USABILITY TEST REPORT OF SISU

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Usability Evaluation Methods
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Version	Date	Initials	Changes
0.1	26.11.2021	JH, NV, JV, HF	Debriefing after the usability testing, dividing work
0.2	29.11.2021	HF	Added questionnaire and interview analyzation. Made video transcript of the test participator 3.
0.3	29.11.2021	NV	For P1: Tasks and interview, video transcript. Video editing and moderator script finalized. Added some propositions for positives, problems, suggestions
1.0	29.11.2021	JH, NV, JV, HF	Finishing up the document

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1 SUMMARY

This usability test report focuses on the Sisu student information system. It focuses on two main functions of the system:

1. Course enrolment
2. Study planning

Tests were conducted in November 2021 with three (3) participants and one (1) pilot participant who all had prior experience with the system. A total of six (6) problems were encountered, including two (2) severe usability issues. During the tests the system overall performed well and there occurred no critical points of concern.

The strengths of the product:

The usability test tasks had completion rate of 100% and no critical issues were observed. Participants to the usability test also compared SISU favorably to other, similar systems they had used in the past. Additionally, participants expressed appreciation for SISU's coalescing of features relevant to their studies to a single platform.

The most essential problem areas:

Majority of the problems found during the usability testing were related to navigation on the Sisu platform. These included users struggling to find and access necessary information, as well as inconsistency on how course the user accesses course information. All participants noted as well that while they succeeded in the tests, a new user would struggle, and that the system felt unintuitive to them.

Moving forward, Sisu platform would benefit from making essential information and functions more distinct, and particularly making the course enrolment system more straightforward. One majorly beneficial change would be to give the course enrolments their own page instead of the current small box next to the study calendar, where the users could in one glance tell the status of their courses (incomplete, selected, not selected...).

2 INTRODUCTION

Usability Evaluation Methods is a course in Tampere University where the students develop skills in usability evaluation methods. The project work of the course involves evaluating the usability of SISU, a key student service used by students at Tampere University for planning and managing of university studies, as commissioned by Funidata.

Before the tests, a pilot test was conducted to ensure the success of the usability test. Task descriptions used in the pilot test were modified based on feedback where appropriate.

In the usability test, SISU was evaluated so that the participants performed specific test tasks given to them. The participants were asked to think aloud while doing the test tasks. The think-aloud technique is used to extract information about the user's though processes during the tasks. In addition to performing the tasks, participants were queried about their experience using the system through a user satisfaction questionnaire and interview presented after the usability tests.

The test focused on evaluating the usability of the following features of SISU as outlined in the commission:

- Study planning: creating a study plan, finding and adding courses to a study plan
- Course enrolment: selecting and enrolling to appropriate courses and course completion methods

3 USABILITY TEST

3.1 Test procedure

The usability tests for this report (three in total) were conducted in November of 2021 through weeks 47 and 48. Due to restrictions imposed by the ongoing COVID-19 pandemic, all usability tests, commission were conducted remotely through Zoom. As a result, all participants used their own devices to participate in the usability tests. All participants to the usability tests used a personal computer running a version of the Windows operating system (Windows 10, 66.66%, Windows 11, 33.33%) and a web browser of their choosing (Google Chrome, Opera GX and Brave). No notes were made of the participants' desktop resolution, or the version number of the web browser used. In addition to recording the participants' desktop throughout the usability tests, a video feed of the participants was also recorded through Zoom.

Permission to record the usability tests was acquired from the participants ahead of the tests through a consent form. Additionally, a background information form was provided to the participants to complete ahead of each usability test. All forms used throughout the usability tests were created through Google Forms. The usability tests themselves consisted of:

- An introduction, briefly describing the purpose of the usability tests and the participants' rights
- A think-aloud practice task, used to prepare to the participant for the usability test
- Usability test, consisting of a total of 13 tasks (including one low-effort zero task)
- A post-test questionnaire
- Semi-structured participant interview

Each usability test session was completed in approximately 20-40 minutes. More details about the completion times for each task of the usability tests can be found in section 5.1.

