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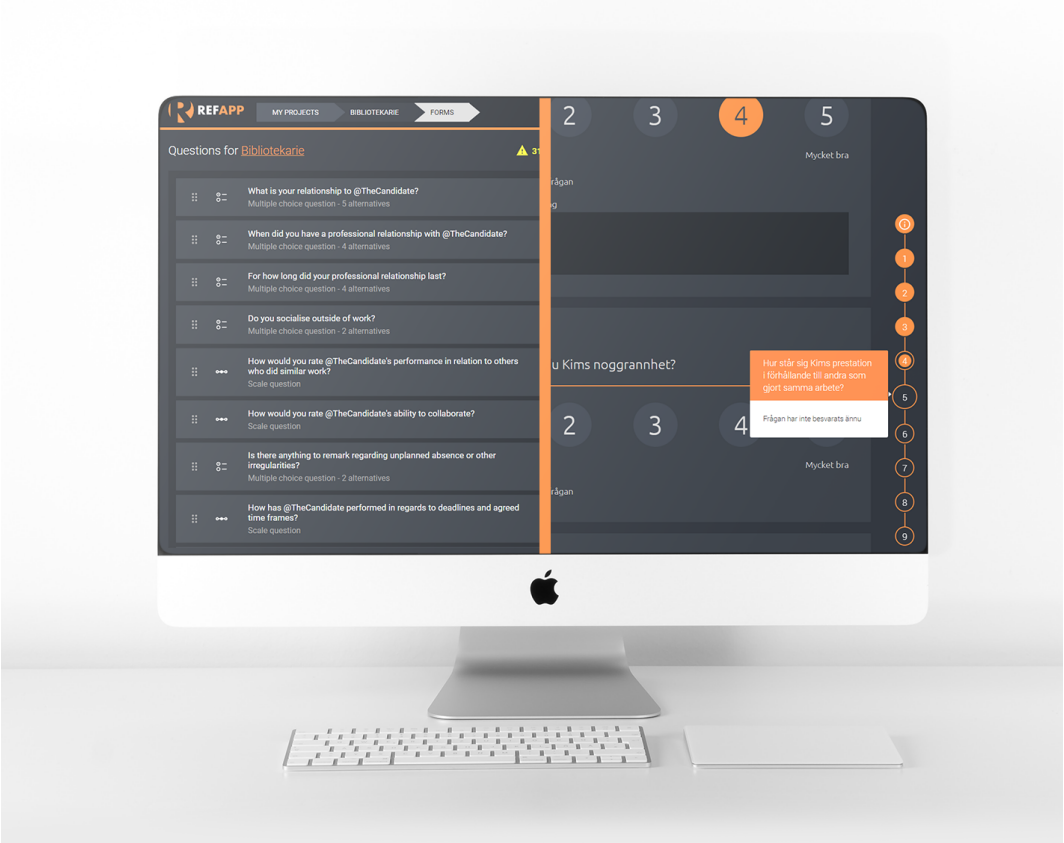

Accounting for the Secondary User Experience

Researching Digital Reference Checking to Establish Guidelines for Creating CMSs

Master's thesis in Interaction Design and Technologies

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Gothenburg, Sweden 2023

Master's thesis 2023

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Cover: A screen showcasing two separate views, one for the recruiter (left) and one for the referee (right)

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Abstract

Many parts of society are being more digitalized, including reference checking in the recruitment process. One such application created for digital reference checking is Refapp, created by Talentwise. This report looks into how a designer can ensure a good user experience, for both primary and secondary users, using Refapp as a base for re-design and developing ideas. In this context, a primary user is defined as one who is in direct contact with the application and creates some content to be experienced by the secondary user. A prestudy was conducted to get an understanding of the application as it was by interviewing recruiters and conducting focus groups with referees. Following were three iterations consisting of understanding and defining the problem, ideating, prototyping, testing, and analyzing. This resulted in 10 guidelines intended to assist in designing for both primary and secondary users when developing CMS-like applications.

Keywords: secondary user experience, reference checking, user-centered design, research-through-design, usability, graphical user interface, design thinking, interaction design, prototyping

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Emma Stenwreth, Gothenburg, May 2023

André Wahlberg, Gothenburg, May 2023

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Glossary

CMS Content Management System. 1, 4

GUI Graphical User Interface. 4, 12, 19

HCI Human-Computer Interaction. 11

LMS Learning Management System. 3

Primary user A primary user is a person that is part of the user group who will spend the most time interacting with the interface. Their actions dictate the experience of other users in one way or another. xiii, xvii, 1–5, 7, 9, 12, 13, 16, 17, 19, 25–27, 30, 32, 33, 35–39, 42, 43, 54, 56–58, 63, 64, 66, 67, 73

Refapp A web-based product for reference checking, created by Talentwise AB and used in this project as a foundation for creating the prototypes. xiii, 4, 7–9, 12, 17, 18, 20

RtD Research through Design. 15

SaaS Software as a Service. 7

Secondary user A secondary user will interact with an interface in a moderate amount of time. Their experience is partly or entirely dictated by the primary user of the system. xiii, xvii, 1–3, 7, 9, 12, 17, 19, 20, 25–27, 29, 32, 33, 35–37, 43, 54, 56, 58, 59, 63–65, 73

Secondary user experience Refers to interactions and experiences that secondary users have with a product, service, or system, which are created or customized by a primary user in advance. 1, 2, 4, 7, 9, 11

1

Introduction

This chapter provides some background to the problem, presents the research question, and states the aim of the project. There are also some references to related work.

1.1 Purpose

Today many aspects of our work are being digitalized [1]. In Sweden, there is even a Digitalisation Council that works towards promoting the government's goal of making the country the best in the world at using opportunities brought by digitalization [2] [3]. However, people differ in terms of digital literacy. It is likely that the trend of digitalization will continue because of what it brings to the table [4], which is why society must also pay attention to the usability and user experience of these new systems.

A designer will sometimes be tasked with creating dynamic systems that are configurable or customizable by the user themselves. The content will thus vary the way it is displayed on the screen, and it is possible that the outcome is not only intended for the person who controls it. Similarly, to a study by Alsos and Svanæs, we would like to define this as a *secondary user experience* [5], due to the fact that the designer will not be in direct control and may have little to no influence over the end result. Similarly, we also introduce the concept of *primary users* and *secondary users* to distinguish between the two groups. These relationships are visualized in Figure 1.1.

Everyday examples include content added to a Content Management System (CMS) that breaks the design of a website, and missing features in online learning platforms, such as a class schedule, resulting in the user trying to compensate by using existing features that were not originally intended for that purpose. This is a well-known aspect of interaction design [6], but despite its importance, it has not received adequate attention in our opinion. Secondary users often take a backseat in research, despite playing a vital role in the overall user experience. One reason might be the difficulty in identifying secondary users, or that many secondary users do not directly engage with the system, but rather are impacted by the consequences of the primary user's actions. This leads to a gap in our understanding of how best to

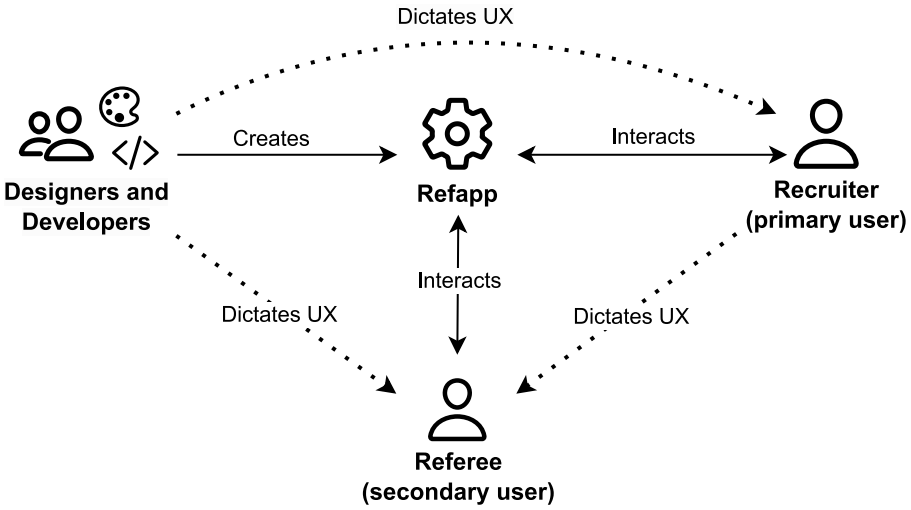

Figure 1.1: A visualization of the relationships between designers/developers and their users

cater to their needs and create a more holistic user experience. Therefore, we think that there is a need for more extensive research focused on both primary secondary users simultaneously.

One area that has become increasingly digitalized over the years, especially in the wake of the pandemic, is recruitment. It has been found that using digital alternatives instead of, or in combination with, traditional methods of recruitment save time and resources [7] [8]. It is also believed that digital reference checking reduces the bias of the recruiter, ensuring a fairer process for the candidates [9].

1.2 Related Work

This subsection presents several sources of related work that were deemed relevant to this project. They are presented in order of relevance and focus mostly on practical results.

1.2.1 Designing for the Secondary User Experience

The previously mentioned study by Alsos and Svanæs (see Section 1.1) is similar in terms of research to this project. They analyzed systems in a hospital setting where they chose to define primary users (doctors) and secondary users (patients), where the result of the study was a set of guidelines [5]. We believe that these could provide an input to this project and help us build a foundation for our findings. Aside from recommending that the secondary user should be included throughout the design process and evaluations, Alsos and Svanæs managed to compile four main elements that they believed would improve the secondary user experience:

- increasing action transparency through system feedback to the secondary user

- support non-verbal communication
- using the language and representation of the secondary user so that information is presented to the primary user in the same way as for the secondary user
- providing a separate interface for the secondary user that is tailored to them specifically with irrelevant information hidden.

Finally, the need for further research in other domains along with other technologies to further expand on this list is clearly highlighted. This, of course, adds to the reason for further research on this topic in our project.

1.2.2 Content on Learning Platforms

Systems for managing content come in many forms, including for educational purposes (a so called Learning Management System (LMS)). *Canvas* is one such widely used system that has received mixed reviews over the years regarding its user experience.

One study have shown that students (the secondary users) who use Canvas often express concerns about how teachers (the primary users) utilize the system in sometimes very different ways. They express a need for templates that makes the course websites more uniform and easier to navigate between [10].

Another study conducted at KTH came to the similar conclusion that rather than there being a problem with Canvas as a LMS itself, the problem lies with the use of it. Teachers set up course websites themselves, which often leads to websites having very different structure. The main outcome of the study was that students wanted consistency between the course websites to make Canvas easier to use [11].

As students at Chalmers, a school that also uses Canvas, we have experienced situations that are similar to the ones pointed out in the studies at KTH. We get the feeling that not all teachers are comfortable with the tool and that it results in course websites with very different use of the same pages leading to confusion, disabled pages that seem to be there but aren't, and "hidden" files that makes it harder to find information. This is very much dependent on which teacher has set up the course website, which means that the primary user is dictating the experience of the secondary user.

In the same way that teachers set up their course websites, recruiters set up their forms for referees (secondary users), and as the studies have proven, the actions of the primary users will affect the secondary users. If we can make Refapp follow the mental model of the recruiter (primary user) and make the tool helpful enough that it is used in a manner that creates good forms, we have a solid basis for creating guidelines for others to follow to hopefully improve the experience of the referee.

1.2.3 CMS and Content-Driven Design

As touched upon in Section 1.1, there are various cases where you would expect the content of a system (paragraphs, headings, images, music, etc.) to be presented in different ways depending on the user's device. One such obvious case is that of a CMS. We believe that there are lessons we can learn from here in regard to user experiences. A usable interface for managing the content is crucial for the secondary user experience, as this enables the primary user to properly realize their vision of the end result. While not being purely academical, this seem to be a somewhat hot topic for those interested in Graphical User Interface (GUI) design based on one articles found online. It was about content-driven design for dynamic content, which gave us some great perspectives on the matter. The author, Ian Spangler, emphasized the idea of considering the content before designing for it and to design each page as a template for content that may vary. Furthermore, he recommended to not give content creators too much stylistic control to prevent them from breaking the layout or in other ways harm the perception of the design [12].

The possibilities of changing content in Refapp are nowhere near as extensive as in a CMS. However, we believe that the aforementioned aspects are valuable to consider in our case as well since new designs to Refapp may introduce a larger set of controls for managing the presented content.

1.3 Aim

The overall aim of this project is to study the current state of Refapp and provide guidelines that may be used to improve it. The guidelines should however be general enough to be used in other but similar products as well since providing a secondary user experience is not unique to this kind of product, as described in Section 1.1.

Furthermore, reference checking in Refapp is only one part of the recruitment process and will sometimes be integrated with other systems. A user may thus be active in multiple systems at once, which should be accounted for when establishing these guidelines. For example, if the systems look and behave very differently, the user risk having to constantly change their mental model [13, Ch. 8].

The secondary aim for this project is to produce a semi-functional high-fidelity prototype based on at least two previous iterations. This prototype will be used to exemplify the guidelines and propose an implementation of them.

1.4 Limitations

The goal of this project is first and foremost to establish a set of guidelines that may be used in further development. As such, any software created in this project will not be considered ready for production. It will be used as a proof of concept and as a prototype for the user tests.

There will be a maximum of three iterations of design. Each iteration is given a set number of weeks where we will go through several stages of development.

The guidelines will primarily be aimed towards designers and not the primary users (recruiters in the context of Refapp). It is possible that we are supporting this user group through graphical elements such as tooltips, but this is not the purpose of the guidelines themselves.

1.5 Research Question

Based on the aim of this project, the research question to be answered is formulated as follows:

What guidelines can help to ensure a good user experience on a digital recruitment platform without direct control over the created content?

