

# DELIVERABLE REPORT

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Project name: Learner-centered digital ecosystem of competence development (CompLeap)

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Work package: WP2

Title: Deliverable No 21: Feedback and specifications to user scenarios in WP2

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## Description of the action:

User scenarios describe the user flows and actions how the user accomplishes their tasks in the Beta-prototype. User scenario is therefore a narrative how the user acts in the user interface of the Beta-prototype. During development iterations, user and stakeholder feedback was continuously gathered to develop most optimal user experience and thus user scenarios.

## Outcome of the action:

The User scenarios have been updated from the previous Deliverable 18: Detailed description of the user scenarios with guidelines and advice for developers in WP3, to now explain and describe the user's actions in the Beta-prototype as described in Deliverable 26 Three Prototypes.

The specified user scenarios are described in textual and visual format, and have been updated with the help of development iterations, the narrowing down of the scope of the prototypes and through user feedback.

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## **1. Introduction**

This deliverable document describes the user scenarios implemented and the user feedback gained during the prototype development phase in the CompLeap project WP3 Prototype Development. The user scenarios described in the following document have been updated from the previous Deliverable 18: Detailed description of the user scenarios with guidelines and advice for developers in WP3. They now in more detail explain and describe the user's actions in the Beta-prototype as described in Deliverable 26 Three Prototypes.

The specified user scenarios are described in textual and visual format, and have been updated with the help of development iterations, the narrowing down of the scope of the prototypes and through user feedback.

### **Development of the Beta-prototype**

The principle objective of WP2 is to develop the requirements and define the functionalities of the CompLeap prototypes. The work in WP2 feed into WP3 where the aim is to prove the practical use of the plans under real-world conditions. The prototypes developed in WP3 give a good understanding of the applicability of the final product planned in WP2.

The three interlinked prototype modules can be seen and tested through this link:

<https://poc.compleap.testiopintopolku.fi/>

The key aim has been to create a link between the competence profile (including interests and existing competencies) and the provision of educational opportunities. Compared to prior phases, this phase includes real competencies as well as proper educational offers. The utilization of national (educational) databases within the service will be tested and illustrated.

The developed prototypes will be implemented and tested by partners.

### **From mock-up prototypes towards Beta-prototype**

User scenarios form the foundations for the development of the three prototype modules that will be tested between May 2019 until September 2019 by the end-users of the CompLeap associate partners. Associate partners comprise of Finnish VET institutions. User scenarios are built to describe the end user flows and interactions in the Beta-prototype and between service modules. User scenario is therefore a narrative how the end user accomplishes certain tasks in the planned modular prototypes.

Service modules were updated in the Beta-prototype against the first iterations of the mock-up prototypes. All the designed features of the modular services in the mock-up phase of the prototypes did not prove to be realistic to be implemented in the Beta-prototype in the time and technical scope of the implementation of the project, and as such the final product being produced out of scope of this project will include more elements than the current prototype.

The Module 3 entitled as the "Learner Map" visualized in the mock-up prototypes, was left out from the development of the Beta-prototype for practical reasons. The Learner Map was designed to

visualize possible pathways for the learner suggesting both suitable educational and job opportunities to reach learner's future goal (Figure 1.). From the point of view of available data sources and suitable solutions for the analytics to depict personalized learner's pathway, it was not found technically feasible to implement this service module.

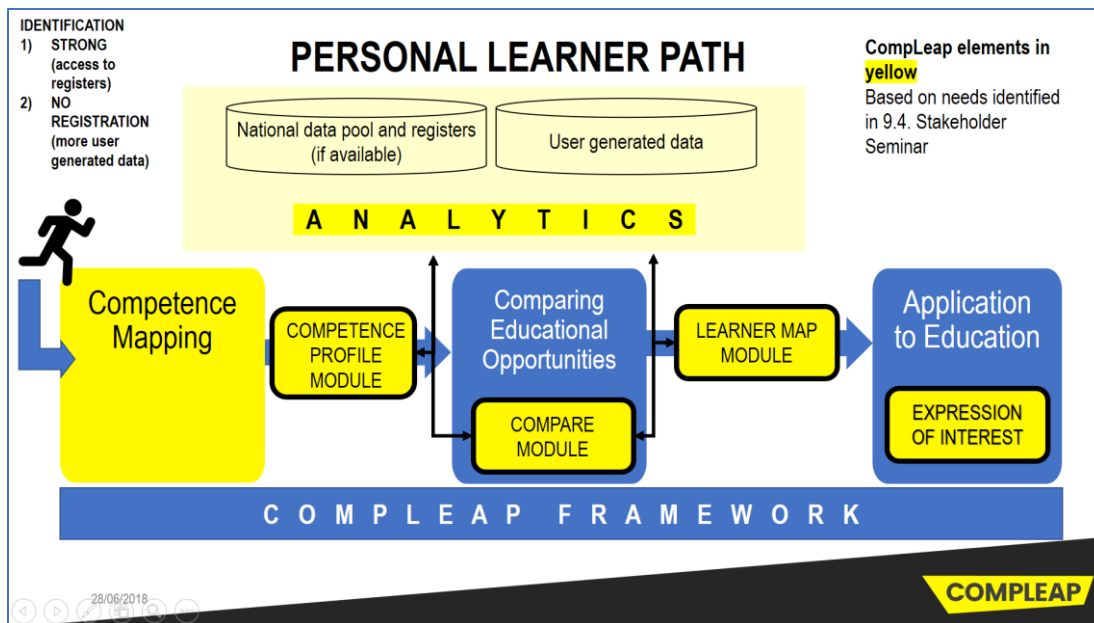


Figure 1. First iteration of the modular service-prototype

At the same time, and in line with the proof of concept Beta-prototype, it was necessary to prioritize and implement only limited number of the most applicable features. Instead of developing the full personalized pathway for the learner with also career opportunities, we had to narrow down the scope to the more feasible personalized educational recommendations. The availability of the Finnish national educational offer in the Studyinfo.fi service also supported this decision, while career options proved impossible to incorporate at this time.

Additionally, a totally new module "Local study records service integration" was added in the Learner Plan as an individual module of the prototype. The availability of the national study registers in Finland, namely KOSKI-service, supported this re-drawing of the modular thinking (Figure 2.).

