the page?
- Q2. What do you think about the button that is below “come and join us!”
- Q3. What do you think about the structure of the content?
- Q4. What do you think about the colors used in the page?

Questions were framed in order to understand what content hierarchy will be best suitable for the landing page, what kind of content will be the best possible way of conveying about SCIL and at the same time motivate them to go through open projects and apply for them. Considering that visual design on the mock-up was kept simple, general question about colors used in the mock up was asked. Question 2 was specific to an extra element added i.e. “Come and join us!” with a call to action pointing to open projects needed to be tested to ensure if it was a good idea to have another call to action. Though, stand-alone landing page usually comprises of one main call to action. This was a way to test if a second call to action can be a part of the landing page. The mock up can be seen below in Figure 5.



Smart Campus Innovation Lab (SCIL) is a living lab which enables students from all three Universities in Tampere and various field to collaboratively participate in development projects in order to gain practical experience with study credits.

Benefits of being part of SCIL

All students from UTA, TAMK and TUT can participate in our projects!

Earn credits ranging from 3-20.

Projects in both English and Finnish.

SCIL has its own work space where students can do their project work and get some free coffee.

Multi - Cultural environment

Participate in our awesome development projects that can add value to your resume!



Skill set one acquires after participation

- Client handling and Requirements management skills.
- Time and project management skills
- Team player and leadership qualities.
- Presentation and communication skills.

One will also gain additional skills, such as : Research methods and content production, developing new project models , handling social media, website designing, photography and photo editing skills.

Come and join us !

[▼](#)

OPEN PROJECTS



Chatbot

Projects helps to understand and produce a report on how to use chatbots and what is it abilities in support of teaching and guidance.

[Apply](#)



Clamor and Media

Project is about marketing and communication.

[Apply](#)

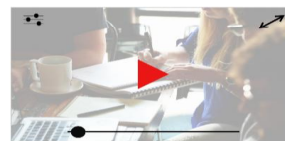
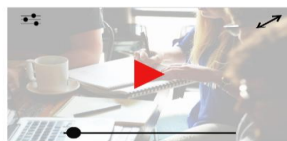


KILKAS

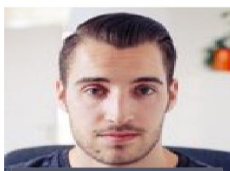
Project is about researching and producing content on promoting employment of foreign students in Tampere.

[Apply](#)

HOW STUDENTS FEEL ABOUT ABOUT SCIL



YOUR COACHES



Joonas
Designer
xyz@mail.com



Alex
Designer
abcd@mail.com



Kathrine
Designer
ijk@mail.com

Figure 5. Mock-up of the landing page.

4.4. Results of Guerrilla Usability Test

Results were analyzed from the audio recordings, observations, interviews and further comments participants had. There were points, which helped in improving the mock up into a prototype, which was the basis of the design of landing page's test website. The tasks were practically easy for participants to perform and not all the buttons designed functioned except for project button along with the hero shot. Therefore, Task 1 was achieved in no time. However, there were little frustrations noted while performing Task 2 as the boxes holding information about 'skills and benefits' were not aligned to the same level. For the Task 3, the participants could not view the video because only representations of testimonial videos were designed. The main criterion here was to test if they are able to find the video section and resonate that these videos will be the student testimonials.

The proper insights came from the interviews taken of the participants. For example, when asked the question "What is the first thing you would like to see in the landing page?" There were three different answers:

- Participant 1: "the background information about Smart Campus Innovation Lab."
- Participant 2: "Skills and Benefits."
- Participant 3: "Open projects."

This dilemma of getting three different answers were cleared when one of the participants chose open projects by telling the interviewer that " I would choose open projects if I already knew what is Smart Campus Innovation Lab" In other words knowing about SCIL is important and should be the first thing in the landing page. This point proved right after testing the test website of the landing page.

As mentioned earlier, in Chapter 4.2, the second call to action represented with an arrow with text 'come and join us!' was designed to test if there is a need of another call to action. Henceforth, a question was asked to all three participants "What do you think about the arrow button that is below come and join us!" All three participants said that it is unnecessary. Therefore, ruling out that portion from the mock-up was strongly indicated by their response. Testing structure of the content was most important, as after combining the key elements of a landing page in the mock-up it was necessary to understand the user's point of view.

Therefore, participants were asked, what they thought about the structure of the content. It was interesting to get answers like, “I think it is good enough but instead of pictures used with benefits, a video can be used.” In addition, “coaches section should be where it is as this is the last information I would like to see”. They also said, “I like top of the page as it has catchy headline and there is a nice picture as hero shot with project button which gives the opportunity to directly go to the projects section, even though it surpasses the information about skills and benefits.”

When asked about the colors used in the mock-up, two out of three felt the combination of yellow and blue is good. However, the yellow and blue theme used in the mock-up was a temporary choice as SCIL official website uses yellow as their home page theme color. Therefore, it was already decided that it will be changed.

Moreover, participants had very interesting comments and they emphasized on subtle matters. For example, “The image used along benefits section seems unnecessary here instead the boxes could be aligned/ merged. Only improving the first section about SCIL will be better.” Some of these comments gave birth to certain functionalities presented in the prototype, for example, “Having a top menu which has links to all these section can also be a good idea as a student I wouldn’t know what all information this page has!” Also, infographic designed and uploaded in the prototype and in the landing page was suggested by a participant “It would be nice if you have like a bubble of skills, each skill in one bubble. Right now you have to go through all the points individually.”

4.5. Conclusions of Guerilla test

After performing Guerilla test it was clear that first half of the page should be re-designed, keeping following points in mind:

1. A section with summarized information about benefits and skills acquired after participation or a video summarizing those points can be uploaded.
2. Unnecessary images and button need to be removed.
3. A menu at the beginning of the page can be added and section can be linked accordingly.
4. Alignment of the content is important.
5. Slight change in colors could differentiate the landing page from home page. As mentioned earlier, the color combination was a temporary choice and color yellow was matching to the home page theme color of Smart Campus Innovation Lab.

4.6. Prototype

Realizing notable points collected from the guerrilla test, a prototype was designed. First half of the design was totally changed and that gave a new feeling to the design. SCIL team was quite convinced with the design and appreciated the design and said “design has developed much more than before.” Their positive feedback gave a green signal to use the prototype for the landing page. The design now had a menu and each menu was anchored to their sections. For example, projects menu when clicked, directs one to the open projects section. Testimonial menu option directs to the “How student feels about SCIL” section and contact menu option directs one to the coaches contact information.

The Figure 6 shows menu that was added and color changed from yellow to orange for buttons. One can also see that there is settings and play button at the bottom right of the header representing a video. There is another reason because of which orange was paired with blue that these colors are the complementary contrast pairs.