As a result of issues observed in the pilot test, participants used the authors' login credentials for accessing the SISU staging area, a siloed testing environment used for the purposes of usability testing for this commission. Additionally, due to feedback from the pilot test, the participants were provided the tasks in a written form through an additional Google Form.

The authors of this report participated in each usability test in following roles

	Moderator	Observer	Recorder
Pilot	Niko Väkiparta	Henri Frangen Janina Hälikkä Jarno Vihonen	Henri Frangen
P1	Jarno Vihonen	Henri Frangen Niko Väkiparta	Niko Väkiparta
P2	Janina Hälikkä	Henri Frangen Jarno Vihonen Niko Väkiparta	Niko Väkiparta
P3	Henri Frangen	Janina Hälikkä Jarno Vihonen Niko Väkiparta	Niko Väkiparta

3.2 Participants

All the test participants were Tampere University students that have used SISU before, and were either associates of the researcher group, or students from other HTI courses as part of participant exchange. In this report and its appendices, the participants will be referred to as P1, P2 and P3.

Table 1. Background information of the participants.

	Participant 1	Participant 2	Participant 3
Age	21	19	18-24
Experience	Has used Sisu before, as well as similar services	Has used Sisu before, but not anything similar	Has used Sisu before, as well as similar services
Occupation	Bachelor student	Bachelor student	Bachelor student
What devices uses	desktop	laptop	desktop, laptop, mobile
Native language	Finnish	Vietnamese	Vietnamese

3.3 Test tasks

The ensure the participants understand their tasks, they were presented the tasks in two forms: spoken aloud by the test moderator and listed one by one in a web form provided to the participant (the questionnaire was also included in the same web form) at the start of the testing. Once the moderator had judged the task successful, they would indicate this with verbal confirmation and present the next task. The goal was to intervene as little as possible in the user's actions, however, if the participant was judged to veer too much from the objective, the moderator was permitted to instruct them.

Table 2. Test tasks used in the usability test

Task 1: Create a new study plan for Master's Degree in Information Technology The goal of the to walk through all the steps required to enrol to courses through Sisu. Creating a study plan is the first step. The user needs to be able to find the function to begin.
Task 2: Find course 'Tools for theses' and find out when 'Research methods' part of the course is set to start (starting date) The goal of the task is to see how long it takes participants to find information related to the course's scheduling, and how well they can navigate the study structure.
Task 3: Select 'Test – Seminar' from the Completion methods The goal of the task is to evaluate the difficulty of selecting the described completion methods, particularly 'Test –Seminar' as it is hidden under 'Show more' text.
Task 4: Enrol in the selected completion method The goal of the task is to evaluate the difficulty of enrolling to the selected courses and identifying which of the selected methods are eligible for enrolment.
Task 5: In study structure, find 'Finnish 1' from your studies. Select 'Test – small group teaching' for course. This task once more tests the user's ability to find specific information, this time with less instructions. It also serves as prerequisite for task 6.
Task 6: After exiting the course page, enrol to 'Finnish 1'. The goal of the task is to see how users proceed to enrol to the course without the guidance of the banner presented at the top of the page.
Task 7: In Structure of studies and Advanced studies –section, add 'Advanced Studies in Robotics and Artificial Intelligence' into your study plan. This task tests the difficulty of adding study modules not already present in the study plan. Requires using the side menu.
Task 8: Find out what are the prerequisites for the course 'Pattern Recognition and Machine Learning'. For study planning it is important to be able to find this course information. This task tests how easily available it is.
Task 9: Find the course page for the item listed in the prerequisites. As there is no direct link to the required course, this task tests how users act to find the information.
Task 10: Substitute the course 'Finnish 1' with the available substitute course. The goal is to see how the participant would go about substituting a course in the structure of studies.
Task 11: Find a way to add a note of your choice to the calendar The goal of the task is to evaluate the discoverability of the 'Add your own note' feature found in the Study calendar page.
Task 12: Log out of Sisu The task evaluates the difficulty of finding the log out function and ends the test.