The Beta-prototype includes three service modules forming a Learner Plan:

**Module 1: Local study record service integration (past)**

**Module 2: Competence profile with current competencies (present)**

**Module 3: Suggestions for educational opportunities (future)**

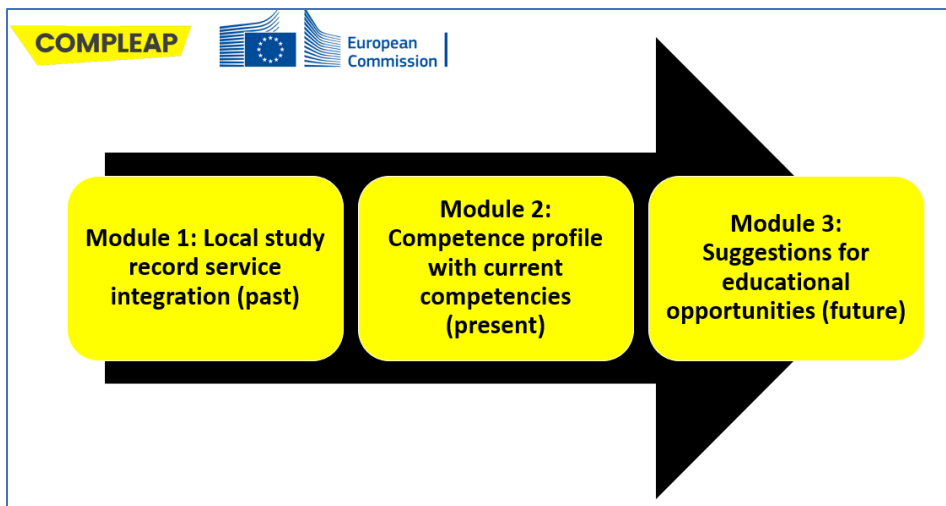


Figure 2. Learner Plan and modular services in the Beta-prototype

## Do you find it hard to find an interesting study place?

Compleap helps you in finding a suitable study place, you only have to tell what interests you and what you have studied so far.

**Are you ready? Start by logging in.**

**LOG IN**

[Continue without logging in](#)

By logging in, CompLeap can use the studies you have done in Finland to help find a suitable study place for you.

Figure 3. First page of the Beta-prototype: <https://poc.compleap.testiopintopolku.fi/>

## 2. User scenarios in Beta-prototype

In this report, a user scenario describes how the end user will interact in the Beta-prototype and its three interlinked modules (three prototypes). A user scenario is moreover a narrative of how the end user accomplishes a certain task or a planned user flow. User scenario determines therefore the concrete steps in the user-interface to achieve the task in question. User scenarios also explains the criteria how the user tasks are successfully accomplished in the Beta-prototype.

According to the user research on most potential user groups and personas accomplished already in the earlier stages of the project, most general user profiles were identified for usage of the Beta-Prototype as follows:

- 1) user with full vocational degree in environmental or arts domain
- 2) user with discontinued education in technical or health care domain
- 3) user with foreign education

This report on user scenarios opens the modules and features of the Beta-prototype as a linear process to achieve finally the suitable educational recommendations for the user. This report describes each prototype module as a user scenario according to the determined most general user profiles (1-3) and their specific needs. Besides explaining the user scenarios, we visualise the user scenarios visually.

### Data sources and restrictions of Beta-prototype

The first implementation case for the beta prototype is in the Finnish Context. Under the current Finnish legislation, the Beta-prototype cannot utilize real personal data, even though we as a National Agency for Education in Finland have access to data sources with reference to the KOSKI-service. For this reason, we employ pre-confined data for the profiles of the test users in the Beta-prototype.

In practice, this signifies that the test users cannot log in and authenticate to the prototype with their own personal data and thus visualise their past study records in the Competence profile. The data of the test users represent some of the most general user groups identified in the CompLeap user research.

The prototype will nonetheless utilise the vocational qualification data of the Finnish national electronic service for educational qualifications, eRequirements service. Data from vocational educational qualifications is visualised in the Competence profiles of the test users.

In the CompLeap beta-prototype, other levels of educations in relation to the user's previous study records have been framed out of the final Beta-prototype and its modules. The decision to concentrate only on the VET sector was done due to good availability of VET qualification requirements set at the national level of Finland. Thus the availability of suitable data sources was one of the key argument select users with vocational study background.

In addition to this, educational recommendations utilise current vocational educational offer from the national Studyinfo.fi service. The prototype includes direct interface to the educational offer.

## **Main findings of the usability testing**

Usability testing in this report signifies user feedback gathered during development iterations. The nature of the testing is therefore different from the end user testing performed in the piloting phase of the finalised Beta-prototype. Piloting in relation to the deployment of the prototype is scheduled to start right after the development phase of the Beta-prototype.

Primary idea for the development testing was to examine:

- A) the usefulness of the CompLeap prototype as such and,
- B) to test the primary functions of the prototype still under development during this usability testing.

During this end user testing, the primary functionalities were still tested via visualised mock-ups of the Beta-prototype. Testing with the mock-ups is limited comparison to the working system in live test environment. In addition, testing was performed via test user profiles mentioned earlier in this report that does not correspond to the personal data of the user's educational background. Test profiles offer therefore a limited selection of vocational educations to be selected as a educational background for the Competence Profile.

Key findings of the usability testing can be summarised threefold:

1. No critical problems were found in the interactions of primary functionalities
  - a. Filling in the past study field and the level of education
  - b. Filling in interests and reviewing suggested educational recommendations.
2. Especially the section displaying educational recommendations was deemed useful. Tests also yielded improvements and suggestions to this section that are explained in more detail in relation to the user scenarios in question.
3. The group of potential users, who would significantly benefit from the Beta-prototype being implemented, is still quite small.

Findings of the usability testing are elaborated in greater detail in the chapter "Stakeholder and user feedback". Findings are categorised into critical, moderate and minor findings according to the usability results. In each description of the user scenarios and therefore prototype module, we summarize nonetheless the most important feedback according to the findings of the usability testing.

### **3. Module 1: Local study record service integration (past)**

In module 1, the Beta-prototype enable the user to see their the vocational education and training (VET) study records in the Competence profile (user profiles 1-2). In the Finnish educational context this signifies that the user can see their past vocational competences by qualification units and by qualifications according to the Finnish qualification requirements. The Finnish National Board of Education (EDUFI) decides on the national qualification requirements for the vocational education and maintains a national digital service for national vocational requirements such as “eRequirements” as previously mentioned in the Chapter 2. Module 1 comprise of two main user scenarios: user logging and user sees their current competences (Figure 3.).