2

Background

This master's thesis will be carried out in collaboration with Talentwise AB with the use of their platform *Refapp*. This section is therefore separate from that of the academic introduction and focuses more on their aspect and serves multiple purposes. First, it describes Refapp in greater detail. Additionally, it covers aspects such as stakeholders and potential risks that may be faced throughout the project.

2.1 Project Overview

Talentwise have created an established platform for digital reference checking called Refapp, which works as a web-based Software as a Service (SaaS) and is often acquired by recruitment firms (but also available to others). As of now, Refapp is used to perform around 400,000 reference checks every year in Sweden alone. With their product, Talentwise states that they want to challenge the traditional ways of doing reference checking by letting people answer when and how they want to [14].

Refapp is customizable by the recruiter (primary user) using it, allowing them to tailor it to their needs. Here, the case of designing a good secondary user experience becomes evident. An important challenge to consider is that any change may affect both recruiters and referees; a tool that is difficult to use from the recruiter's standpoint may not be effective in eliciting answers, and a poor user experience for the referees (secondary users) may cause them to give up prematurely.

2.2 Existing Software

Refapp supports the recruiter's (primary user) process by making the reference checking step more efficient by automating the work and providing the user with supporting quantitative data. Its main feature is the creation of forms (see Figure 2.1) that are customizable by the recruiter based on their circumstances. It is currently possible to create questions and choose one out of three ways for how the user should be able to answer: multiple choice, scale 1-5, and free text. The recruiter is provided with an admin dashboard (see Figure 2.2) where they may do things such as create and manage the forms, keep track of respondents, as well as automatically sending out invitations.

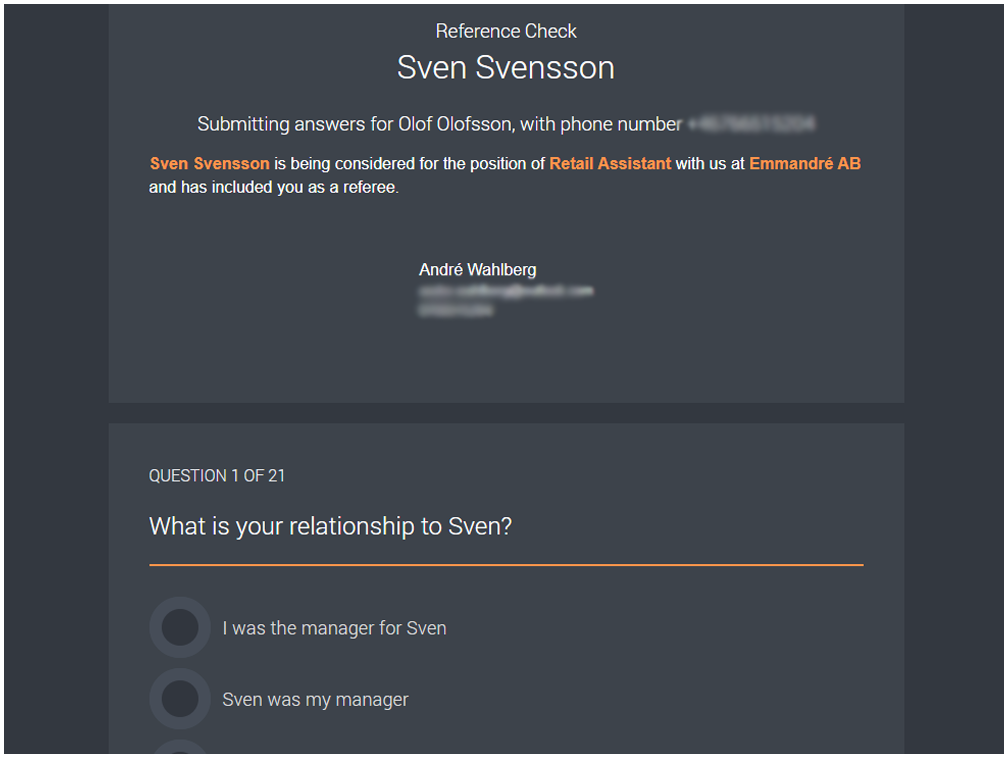

Figure 2.1: An example form, showcasing what is generated by Refapp

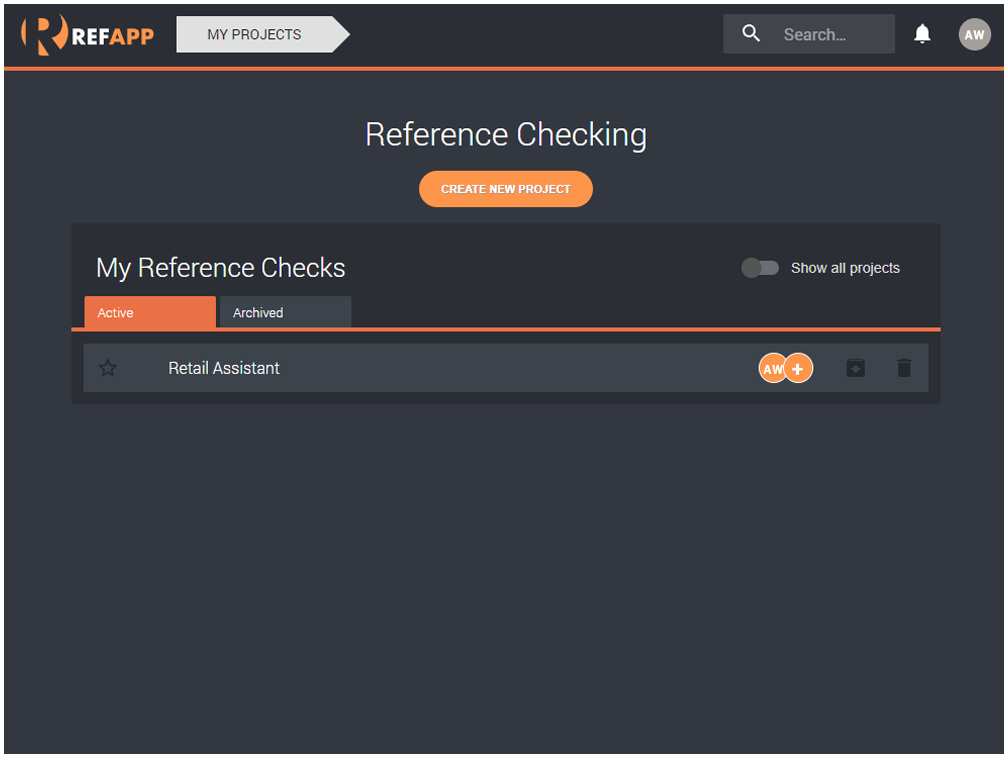

Figure 2.2: The admin dashboard of an authenticated user in Refapp

2.3 Stakeholders

Accounting for a secondary user experience will inevitably include many stakeholders. As such, it is important to realize who they are and how they may affect the outcome of this project. The power-interest grid in Figure 2.3 visualizes the influence each one have and how much attention they might require.

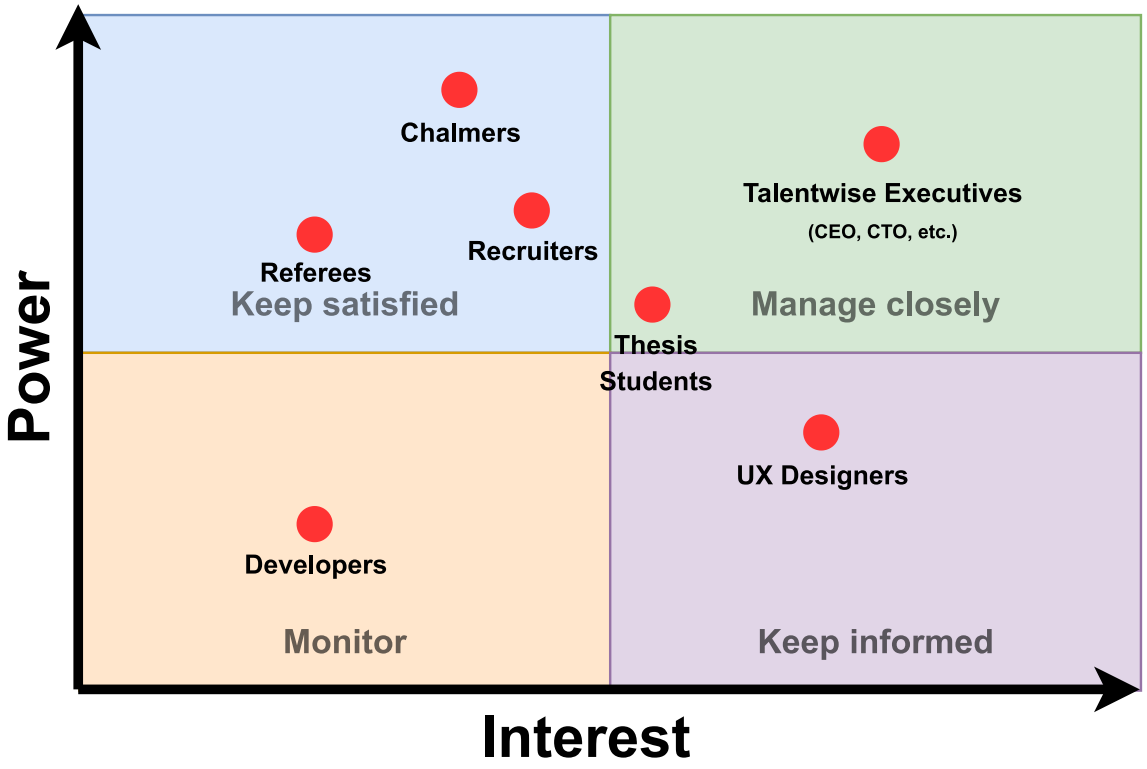

Figure 2.3: A stakeholder analysis (power-interest grid) of the project

The main users of Refapp are referees (secondary users) and recruiters (primary users) as they are the ones directly interacting with the product. We suspect that they might pose the risk of opposing each other since we expect recruiters to want lots of data that can easily be analyzed, while referees want the process to be quick and to not require too much of their time and effort. As such, it is important that the guidelines either maintain a good balance between both parties, or that they clearly state any trade-offs required.

Apart from the primary users, we also have Talentwise executives. They wield significant influence over the project and have a large interest in how we handle their product. The modifications we suggest and implement could potentially enhance the product, but they could also introduce challenges. Additionally, any potential interaction with their customer base might require careful handling due to its sensitive nature.

On the other hand, Chalmers University of Technology holds authority over the

final report we submit, with the power to fail us in the course. They may not have much interest in the specific details of the work conducted, instead focusing more on the academic outcome.

The UX designers in the diagram refer to the ones working at Talentwise with design-related tasks. Our guidelines will be constructed such that they could be of help for the UX designers, which increases their potential interest in our work.

Similar to the UX designers, the developers are also working at Talentwise. Their work is more focused on implementation but will of course also be affected by any design decisions inspired by our guidelines.

As for us, the thesis students, we hold limited control over the project's outcome other than putting in the work and doing our best. The power lies with the examiner and Talentwise as previously mentioned. Our interest lies in presenting something we can be proud of and passing the course.

2.4 Risk Analysis

In interaction design, it is often highlighted that a multidisciplinary team is great for complementing each other's skill sets, promote creativity, and to make sure that you look at the problem from a good number of perspectives [15, Ch. 1] [13, Ch. 7]. Considering that we are students from the same program with similar backgrounds, one could argue that we face the risk of being narrow-minded when conducting our design research.

To prevent this and make sure that our work is done thoroughly, it is important that we regularly remind ourselves about the risk and try to be critical in our own thinking. For each decision we should try to see it from the perspective of someone completely different from ourselves. In addition to that, we strongly believe that we have to involve real users as much as possible. If we are uncertain (or overly confident) that a solution will work, it should always be confirmed through testing.

There is also a risk of us not finding any real users or finding too few users to come to any conclusions. This would lead to us not being able to test our prototypes with the correct user group and would delay our work in search for participants.

Finally, in a worst case scenario Talentwise could for some reason have to break contact with us. This would force us to change direction in our work completely as we would no longer have access to Refapp for testing. This would in turn make our work solely theoretical and leave us with few things concrete.

3

Theory

This section includes any theoretical frameworks used in the project, as well as relevant concepts and related research. This includes topics such as user-centered design, posture, feedback, and the gestalt principles.

3.1 User-Centered Design

User-centered design is an established term within Human-Computer Interaction (HCI). This can be described briefly as iteratively designing with the users in mind and as part of the process itself. To take a user-centered approach is often boiled down to four activities: discovering requirements, designing alternatives that meet the requirements, prototyping the designs so that they are properly communicated to the user and may be evaluated, and finally proceeding with the evaluation of the product and its user experience [15, Ch. 2].

This project will be user-centered due to the focus secondary user experiences. We believe that the aforementioned activities fit this project and research question since there is a need to understand the problem space and be careful about not rushing to any conclusions. User experiences, both primary and secondary, are a subjective matter and should thus be treated as such.

3.2 Relevant Concepts

This subsection includes relevant concepts found in literature and various articles. They are mainly selected with the intention of supporting our ideation process by substantiating the reasons for our design choices.

3.2.1 Posture

A product's *posture* is the way it presents itself to the user and can be a way of describing the amount of attention a user will put into interacting with it. This is determined by the product's intended usage contexts and environments.

A *sovereign* application is one that is used over longer periods of time while a

transient applications are used briefly and usually only has a single purpose. A sovereign application requires a clean design that is not overwhelming to work with given the extended periods of time the user spends within the interface. Alternatively, a transient application needs to be easy to understand and enable immediate comprehension, as users will not have time to familiarize themselves with the system [16, Ch. 9].

We will have to treat our two different users' views (recruiters and referees, primary users and secondary users respectively) of the system differently in our assessments. Recruiters work with Refapp as a sovereign web application, while the referees only use the forms for a short time as a transient web application.