4 RESULTS

4.1 Task times and completion rates

Task times, number of problems per task and task completion are described in Table 3. The following codes are used to describe task outcomes:

A – Task was performed successfully

B – Moderator helped in task performance

C – Task failed

D – Task was suspended

E – Task was not tested (e.g. there was no more time)

Table 3. Task times, number of problems per task and task outcomes

Test task	Participant 1 (=P1)			Participant 2 (=P2)			Participant 3 (=P3)		
	Task Time	Number of Problems	Task Outcome	Task Time	Number of Problems	Task Outcome	Task Time	Number of Problems	Task Outcome
Task 1	1:14	1	A	0:30	1	A	1:04	1	A
Task 2	2:37	0	A	0:09	0	A	1:29	1	A
Task 3	0:21	0	A	0:30	2	B	0:34	0	A
Task 4	0:36	0	A	0:22	0	A	0:17	0	A
Task 5	1:13	1	A	0:13	1	B	0:47	0	A
Task 6	1:04	2	A	0:34	0	A	0:31	1	A
Task 7	1:20	1	B	0:17	0	A	0:29	0	A
Task 8	0:30	0	A	0:24	0	A	0:30	0	A
Task 9	0:40	0	A	0:19	0	A	0:25	0	A
Task 10	-	-	E	-	-	E	0:26	0	A
Task 11	0:41	1	A	0:09	0	A	0:33	0	A
Task 12	0:16	0	A	0:04	0	A	0:08	0	A
TOTAL	10:32	6	-	3:31	4	-	7:13	3	-

Overall, every participant succeeded in one way or another from all tasks. The task 10 is marked ‘E’ for P1 and P2, because we unintentionally used an outdated version of the script for testing P1 and P2. All tasks given were completed.

For P1:

For P1, there was some struggling at the start, but this was mostly due to nervousness. In task 7, which is marked as ‘B’, P1 did the task correctly, but was confused by a menu that was irrelevant for completing the task. It is marked as ‘B’ because P1 got stuck in the button’s menu and seemed to need help from the moderator. This is a relevant problem because the user thought that the blue highlighted button was for accepting the chosen study into the plan.

For P2:

P2 managed to complete most of the tasks with ease, but at task 3 there was some trouble finding the correct teaching method. After some time, P3 chose the wrong teaching method and moderator had to come in play and correct the mistake. A small hint to the right direction was needed, because the participant could not find the correct functionality to expand the list of available teaching methods. With more visible teaching methods available the participant was able to find the correct teaching method quickly.

For P3:

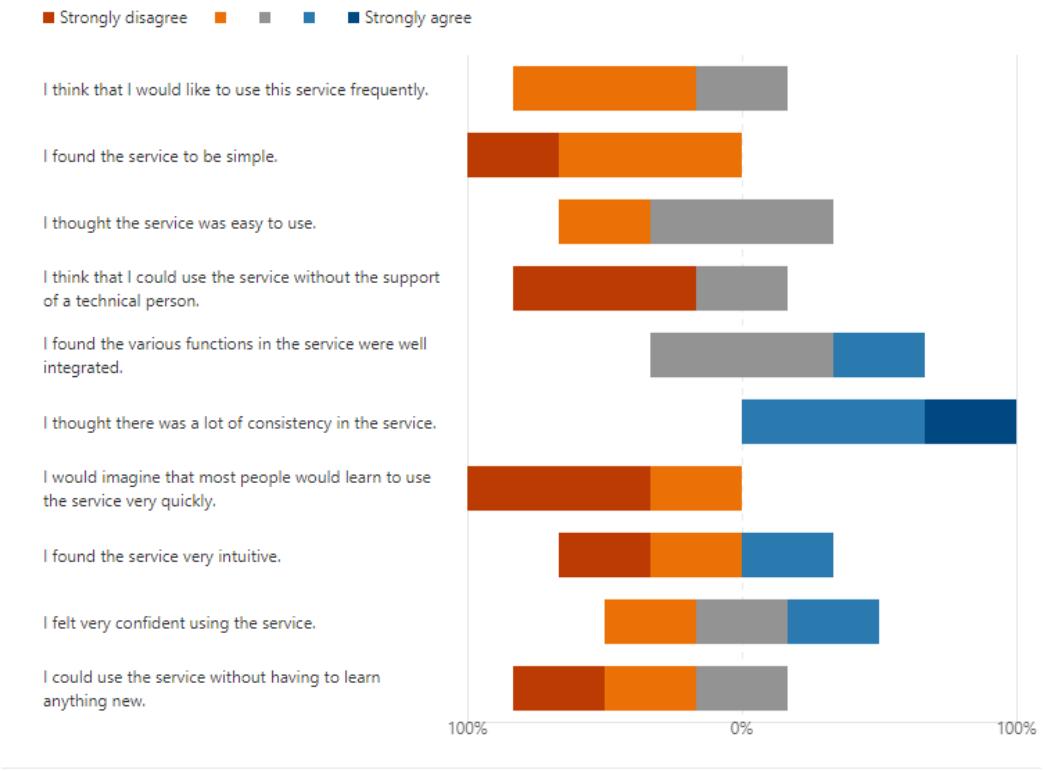
P3 succeeded in all their tasks quickly. During task 1 it took them a while to find the option to create a new study plan, as they expected to find it closer to the list of existing study plans. P3 also said they were confused about task 2 description and spent some time unsure on whether they had found the right information. Task 6 was judged successful based on the instructions provided to the participants, although the goal of the task was to test course enrolment without the use of direct links that appear open method selection. This confusion on enrolment is something addressed in this report several times.

4.2 Interview and questionnaire results

The themes of the questionnaire and interview aims to find the answers to the most important usability issues regarding the SISU system. The questionnaire consists of 10 basic questions related to the usability of the system on a 5-point Likert scale.

The interview was aimed to attain information of the test participants' prior experience from systems like SISU. Also, the ease of using the functions in the system and overall user experience was asked from the participants after the test.

Table 4. Questionnaire results



The data gathered from the questionnaire reveals that the biggest issues in the SISU system lies in the unpleasant and steep learning curve. The learnability of the system needs to be questioned if most of the test participants have left an answer which suggests they could not be able to use the system without the support of a technical person. For example, the interviews done after this questionnaire revealed that the mutual consent is that the participants would struggle as beginner users of the system. Another target area of critical feedback is the simplicity of the system. All the test participants either disagree or strongly disagree with the fact that the system is simple to use.

The only question that received mainly positive feedback is directed to the consistency of the system. This might be the saving measure of this questionnaire, because the consistency is very important in a system like SISU. Consistency helps to build the system's structure in the user's mind and might help to flatten the steep learning curve.

To summarize, we must keep in mind that the test participants completed the tasks very quickly overall, and the most critical feedback receiving problems affect mainly beginner users of the system. However, these issues may not be ignored and need to be dealt with. The user experience for a beginner user is extremely important, considering the system gets new users annually.

The interviews showed that for an experienced user, the system is easy and quick to use but for a novice it may take tens of minutes to figure out the main functions on their own. All the participants had the site memorized quite well.

5 POSITIVE FINDINGS

An analysis of data of the gathered from the usability tests revealed a handful of positive findings.

Finding 1. The system compared favorably to alike systems. In post-test interviews, two of the three participants expressed that they found SISU to be better than other, similar system they had used in their previous studies.

> *P3: "I would say that SISU is better than the older system I was using."*

Finding 2. All tasks from the usability tests were completed successfully. Despite some tasks taking longer than others to complete, all participants to the usability tests were able to complete all tasks presented to them.

Finding 3. The system is on the right path to become the 'one-stop shop' for student course services. The system contains plenty of information for the average university student and the information is accessible for an experienced user.

6 USABILITY PROBLEM DESCRIPTIONS

This chapter reports usability problems found in the test. Problem descriptions are numbered, so that they can easily be referred by the number. Each problem description includes a short title, a more detailed problem description and a suggestion for solution.