User with foreign education (3) constitutes an exception in comparison to the users with vocational degree (1) or discontinued education (2). User with foreign education cannot see their past study records or competences in the Competence Profile. We suppose that this user who has submitted their degree abroad does not have recognized study records in the national service for the study records (KOSKI-register) and therefore the competences cannot be shown to the user via potential service integration. Since this user cannot see their automatically visualized study data in the Competence Profile, user can use the prototype without logging in or authenticating to the prototype. Nonetheless, user with foreign study background can manually fill in directly to the Competence Profile the level and the field of their past studies.

#### **Module 1: User logging and user sees past competences**

- 1) User with vocational degree logs in and uses strong authentication and sees study records from national study, credit and degree register to the Competence Profile.
- 2) User with discontinued education logs in and uses strong authentication and sees partial records from national study, credit and degree register to the Competence Profile.
- 3) Un-identified user without records from National registers fills in their study information to the Competence Profile by level of study and field and level of study.



Module 1: User logs in and sees their competences

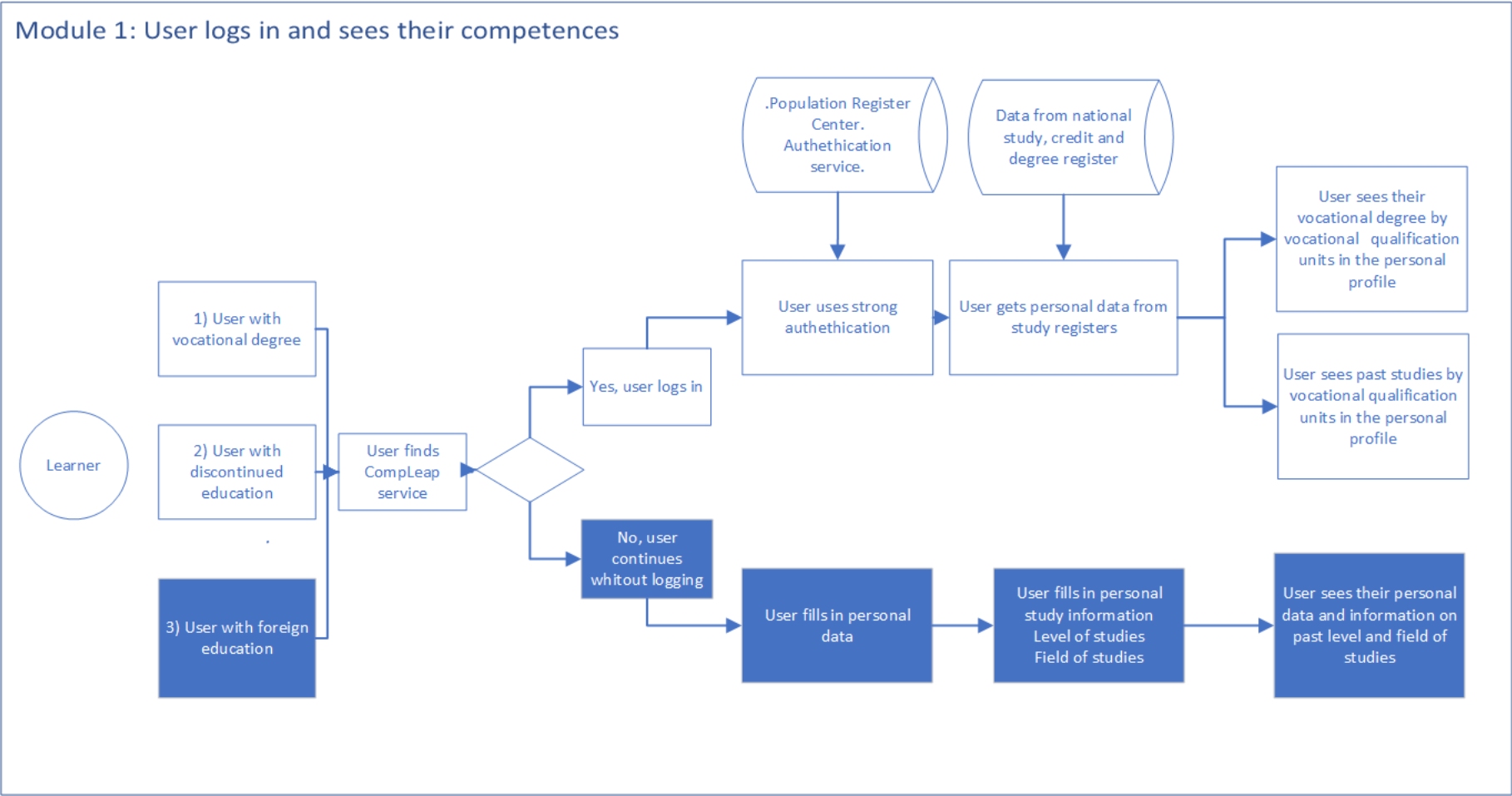


Figure 4. Module 1: User logs in and sees their competences.

According to the usability testing a critical problem was that users were reluctant to use bank credentials to log in to the service. Only one test user chose to log in with bank credentials already on the landing page. Others chose to continue without logging in. The reason for this was either they did not understand why the bank credentials were needed or did not trust the CompLeap-brand enough to use the bank credentials.

More moderate problem of the usage was that the “log in” function was understood as creation of an entirely new profile for the user. Creating a profile was found too heavy for just looking for suitable education. It was also expected that the creation of a profile would mean more spam into their email of the test users. Consequently, the test user continued without logging in.

The logging challenge with strong authentication via bank credentials is not finally a critical problem for the Beta-prototype as the test user will be using only the test profiles to sign in into the Competence Profile. This is noteworthy if the decision is taken to develop the beta-prototype towards a real live product. In this case, the reliability of the product can be increased with adding visual banners of officials such as the Finnish Agency for Education, the Ministry of Education and Culture (in Finland) and the European Union. Additionally, the final service could be integrated in the Finnish context to the national application and education service named “Studyinfo.fi”.

Nevertheless, it is important to remember that we will always have a group of users who will use such a digital service without logging in nor using strong authentication. In other words, a group of users who are not willing to digitally identify or use their personal data. This is a user scenario, that must be carefully taken into consideration and independent of the educational background of the user.

On the other hand, and as a minor remark, users who decided to use the competence profile without logging in, would have preferred to fill in their personal history of studies in greater detail instead of just filling the field and level of studies.