Regardless of the posture, we need to be mindful when adding things to the interface. There is always a risk of cluttering and usually the interface gets better the less there is of it [16, Ch. 11].

3.2.2 Excise

Excise is what you have to pay extra in terms of cognitive and physical effort whenever an interface is used. This comes in a variety of forms, including cognitive, memory, visual, and physical work [16, Ch. 12]. Overall, it is very important when designing a GUI that you remove unnecessary features and steps in order to simplify it and improve the overall user experience. The goal is to make the interface more intuitive and easy to user, while still providing all of the necessary functionality [17, Ch. 5].

3.2.3 Affordance

Affordances are visual clues perceived from the properties of a graphical element in an interface that suggests its use or purpose. They are a very fundamental part of making GUIs intuitive and can be found in many places. A very common example is buttons with three-dimensional styles that conveys to the user that they are clickable [17, Ch. 10] [16, Ch. 13]. To summarize, the concept of affordance helps us to create a more intuitive and user-friendly interface by making it clear what actions are possible and how they should be performed.

3.2.4 Feedback

In GUI design, *feedback* refers to information provided to the user following the user's interaction with the interface. This may come in visual forms such as highlighting, animations, and change of state. It is also possible that feedback is given auditory. In any case, feedback helps to confirm the action of the user and to communicate the result of that action.

Feedback can be categorized into *modal* and *modeless* based on its behavior. Modal feedback simply refers to modal dialogs that are used in some interfaces. These demand that the user interacts with it in order to keep using the rest of the system

by blocking any other action. Modeless works the opposite way, by only updating parts of the interface without being too intrusive. The choice of type can be based on the severity of the information presented to the user. Too many dialogs blocking the interface is often seen as annoying and should only be used in cases where it is crucial that you grab the user's attention [16, Ch. 15] [18].

3.2.5 Hick's Law

Hick's law describes how the more options you give the user the longer it will take for them to come to a decision. It is therefore recommended to limit the number of options to just what the user needs to accomplish their task. This can either be done by dividing the interactions into several screens or by highlighting the most important features [19].

The application of this principle is essential in our case because having too many choices can make the system confusing and difficult to use. Having too many choices can slow down form setup in Refapp and create frustration and unsatisfactory results for the recruiters (primary users). Making the most frequently used functions and choices prominent leads to a more seamless and efficient user experience. Less important functions can be hidden to avoid distractions and ensure that the focus remains on the most crucial elements.

3.2.6 The Vox-Restorff Effect

The Vox-Restorff Effect is also known as the isolation effect and describes how an object that differs from the rest will be remembered [19]. For example, if you have a basket of apples that are all red except for one green apple, the green apple will stand out and be more memorable.

By highlighting the core functions in Refapp, it becomes easier for users to access and utilize the program, whether they are frequent or infrequent users. This approach will help users quickly locate the important functions, as vital buttons and options will stand out and naturally attract their attention, eliminating the need for extensive searching within the interface.

3.2.7 Gestalt Principles of Visual Perception

Gestalt Principles describe how humans tend to interpret things as a whole rather than separate [20] [21]. Following are eight principles:

- Similarity: elements with similar shapes, colors, and/or size will be seen as being in relation to each other [22].
- Continuation: humans tend to follow curves and lines and continues them [23].
- Closure: even though an object is not complete, the brain will fill in the blanks to make it whole [24].

- Proximity: items close together will be seen as being in a group [25].
- Common region: items within the same region will be seen as being in a group and sharing some characteristics or functionalities [26].
- Connectedness: connected elements will be seen as belonging together [27].
- Common Fate: objects that move the same and together will be seen as connected. The objects should move at the same time, in the same speed and in the same direction [28].
- Figure/Ground: objects in the foreground are seen as separate from objects in the background [29].

4

Methods

This section describes the methods to be used in this project. They are based on a literature review and provides a foundation for our design process using established approaches.

4.1 Research through Design

Connecting research and design has proven to be a challenging area for researchers in the past. From this came the idea of Research through Design (RtD) where you employ the knowledge collected in your design toolbox with the purpose of generating new knowledge. RtD may easily be mistaken with standard design practice, but it is important to remember that it has characteristics such as being more systematic and documented in a way so that others may replicate the process in the future. RtD involves five stages of the design process: selecting a problem, designing a solution, evaluating the solution, reflecting upon the results, and repeating [30].

Furthermore, there are four criteria to ensure the quality of interaction design research. First, the process should be well documented including methods and good reasons and explanations for the choice of methods. The process should be reproducible just through the documentation. Second, it must be clear that the research regards something new and inventive in a specific situation. The invention should be backed up by a thorough literature review that illustrates the addition in advancement the research brings. Third, the researchers should explain why their work is relevant. There should be motivation for why, an explanation of the preferred state, and information on the current situation. Finally, the results should be usable by others either by continuation of research or by direct usage [31].

Comparing this to the user-centered design described in Section 3.1 can be difficult as they may seem similar at a glance. However, it is important to note the distinguishing factor that RtD primarily focuses on generating new knowledge rather than creating an effective, useful, and desired product or service. They are however possible to use in complement with each other as they together cover both the practical and academical aspect of this project.

4.2 Figma

Figma is a tool for designers and developers to come together to wireframe, design and prototype [32]. It can be used in teams to simultaneously work on the same project in the cloud or by people working by themselves. Additionally, Figma provides real-time collaboration, vector editing tools, and allows for the use of components and styles for staying consistent in the design.

4.3 React

React is a JavaScript framework primarily used for front-end development [33]. Due to its large base community-made libraries and its structure, we believe that React is a well-suited tool for prototyping in this project. Additionally, Refapp is partly built using this framework, which implies that we might have to utilize this if we want to create hi-fi prototypes.

4.4 User Studies and Data Collection

This subsection describes the methods that will be used for data collection throughout the project. These will be utilized not only when understanding the users, but also as we approach the end when there is a need to evaluate solutions.

4.4.1 Interviews

Interviews are a good fundamental way of collecting firsthand data [16, Ch. 2]. This can be matters such as, but not limited to, previous experiences, opinions, and attitudes. The content of an interview is mainly dictated by the type of questions posed during the session [34]. Depending on its purpose, interviews may also be classified differently. There are three commonly agreed upon types: unstructured interviews, semi-structured interviews, and structured interviews. The selection should depend on the desired degree of specificity in the participant's answers [15, Ch. 8].

To understand the current experience of recruiters (primary users) and how they interact with existing systems, we need an early direct contact with our primary user group. We thus plan on interviewing recruiters at an early stage of this project. These interviews should be semi-structured to allow them to think and express their opinions freely while still getting some comparable answers between participants.

4.4.2 Focus Groups

A focus group is a type of group interview where a facilitator guides the discussions and ensures equal participation from all members. Typically, a focus group comprises of three to ten individuals chosen to reflect the intended audience. The facilitator has an agenda but can follow unplanned discussions raised by the participants as well. A focus group is best used to investigate shared issues that several

users may have rather than experiences on an individual level [15, Ch. 8].

Our plan is to hold focus groups with referees (secondary users) in the initial stage of our design process in order to gain a deeper understanding of factors affecting form completion, and to gather information that will aid us in our design approach. We have decided to limit our focus groups to referees only, rather than including recruiters (primary users), as these two groups utilize the system differently and most likely have different experiences in using it. There is less of a need for answers to specific questions regarding the design from referees than from recruiters, which is why only referees will be included in focus groups.

4.4.3 Software Metrics

There is a possibility to collect software metrics from Refapp itself. We see this as a potential alternative for evaluating our solutions under the presumption that those solutions are possible to integrate into the existing software without too much difficulty. It is important that any software-related problems do not take up too much time since the main focus of this project will be on the interaction design and not the software engineering side of things. Under ideal circumstances however, this could be an efficient approach to collecting a relatively large number of quantitative data.

4.4.4 Observations

Instead of asking users about their behaviors using a product you can observe and get more accurate answers [16, Ch. 2]. Observations can be made both early in the design process but also to test prototypes in the later stages for evaluation. A user may take on a task in a controlled environment or be observed in their daily life. Observations in a controlled environment can be rather formal and benefits from having a script. Using a script ensures each participant gets the same information and increases validity to the results. Cameras can be used to record for later reference and analysis [15, Ch. 8].

We see the possibility of using observations when determining the current state of Refapp, and later evaluating our own prototypes with both qualitative and quantitative data. Observations would be a good way to uncover behaviors and perceptions that may not be obvious for us as designers, or things that the user is not even aware of. We plan on using observations during all iterations. The first iteration will consist of think-aloud and screen recordings to see our design in action. The second and third iterations may differ depending on our needs and will be planned after iteration one.

4.4.5 Think-Aloud Protocol

The think-aloud protocol is a tool to understand what the user is thinking and feeling that cannot be observed. The protocol can either be used while the user is performing the task or in retrospect where the user comments on a recording of

themselves performing the task [34, Ch. 109].

The protocol may be used in combination with observations to get a better understanding of what the participant is thinking if deemed useful. This is also a way to get insight into potential strategies they use while performing the task we give them.

4.4.6 Expert Review

To get a fresh perspective on your design, one may consider getting a review from a UX Expert. An expert is someone with real experience from years of work. They should not have been involved in the design before to avoid bias and give you a new point of view [35].

There are some components that is recommended to include in an expert review. A list of strengths in the design to highlight what especially works. A list of problems, the severity of the problems, recommended solutions, and some real-life examples of good design solving the same problem. This should all be objective and have clear reasoning as to why it is a problem and not be a matter of preference from the expert designer [35].

An expert review in combination with usability testing can complement and uncover different problems with a design. Using them both can benefit the whole design [35].

We plan to use expert reviews in the end of iterations one and two before conducting usability test with actual users. This way we can make a quick redesign if needed before showing users and they will not get distracted by those faults and can instead find more unpredictable problems. We plan to ask two different experts to help give reviews, one for each iteration for them to give a fresh perspective each iteration. The experts will have to be unbiased and can therefore not already work with the design of Refapp. The experts will be people teaching at our master's program, Interaction Design and Technologies at Chalmers University of Technology in subjects found relevant to the project.

4.4.7 Handling Participant Data

To make sure the participants in each test knows what we plan to do with the data we gather, as well as their rights to it, we will provide a contract for them to sign before the test start. This contract will present how we plan to collect data for each test, why we collect it, what we will do with it, and what they can do if they want us to delete it. The participants will have to sign the contract and we will ask before starting each test if they still agree with it. We will also make it clear that they can withdraw from the test without explanation at any time. All data will be anonymous, and any data presented in the report should not be possible to link to a single person.

4.5 Personas and Scenarios

Personas are used to represent the users and to help the designers remember who they are designing for. They usually contain a name and a picture of the persona, user behaviors, their goals, and their attitudes [15, Ch. 11]. They are helpful in communicating requirements and goals because it is easier to relate to a person than just a list. Personas can also be used for testing making the design stronger before the time comes for testing with real users [16, Ch. 3].

Similarly, scenarios are a way to envision future use of a product or service. They can be a help to focus on the future use rather than just meeting technical requirements, and work well together with personas [34, Ch. 92].

Since we will have two different user groups, we see the need for creating several personas. The first will represent the recruiters (primary users) based on some initial interviews with them. Aside from that, we will create two personas to represent the referees (secondary users). Diversity is likely to be higher amongst referees since basically anyone could take on that role. This is why we see the need to have more personas for referees than for recruiters. The personas of the referees will be based on initial focus groups that we hold with people that have had some experience with reference checking.

To conclude, the personas will be of help while prototyping and support us in staying user-centered while designing. Our personas will be used according to theory by being used within scenarios to envision future designs and evaluate if they are worth testing with actual people.

4.6 Ideation

This subsection concerns ideation methods that are expected to be part of the design process in this project. At the time of writing, we have not yet conducted any initial interviews or focus groups to understand our users. This means that the choice of the following methods is made as a qualified guess for which will be useful and fitting to our circumstances.

4.6.1 Sketching

Sketching will take a natural part of our process as this project will deal with a GUI, which are inherently visual in nature. This in combination with brainstorming will be the main way we will generate design ideas to later evaluate. Another reason for using sketching in the ideation phase is that it is a good way to find new perspectives and promote a conversation between the designers. This is meant to highlight the designers' thinking process and to stimulate creativity by generating new ideas together [36].

4.7 Prototyping

Prototypes are concrete representations of a design or idea [15, Ch. 12]. There are commonly three levels of fidelity of prototypes: low-fidelity, medium-fidelity, and high-fidelity. They represent different levels of completeness toward the final product, where each one has their own advantages and disadvantages over the others [13, Ch. 11] [15, Ch. 12].

Prototypes will be useful for us since they will enable us to test the usability of any proposed solution. The user interface of Refapp will be partially re-designed to allow for exploration of things such as new input methods, visually guiding the user, and changing the user flow. Fortunately, we have backgrounds in IT that will certainly be useful in this regard. Therefore, the prototypes will hopefully be able to be produced with a relatively high degree of fidelity.

4.7.1 MoSCoW Method

To prioritize tasks while developing one may categorize them using the MoSCoW method. Each task is put in one of the follow categories: *Must Haves*, *Should Haves*, *Could Haves*, or *Won't Haves*. The Must Haves are things that have to be implemented and that are vital for the product to succeed. Should Haves are important, but the product can still stand without them; these will be prioritized if there is time. Could Haves are not vital for the product and will only get implemented if there is time left, but they are not particularly important. Won't Haves are things that will not get implemented, at least not at the time of writing [37]. Since there will be limited time for prototyping we will have to prioritize what to implement. Some features or aesthetics might be more important than others based on what we want to achieve in our tests.

4.8 Data Analysis

The collected data will have to be analyzed for us to come to any conclusions and learn from it. As of now, it is clear that we are going to end up with mostly qualitative data. A secondary user experience may very well be measured using quantitative software metrics as well, but as of now, we need to investigate the problem space in greater detail to know what to measure. Therefore, we cannot say what type of quantitative analysis method we will use. This will be determined depending on the observations we plan for iterations two and three.