The usability problem descriptions include an evaluation of the severity of the problem according to the extent to which the problem impedes the use of the system. The severity rating is expressed with a number from one to four in the following way:

1 **Major problem** – Prevents the users from using the product in a feasible manner and therefore needs to be repaired before the product is launched.

2 **Severe problem** – Complicates the use significantly and should be repaired immediately.

3 **Minor problem** – Complicates the use of the product and should be repaired.

4 **Cosmetic problem** – Should be repaired for the use to be as pleasant as possible

T **Technical problem** – Technical problems are most likely due to technical problems with the product.

C **Comment –** Comments and observations by the test team or participants that are not related to usability problems.

6.1 General problems

Problem 1.1: Old curriculums are not integrated well with the new study plans. In the interview with P2 and in our heuristic evaluation, it was noted that old curriculums and courses are not integrated well into new study plans. There are situations where old courses can only be added into study plans through ‘free edit mode’. After doing this the system informs about the structure being against the rules. Doing multiple of these ‘erroneous moves’ can result in confusion. The current way to solve this with ’apply for approval’ resolves the issues in individual cases but is not user friendly especially for new users. Therefore, attention should be paid to integrating the system better with old courses and curriculums. Although a massive integration like this will be time-consuming, it will save students’ time in the future. (Figure 1) [3]

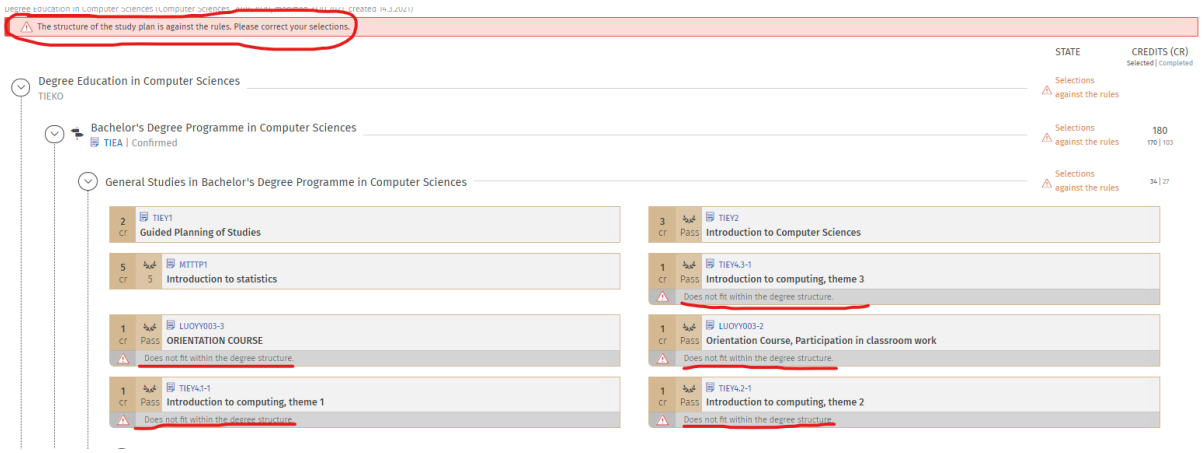


Figure 1: Multiple free edit selections that break the rules.

Problem 1.2: Completion method selection underneath options

During testing a participant struggled to select part of the course several times before noticing the green ’select this completion method’ button. As this selection is made first, it would be more intuitive for the user to have the button above the individual options. Clicking the gray ‘select’ button should also highlight the ‘select this completion method’ button (Figure 2) [3]