#### **4. Module 2: Competence profile with current competencies (present)**

In the Module 2 **user can give emphasis on the current competences and express their interest on the competence areas for the future**. The competence profile is therefore formed based on the past competences shown for the user from the national study records and on information provided by the learner themselves in the Beta-prototype.

Feature of the emphasis-giving of the competences is applicable for the user personas with the past study records for national registers: 1) user with vocational degree 2) user with discontinued education. User with foreign education (3) is not supported with this feature because the prototype does not have the past study records to visualise for the user and thus user cannot give emphasis to the past competences (See Figure 4.). With reference to the usability testing, there were no important usability observations connected to the emphasis-giving functionality.

All the represented user profiles have opportunity to express their future interests in the competence profile (See Figure 5.). The usage of this feature is compulsory at the systemic level of the Beta-prototype to provide educational recommendations for the user. User sees first main categories of interests and by clicking the main interest categories they may choose sub-interest becoming visualized after choosing the main category of interest. Interest categories shown for the user are constructed from the Finnish General Ontology (Finto: YSO Finnish General Ontology).

## **Module 2: User gives emphasis to the competencies**

- 1) User with vocational degree gives emphasis (thumps up/thumps down) to the competences by vocational qualification unit.
  - or user decides not to like or dislike the competences
- 2) User with discontinued education gives emphasis (thumps up/thumps down) to the competences by vocational qualification unit.
  - or user decides not to like or dislike the competences
- 3) This feature is not applicable for user with foreign education.

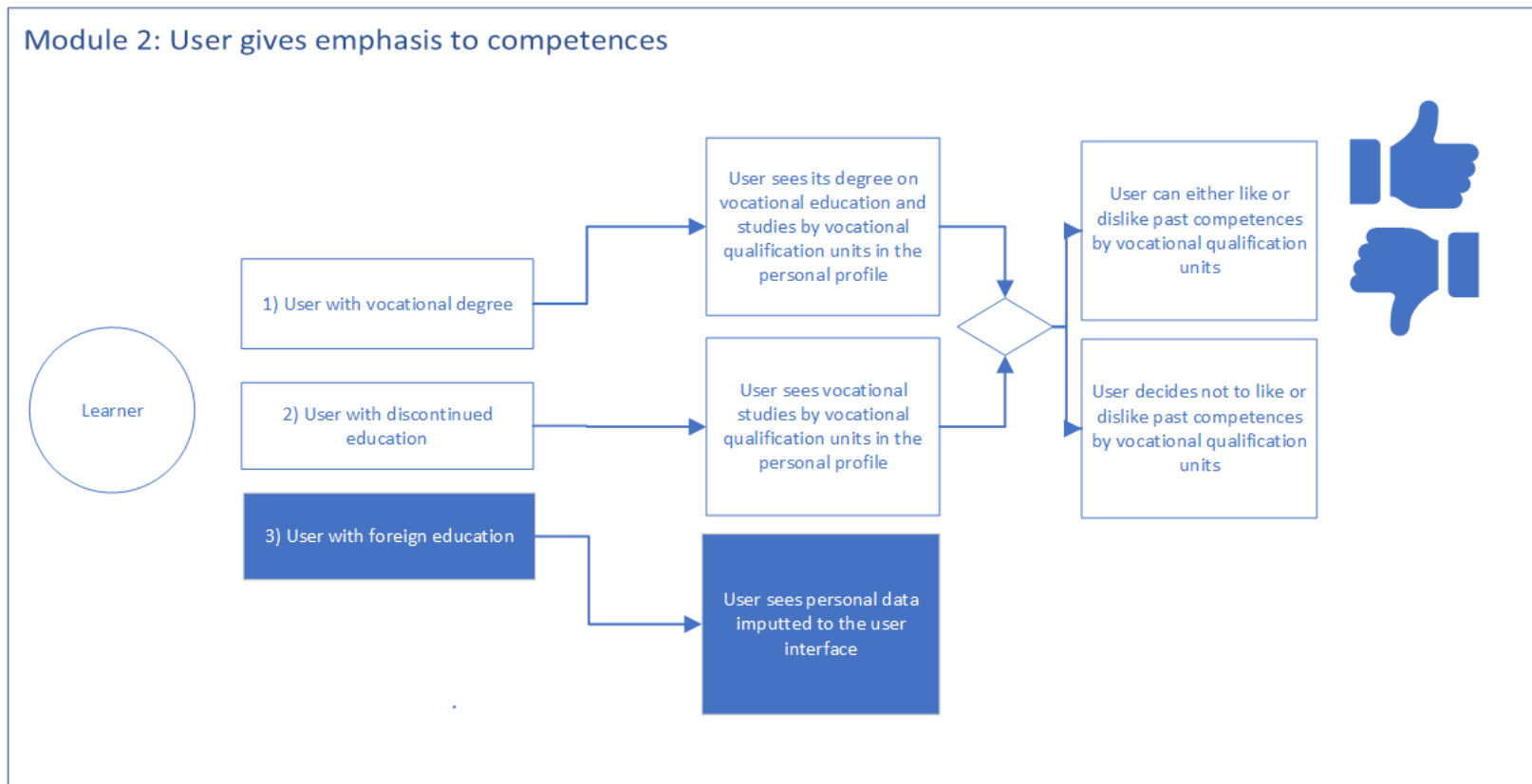


Figure 5. Module 2: User gives emphasis to the competences

**Module 2: User expresses fields of interests**

Scenarios 1-3 are applicable for all user profiles: User selects at least five most valuable interests in the Competence Profile.