4.8.1 Thematic Analysis

Thematic analysis is a way to analyze qualitative data [15, Ch. 9]. There are five steps to thematic analysis: compiling, disassembling, reassembling, interpreting, and concluding. At the end of the compiling step, the data should be organized and be easy to go through [38].

Disassembling involves looking more closely at the data and coding it, which means looking at data and finding similarities and differences. Each piece of data is assigned a code, or a category, that either is predetermined or defined while looking at the data. Changes to the code may occur the more data you go through which makes it important to look at the first pieces of data that was assigned again to make sure they follow the current code. Disassembling is done when nothing new arises and everything has been coded [38].

When reassembling you find themes between the codes and add groups of categories together. When finding themes, it is important to make sure the theme depends on the data, and you don't set a theme and try to find data to support it. It is recommended to sort through a portion of the data, wait a few days, and then resort the same data to see if you make the same groupings to ensure reliability [38].

There are a few qualities to interpreting the reassembled data. First, it should be possible for the reader to follow the process of how the interpretations were drawn. Second, the same interpretations should be able to be drawn by other researchers given the same data. Lastly, the interpretations should represent the raw data [38].

We plan on using thematic analysis to analyze the qualitative data to find themes and patterns. Due to its natural ability to find themes without having them predefined, affinity diagrams is most likely the outcome of our thematic analysis [34, Ch. 3] [15, Ch. 9].

5

Planning

This chapter describes the initial plan of the project regarding time spent in the different stages. It also presents internal deadlines in the form of milestones as well as further description of our Gantt chart.

5.1 Gantt chart

The plan for the project is as can be seen in Figure 5.1. The first four weeks include research and writing the planning report as well as getting in contact with whoever can help us find people to interview and test with.

Next, the plan is to go through three iterations of design, where each iteration will have five steps according to Research through Design. The steps are understanding users, define the problem, ideate, prototyping, and test and analyze.

When we are done with the iterations full focus will be on finalizing the report and preparing for the presentation. Writing on the report will also be done throughout the iterations as to not leave all the writing for the last weeks and also to keep up with thoughts and reasoning.

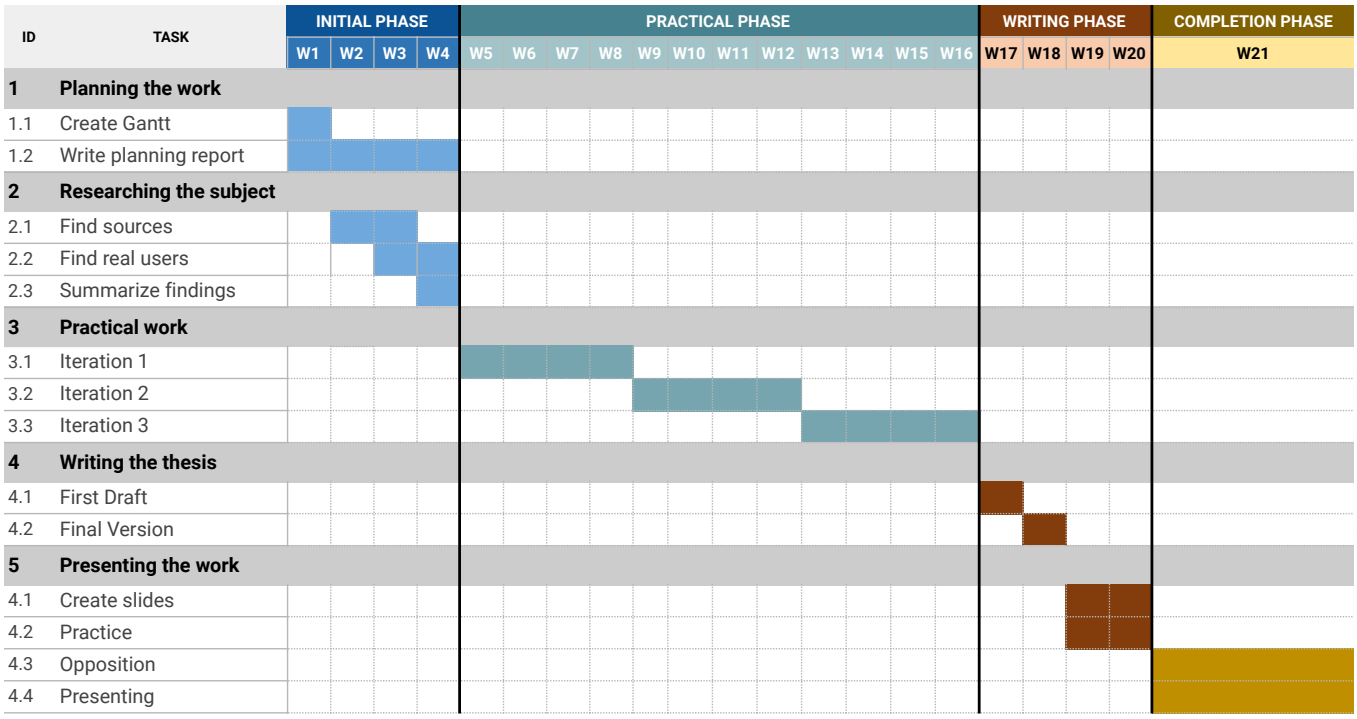

Figure 5.1: The Gantt chart used for planning of this project

5.2 Milestones

As in most projects, there will be a need to track progress. Aside from the Gantt chart, we thought that it would be fitting to define a set of milestones seen in Table 5.1. An 'X' stands for there not being a set date yet.

Table 5.1: The milestones used in this project

Name	Completion Date	Project Week
Planning report handed in	23-02-10	4
First prototype finished	X	7
Analysis of first prototype completed	23-03-10	8
Second prototype finished	X	11
Analysis of second prototype completed	23-04-07	12
Third prototype finished	X	15
Analysis of third prototype completed	23-05-05	16
First draft of report handed in	23-04-15	13
Final version of report handed in	23-05-12	18
Presentation and opposition completed	X	X

6

Execution

This chapter describes the execution of our methods up until the end of Iteration 3. The first iteration is somewhat longer due to the user study that took place during this part of the project.

6.1 Iteration 1

This section covers the first iteration, including all design phases. It begins with describing our prestudy, where the goal was to understand the users. This is then followed by a short subsection about the phase where we defined the problem, followed by some parts about our brainstorming, prototyping, and finally testing.

6.1.1 Understanding the User

As mentioned, to begin the first iteration, we conducted a prestudy to gain a better understanding of our users. As expected, establishing contact with recruiters (primary users) who were open to participate in our tests presented a significant challenge. We believe this was mainly because they had very little time and little to gain. Consequently, we found it necessary to seek assistance from the employees at Talentwise in finding participants. At the same time, we also contacted possible people that could represent the referees (secondary users). It was important to us to make sure to select individuals who represented a diverse range of ages, genders, and professions in order to ensure the data we gathered was as accurate as possible. The people contacted were chosen from our own social connections with priority given to those who were not particularly close to us.

Furthermore, the prestudy was divided into two parts. We conducted one-on-one interviews (see Appendix A) with three recruiters and arranged two focus groups with four to five referees in each (see Appendix B). Since the participants were located in different cities, we conducted the interviews through video calls. These interviews were semi-structured and resulted in qualitative data. The focus groups, on the other hand, were held in person as conducting them online could result in the loss of social cues and norms. We also sent the participants a participation contract prior to the study to outline our data collection procedures and their rights.

After conducting interviews and focus groups with recruiters and referees, we developed three personas (see Figure 6.1) to use in our design process: one recruiter and two referees. These personas were created based on the insights we gained, and our perceptions of the participants' attitude towards the problem.

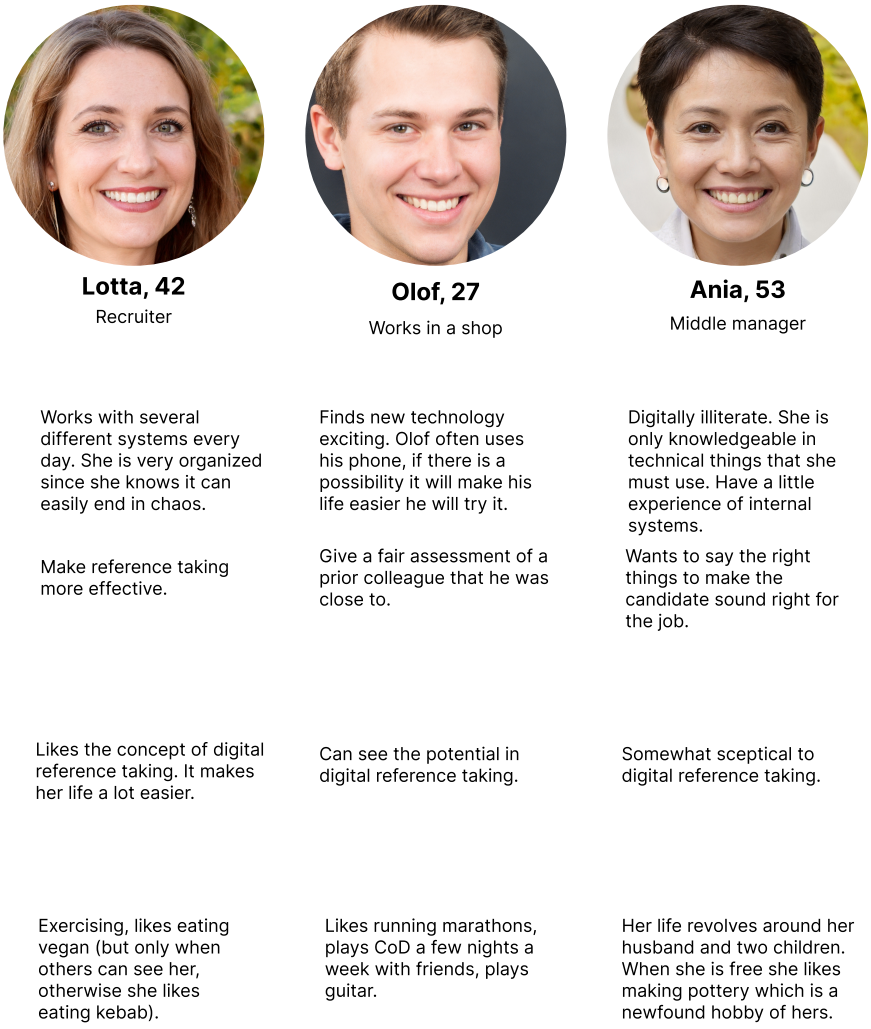

Figure 6.1: The personas that were used used to visualize potential users of Refapp, where Olof and Ania are referees (secondary users) and Lotta is a recruiter (primary user)

6.1.2 Defining the Problem

The results of the focus groups and interviews were then transcribed to be analyzed more easily. We used a thematic analysis approach to evaluate the data collected during the prestudy. First, we analyzed the responses from the focus groups, followed by an analysis of the interview answers. Finally, we synthesized our findings from both user groups to generate concrete design ideas and identify areas of agree-

ment or disagreement between recruiters (primary users) and referees (secondary users). The results of this analysis were presented in a bulleted list format seen in Appendix C.

Before beginning Iteration 1, we had compiled a list of areas for improvement based on our own knowledge of design theory and experience using Refapp. We merged this list with our analysis and added it to a Figma project (see Section 4.2) where we used screenshots of the product to illustrate as many of the identified points as possible.

6.1.3 Ideate

To kick off the first ideation phase, we used a Figma document to braindump the result of our prestudy (found in Appendix C), our own initial thoughts, and any other assumptions made so far. This also included our own proposed solutions to the problems and suggestions made during the prestudy, as well as issues we discovered ourselves. This was then followed by a proper brainstorming session to generate as many ideas within the scope as possible. Each design idea was then added into one of the following categories:

1. user experience for referees (secondary users)

2. user experience for both referees and recruiters (primary and secondary users)

3. user experience for recruiters (primary users).