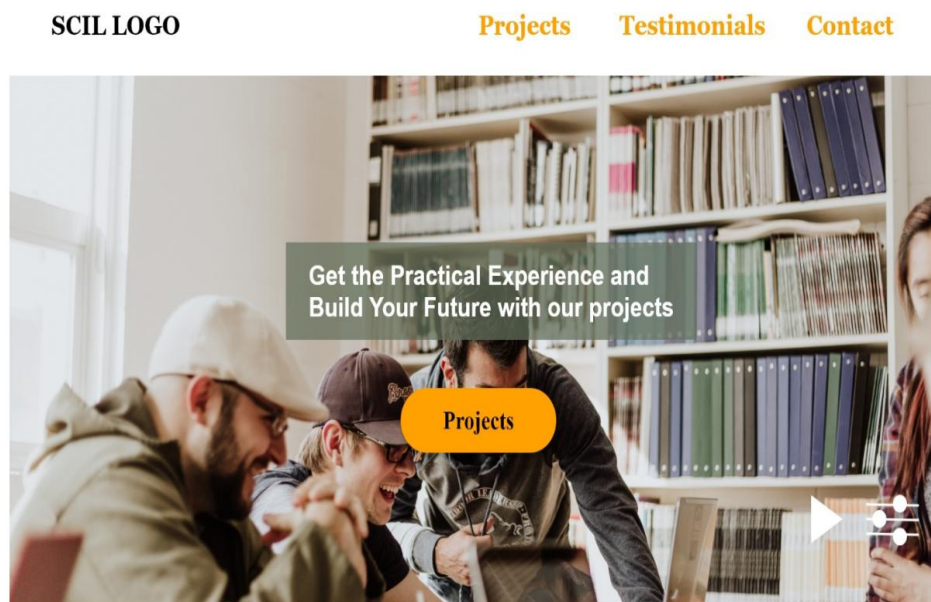


Figure 6. Header section of the prototype of landing page.

Complementary contrasts are the pairs of colors across from each other on the traditional color wheel to create vibrancy and luminosity. Complementary contrast pairs may not

be the most attractive pairs to some because mentioning them to be attractive or not are subjective. However, the reason two colors are paired together is because they are of equal value and saturation, each will cause the other to appear their most vibrant, compared to when seen alone or paired with other colors [Schlatter and Levinson, 2013, p. 189]. This can be seen in Figure 7.



Figure 7. Complementary contrast. [Schlatter and Levinson, 2013, Figure 6.26]

After header section, the introductory part for SCIL is presented with a video. This video intended to show the users the how previous projects of SCIL has been carried out. The next section uses an infographic that segregates the information about the skills one gets after participating in SCIL projects and benefits they get from being part of their projects. These changes were made to give a sense of structure, which was missing in the mock-up, for example, now there is no need to read a long text about ‘skills and benefits’ confined in a color box that is not aligned properly but in a colorful and simple infographic with several bullet points.

Instead of reading minimal information about SCIL in a few sentences, one can view a video about it. The top menu feature makes it easier to navigate within the page as the menu options directly leads a user to each section. This focuses the attention of the user to the section they are interested. Throughout the page, a color theme of blue and orange is seen and even the infographic has similar combination. The prototype can be seen in Appendix 6.

4.7. Landing Page for SCIL

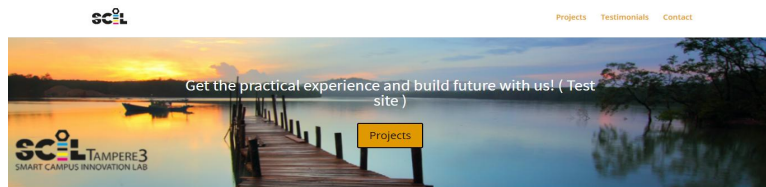
Landing page was developed using Wordpress and Divi builder. While developing the landing page there were some challenges. For example, according to the conclusion of guerrilla test and approval of that conclusion and new design by SCIL, a video about

students and projects of SCIL was decided. However, it could not be achieved as Wordpress backend did not approve to upload a video in the media library due to some administrative issues.

The alternative was to upload a header image and that was done. With header image, a bold headline 'Get the practical experience and build your future with us' was given with 'projects' call to action. The color theme was kept the same as in prototype: orange and blue. Buttons were orange as the intention was to highlight these options with subtle colors, blue and white. For the overall design, it was important to keep a balance between the content structure, colors, images or videos and white space. Schlatter and Levinson [2013, p. 106] describes, white space to be an empty space or a blank space which provides rest to the eyes before moving on to the next item. It can be spaces between columns, around elements, main body of the page or bordering the screen itself.

Therefore, the color theme was kept orange and blue with some emphasis on the white space due to its importance mentioned above. This factor also helped other important aspects of the page to pop out like the open projects has the background blue and all other sections have white background. SCIL is introduced as the first section in the page. First half of the page gives option to the user to either directly jump to open projects or first get to know about Smart Campus Innovation Lab by watching a video, reading information and understanding what skills and benefits a student gets. This information allows a user to make a decision after getting all the important information and then traversing through the open projects. However, if a user is familiar with SCIL, they can skip the information and go directly to the open projects.

Open projects has attractive pictures, titles of the project, description about the projects and call to action. After clicking 'apply', user is directed to the application page where they can apply for their respective choice of the project. The landing page can be seen in the Figure 8. The final section holds information about the coaches who will coach the students in their respective projects and also work as web designers in SCIL.

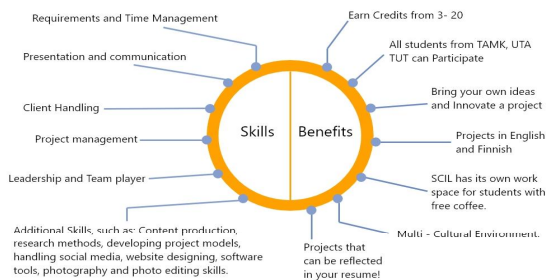


SMART CAMPUS INNOVATION LAB



Smart Campus Innovation lab helps students work like an expert for a multi-coaches in every process, though, they are motivated to innovate and implement their ideas in an individual manner. While they are engaged solving the problems of the projects they learn numerous skills, knowledge and practicalities of the project. They not only earn credits but a practical experience which they are proud of.

Skills and benefits



PROJECTS

Communication Team: Clamor and media

This project helps a student to learn more about marketing and media communications in terms of practicalities of this field.

[Apply](#)

Chatbot

The project will produce a report about use of chatbots technologies in support of teaching and guidance activities.

[Apply](#)

Help us build a project!

At SCIL, interdisciplinary student teams will take ideas into practice and develop a independent SCIL project.

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Figure 8. Landing page

5. Usability Evaluation

This chapter illustrates how the usability test was conducted. This chapter also explains the importance of usability evaluation.

5.1. Importance of usability evaluation

Usability evaluation helps evaluate the usability of an online service or the product with users where user behavior and attitude towards that service can be observed and analyzed. User testing or usability testing is the most commonly employed form of user research. User testing is not about testing your users; instead, it is testing what you have produced with users [Garrett, 2011, p. 47]. Usability is defined through its five attributes [Nielsen, 1994a, p. 26]:

- **Learnability:** The system should be easy for users to accomplish their tasks with the system.
- **Efficiency:** The system should be efficient that once users have learned the system they should be able to perform tasks with the system for productive outcomes.
- **Memorability:** When users return to the system after a period of not using it they are able to use the system without learning the system again.
- **Errors:** The system should comprise of less errors and if a user makes any error they should be able to recover from them.
- **Satisfaction:** The system should be pleasant to users so that they like using the system.