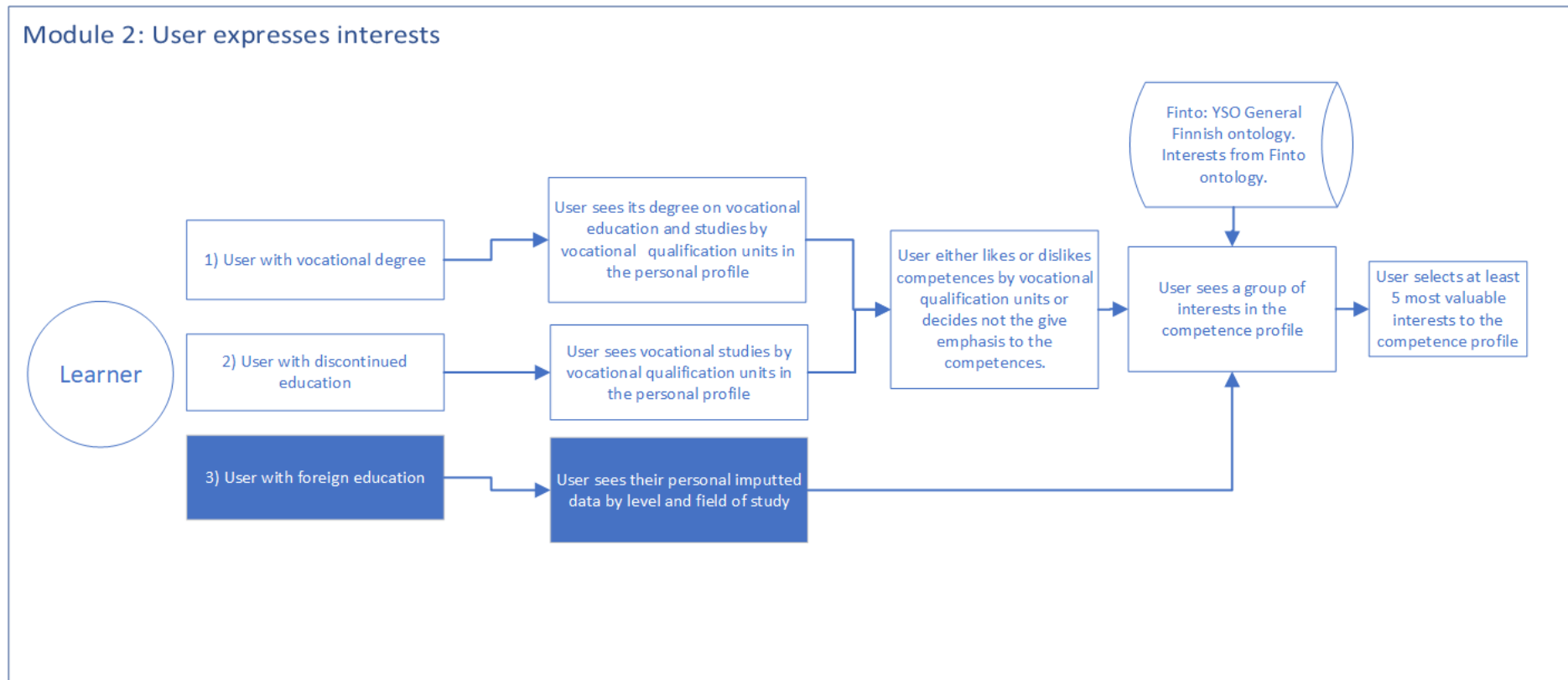


Figure 6. Module 2: User expresses fields of interests

According to the usability testing, it was observed a moderate problem in relation to finding a relevant “sub-interest” category. For the user to find a suitable sub-interest category is dependent on the user to also finding the top-level interest. This may lead to the user not finding all interests relevant to them. This usability observations are very dependent on the displayed interest options and phrasing. More feedback will be gathered on the selected interest categories, phrasing and about the visualization of interests in the user-interface during the deployment and piloting of the Beta-prototype.

## **5. Module 3: Suggestions for educational opportunities**

Recommendations are based on semantic matching of the descriptions of the user's past study records, emphasis on past study records and selected fields of interests as well as on the descriptions of the available national educational offer. Finally, all the previously described user scenarios in relations to the prototype modules 1-2 found the basis and sources of metadata to accomplish service module 3 of provision of suitable educational recommendations for the user. After the user have given emphasis to the past study records and selection of suitable future interests, Beta-prototype offers personal educational recommendations for the users.

Here again it's noteworthy that the user with foreign education (3) makes an exception in comparison to the user scenarios 1-2 with past study records. As described in the user scenarios with reference to the prototype modules 1-2, user with foreign education does not have the same metadata in their competence profile. For this reason, user with foreign education is having education recommendations based on the field and level of past studies and expressed fields of interest.

Users 1-2 have also opportunity to decide not to give emphasis to the past study records. In this case the algorithm behind the education recommendations includes all past study records and their descriptions to the recommendations of the learning opportunities. During the piloting of the Beta-prototype, we are looking forward of having more feedback whether it would be more beneficial to exclude all past study records from the algorithm if the user decides not to give any emphasis to them.

### **Module 3: Suggestions for the educational opportunities (future)**

- 1) User with vocational degree sees suitable educational recommendations in relation to the past studies considering given personal emphasis and future fields of interests.
- 2) User with discontinued education sees suitable educational recommendations in relation to the past studies considering given personal emphasis and future fields of interests.
- 3) User with foreign education sees educational recommendations in relations to the past field and level of study and future fields of interests.