The categories listed above reflect their priority, with the user experience for the referee taking precedence over that for the recruiter. This decision was made as our primary focus lies on enhancing their experience. Ideas were now ready to be collected and tagged to help us visualize the priority in Figma (see Figure 6.2). Using these categories, we selected which ideas to develop further and were able to prioritize the individual ideas to ensure that we would focus on the right things in case we would be low on time. Furthermore, we carefully considered the time and complexity associated with each design idea to avoid taking on overly demanding tasks. We decided to continue developing the following design ideas during this iteration (see Figure 6.3):

- A progress indicator for the form to provide the referees with an overview where they can see which question they are currently answering, how many remains, and which ones are completed/not completed

- A branding tool used to change colors, analyze contrasts, and change theme to improve the referees' perceived reliability of the forms, and to give the recruiters greater opportunity to communicate their brand and adapt it to their liking

- 1-6 rating scale (instead of 1-5) to prevent the referees from giving an average score, effectively not leaning towards any of the two extremes
- A dedicated text field where a recruiter may include a link to the job posting to allow the referees to make a more educated answer
- The option of using checkboxes in addition to radio buttons where the recruiters creates their questions
- A change of order of identification methods where the recruiters enable them

Figure 6.2: Priority while ideating

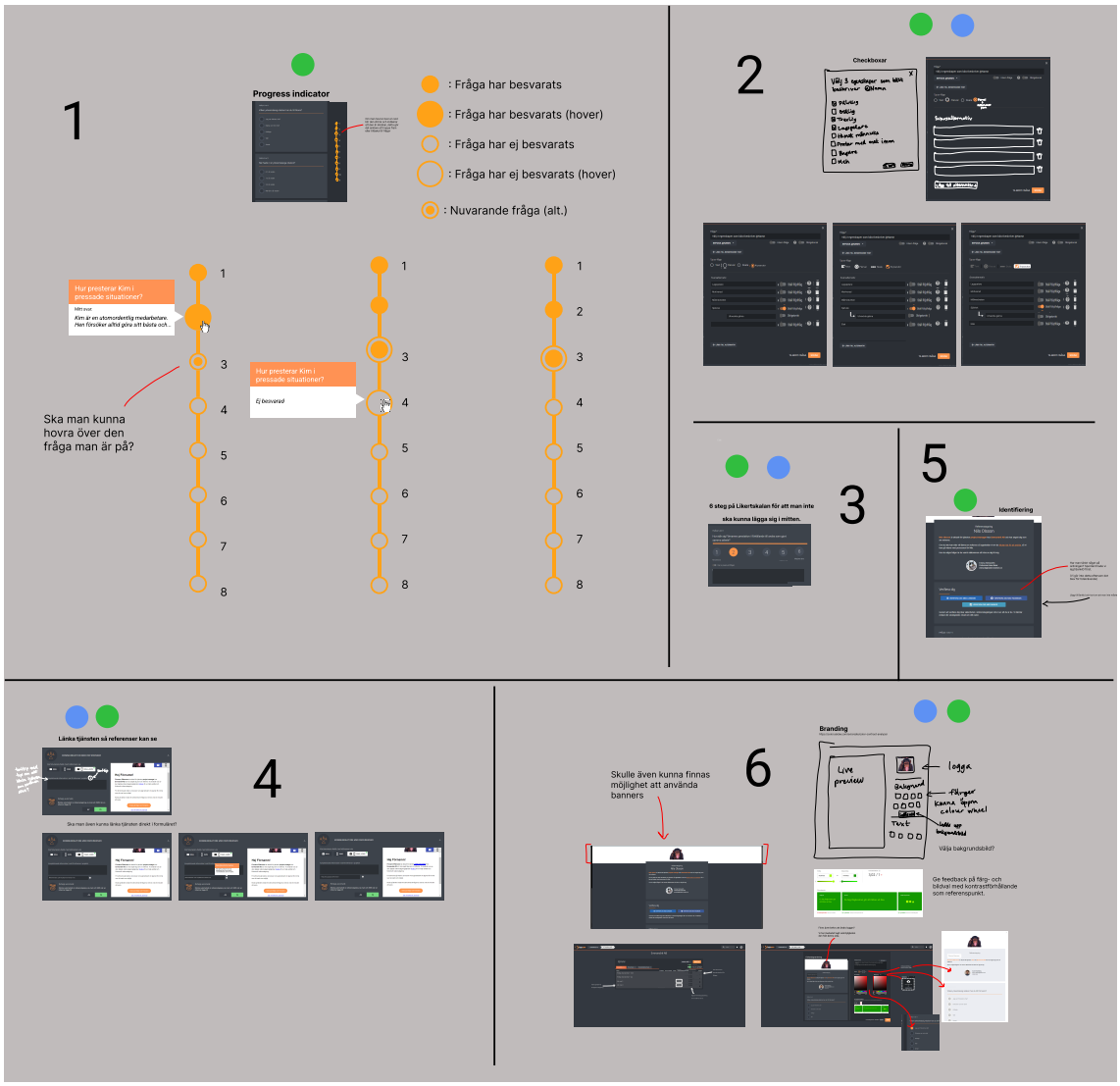

Figure 6.3: Markers for the priority of design ideas in Iteration 1

6.1.4 Prototyping

The selected designs underwent further refinement using Figma to create mockups that could be used as a basis for implementation. The majority of the designs were then integrated into Refapp's test environment. However, the design of the branding tool was expected to be too complex to implement, and was thus created as an interactive prototype in Figma instead (see Figure 6.4).

Below is a list of items that have been implemented for testing purposes:

- **Progress Indicator**: To help the referees (secondary users) navigate throughout a very long form, we designed and implemented an omnipresent progress indicator, presented in Figure 6.5. This is always visible to the right of the form and will follow the user's scroll position, keeping the node representing

the current question centered at all times. Furthermore, a node could assume one out of three appearances depending on its state: unanswered, answered, or currently answering, as seen in the same figure as before. This was as a way to embed more information within the visualization and provide a more extensive overview of the form.

- **Branding Tool**: The branding tool allows users to experiment with different colors and their effects on the form. Users can click and scroll through the prototype, while the contrast tool adapts to their color and theme choices, providing feedback on whether the combination is favorable or unfavorable. Users can customize the accent color, background color, and banner color behind the logo. We also included a reset button that returns the prototype to either the dark or light theme, depending on the user's preference. The form preview is scrollable and interactive for the recruiter (primary user) to see the results of their choices. This includes there being one of each type of question and the standard information included in all forms. The branding tool can be seen in Figure 6.4.

- **1-6 Rating Scale**: We changed the rating scale to have six steps instead of five (see Figure 6.5). Nothing else about the scale was changed.

- **Linking the Job Post**: We made an update to the recruiter's interface to allow them to control the communication process with referees. Specifically, we included a text field for inserting a job link, which would replace the non-interactive job title in the email sent to referees. Additionally, we incorporated an info symbol to provide guidance on the purpose and usage of this feature.

- **Checkboxes**: We added a separate button for choosing checkboxes as a question type. Checkboxes were presented as a different input type than Multiple choice.

- **Identification Methods**: We changed the order in which the identification methods are presented to the referee. We felt that BankID would be a more serious approach to ask for identification and placed the options of Facebook and LinkedIn below BankID in the form.

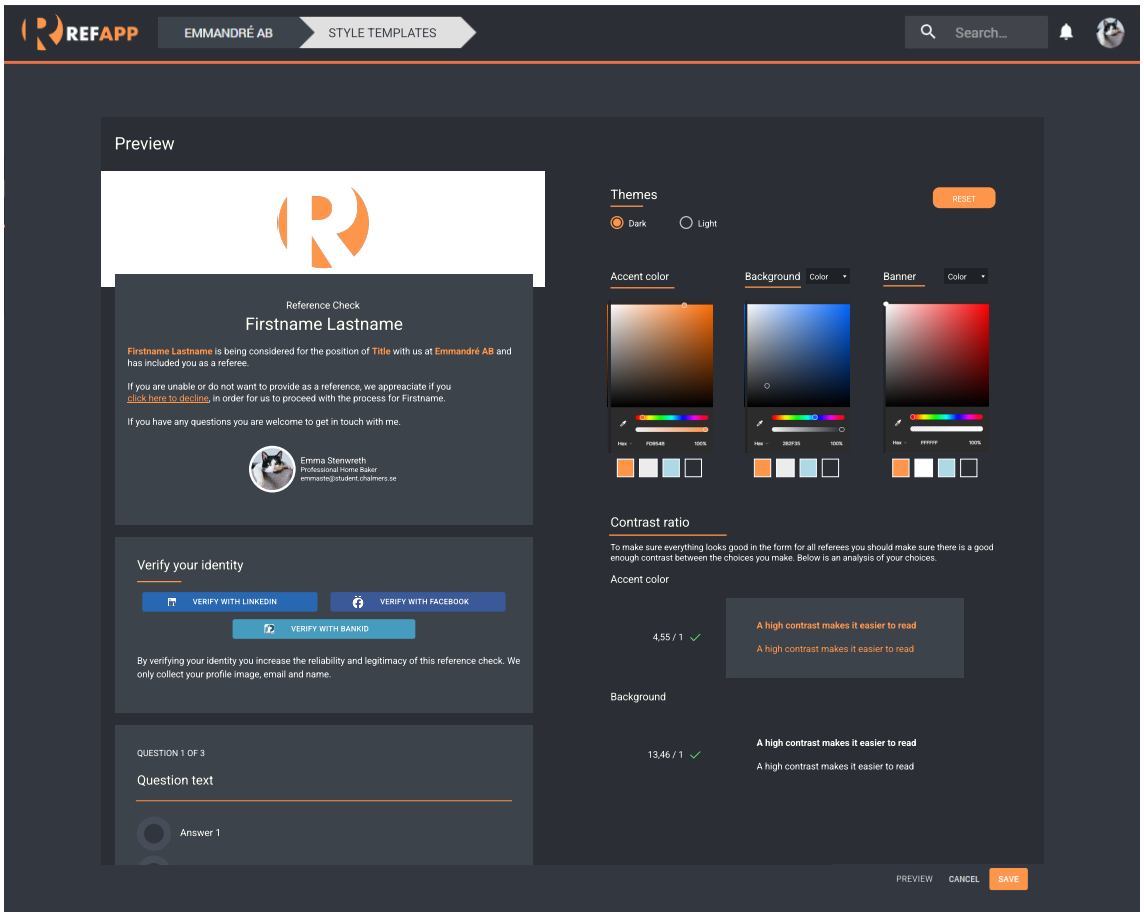

Figure 6.4: The new branding tool, as prototyped in Figma

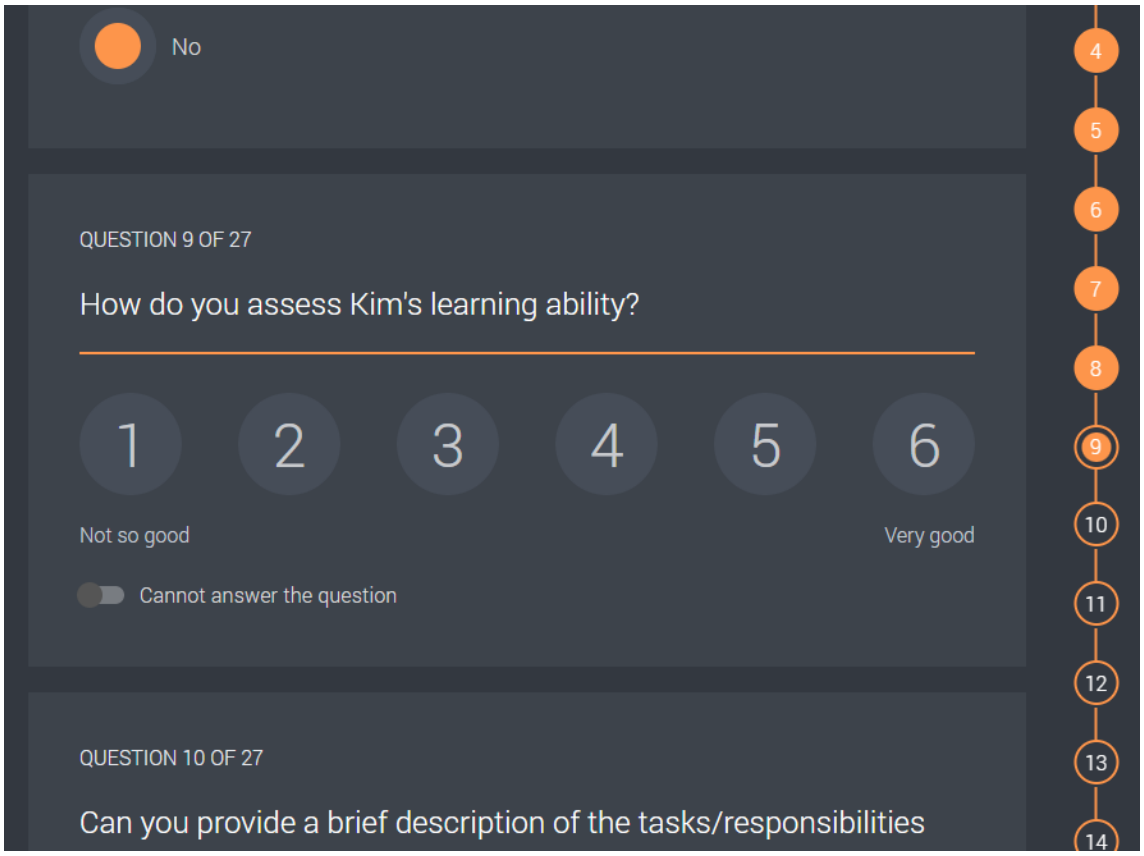

Figure 6.5: Example of the progress indicator introduced in Iteration 1

6.1.5 Testing and Analyzing

We had two separate types of tests, one expert review where we shared our design with a designer with more experience than us, and five observational tests combined with questions. In summary, we conducted tests with three referees (secondary users) and two recruiters (primary users).

Expert Review

To make sure that the expert review would provide us with relevant insights, we prepared a document describing what had been implemented and what we wanted the expert to examine. The expert was given access to the testing environment, as the majority of the work was implemented in code and could be assessed within Refapp. They were also provided a link to an interactive Figma prototype. Feedback was given during a remote meeting in which the evaluator reviewed our designs alongside us and offered recommendations for what could be improved.

Some of the things discussed during the remote meeting were as follows: The expert review mostly resulted in indications that we were heading the right direction and some minor suggestions for improvement. The results are the following:

- The design looked good overall, but we did receive some feedback on the size of the components and contrast. It's important to note that we had taken these elements directly from the current product.

- The button labeled "RESET" (located in the top-right corner of the branding tool, as shown in Figure 6.4) could potentially be relocated and grouped with the theme buttons to emphasize their association. This button resets the theme to either a dark or light mode, making it more logically aligned with the theme buttons if placed in closer proximity.

- In regards to the theme buttons, another suggestion was to add additional buttons that users could utilize if they had created their own themes. This would enable these custom themes to be more easily accessible alongside the default light and dark themes.

- Consideration was given to who should have access to the branding tool, and whether it should be restricted to those within the company who have admin accounts. The main reason for this proposal is to prevent any misuse of the branding tool, which may result in poorly designed branded forms that could potentially harm Talentwise's reputation.

- As a part of our redesign, we had updated the buttons for selecting the question type by including icons, which was well-received.

- After showing that we had updated the rating scale to include six steps instead of five, there was a discussion regarding whether recruiters should be given the option to choose between the two. One suggestion was that providing the option to select between an even and odd scale could potentially have value.