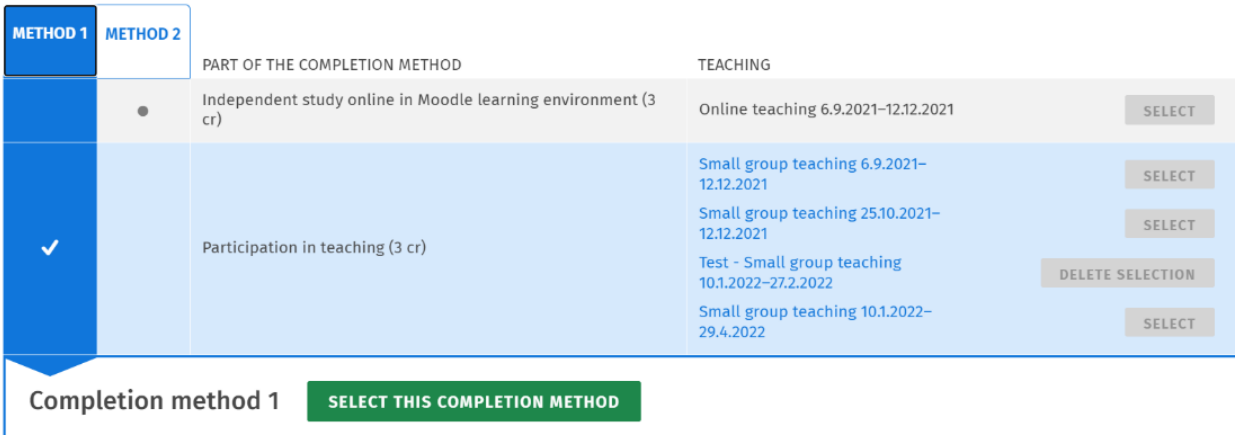


Figure 2. Multiple methods for course completion

6.2 Navigation problems

Problem 2.1: Enrolling for courses sometimes requires two different pages. Enrolling to multiple courses in a row for example forces the user to use the calendar for enrolments. In Task 6, P1 tried to enrol through the 'completion methods' but could not do it without the blue enrolment bar. P3 acted in a similar way, deleting their selection, and rejoining in order to get the blue banner to appear again. There should be a way to enrol in courses through the same tab you select your completion method through. This way the user does not have to enter a different main tab to complete one action. The simplest way to implement this would be to add the calendar sidebar view next to or below the completion method selection. (Figure 3) [2]