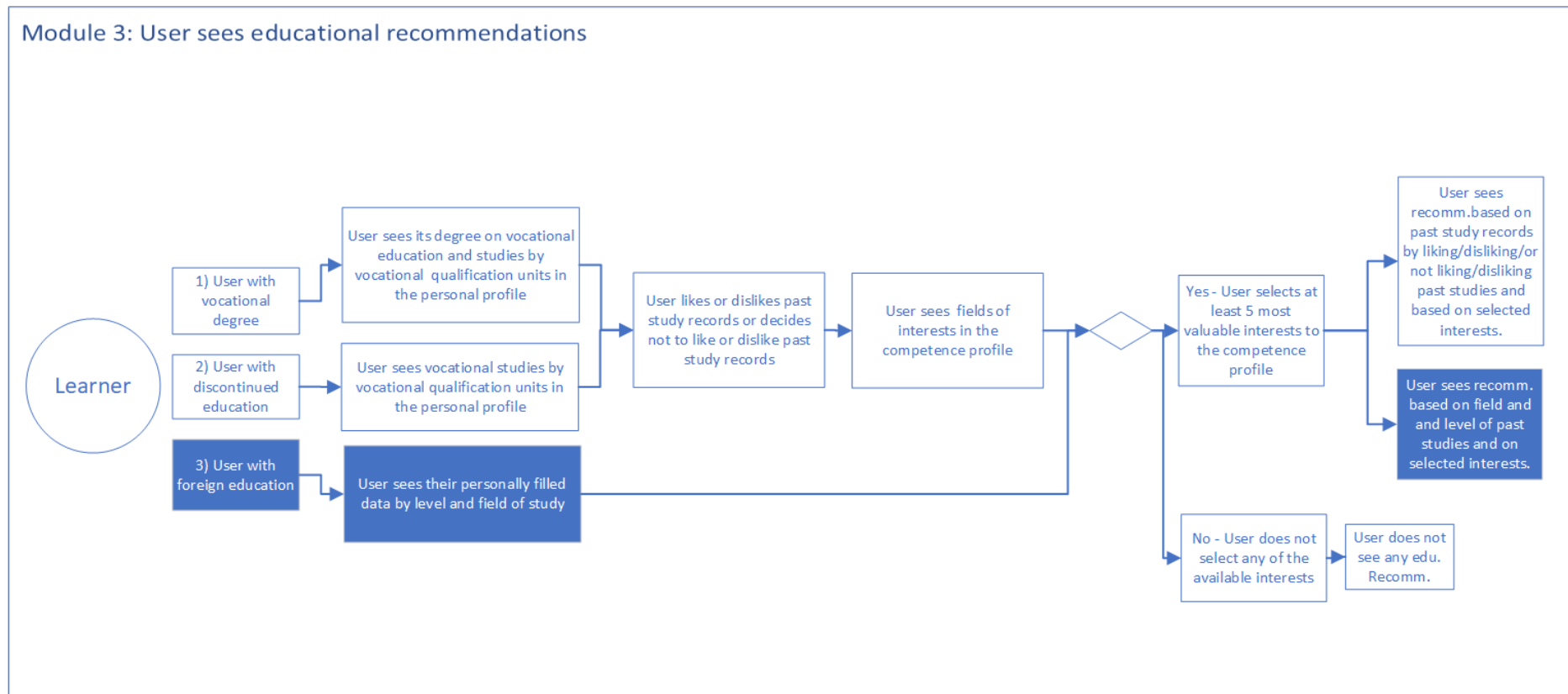


Figure 6. User sees educational recommendations

Usability findings in relation to the educational recommendation functionality were more remarks on critical needs for having more functionalities in the Competence profile. This remind on the narrow scope and restrictions of the implementation of the Beta-prototype. Firstly, our Beta-prototype currently offers only vocational educational recommendations. Recommendations of the higher educations would be very valuable for the users who have submitted their vocational degrees. Higher education is often an ultimate goal for the end user and therefore vocational studies signify only transiftion for higher education. Having the higher educational offer would also enlarge the potential user group to users with general upper secondary education aiming directly to higher education.

Users also wished, after having their personal educational recommendation, to filter suggested educations to show only those educations that have their application period open. In parallel, users wanted after having personal recommendation to filter and search for a specific field of studies. However, at this stage of development of the Beta-prototype it was too early to study usability and functionality of the fully functioning algorithm behind the educational recommendations. The end user piloting and deployment started after finishing the Beta-Prototype.



## 6. Stakeholder and user feedback

User feedback comprised of various methods of involving stakeholders and end users to the development work. We can identify threefold way of involving different target groups:

1. Open online demo sessions
2. End user usability testing
3. Stakeholder observation, interviews and reviews

### Open Online demo sessions

During the most intensive months of development, open biweekly demo-sessions of the development of the Beta-prototype were organized by EDUFI. These online sessions offered a window to follow the development of the Beta-Prototype, by showing participants concretely what we have achieved after each iteration.

#### 6 Demo 17.5. at 10:30-11:00.

**Commentator:** Maria Petritsopoulou / SkillsMatch (<http://skillsmatch.eu/>)

#### What were demonstrated?

- The whole user flow with all functionalities in place
- In the algorithm of recommendations, the interests were connected to the user flow taking now fully account the past study records as well as interests.

#### Joint discussion:

Skills Match project is planning a prototype around the soft skills. The possible synergies between these two DG-Connect projects were discussed about.

#### 5 Demo 3.5. at 10:30-11:00.

#### What were demonstrated?

- Educational recommendations and foundations of the algorithm
- User flow until recommendations (without interests included into the algorithm)

**Commentator:** Henriikka Kokkola / JobBoard Finland

#### Joint Discussion:

Do the reinforcement learning (RL) techniques will be used in the prototype? Reinforcement learning is not utilized. Deep learning techniques were used which means semantic matching of texts, matching not only same words but also semantically the same looking words.

#### **4 Demo 17.4. at 10:00-10:30.**

##### **What were demonstrated?**

- User with discontinued vocational education
- Expression of interests: Short introduction and reasoning for the use of Finto-ontology.

**Commentator:** Vera Mol / DUO

##### **Joint Discussion:**

How the <http://finto.fi/yso/en/> Finto-ontology can be used in other EU-countries?

Finto-ontology for the expression of interests function will be tested in the Beta-prototype. Ontology is also translated in English. It consists of approximately 200 groups of educational disciplines.

How educational institutions and their educational offer can be used in this prototype?

Finnish national educational offer from Studyinfo.fi / Opintopolku.fi service in the Beta-prototype is currently used and will be tested soon. Moreover, in the prototype educational offer from Finnish VET institutions and Universities of Applied Sciences is used.

The prototype will be also piloted to some extent by EDUFI's partner in the Netherlands (DUO).

#### **3 Demo 5.4. at 10:30-11:00.**

##### **What were demonstrated?**

- Demo of the user flow with identified user with data from national study records. User interface was translated in English.
- User authenticates successfully and gets local study records prefilled to their Competence Profile
- User sees their degree data by vocational qualification units.
- User selects their interests in the Competence Profile (still moc-up data)
- User sees educational recommendations.
- User selects one educational recommendation and sees educational information.

**Commentator:** Annika Grönholm (EDUFI) coordinator of the national application system, studyinfo.fi service.

##### **Joint Discussion:**

How users with national degrees whose records are not in Koski-service are taken into account in the prototype?

In conceptual terms, this kind of user has similar needs than the user with foreign study records or a user who is not willing to identify to the service.

It will be examined whether the text in feature "add a degree done outside of Finland" and title "Studies done outside of Finland" could be changed to more generic "add education" and "Educations or educational background".

However, in the Beta-prototype real user data is not used but mock-up data according to the user scenarios. Therefore, such a user scenario with Finnish degree but without KOSKI-records doesn't exist.

**Suggestion: Could user that adds foreign educations highlight their highest degree?**

Currently, user can list the degrees from lowest to highest, but cannot highlight the highest degree. This will be added into backlog.

Even more important, what will be implemented, is that the user can rate (thumbs up-down-down) the given degrees. This emphasis is taken into account when educational recommendations are given.

**Suggestion: Educational classification should be updated to correspond international ISCED study levels.**

**Suggestion: Could user add notion about their language competency?**

Currently it is planned that user could filter educational recommendations by language of instruction.