Observations and Interviews

The tests for recruiters (primary users) and referees (secondary users) were similar in their arrangements but there were some differences in what was tested. Each test started with an introduction to the project and asking if it is okay to record the meeting. We had already told the participants that the tests would be recorded but we asked again just to be sure there were no misunderstandings or that they had changed their minds. When recording we asked for their agreement to the participation contract we had sent them a few days earlier. The full protocols from both tests are presented in Appendices D and E.

Participating recruiters were selected based on the requirement that they should have prior experience with Refapp so that they could compare the two versions more easily. Also, they should not have participated in the prestudy. Similarly, referees were selected based on the requirement that they had a background such that could potentially have been asked to act as reference in real life.

The test started with observations where we gave them tasks to perform. The

recruiters were logged into Refapp and made changes in forms while referees were given a link to a Refapp form that contained the changes we had made, also from the test environment. The recruiters also got a link to Figma to test out our branding tool that was not implemented in the code.

After the observations the participants were asked some questions regarding the test. The referees were shown some examples of branded forms that we had created to get their thoughts on whether it made a difference how the form looked. The forms that were shown can be seen in Figure 6.6.

Results from all tests were analyzed using thematic analysis and compiled in a document along with the results from the expert review. The thematic analysis was done in two steps for both the results from the recruiter tests and the referee tests.

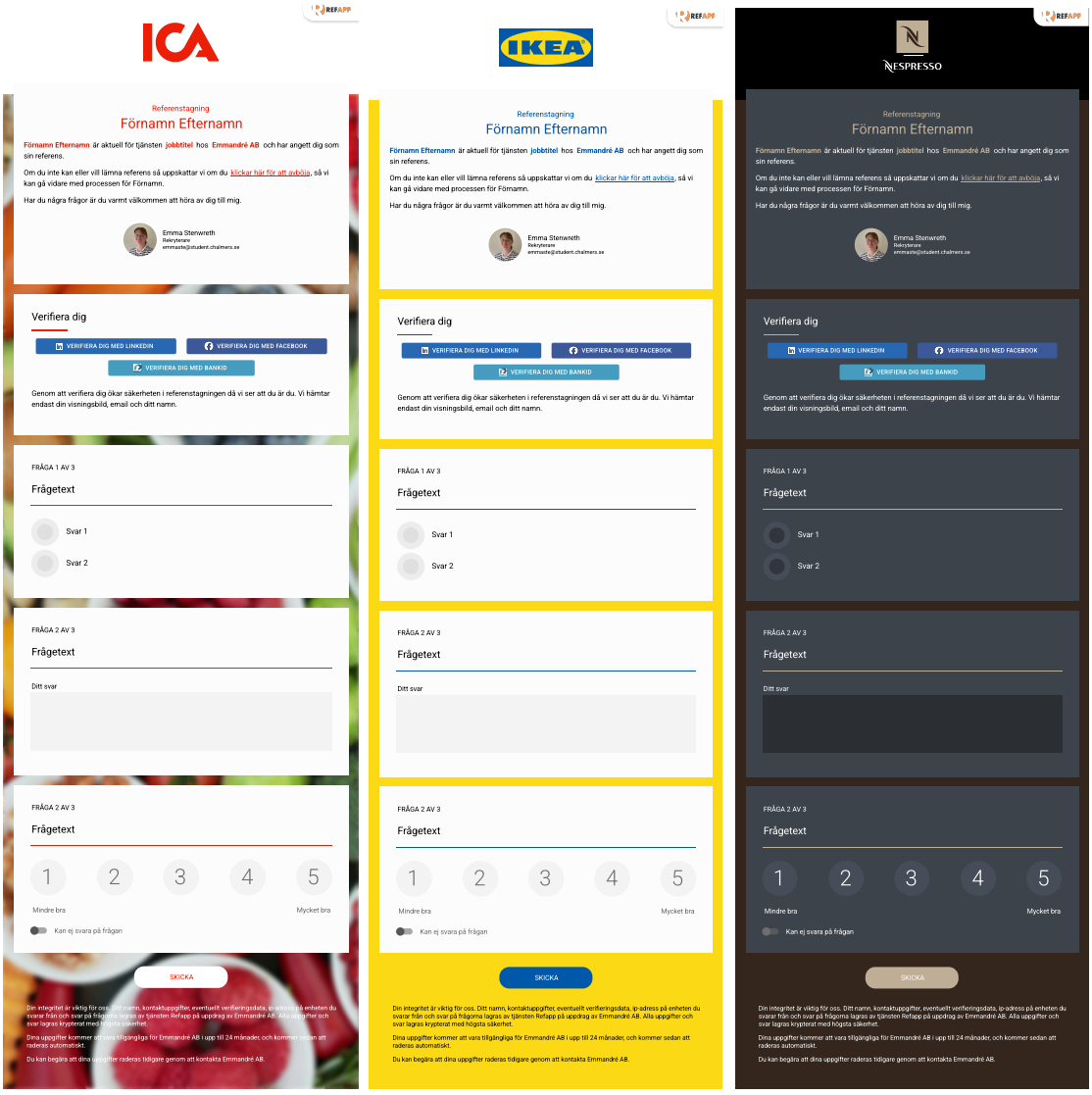

Figure 6.6: Examples of branded forms, selected for their distinct colors and recognition, unrelated to Talentwise customer relationships

6.1.6 Findings From Observations and Interviews

The most significant changes made in this iteration were the addition of a progress indicator and the introduction of our new branding tool. These features were both received positively by the users. We could observe the use of the progress indicator without us prompting, both when moving between questions and in knowing which question they were currently on. The referees (secondary users) later expressed that they liked how they could see how much was left of the form and that they got feedback on which questions had already been answered. The recruiters (primary users) saw the potential of the branding tool and came with their own ideas and suggestions as to how it could be used and further features that could be added. One suggestion was to make the tool for contrast more complex to include tools for color blindness and potentially not allowing some combinations of color because of bad contrast. There was also some concern from one participant that not everyone should be able to use the branding tool, that perhaps it should be exclusive to the admin.

In contrast, the feedback on the smaller changes was somewhat mixed where some users had strong opinions about certain features, such as the 1-6 scale. This included the way a recruiter would be allowed to create multiple-choice questions where more than one answer could be checked, utilizing a 1-6 rating scale instead of 1-5, and experimenting with the possibility of providing the referee more information about the candidate's applied position. We did however realize that we needed to better communicate what the change in input type would result in.

We realized that it was hard to understand what we meant by the new input method labeled "Checkboxes" and the recruiters chose what they already knew existed, "Multiple choice". Instead of trying to use "Checkboxes" they searched for alternatives in "Multiple choice" to change the input from radio buttons to checkboxes. One factor to it being harder to understand could be the design being very similar between the two input choices and them not being able to test properly in the preview.

Regarding the rating scale there were some mixed opinions. Two of the referees said they liked the scale being even while the third referee would have liked to have five steps. All referees said they thought it would give better results for the recruiters using an even scale since the referee can't choose the middle answer. The recruiters also had mixed opinions. One of them expressed how most people usually choose four or five on the scale either way and that a scale with five steps is very common. They also said they thought the referee might get pressured if they didn't have the option to choose in the middle. Another recruiter said that being given the option to either have five or six steps when creating the question could be useful.

Lastly, the idea of adding information about the applied position was met positively. There were some concerns though from a candidate that adding the information as a link in the email to the referees could provide too many links in one place since there already are three clickable components in the email.

6.2 Iteration 2

After having put a considerable amount of effort into improving the user-friendliness of the form, we felt that there was not much more that could be done, since Talentwise had already developed a clean and comprehensive solution to begin with. However, we realized that another issue was to be found in Refapp's utilization. As a result, for the second iteration, our primary objective would be to assist recruiters (primary users) in their role, which would not only enhance their experience but also benefit the referees (secondary users). We started thinking about things such as how to make sure they pick the right questions, providing feedback in regard to form length, and other ways of giving them more guidance throughout the process.

6.2.1 Ideate

For the second round of ideation, we used both previous ideas from Iteration 1 that did not get implemented and ideas from the feedback we got from the tests.

Checkboxes

The checkboxes from the test needed to be further developed and we used feedback from one of the testers to make the view more comprehensible. We had previously thought to have radio buttons and checkboxes separated but the feedback we got said that it would be easier to use if they were located together, something we also noticed during the observations. This led to the sketch in Figure 6.7. We chose to use a switch to either have the question use radio buttons or checkboxes. If checkboxes have been chosen the recruiter (primary user) can choose the minimum and maximum number of answers that can be chosen for the question with the dropdown menus.

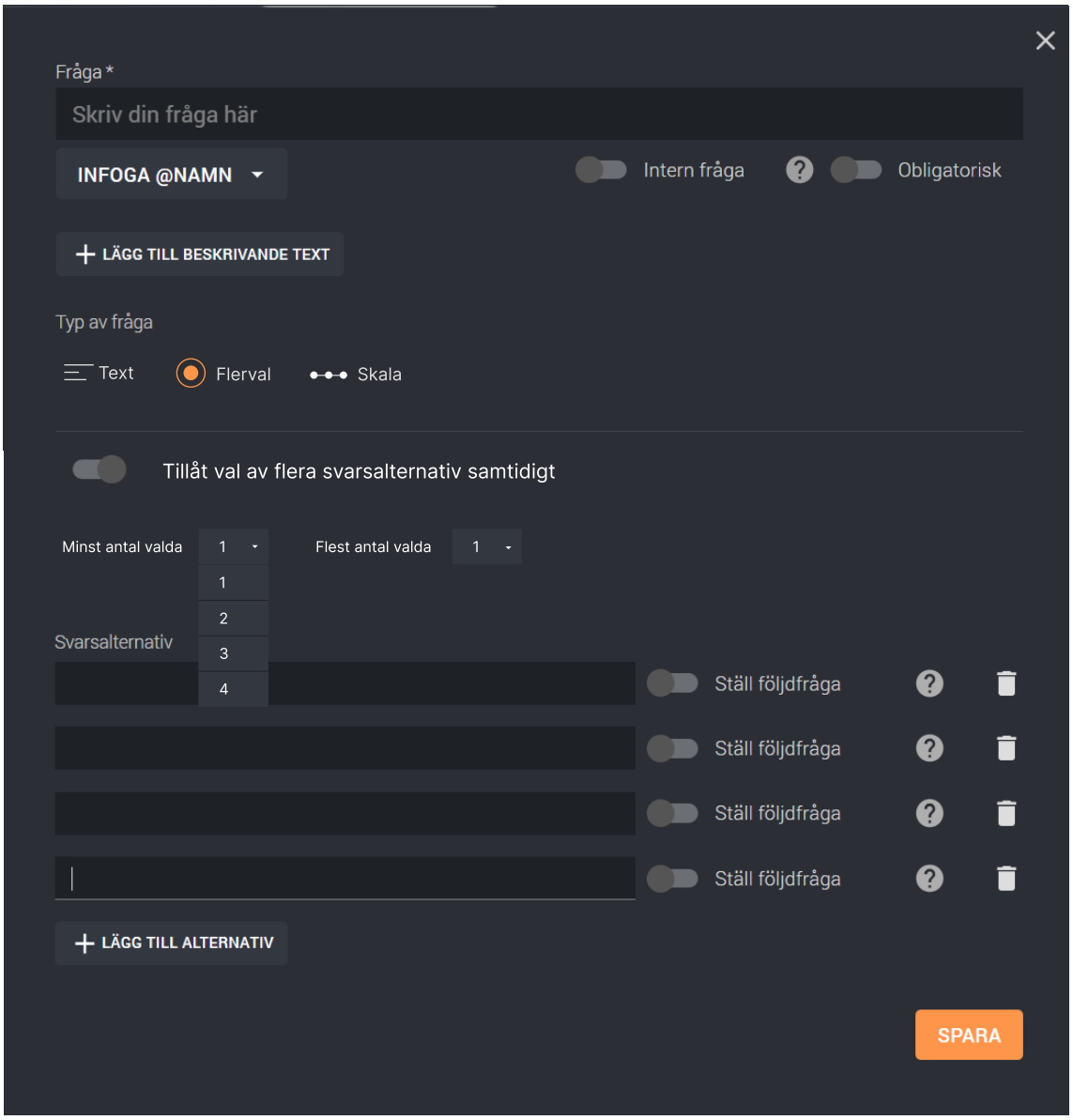

Figure 6.7: Sketch of question modal for creating a question with checkboxes

Adding Information

Another addition to the creation of a form was to add *information cards*. This idea was shaped from the fact that adding more links to the e-mail that is sent to the referees (secondary users) was seen as problematic. However, we still considered it valuable to share information about the job in some way. The information cards would be similar to questions but would only contain text and require no input from the referee. In its essence, the idea was that the recruiter (primary user) should be able to add all kinds of information whereever they wanted in the form.

Live Preview

The biggest change to this view was how we decided to make more use out of the split view layout. Our vision was that the recruiter (primary user) would become more productive if they could create and edit questions or information to the left while at the same time doing other things to the right. This would include live previewing their changes and picking premade questions or information. To accomplish this, we added tabs to the right pane where the user could switch between the original tool for dragging and dropping questions to the form and our live preview (see Figure 6.8). Since we also saw the possibility of including information to the list of recommended questions, we needed an umbrella term for both of them. This ended up being described as *cards* due to their final appearance in the form, hence the tabs being named "Cards" and "Preview".