These attributes are tested when the usability evaluation is done. Once tested, results are acquired and these findings are realization for the designer and developer. These finding showcase what works in the service, what are the pain points of the user, what improvements are needed in services and what needs to be omitted permanently. Usability evaluation is done with an intent to improve existing service or prototype of the service. In this thesis, we have tested two web pages in comparison to each other in

terms of usability, a landing page and home page of the official website of SCIL. The results were compared in order to answer the research question *can landing page be an easier and quicker way for a student to find and register for an ongoing project of SCIL in comparison to their office website's homepage?*

5.2. Usability Evaluation Method

Usability test was conducted in a usability laboratory at University of Tampere. The time and availability of students were limited. Therefore, only seven students could participate. Two of them participated in the pilot test and five of them were participants of the formal usability test. Pilot test is the best way to test your initial test plan. It gives opportunity to re-plan and re-design the usability test if any phase of the test goes wrong or/and any technical problem occurs. By observing the whole situation of the pilot test, an evaluator can modify and add methods to the evaluation later and prepare for the actual test. Conducting pilot test was helpful in this case also. Tasks, questionnaires and interview questions were modified after the pilot tests.

The formal tests had the similar approach as the pilot test. Usability test was 35-50 minutes long. First participants were welcomed in the laboratory, they were asked to sit comfortably. At the beginning of the test, participant was introduced to the purpose of usability test and for what reason usability test was being held. Participants were told the importance of their participation, as it is they, who are helping SCIL to improve the home page and landing page, and highlight the comparison between the two. They were clearly told that it is the web pages that are being tested and not them.

Participants and participants' voice were recorded during the test. Consent of the participants for recording them were taken in order to respect their choice. A background information was taken after the consent form. They were also allowed to take a break in between the test as they had to perform tasks with home page and then with the landing page. They were asked if they have any questions they would like to ask before performing the tasks.

Once they completed the tasks with the home page and landing page, questionnaires were handed to them. These questionnaires were separate for home page and landing page. Once the participants submitted their answers for the questionnaires, their answers were examined and answers for home page and landing page were compared. These differences were asked as post-questionnaire interview to get information as to why they had given a certain score for home page and to the Landing page for a particular aspect. Afterwards, a small interview related to particular functionality and

aspects related to both the pages were asked. This helped in getting concrete insights of the users.

5.3. Tasks and Questionnaire

After designing the landing page, it was important to investigate how users will behave and interact with the landing page and existing home page of the official website of SCIL. This could be achieved by formulating tasks for both the pages. “The idea behind task analysis is that every user’s interaction with a product takes place in the context of some task that user is performing” [Garrett, 2011, p. 66] and analyze their performance at later stage. There were certain points prioritized while formulating the tasks: The initial tasks should be easy, as there will be tasks for each of the web pages, tasks are required to be less than 10 each, keeping the purpose of the test in mind, which will answer the research question.

There were 8 tasks formulated for home page and 7 tasks for landing page. While performing the tasks, participants were asked to think aloud which means that they have to read the tasks aloud, they had to tell the moderator what they were doing with the system and what they were thinking while doing those tasks. This enabled the moderator to observe and know what user felt, where they get frustrated and what they appreciate about the product. Think aloud method makes it easier for a user experience designer to collect user insights.

Tasks for Home page:

- Open a browser and type URL scil.tampere3.fi
- Change the language of the page to English.
- Find information about Smart Campus Innovation lab and read the information and go back to the top of the page.
- Find the topic “Why should I participate?” and read it out loud. Go back to the top of the page.
- Go to testimonials and view any video of your choice. Go back to the Home page.
- Find who you can contact. Go back to the top of the page.
- Find projects and apply for ‘Change management and communication’ project.
- Once you are directed to the application page please type “test” in all the answers and submit. After submission please close the browser.

Tasks for landing page:

- Open a browser and type URL www.sciltest2018.blogs.tamk.fi
- Find information about Smart Campus Innovation lab and read the information and go back to the top of the page.
- Find information about skills and benefits a student acquires after participating in SCIL projects and read it out loud.
- Go to testimonials and view any video of your choice. Go to top of the page.
- Find who you can contact and read about the contact persons. Go back to the top of the page.
- Find projects and apply for 'Communication Team: Clamor and media' project of your choice.
- Once you are directed to the application page please type "test" in all the answers and submit. After submission please close the browser.

All five participants did tasks one by one first, for home page and for the landing page. To record their experience, which could be quantified, questionnaires were given to the participants just after the task performance. The first questionnaire was designed for home page and the second was for landing page. The idea behind devising the similar questionnaires for the web pages was to compare the score a participant would give to home page versus landing page.

Questionnaire helped evaluate how they felt about certain aspects of the web pages, for example, ease of use, quickness in finding projects, look and feel and confidence about the information they read about SCIL. Will they return to the pages and recommend their friends to use these pages to apply for projects.

For first nine questions in the questionnaire score range was set from 1 – 5; 1 (strongly disagree), 2 (disagree), 3 (neutral), 4 (agree) and 5 (strongly agree). Final point had score from 1 – 5 too but it signified other emotions, such as, 1 (very likely), 2 (likely), 3 neutral, 4 (unlikely) and 5 (very unlikely). Appendix 4 and 5 presents questionnaires for home page and landing page. Participants were also allowed to open and look at the web pages again while answering the questionnaire. If they had any queries regarding questionnaires, they were allowed to resolve with the moderator. This made their answers more credible.

5.4. Questionnaire Related Interview

To have a better understanding of the scores given by the participants, participants were asked questions related to their scores given, which were in contrast for both pages. For example, one of the participants for question 2, 'It is easy to navigate within home page' he or she had given score 3 but for same question about landing page he or she had given 4. Why one page gained more score than the other?

These kinds of questions were important to ask and record because they gave justification of their scores. These justifications were collected as user insights for both the pages. These user insights helped in knowing why the participants preferred a particular web page to another. Nielsen also regards interviews as “open-ended questions where users are encouraged to explain themselves in depth, often leading to colorful quotes that can be used to enliven reports and presentations to management” [1994a, p. 211]. The questions asked in the interview were mostly related to questionnaire and no document was prepared for it because the interviewer knew that they have to only ask for their justifications on their scores.

5.5. Interview

There were few formulated questions too, which were asked to get feedback from the participants about certain features of the landing page. There were four questions prepared to ask from the participants. These questions had to be particularly about preference and content of the pages. However, the fourth question was only asked to three participants who gave similar scores in questionnaire for both the pages. Questions are as follows:

1. What do you think about the infographic used in landing page?
2. In which page you found SCIL information more relatable and understandable.
3. What do you think about the contact information in home page and landing page?
4. Which one of the two pages, would you prefer for applying projects?

Usability evaluation worked as a great tool to recognize the problems, which a designer may not himself or herself pin point. Observing how the participants complete the tasks can provide great amount of information, which might have not thought about while designing the service. Therefore, testing home page and landing page gave an opportunity to recognize the usability problems with them.

6. Results

This chapter comprises of the results of the usability evaluation done on home page and landing page. First, it represents the outcomes of the tasks, more precisely it shows that if the tasks were completed by the participants or they could not complete the task or did they require any help from the moderator. This chapter also includes the data about time consumed by participants to find information about SCIL and their projects via home page and landing page. This comparison of time was done because it shows using which web page a user can find SCIL information and projects quicker. In addition, it presents the results found from the questionnaires and interviews taken.