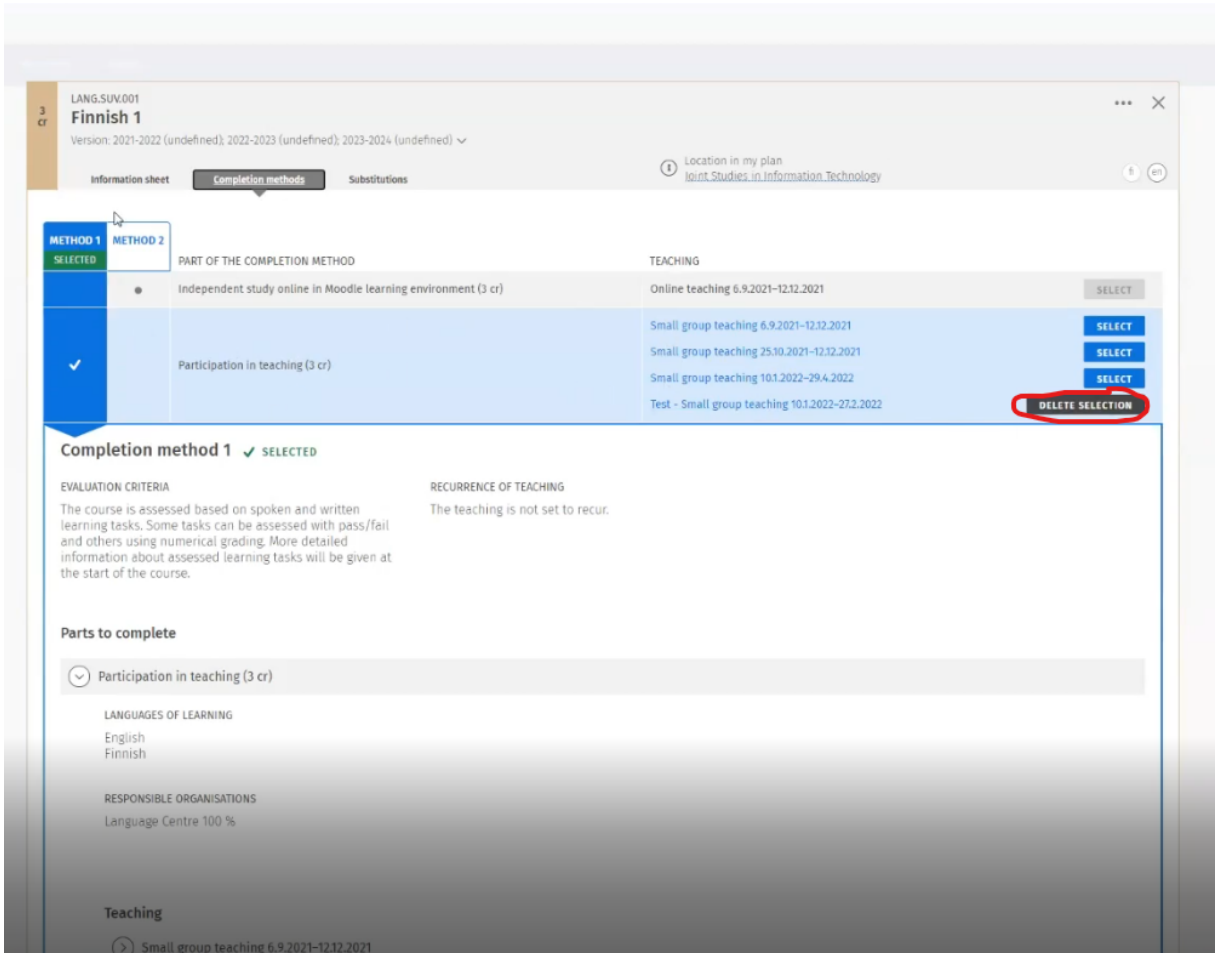


Figure 3: Due to leaving and coming back to the page, the small blue bar used to enrol in courses is no longer visible.

Problem 2.2: 'Show more' option gets lost in the listings

During task 3 the participants were instructed to find specific part of the course and had to click open a 'show more' prompt. P2's gaze went over the text several times without paying attention to it. To tell it apart from other listings, it could be another color. Another solution would be to initially show all the options. (Figure 4) [2]

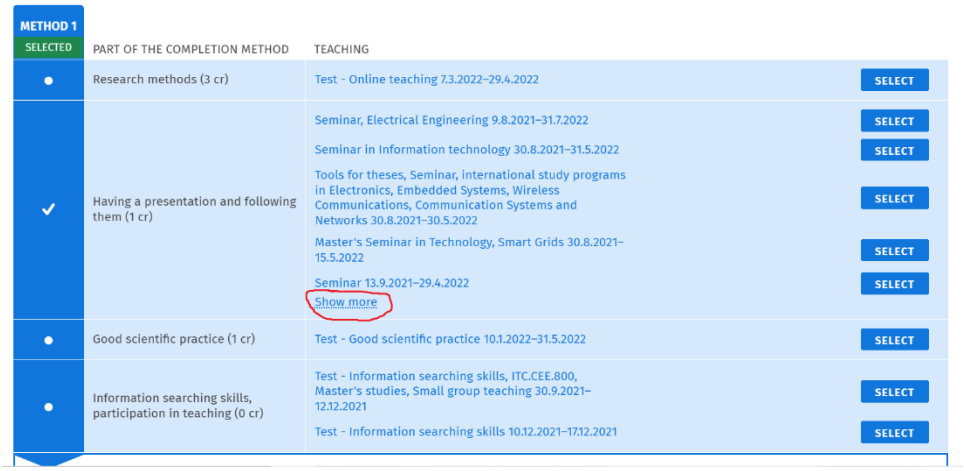


Figure 4 Options hidden under a difficult to see prompt

Problem 2.3: Important links are missing. This is a minor integration issue but not all titles of courses have a link to them in the name. This is for example the case with all prerequisite courses listed in the bottom of the 'information sheet' tab. Implementing these links improve maneuverability on the site. (Figure 5) [3]