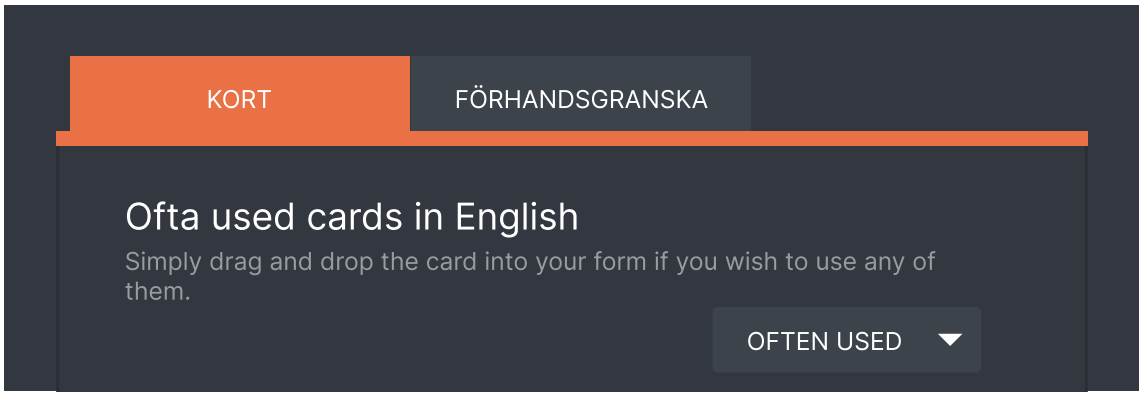

Figure 6.8: The new tab system for switching between different tools in the right pane of the form creation view

Filtering Questions

We also decided to complement the Cards tab with a filtering tool to make it easier to find specific or more relevant cards (see Figure 6.9). Consequently, a dropdown was added next to the already existing search bar with the five possible values:

- **Often used**: based on the number of times you have previously used the question
- **Relevance**: AI-based, showing questions that are likely to go hand-in-hand with the ones you have already picked
- **Favorites**: questions manually marked as favorites (this feature was never further implemented)
- **Framework**: based on frameworks used by people working in HR, i.e. *Malin Lindelöw's competence model*

- **All**: showing all questions

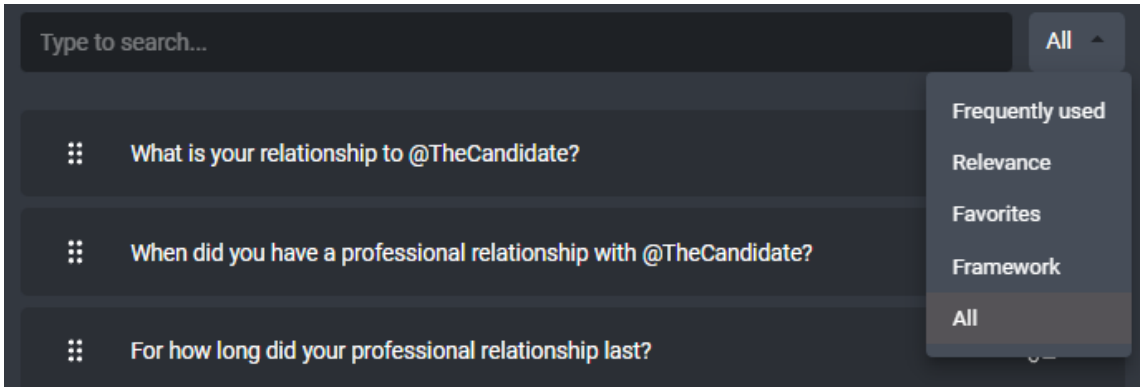

Figure 6.9: The new tool for filtering questions in the right pane of the form builder view

Undo and Redo

We also added undo/redo buttons and feedback to the recruiter (primary user). The feedback tells the user if there are too many questions or if they should mix up the choice of questions if, for example, all questions are text input.

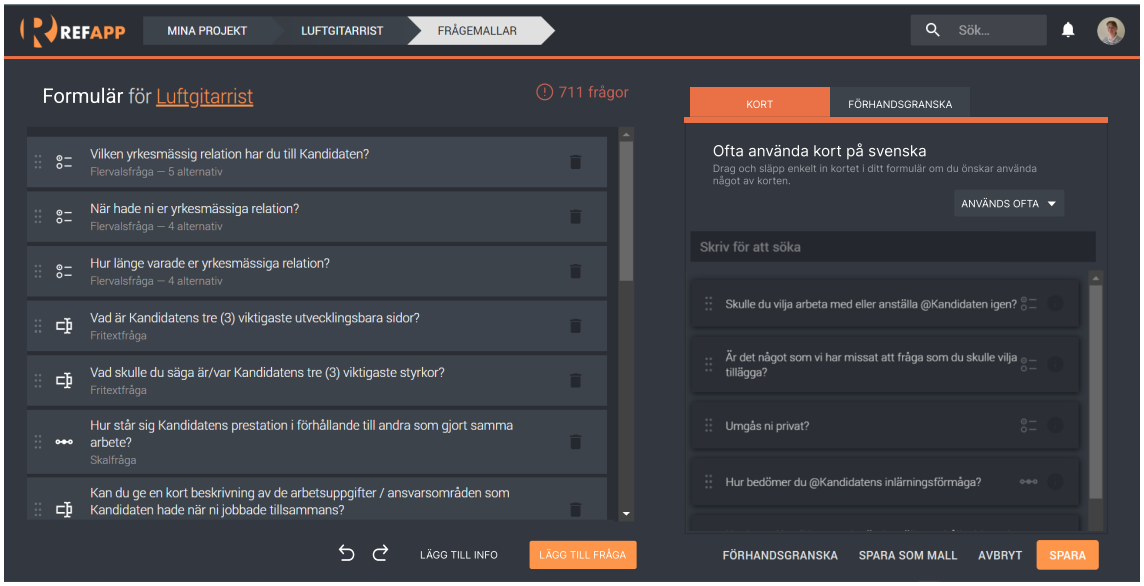

Figure 6.10: Sketch of overview of chosen questions and suggested questions

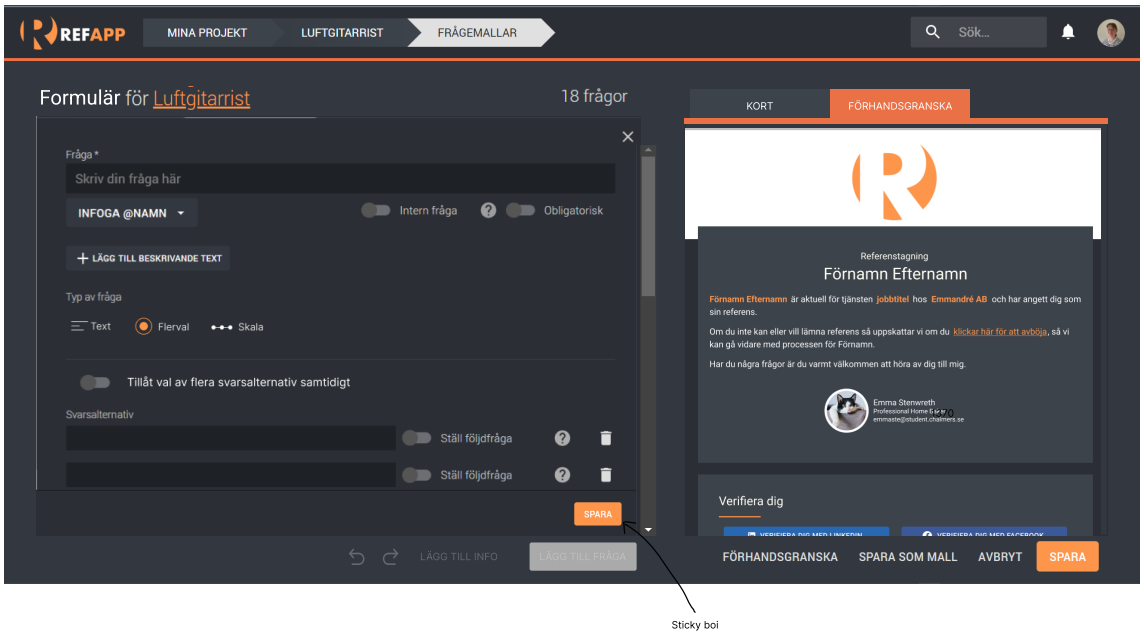

Figure 6.11: Sketch of preview and editing of questions

6.2.2 Prototyping

This time we set up our own test environment and built everything from scratch instead of using the environment Refapp is using. We thought it would be easier and quicker this way since the changes would be big and it would be easier for us both to help on the code. We built the prototype using the React framework (see Section 4.3). During development we set up a MoSCoW list (described in Section 4.7.1) to keep track of what needed to be implemented and what priority it had. This list was updated throughout the prototyping phase as working with the software sometimes tended to introduce too many bugs to make it time efficient.

The prototype can be seen in Figures 6.12-6.16. The styling and choices of color is based on the actual product, Refapp, as we wanted to make it look convincing.

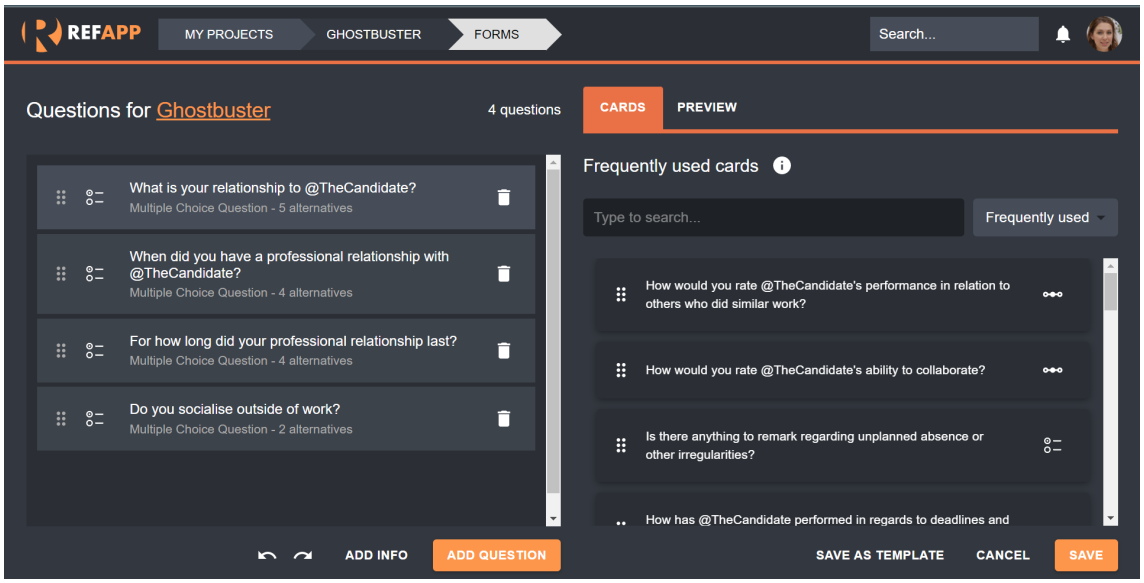

Figure 6.12: Screen caption of prototype showing list of chosen questions and questions that can be added

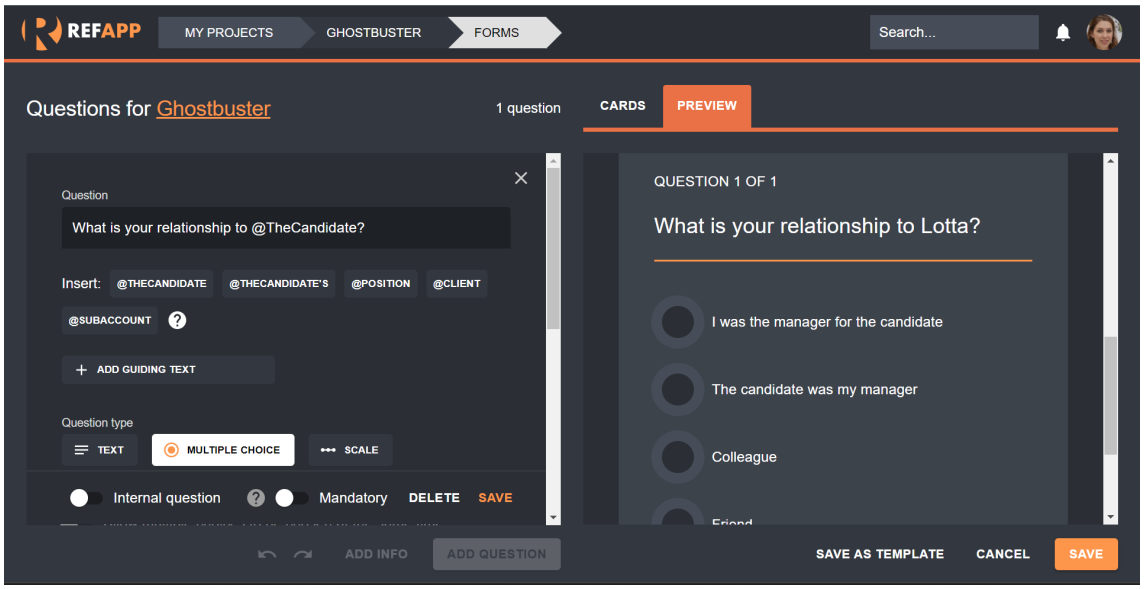

Figure 6.13: Screen caption of prototype showing how you can edit a question and the live preview