6.1. Outcome of Tasks

Participants were able to complete all the tasks, shown in Table 2 and 3. However, Table 2 shows that moderator had to help participants in completing tasks with the home page. For example, four out of five users couldn't find the 'change management and communication' project, three out of five users couldn't find information about SCIL and one out of five users couldn't find testimonials. These findings had significance while analyzing the test.

Tasks	Participant 1	Participant 2	Participant 3	Participant 4	Participant 5
	Task Outcome	Task Outcome	Task Outcome	Task Outcome	Task Outcome
Task 1	Completed	Completed	Completed	Completed	Completed
Task 2	Completed	Completed	Completed	Completed	Completed
Task 3	Moderator helped	Completed	Completed	Moderator helped	Moderator helped
Task 4	Completed	Completed	Completed	Completed	Completed
Task 5	Completed	Completed	Moderator helped	Completed	Completed
Task 6	Completed	Completed	Completed	Completed	Completed
Task 7	Moderator helped	Moderator helped	Completed	Moderator helped	Moderator helped
Task 8	Completed	Completed	Completed	Completed	Completed

Table 2. Task Outcome for home page

Tasks	Participant 1	Participant 2	Participant 3	Participant 4	Participant 5
	Task Outcome	Task Outcome	Task Outcome	Task Outcome	Task Outcome
Task 1	Completed	Completed	Completed	Completed	Completed
Task 2	Completed	Completed	Completed	Completed	Completed
Task 3	Completed	Completed	Completed	Completed	Completed
Task 4	Completed	Completed	Completed	Completed	Completed
Task 5	Completed	Completed	Completed	Completed	Completed
Task 6	Completed	Completed	Completed	Completed	Completed
Task 7	Completed	Completed	Completed	Completed	Completed
Task 8	Completed	Completed	Completed	Completed	Completed

Table 3. Task outcome of landing page

Time was noted for two tasks: one, finding the information about SCIL and second, finding the project. This was done, in order to know, with which page user takes less time and finds the information easily. Table 3 and 4 presents the time difference. Time was counted when participant began to do the task until the time they found the information and project.

Participants	Home page	Landing page
Participant 1	4 min 14 sec	5 seconds
Participant 2	14 sec	5 seconds
Participant 3	13 seconds	4 seconds
Participant 4	1 min 17 seconds	4 seconds
Participant 5	11 seconds	5 seconds

Table 4. Time noted for task: find information about SCIL

Participants	Home page	Landing page
Participant 1	2 min 45 sec	7 seconds
Participant 2	1 min 20 sec	6 seconds
Participant 3	8 seconds	2 seconds
Participant 4	1 min 16 sec	5 seconds
Participant 5	2 min 45 sec	7 seconds

Table 5. Time noted for task: find project

One can notice the time taken for the tasks with home page and landing page, which clearly indicates that it took significantly lesser time for a user to find information about SCIL and their projects with the landing page.

6.2. Result of Questionnaires and Related Interview

Participants' answers were examined and questions related to their scores were asked, for example, interviewer asked the participant for questionnaire about home page for the second point 'It is easy to navigate within home page' you have given 3 but for the same question about landing page you have given 4. Why? Participant answered, "As user's perspective, normally, attention goes to the top of the page. I think designer will put important information at the top, that is why there is a menu bar but I could not find projects with home page's menu bar. All the projects should be there but there wasn't."

There were other insights given by the participants that helped evaluator to make comparisons, for example, "Landing page has project menu which directly leads me to the projects and all projects are there with clear description." Other participants who faced problems in finding certain information with home page also gave insights as to why their score varied, for example, "It was easier for me to use the links in menu bar in the landing page that directly leads you to the section but in home page, I was looking for testimonials for longer time. I like the outlook of landing page more and the order of the content where information about SCIL was first and then the projects." In addition, "in landing page SCIL information is right on my face and if I want to get contact information, it is right in the menu bar. In the home page I am confused as there is no navigation in the menu bar." and "I was stuck in finding projects and SCIL information on the home page."

It was also noticed that one of the participants who had difficulty in finding project with home page had given score 5 (strongly agree) for home page, when asked about "I am able to find project quickly with the home page." This answer seemed to contradict with the task performance, so they were asked to clarify their answer. Participant said "Well! If I go from menu bar then I will not be able to find all projects but if I just scroll down the home page, I will find so I have 5." The participants found difficulty in finding the project: change management and communication in the menu bar of the home page because it was missing in the project list and they tried to look for it in the archive projects, which are not open projects. Menu bar of home page is displayed in Figure 9. Whereas, with landing page shown in Figure 8, they found the project quickly because participants clicked on the projects menu were directed to the projects.

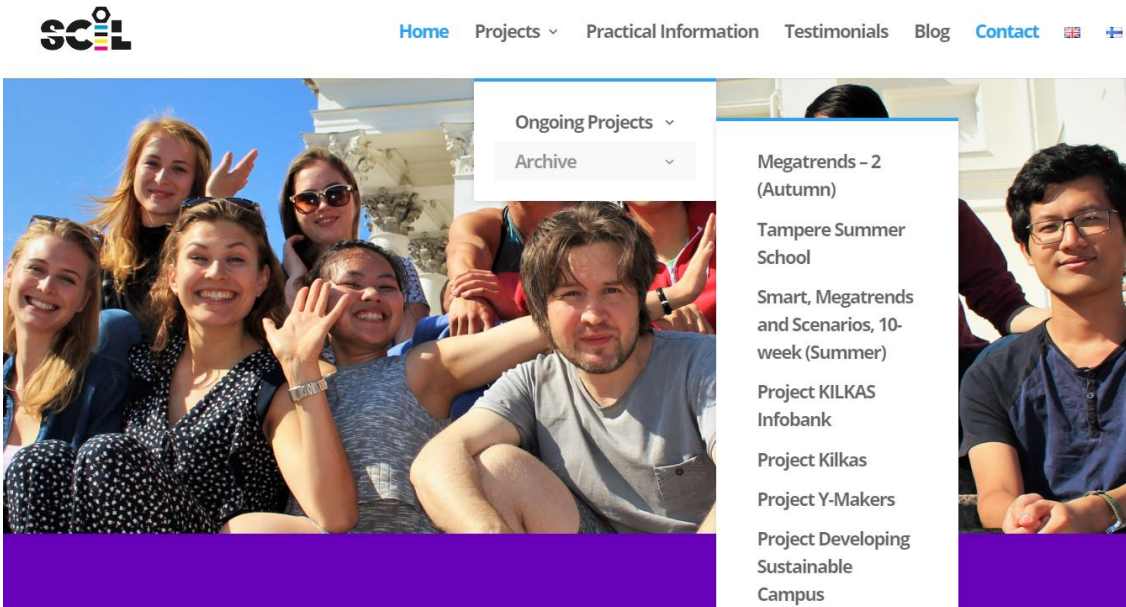


Figure 9. Menu for open and archive projects in home page.

There were mixed results for the look and feel of these page, some participants appreciated appearance of the home page and some, landing page. One such participant when asked why the score for the home page is better than of the landing page, he or she answered “landing page is not very attractive to me because it is not very vibrant and not very energetic.” On the other hand, a participant appreciated both but emphasized on ease of use in case of landing page “Both look really nice but for me the landing page has more information and is easier to use.” On the other instance, a participant gave low points to both the pages in appearance.