Feature about language competency is listed in the project's backlog.

How users with discontinued study backgrounds are taken into account? Or user with submitted educations but not full degrees?

User flow discontinued study background is one of the user involved user scenarios included into the prototype scope.

The definitions for the past study records and its structure will be checked.

How are the users with preparatory educations taken into account?

**2 Demo 22.3. at 10:30 - 11:00.**

The actual Beta-prototype and selected service modules were demonstrated.

**What were demonstrated?**

- Demo of the user flow with an immigrant background
- User without national study records.

**Joint Discussion:**

How are the user interests built in the prototype?

Currently the final decision on the typology/register behind the user interests that would be the most feasible and applicable in the Beta-prototype hasn't been made.

Possible options: ESCO-ontology, EU-key life-long learning key competences

When the prototype will be developed in English?

The user interface will be translated soon in next 2 iterations in English.

## **1 Demo 8.3. at 10:30 - 11:00.**

### **What were demonstrated?**

- Demo on the Beta-prototype, illustration of the user flow with the user interface-mockup consisting of interlinked pictures

### **What is the Beta-prototype:**

- Development of a new proof-of-concept
- Scope is more focused compared to the previous prototypes
- Beta-prototype combines Koski register data with user interests and provides education recommendations

## **Usability testing during development iterations**

### **Aims:**

- Testing the primary idea and usefulness of ComLeap prototype.
- Testing the usability of primary functions.

### **Execution of the usability testing**

- Usability testing with prototype version with mock-up pictures
- 7 pre-screened test users: currently studying or seeking to study in a vocational school, possibly also had some prior vocational education (having either graduated or dropped out)
- Difficult to find users who would be genuinely interested in applying for a new vocational education. Would these users actually use ComLeap service?
- Testing environment was adjusted to a certain extent to the educational background, but environment does not represent personal user-data.
- The functionality of the mock-ups is very limited in comparison to working system in live.
- 1 test user from Ohjaamo, 1 from Gradia, 5 recruited by Tutkimustie.
- All test users were Finnish and had studied in Finland.
- Tests were carried out between April 2nd and April 10th using a digital prototype displayed in Figma.
- Identified usability problems were fixed in the above-mentioned digital prototype between tests when possible.
- Findings were further discussed with the development team.
- Lack of own my data of the test persons

### **Main Findings**

- No critical problems were found in the interactions of primary functionalities (filling in preferences of school subjects in prior education, filling in interests and reviewing suggested educations).

- Especially the section displaying suggested education was deemed useful. Tests also yielded many improvement suggestions to this section.
- The group of potential users who would significantly benefit from the version being implemented given the technical and time related restrictions of WP3 is quite small.
- NB! POC with limited scope on vocational educations

## Identified Usability Problems

### Critical Problems

1. Users were reluctant to use bank credentials to log in to the service
  - a. Only one test user (the last one) chose to log in with bank credentials already on the landing page. Others chose to continue without logging in.
  - b. The reason for this was one of the following
    - i. Didn't understand why the bank credentials were needed
    - ii. Didn't trust the CompLeap-brand enough to use the bank credentials

### Moderate Problems

1. The "log in" option was understood as creating a profile
  - a. Creating a profile was deemed too heavy for just looking for education. It was also expected that creating a profile would mean more spam into their email.
    - i. The user continued without logging in.
2. Finding a relevant "sub-interest" depends on the user also finding the top-level interest as "interesting"
  - a. May lead to the user not finding all interests relevant to them. This is very dependent on the displayed interest options and phrasing.
3. **(Missing functionality)** User is not able to filter suggested educations to show only those that have their application period open.
4. **(Missing functionality)** Only vocational studies are suggested. Suggesting higher education would be useful.
  - a. Higher education may be the ultimate goal for the user and studying at a vocational school only a means to gain applicability to higher education. Suggesting a path to higher education may be useful.
5. **(Missing functionality)** User is not able to search for a specific field of studies.
6. **(Missing functionality)** User is not able to fill in their own Finnish education as a workaround for not signing in with bank credentials.
  - a. This may lead the user to just leave their prior educations empty, if they don't want to use their bank credentials.

## Minor Problems

1. Filling in preference of previous school subjects is easy to understand as “How did I like these classes in school?” instead of “How did I like the subject being taught?”
  - a. This can lead to misleading data for the algorithm: e.g. even though they like math in general a user may tell that they did not like math because they feel the teacher in their school was boring
2. It is possible to understand that “liking” previous educations would result in the system trying to suggest the same degree again.
  - a. This can lead to the user not filling in their preferences of previous studies
3. Users did not anticipate clicking the primary interests would open new, related interests
  - a. Understood once clicked. However, this is not a good user experience and may lead to the user not finding a relevant sub-interest if the primary level interest is not relevant to them.
4. (Missing functionality) The UI does not tell what the chances are of being employed after graduating from the suggested degree.
  - a. Showing wages for people graduated from the suggested degree could also be relevant.
5. Introduction texts of suggested educations are long and difficult to read
  - a. Official and unfamiliar terminology such as “tutkintonimike”, “osaamisala” etc.
  - b. Can discourage getting introduced to a potentially suitable study place

## Suggested Fixes to Usability Problems:

### Critical Problems

1. Users were reluctant to use bank credentials to log in to the service

Note: A critical problem if the development of the service is continued after the pilot. Not critical for the pilot as the users will only be signing in with test profiles.

- a. Increase sense of reliability with banners from officials (Finnish Agency for Education, Ministry of Education, European Union).
- b. Integrate the service to Studyinfo.fi (in Finland’s context), as the intended user group is already familiar with it. Use similar layout to Studyinfo.fi.
- c. Rephrasing. Emphasizing that the bank credentials are needed to make better suggestions.

### Moderate Problems

1. The “log in” option was understood as creating a profile
  - a. Rephrasing. Emphasizing the use of bank credentials and what they are used for.
2. Finding a relevant “sub-interest” depends on the user also finding the top-level interest as “interesting”
  - a. Make the primary interest buttons look more expandable.