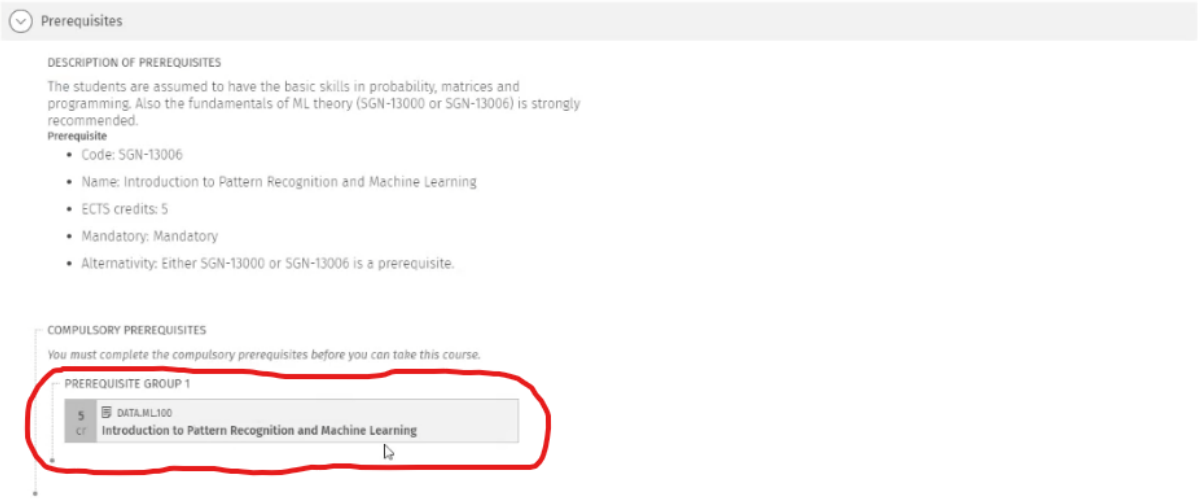


Figure 5: The prerequisite courses do not have links to their respective information sheets in them.

Problem 2.4: Some button placements and highlighting are misleading. Only a small portion of buttons on the site were tested but some of them caused problems due to their appearance. Like in Task 1 with P1 for example, the button to add a new study plan blended in with the site background color. The study plan button should be highlighted more, whereas the 'add a study draft' button was mistaken for a more important 'accept' button and should be unhighlighted. Also, the buttons should be grouped closer to related functions, for example with the 'new study plan' button. (Figure 6) [4,C]

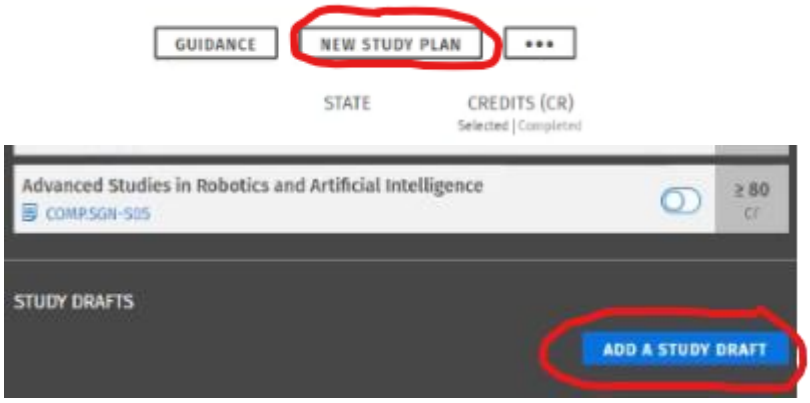


Figure 6: Buttons that are problematic due to their highlighting.

IDEAS FOR FURTHER DEVELOPMENT

For further development, it has also been noted that user testing with participants not yet familiar with Sisu's functions is crucial. Though SISU compared favorably similar systems participants had used in the past, the interviews also revealed that the participants considered aspects of SISU unintuitive. Participants also believed that new users would struggle more with the given tasks.

Appendices

To the client:

- Original Interview questions and Questionnaires