For the final point ‘would you recommend home page to your friend?’ and in other questionnaire ‘would you recommend landing page to your friend?’ three out of five participants answered on a positive front (likely/very likely) for the landing page and two out of five participants gave positive answer for home page.

6.3. Interview and Other Comments

There were four questions prepared to ask from the participants. These questions had to be particularly about preference and content of the pages. However, the fourth question was only asked to three participants who gave similar scores in questionnaire for both the pages. Questions are as follows:

- What do you think about the infographic used in landing page?

- In which page you found SCIL information more relatable and understandable.
- What do you think about the contact information in home page and landing page?
- Which one of the two pages, would you prefer for applying projects?

For the first question, all participants suggested that the infographic (can be seen in Figure 8) is clear and it helps categorize skills and benefits a student acquires after participating in SCIL. They also gave comments such as, “Useful, clear, before reading infographic it was unclear to me about SCIL. After reading the infographic I know I will get skills like leadership and so on.” Their answers also gave hints of comparison between the content given about the similar topic, for example, a participant answered, “I like it! Because it doesn’t just tell practical experience like in home page but shows various skills and benefits one can get.”

Answer to the second question was very important because it portrayed how well a user understood and related with the information about SCIL. Three out of five participants found information about SCIL in landing page more understandable and relatable. They had their reasons of choosing this option such as, “it gives information about skills and benefits.”, “It felt more like human text than home page.” and “ It has better way to tell about SCIL, in home page it is abstract for example, words such as, internal innovation ecosystem is abstract to me. Basically many words written but doesn’t tell enough.”

One of the other two participants felt that both are understandable but the participant added more to this statement, “Both are understandable but infographic clears more to me about SCIL.” The remaining participants chose Home page because they expressed, “It tells that it is a Lab and uses information like multi-disciplinary and all Tampere 3 university students can join.”

In both the pages contact information differed and designer wanted to test if that variation makes an impact on participants. Landing page had contact information only of two coaches who are from Tampere University of Applied Sciences and in home page; the contact information included more persons (from University of Tampere and Tampere University of Technology) who represents SCIL. Figure 10 shows, the contact information in the home page. Participants responded that having more people from all Tampere3 universities is a better option as students can approach them directly due to proximity with the teachers and students from University of Tampere. One of the participants also mentioned that putting more information about their expertise would be a better idea.

Contact Us

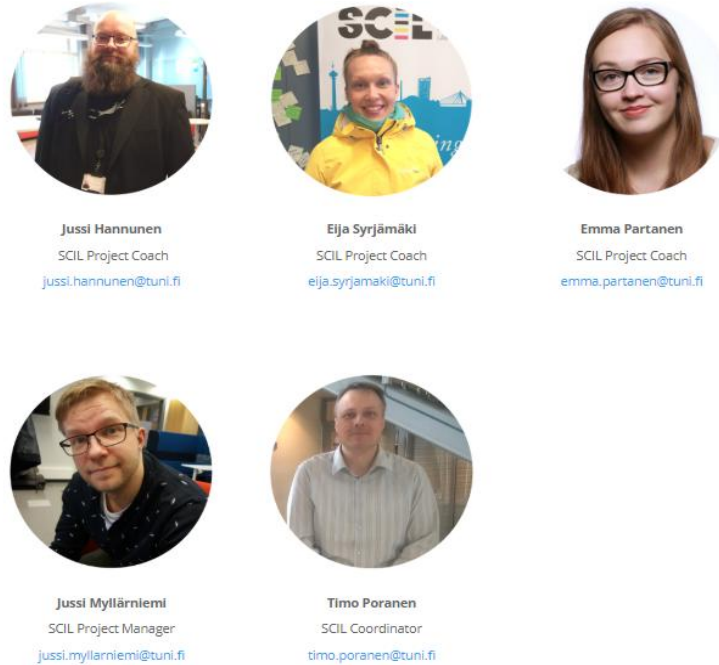


Figure 10. Contact information in the home page.

All three participants chose landing page as an answer to the fourth question. Participants were asked to give comments or feedback for these pages' content or functionality. Interviewer suggested the participants that their comments will hold significance in order to improve these pages. All participants had one or two suggestions that are combined as a list below:

- Videos can be modified to make them more powerful.
- It would be good if they have projects description
- They liked the landing page's order first SCIL information and then projects.
- Find the main core of SCIL and put it in the content of the pages, something more about students via pictures and videos.
- I think in home page information should be clearer as there are students in Tampere University of Applied Sciences who do not know about SCIL.

7. Discussion

This chapter is divided into two sections. First section discusses the result of usability evaluation and second part discusses the overall experience of the work for this thesis project and my personal learning.

7.1. Reflection on the Results

Highlight of the usability evaluation has been the usability factor between the two web pages in question. As stated in Chapter 5, usability has five attributes which are learnability, efficiency, memorability, errors and satisfaction. Home page and landing page were tested in comparison with each other and therefore these attributes were tested in comparison too. It was found that all participants were able to perform all the tasks with the home page and landing page. Though through the research question *can landing page be an easier and quicker way for a student to find and register for an ongoing project of SCIL in comparison to the their official website's home page?* Idea was to test if finding the information about Smart Campus Innovation Lab and its project is easier and quicker with landing page than home page.

With the results in Table 2 and 3 in Chapter 6, it is evident that participants had difficulty in performing tasks 3, 5 and 7 with home page and with the landing page, there were no difficulties found. Task 3, 5 and 7 shown in Chapter 5.3, were about finding information about SCIL, finding testimonials and finding project 'change management and communication'. Moderator had to prompt the participants certain clues, for example, "we are testing the home page only" to indicate the information they are looking for is in the home page and there is no need to traverse other pages of the website. Participants showed a lot frustration when they were unable to find the information about SCIL in the home page and were looking into other pages of the website. On contrary, with landing page, participants showed sign of relief by commenting "Okay it is here" and "So lucky that it is here."

The time difference in completing the tasks for finding information about SCIL and project in Table 4 and 5 in Chapter 6 shows that all participants took much longer time with home page and less with the landing page. This shows that landing page has been more efficient, easier and quicker when finding information on SCIL and projects.

According to Geddes and Brad [2010, p. 442], the landing page should quickly and easily, convey the information, which is necessary for a visitor to get their answer to their question and make a conversion decision. This was somewhat achieved while testing the landing page as one of the participants clearly stated that “in landing page SCIL information is right on my face and if I want to get contact information, it is right in the menu bar. In the home page I am confused as there is no navigation in the menu bar.” Therefore, if a visitor is looking for the information on SCIL and projects, they are able to find it better with the landing page. Hence, the purpose of this thesis project is achieved through the landing page even though it is not used for acquiring leads but simply conveying the necessary information and providing better user experience.

In other words, novelty of this thesis is that landing page is not being optimized or acquiring leads but simply used for improving user experience of students who would like to participate in SCIL projects. In addition, out of five key elements stated and explained in Chapter 2.3, some of the key elements were specifically tested and those are trust indicators and benefit statements. Though already mentioned that optimizing the landing page is not the aim of the thesis but these were tested as features of the landing page. Trust indicators are a piece of content which represents how prior customers have benefited from the service or the product, so to have that element reflecting in the landing page YouTube videos were used as testimonials of previous students who had participated in SCIL projects.