3. (Missing functionality) User is not able to filter suggested educations to show only those that have their application period open.
  - a. A possible item for further development, priority needs to be evaluated before a final decision on its development is made.
4. (Missing functionality) Only suggests vocational studies. Suggesting higher education would be useful.
  - a. A possible item for further development, priority needs to be evaluated before a final decision on its development is made.
5. (Missing functionality) User is not able to search for a specific field of studies.
  - a. Add a filtering search bar into suggested educations.
  - b. In practice, implementing this is challenging in the timeframe of WP3.
6. (Missing functionality) User is not able to fill in their own Finnish education as a workaround for not signing in with bank credentials.
  - a. Add the possibility to do so. However, this is not possible in the scope of WP3.

#### Minor Problems

1. Filling in preference of previous school subjects is easy to understand as “How did I like these classes in school?” instead of “How did I like the subject being taught?”
  - a. Rephrasing of instructions.
2. It is possible to understand that “liking” previous educations would result in the system trying to suggest the same degree again.
  - a. Rephrasing of instructions.
3. Users did not anticipate clicking the primary interests would open new, related interests
  - a. Make the primary interest buttons look more expandable instead of a checkbox.
4. (Missing functionality) The UI does not tell what the chances are of being employed after graduating from the suggested degree.
  - a. Add functionality in the context of suggested educations. This is not possible within the scope of WP3.
5. Introduction texts of suggested educations are long and difficult to read.
  - a. Add multimedia (pictures, videos etc.) This presumably would require cooperation with education providers and/ or the Finnish Agency for Education. Not possible within the scope of WP3.
  - b. Reduce use of complicated words.

#### General observations

- Users generally expected that the system would give suggestions on all types of degrees, not just vocational ones.
- Users also sometimes expected the system to use prior education to verify applicability to higher education.

## Stakeholder observations, interviews and reviews

The development of the Beta prototype was launched with EDUFI and development team in the beginning of the year 2019. User experience specialist was responsible to gather needed stakeholder and user feedback directly from different stakeholders and end-users. The stakeholder feedback was gathered from February to mid-March 2019.

The utilized feedback methods comprised:

- Expert interviews
- Meetings in Ohjaamo Helsinki (one-stop-guidance-shop)
- Observations of advisor/ client meetings
- Interviews with VET specialists from OSAO and Gradia
- UI-prototype validations

## Conclusions of the stakeholder observations

General feedback:

Issues even within the user groups (immigrant, NEET, transitional phase) can be very diverse.

- The system must assume that other aspects in the user's life are in order and finding a place to study in is a prudent way forward.

Immigrants, especially from developing countries can have unrealistic expectations on what they can apply for, and how applicable their previous studies are in Finland.

- This should be taken into account when the system suggests educations for someone who has studied abroad.

**User scenario:** User expresses their interests in the Competence Profile

### Feedback:

Validated that verbalising "what am I good at" and "what am I interested in" is difficult for the intended user groups.

The experts use an adaptive pattern of questions and conversation structures to uncover interests and competences of their clients.

### Impact:

Implies that the UI should be suggestive and give options for the user to choose from (vs. a tabula rasa), when asking for interests or competences. Nonetheless this is a major design challenge.

**User scenario:** User receives suitable recommendations

**Feedback:** Navigating through existing systems (e.g. Studyinfo.fi) can be difficult and demotivating.



**Impact:** The system should give as much information on study programs as possible and technically convenient (and keeping the information concise), before directing the user to Studyinfo where the actual application takes place.

**User scenario:** User gives information on the submitted degrees (educational level and field) and User receives suitable recommendations

**Feedback:** According to the interviews and observations, prospective applicants for vocational studies look for job titles they might want to have, instead of the name of the degree (for higher education, the situation can be vice versa).

**Impact:** For vocational studies, suggesting a profession instead of a degree would be convenient. A qualification title will be suggested when possible. These often resemble actual professions, such as “cook” or “car painter”.

**User scenario:** User authenticates and gets local study records visualized to their Competence Profile

**Feedback:** For a person dropping out of an education, it can be unclear that some of their completed studies could be accepted into a new degree (e.g. a 3-year degree could be completed in a shorter time). Currently the study advisors work on these issues manually. Showing and suggesting “shorter” degrees to prospective applicants would be very valuable according to the interviews and observations.

**Impact:** This is an advanced feature and would be difficult to implement reliably. As such, it cannot be implemented within the scope for WP3.

## Detailed description of stakeholder meetings

Ohjaamo Helsinki

Ohjaamo is a chain of advice centers across Finland. Ohjaamo centres are "one-stop guidance shops" for people under the age of 30. The Ohjaamo centre in Helsinki is co-founded by five City of Helsinki government departments and the Uusimaa regional Public Employment Services. Developed based on experiences from a previous ESF-funded project, Ohjaamo focuses on employment and career guidance, but also offers advice about everything from finances to health and relationships.

**Timeline for the meetings:** 11.2., 12.2., 14.2., 11.3. and 12.3.

**Setting:** Observing situations where an Ohjaamo study-advisor interviewed clients seeking advice in finding a place to study. At breaks, the experts were interviewed and asked further questions.

**Day 1:** 11.2.

3 clients

Refugee from Afghanistan ~25 years old

Finnish 2017 high school graduate, NEET (Not in Education, Employment, or Training), university oriented ~20 years old. Wants to apply for a university degree program within social sciences.

Finnish fall 2018 high school graduate, NEET, ~18 years old. Looking for a place to study.

**Day 2: 12.2.**

1 on 1 pre-booked meeting with a client, studying for a vocational qualification. Struggling with studies, possibly quitting / being expelled from school. Needs direction in whether to choose another degree or to be employed.

**Day 3: 14.2.**

2 expert interviews: a study advisor and a career advisor.

**Day 4: 1.3.**

UI Review with a Study Advisor

Demonstrating UI and gathering feedback

**Day 5: 11.3.**

Afghan immigrant/refugee lived in Finland for 10 years. Wants to apply for vocational studies in order to pursue a higher degree (University of Applied Sciences) in construction after graduating. Has met the study advisor before on several occasions.

**Day 6: 12.3. (deadline for joint applications to vocational studies and high school)**

1 immigrant from Somalia, 15 years old, wants to apply for a specific vocational qualification.

1 NEET ~26 years old. Looking for a new place to study for a vocational qualification. Has recently dropped out of his previous vocational studies.

UI review with study advisor

Interviews and UI reviews with VET specialists from OSAO and Gradia

**Timeline: 14.3. and 21.3.**

**Setting:** Interview and UI review with Finnish-language teacher and program supervisor at Gradia.

**Day 1: 14.3.** Interview with expert from OSAO, UI review and interview

**Day 2: 21.3.** Interview and UI review with study advisor at Gradia.