Benefit statements were presented alongside of skills students will acquire after participation in an infographic designed for the landing page. In interview, participants were asked specifically about the infographic and all of them stated that it was clear and useful. One of the participants said that “It is useful, clear, before reading infographic it was unclear to me about SCIL. After reading the infographic I know I will get skills like leadership and so on.” and “I like it! Because it doesn’t just tell practical experience like in home page but shows various skills and benefits one can get.” Thus, it is important for users to understand what kinds of benefits they get from your service and why they should use your products or services.

Viewing the video was one of the tasks participants had to perform. However, one of the participants struggled finding the testimonial videos in home page and the same participant found it easy to find them in landing page. In addition, while giving feedback after the interview participants suggested that videos could be more modified to make it powerful, “find the main core of SCIL, and put it in the content of the pages, something more about students via pictures and videos.” Therefore, this could be a good learning

for the video content maker for SCIL. They have to consider such suggestions and make the content of the videos more energetic and powerful because videos with short duration can also convey many meaningful messages that could make visitors feel that this could be a right place to get practical experience and earn credits.

There were certain points revealed in usability evaluation process that could also improve the landing page. Participants felt the need to have more than two contact persons. As SCIL motivates students from all Tampere3 universities (University of Tampere, Tampere University of Technology and Tampere University of Applied Sciences) to participate has incorporated coaches and coordinators from all Tampere3 universities. Home page consists of all representatives from Tampere3 universities and landing page consisted of only coaches from Tampere University of Applied Sciences. This was done on purpose to test if having two persons from SCIL is enough or is it better to have all representatives from all three campuses of Tampere University. When asked in the interview, participants showed certain sense of missing contact persons in the landing page and suggested to have all representatives because students participating in SCIL projects will be able to reach out to the native representatives.

Participants showed certain dissatisfaction towards the appearance of the landing page. Although it is nearly impossible to please all the users and users may have many opinions but the final decision is of the designer if they would like to consider users' suggestions. There was an instance where a participant started showing other websites to give example of design that they felt were attractive. A designer cannot make decisions in terms of the opinions, as one may like a service attractive but the other user may not. However, the aim was to get the collective response of the participants that holds importance and so, three out of five participants felt that landing page is not attractive. This shows that the landing page has prospects to improve in design and appearance. The satisfaction attribute of the definition of usability falters with respect to design of the landing page, although the user experience factor of the landing page is appreciated in comparison to the home page.

Overall, it was found that using the key elements of the landing page discussed in Chapter 2.3, helped users to get information about SCIL quickly and easily in comparison with home page. However, problems found with home page and landing page when reported to SCIL will benefit them to understand their target audience. This also includes how they should convey the information about their services in a better

fashion. Reader who would like to know about landing page will benefit by reading the thesis report also user experience designers who would like to take different approach to test landing page other than A/B testing can benefit from the presenting report. As mentioned in Chapter 2.3, five elements taken into account according to the purpose of the landing page suggests that there are more than five. For example, forms, persuasive sub headings, engaging media and so on. The presenting report is an example of a designer with minimum elements of landing page can achieve an organization goal.

7.2. Overall Experience

It has been repeated a few times in the thesis report about the focused motivation in making the user experience of the users easier and efficient when it comes to applying for open projects offered by SCIL. Cutting down the steps of finding information about SCIL, open projects, benefits in joining these projects and contact information was the best possible solution. At the same time, providing relevant information to the users in order to know about SCIL, open projects and other related information was important. A sense of balance was needed in a web page, which gave enough details and did not distract the user with any other information.

In other words, a web page is different from the current home page of official website of SCIL providing equally important details about the enterprise and their services. Realizing the importance and key elements of landing page helped decide that the web page can be the landing page, which helps focus user's attention to information mentioned above. Doing a certain amount of literature review helped understand landing page's importance. Learning about different types of landing page helped in deciding that designing a stand-alone landing page will serve the purpose as it consists of one main call to action and meant for one particular service. One main call to action being "apply" and service: providing students open projects to achieve their goals, which are to earn credits and practical experience.

While designing landing page, user experience design process was followed as explained in Chapter 3. However, many mockup designs could have been iterated and the user interface design of the prototype as a result would have been better but due to lack of time, it was not possible to have intensive period devoted to the designing phase. Therefore, after performing guerrilla test on the mock up with users, potential improvements were made to the mock-up after the test. Guerrilla test helped in getting user insights about the visual aspects and content structure of the mock-up of the landing page as the findings suggested that what kind of content should be first divided

in the landing page. For example, in the interview a user clearly said, “I would choose open projects if I already knew what Smart Campus Innovation Lab is” This was the clear indication knowing the about who is offering these projects will make it easier for a person to choose a project.

Feedback on certain features of the mock-up design were taken account, especially an extra call to action was removed which was used in the presence of the only call to action which is “apply.” All participants agreed that this was unnecessary. Even after learning about stand-alone landing page, I tried to use an extra call to action and found out that it was unnecessary and only using extra space. I myself realized that the extra call to action could be distracting for the users. Therefore, it was necessary to remove it. Abiding with the chosen key elements discussed in Chapter 2.3, structure of the mock-up was defined, and though it is always best to test, what one implements in their design and that is the core principle of following user centric design. Henceforth, asked in the interview taken during guerilla test they stated the structure is good although telling about SCIL should be first instead of skills and benefits.

Participants had other notable comments, which helped modify the mock-up in a better way. However, there were fewer participants for the guerilla test. More insights could have been collected if there were more participants. Nevertheless, designing an infographic for segregating skills and benefits was one of the profound changes done after guerrilla test and reaching to a better design as a prototype. This was the first time I had implemented guerrilla test and it acted as a great tool in testing the design and improving it.

When the landing page was designed, team of SCIL appreciated the design process and the prototype of the landing page. They shared their honest feelings while giving feedbacks in the meetings, such as, “your way of approach and design has developed.” This appreciation gave a boost and indication that the thesis project is heading to a right direction. For a user experience designer, client satisfaction is as important as user satisfaction. This gave a sense of motivation to proceed and develop the landing page.

However, there could be certain challenges when a design is developed. The transition can have certain limitations. For example, the prototype as shown in Appendix 6, displays that the header will have a video about projects to develop user’s interest. This was not achieved because the landing page was developed with Divi visual builder for Wordpress site and there were certain administration restrictions that did not allow the

video to be uploaded as header section. This was a huge disappointment and that also showed its affect while usability evaluation process when participants suggested that illustrations of people and videos which shows more of SCIL is missing. In future, a better visual aspect can be included in the landing page, which shows student participation. This can be a great visual for visitors to see when they get to the landing page for the first time.

The alternative approach was to put a full width picture that gives a nice feeling to the landing page and should match the colors used in the landing page. It is a good practice to balance the color scheme throughout the web page [Lal, 2013, p. 50]. There were other small challenges, which had to do with the alignment of the key elements. The landing page has testimonial videos, which were so small in size that three videos had to be uploaded which was not the case in the prototype. It was observed during the usability test that participants had to click on the full view of the videos in order to have better view at them. These challenges made the landing page provide less experience in relation to what was expected.

When talking about limitations, there were certain limitations faced while planning the usability test. The lack of time and participants limited the experience of usability test. There were only seven participants two of them were selected for pilot tests, leaving only five for the formal test. When there are more users for formal usability test, there more and various user insights. The other limitation was, counter balance approach in usability test i.e. to do tasks with first with home page then with landing page for the participant 1 and vice versa for participant 2 was not implemented. This approach would have given the research more reliable and valid results. Albert and Tullis [2013, p. 52] explains the concept beautifully, each participant, alternatively perform tasks using one primary design and then with the other design. This allows capturing feedback about all the design from every participant. In addition, counter balance approach removes any barriers of any carryover or learning effect.

However, the structure of both the web pages was different. For example, in home page, the SCIL information is in the second section that can be seen in Appendix 7, and in landing page; it was just after the header section or header image, this can be seen in Figure 8. Participants as discussed earlier, expressed a sense of accomplishment when they found SCIL information in landing page already after header section, which was not a case in the home page. This indicates that even though participants knew they have to find SCIL information in landing page after doing the same task with the home page, they were not sure where they will find it in the landing page and were surprised

to find it so soon. In addition, home page and landing page were shown in the computer screen in front of the participants while answering the questionnaires to prevent any bias.

Nonetheless, the usability test was conducted properly and efficiently and a number of user insights were collected. There were not only challenges but some learning too, according to the usability test plan only one pilot test was planned but after facing some issues while the first pilot test was executed another pilot test was considered and there were some changes made in tasks and questionnaires. After this experience, for future, I would consider running at least two pilot tests before the formal test.

As mention in Chapter 2.3, the aim of the thesis is not to draw traffic to registration for open projects of Smart Campus Innovation Lab or to land the traffic to the official website through the landing page. However, there could be a separate project where changes suggested for the developed landing page can be improved in another or second design of the landing page. In other words, there could be a version A (which already exists as a product from the presenting thesis) and version B. Version B could have certain features changed according to the learning from this thesis. For example, contact person could be more as found out in the results mentioned in Chapter 6. These versions can be A/B tested and traffic analysis can be done to have a better choice in the landing page for SCIL. In addition, an Adword could be designed for the selected landing page after A/B testing to draw more traffic to the open projects of Smart Campus Innovation Lab.

In summary, this thesis project has been a great experience in practicing user experience methodologies, helped practice and improve design thinking and my design skills. It has taught me great deal of client handling, and has prepared me for writing an academic paper.

8. Conclusion

This study was done with the intent of putting an influence on the user experience of students from Tampere3 universities applying for open projects offered by SCIL. In order to improve the user experience of students, landing page was created. Landing page was created using user experience design process. Five key elements of the landing page were used to get information about SCIL and its open projects easily and quicker than a user would get the same information using SCIL official website's home page. This understanding or insight helped create the research question: *“Can landing page be an easier and quicker way for a student to find and register for an ongoing project of Smart Campus Innovation Lab in comparison to the their official website's home page?”*

To have a better understanding of landing page and its history, some literature review was done. This helped in understanding the types of landing pages and which fits best for the purpose of this thesis project. It was found that stand-alone landing page would serve the purpose, as it is a single web page that promotes one particular product or service with one main call to action. Therefore, keeping open projects as the service in the landing page and “apply” being one main call to action. The design process to create the landing page underwent modifications in order to have a better design. The mock-up was created using Adobe Experience design (XD) tool and was tested using guerrilla test with three persons and that helped recognize the usability issues and design issues.

As a result, the design was improved using the same design tool (Adobe XD) and a seemingly better user interface was evolved as a prototype which was a base of creating the landing page. Landing page development had its own challenges for example, an engaging video displaying previous users working in SCIL projects was decided and designed in the prototype but it was not achieved while developing the landing page. Certain alternatives were incorporated for example, the video which was decided to be uploaded as a header section, a beautiful picture of full length as a hero shot was uploaded to the header section.

To keep on following the user centric approach the landing page was tested and to test it, qualitative usability test was implemented. The tasks were formulated for home page and landing. To test them one after the other by the participants who volunteered for the test. There were two participants for pilot tests and five participants for the actual test.

All the participants were either students from University of Tampere or Tampere University of Applied Sciences because students participating in SCIL projects are from these universities and minority of students who participate in SCIL projects are from Tampere University of Technology.

The usability test involved questionnaires in accordance of validating their experience of doing tasks with home page and landing page. Thus, these questionnaires were generated for both home page and landing page. Questionnaires helped in getting quantifying results of their experience after using the web pages in terms of scores.

Both the web pages were kept in front of the participants while giving scores to the questions asked in the questionnaire. This helped them remember their experience and prevented bias. To validate their answers even more, questions related to their scores were asked as to why they gave more score to a particular web page and less to the other. After analysing their answers, it was found that the menu and structure in the landing page helped them get a better experience while finding the information about SCIL, finding the videos of testimonials and contact information and the same factor made it difficult to find the same in the home page.

As fairly expressed by one of the participant that a user would intuitively think all the projects are listed properly in the menu bar, will be disappointed to not find all of them under projects menu. This error should be fixed by listing all the ongoing projects under projects menu option, otherwise a student will struggle to find all projects just how it was depicted in the usability test where most of the participants struggled finding projects. In addition, practical information option in the menu bar of the home page confused the participants with the information about SCIL. SCIL should find out a way to omit such confusion. In addition, the appearance factor measured via questionnaires helped in knowing that user interface design of the landing page needs to improve.

Separate interview followed after the questionnaire related interview, it was found from the answers of the participants that having an infographic or listing out clear benefits and skills a student will acquire after participating in SCIL projects could be helpful for a user to clearly understand what they will achieve by participation. A user is mostly interested in knowing what they will get out of the service or a product. They mentioned infographic in landing page about skills and benefits students acquire after participation in SCIL projects was useful, clear and it explained them more about SCIL

This indicates that having a clear menu and description or content has so much importance in conveying about the services you provide. It was found that landing page has better navigation menu, especially when participants could find projects. It was observed that home page did not have any description about the projects, wherein, landing page had short description about the projects. Therefore, home page should have short project description. This makes it easier for a user to know what to be expected from the project.

The participants were asked about their further feedback, which could help improve landing page or home page or both. Participants suggested that videos used in both the pages should be improved in terms of their presentation and content. In addition, projects in home page should lead to first, a descriptive page and then to a form. They emphasized that they preferred landing page's content structure. They also proposed that landing page should have more pictures and videos. For home page, they clearly mentioned that the information about SCIL should be clearer as there are students in Tampere University who may not know anything about SCIL.

In conclusion, **it was seen from the results that finding information about Smart Campus Innovation Lab and projects with the landing page was quicker and easier in comparison to home page. Thus, this answers the research question.** Other data related to the pages, which are valuable to improve both home page and landing page were realized. For example, landing page has to be improved in terms of appearance and content for contact information. More visual aspects like videos/images of SCIL and students should be added to make the landing page more energetic and active.

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Appendices

Appendix 1: Background Questionnaire

Background Information

Age: _____

Gender: Male Female

Occupation:

- Entrepreneur
- Employer
- Student
- Retired
- Unemployed or on leave

Education:

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

Computer and Internet Use

How do you evaluate your computer skills?

- Excellent, I understand how computers function
- Good, I use computers often and fluently
- I can use basic functions such as email
- I am a novice in computer use
- I don't use computers at all

How often do you use the Internet?

- Daily or nearly daily
- Few of times a week
- Few times a month
- More rarely than few times a month
- Never

Which browsers do you use the most often?

- Internet Explorer
- Mozilla Firefox
- Google Chrome
- Netscape
- Opera
- Other, which? _____
- I don't know

To which purposes do you use Internet?

- Information retrieval
- Electronic chores such as banking
- Reading and sending email
- Electronic shopping
- Reading the news
- Socializing (e.g. IM, Facebook)
- Entertainment

Appendix 2: Consent form

CONSENT TO RECORD A USABILITY TEST

We ask you to participate in a usability test that is part of my thesis work project in collaboration to Smart Campus Innovation Lab (SCIL) at University of Applied Sciences (TAMK). By participating in the usability test you will help us evaluate the comparison of usability between the Landing page for Smart Campus innovation Lab and the home page, this home page belongs to the official website of SCIL.

You will be asked to perform different tasks first with the home page and then with the Landing page and to think out loud while doing the tasks. In addition, we will ask you to fill in questionnaires and we will interview you about the use of these services. The test will be recorded.

During the test, we will record the computer screen and its events, a video image of your face, and audio. The materials recorded during the test will be used to evaluate the usability of the. In addition to the conductor of the test, the supervisors of the thesis work will view the video and other materials from the test. The recordings will be destroyed after the course is over.

The results of the test will be reported anonymously.

You can stop participating in the usability test at any point.

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

Date and place: _____

Signature: _____

Name clarification: _____

Appendix 3: Standard Universal Percentile Questionnaire (SUPR-Q)

The SUPR-Q		Strongly disagree					Strongly agree				
		1	2	3	4	5					
1	This website is easy to use.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>					
2	It is easy to navigate within the website.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>					
3	I enjoy using the website.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>					
4	I feel comfortable purchasing from this website.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>					
5	I am able to find what I need quickly on this website.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>					
6	I can count on the information I get on this website.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>					
7	I found the website to be attractive.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>					
8	I feel confident conducting business with this website.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>					
9	The website has a clean and simple presentation.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>					
10	The information on this website is valuable.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>					
11	The website keeps the promises it makes to me.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>					
12	I will likely return to this website in the future.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>					

		Not at all likely			Neutral				Extremely likely			
		0	1	2	3	4	5	6	7	8	9	10
13	How likely are you to recommend this website to a friend or colleague?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Appendix 4: Questionnaire for home page derived and modified from SUPR-Q

Questionnaire 1

	Strongly disagree		Strongly agree		
	1	2	3	4	5
• Home page is easy to use.	1	2	3	4	5
• It is easy to navigate within the home page.	1	2	3	4	5
• I enjoyed using the home page.	1	2	3	4	5
• I feel comfortable applying for a project with the home page.	1	2	3	4	5
• I am able to find projects quickly with the home page.	1	2	3	4	5
• I found home page attractive.	1	2	3	4	5
• I feel confident participating in Smart Campus Innovation Lab projects, after reading about them in the home page.	1	2	3	4	5
• Home page has clean and simple presentation.	1	2	3	4	5
• I will likely return to the Home page.	1	2	3	4	5

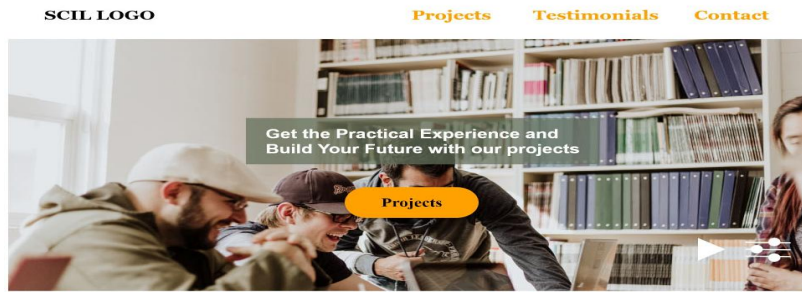
	Very likely		Very unlikely		
	1	2	3	4	5
• I will recommend the Home page to a friend.	1	2	3	4	5

Appendix 5: Questionnaire for landing page derived and modified from SUPR-Q

Questionnaire 2

	Strongly disagree			Strongly agree	
	1	2	3	4	5
• Landing page is easy to use.		1	2	3	4 5
• It is easy to navigate within the landing page.		1	2	3	4 5
• I enjoyed using the landing page.		1	2	3	4 5
• I feel comfortable applying for a project with the landing page.		1	2	3	4 5
• I am able to find projects quickly with the landing page.		1	2	3	4 5
• I found landing page attractive.		1	2	3	4 5
• I feel confident participating in Smart Campus Innovation Lab projects, after reading about them in the landing page.		1	2	3	4 5
• Landing page has clean and simple presentation.		1	2	3	4 5
• I will likely return to the landing page.		1	2	3	4 5
		Very likely		Very unlikely	
		1	2	3	4 5
• I will recommend the landing page to a friend.		1	2	3	4 5

Appendix 6: Prototype of the landing page



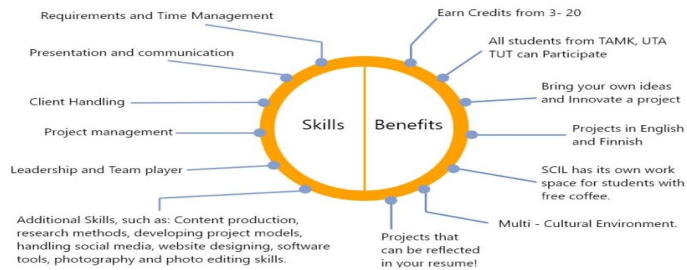
Smart Campus Innovation Lab



Smart Campus Innovation Lab is Lorem Ipsum je demonstrativní výplňový text používaný v tiskářském a knihářském průmyslu. Lorem Ipsum je považováno za standard v této oblasti už od začátku. Lorem Ipsum je demonstrativní výplňový text používaný v tiskářském a knihářském průmyslu. Lorem Ipsum je považováno za standard v této oblasti už od začátku.

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Skills and Benefits



OPEN PROJECTS

Chatbot

Projects helps to understand and produce a report on how to use chatbots and what is it abilities in support of teaching and guidance.

Apply

Clamor and Media

Project is about marketing and communication.

Apply

KILKAS

Project is about researching and producing content on promoting employment of foreign students in Tampere.

Apply

HOW STUDENTS FEEL ABOUT ABOUT SCIL



YOUR COACHES



Appendix 7. Information about SCIL in home page.

[Home](#) [Projects](#) [Practical Information](#) [Testimonials](#) [Blog](#) [Contact](#)

CLICKING THIS BANNER

Smart Campus Innovation Lab

Smart Campus Innovation Lab (SCIL) is an **internal innovation ecosystem - a living lab - and an open development community in Tampere University Community**. Students from various fields from Tampere universities, as university professionals collaboratively carry out **development projects**. Students can participate in SCIL projects and **get credits, practical experience, multi-cultural environment and use SCIL space for their project work**.