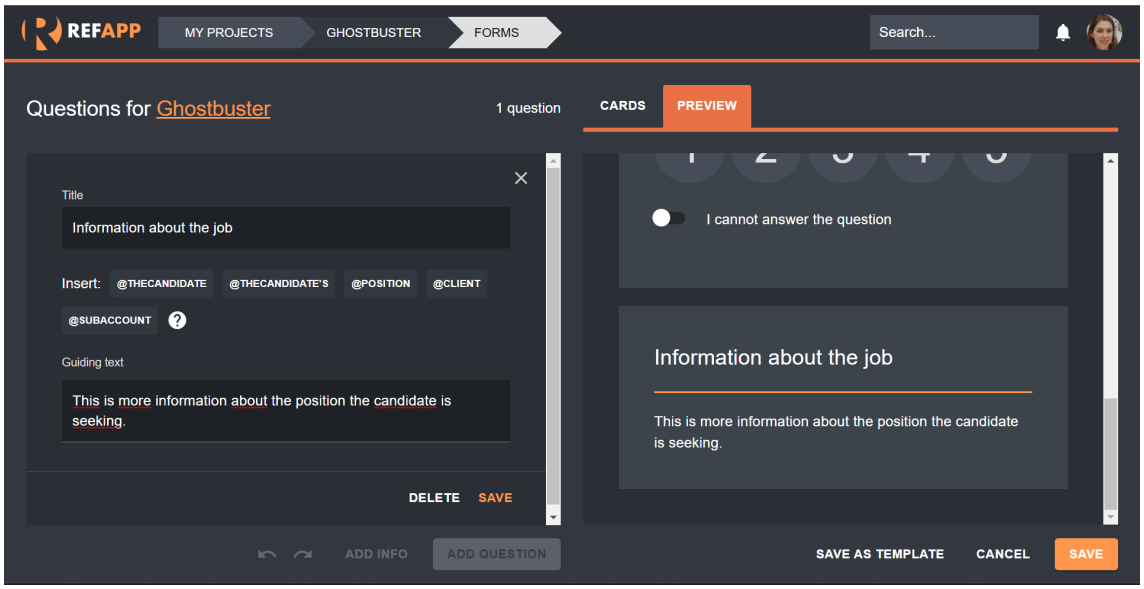

Figure 6.14: Screen caption of prototype showing editing of an information card

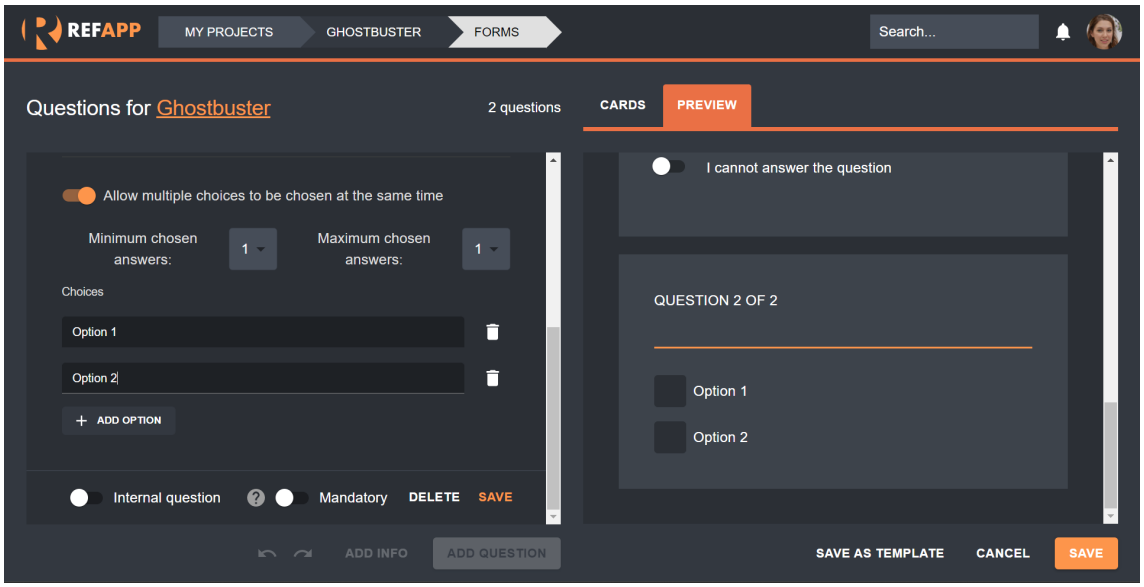

Figure 6.15: Screen caption of prototype showing editing of multiple choice question

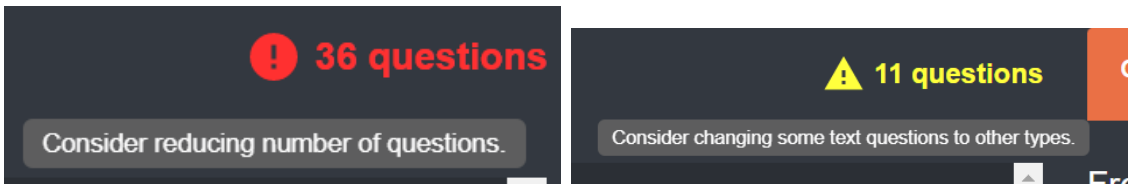

Figure 6.16: Feedback messages given to the recruiter (primary user) when creating the form

6.2.3 Testing and Analyzing

We had two separate types of tests, one expert review where we shared our design with a designer with more experience than us, and six observational tests combined with questions.

Expert Review

The expert review went much like in the previous iteration where we created a document with information regarding the project, what we wanted them to look at and access to the prototype. We then had an online meeting with the expert to get feedback. Note that we now involved another expert than in Iteration 1.

Some points taken from the feedback we got were as follows:

- The live preview in the design includes the full form as it would be shown to the referee (secondary user). It might not need to show more than what can be edited by the recruiter (primary user). Instead, a full preview of the form could be added separately with a button, opening a modal that covers most of the content. The full preview would then include the form as it would be shown to the referees.

- There is no real visual feedback that you are changing between radio buttons and checkboxes if you don't have the preview open which could make it harder for the recruiter to know what they are choosing. This was brought up since radio buttons and checkboxes are very visual elements.

- The warning for having too many questions could be more noticeable or have better contrast. There is a risk that you miss it if you don't look that way on the screen.

- The warning could be a bit more direct. You know that something is wrong, but you dont know what. It should be more upfront with what should be done.

- In the dropdown for filtering questions there could be icons to further define each alternative.

- We got asked why we added a separate button for adding information to the form instead of incorporating it into adding a question.

Observations and Interviews

The observations and interviews were held digitally, both since some participants were in other cities and because we needed to record their screens. Each test started with a brief introduction to the project followed by how the test was going to be conducted. We made sure the participants agreed to the contracts sent out before-

hand before starting the recording and the test.

Just like for Iteration 1 (see Section 6.1.5), the participants were selected based on a few simple criteria. First of all, the recruiters should have worked with Refapp prior to the test. This was decided since we wanted them to notice the difference and clearly be able to compare the two alternatives. The referees were selected such that they had at least some working background or similar. It was important that they theoretically could be requested to stand as reference in real life to make our results more reliable.

The observational part of the test consisted of them getting access to the prototype which was hosted on a server. They were given instructions and tasks to go through while we observed and gave hints if needed. When the observation was done the participant was free to test whatever they wanted in the prototype without us intervening while we asked some questions connected to what they had just tried out. The protocol for the tests can be found in Appendix F.

Once again, the results of the tests were analyzed using thematic analysis. We started out having observations separated from interview answers and then combined the two parts of the tests. The separation was done for us to be able to correctly interpret what the notes depicted since two notes might say the same thing but come from different parts of the tests.

6.2.4 Findings From Observations and Interviews

Below are the findings from the observations and interviews conducted. The results of the expert review can be located in Section 6.1.5.

- **Overall Impression**: The overall impression of the design was positive. It was perceived as clear and that it contained good functionality. Furthermore, it was noted that the new style of the buttons for selecting question types (with icons) are now much clearer, and that the colors are more distinct. The addition of checkboxes was also received very well.

- **Layout and the Question Editor**: There was some information to gather regarding the users' perception of the question editors layout:

  - Overall, the users seemed to recognize and were able to use the question editor.

  - When asked about the layout order for the question editor, users did not express a clear majority opinion on whether "Question Type" should come before or after "Title".

  - A few users expressed their opinion that the dropdowns for "Minimum/Maximum Chosen Answers" came in the wrong order. Their actions indicated that

they first added response options and then selected the number, which was opposite to the order presented in the prototype layout.

  - The majority of users comprehended the distinction between radio buttons and checkboxes, but understanding the purpose of the switch (for switching between the two) occasionally required some exploration.

- **Question Feedback**: Was seen as relevant and simple. The users were able to find the information, and it was apparently positioned in an acceptable location. The following things were noted regarding this feature:

  - The question feedback provided was generally well-received and understood by the users, although many of them expressed a desire for additional information or small adjustments.

  - The critical (red) and warning (yellow) colors were perceived differently. It was clear in both cases that something was wrong, but not always what. One user commented that the use of red was too aggressive, stating that "the system is working for me, not the other way around." The user preferred suggestions or more subtle warnings.

  - The majority of users understood the question feedback and noted that the text changed when the number of questions was updated.

  - The behavior of hovering the mouse over the exclamation mark or text for question feedback and discovering the tooltips was intuitive for all users in our tests.

- **Insert-Buttons**: The Insert (@) buttons were perceived as clearer and simpler when they were spread out instead of being placed within a dropdown. It was positive that it reduces the number of clicks.

- **Filtering**: The users had no problems with filtering questions. One user even noted that "Framework" was especially good and would have been nice to have in the real product.

- **5/6 Scale**: There were some concerns raised by certain users regarding the option to choose between a rating scale with 5 or 6 steps. One of their primary concerns was that this could potentially have a negative impact on user-friendliness. Additionally, they questioned the reasoning behind providing this feature altogether.

- **Naming and Labels**: There is room for improvement when it comes to naming conventions. This may vary depending on individual user demographics and backgrounds. It is important to carefully consider how things are labeled:

  - While the function is effective, a few users did not fully comprehend the meaning behind the label 'Info'.

  - The label 'Cards' did not resonate well (quite expected). Alternative suggestions were proposed, such as 'Library', 'Question Bank', 'Edit', and simply 'Questions'. It was also suggested not to combine information cards and questions.

  - Some users did not understand the meaning behind 'Minimum/Maximum Chosen Answers'.

- **Undo/Redo**: The undo/redo buttons were easily discoverable by most users, with only one exception who eventually found them. Although everyone found the functionality desirable, the aforementioned user expressed uncertainty about the buttons' purpose and was unsure if they would navigate to a different page. However, all other users were able to intuitively comprehend the buttons' intended function.

- **Information Cards**: All users were able to comprehend how to add information to the form with ease, and no issues were reported during the process. The addition of information functionality was positively received by all users, who provided additional suggestions for its use. The button used to add an information card was quickly identified by all users except one, who eventually found it. This user, however, initially did not understand the purpose of the button upon first glance.

- **Scaling and Overview**: During testing, the design was observed to be overly zoomed in, resulting in limited visibility for users depending on their screen size. A user provided feedback that the form felt excessively large and zoomed in, with the large components causing only one question to be visible at a time due to the limited screen space.

- **Live Preview**: During testing, the live preview feature received favorable feedback from users who used it to experiment with different questions and evaluate its functionality. They were pleased with the ability to observe real-time changes as they made modifications, as well as the automatic scrolling feature that highlighted the question they were currently working on. Nonetheless, three out of the six participants expressed that the placement or arrangement of the live preview appeared disorganized or wrong.

- **Suggested Features/Alternative Solutions**: During the testing, various alternative solutions and requests were identified. Many of these suggestions submitted by users focused on the need for additional support within the system. Our take on it was that it is equally important to understand what went wrong, how to fix it, and why. The system should not withhold information or reasons for error messages/warnings if the user wishes to know more.

Furthermore, the following features or alternative solutions were suggested:

  - The ability to use for example @Name in other fields than just the title.
  - A solution for quickly changing a question into an information card, and vice versa.
  - Feedback (in the form) regarding minimum amount of expected answers.
  - Making it even more clear in the list of added questions what type each one has.
  - To have "Information" as an entry in the filtering dropdown in the "Cards" tab.
  - Highlighting what's most important in the current moment (for example, the question that's being edited).
  - Not including information in the question editor view at all but instead having it as a separate view or incorporating it in another already existing one.
  - Previewing the form in full screen/fit to screen or adding some other type of overview to add some kind of quality assurance for yourself as a user.
  - Not including information cards in the list of "Often used cards" (to rename it as "Often used questions").

- **Fault Tolerance/Other Issues**: We discovered several issues (often extreme cases/outliers) that negatively impacted user-friendliness. These were relatively simple things that could likely be addressed quickly:
  - Sometimes users were unable to scroll or unaware that scrolling was possible due to macOS's styling of the scroll bar (which disappeared when unused).
  - One user wrote @candidate instead of @Candidate and were thus not able to take advantage of the variable's value.
  - Another user was curious as to why 'Minimum Chosen Answers' doesn't have a number in the dropdown. However, this person quickly resolved the issue after adding an option (there are no available selections in the dropdown until an option is added).

6.3 Iteration 3

As we concluded Iteration 2, we felt the need to bring everything together. So far, our solutions were somewhat scattered across the system, addressing both user groups in different ways. We thus needed to assess how our modifications had affected the overall user experience of the application, since this was part of our goals. The last iteration was thus mainly used to combine previous results, making slight adjustments to the current designs, and prepare for the more extensive final tests.

For this iteration, the idea was to make a prototype of very high fidelity so that we could conduct final tests that would reflect the reality of its use. Because of that, our prototype was given the name *Riffraff* to be more easily separated from Refapp (the original product).

6.3.1 Understanding and (Re)defining the Problem

From the feedback gathered in Iteration 2, our prototype seemed too complex for non-expert users, especially due to the complexity of the split view and live preview features. We therefore decided to rethink our solution. Refapp's original solution for creating/editing questions used a modal that blocked the rest of the GUI when opened. This was deemed too transient by us initially and was thus discarded and reworked in Iteration 2. However, we now realized that our current solution might have introduced too many sovereign elements instead. To address this, we aimed for a middle-ground solution, preserving the well-received live preview feature from Iteration 2, according to user feedback.

6.3.2 Ideate

The ideation started with us prioritizing the results from Iteration 2. Given that the user tests generally yielded positive experiences, we chose to concentrate on the proposed features/alternative solution and the list of issues we had observed. The findings from the thematic analysis can be found in Section 6.1.6.

As mentioned in the previous section, one of the more significant changes to the design from Iteration 2 was how we changed the live preview (see Figure 6.17). We realized that the tabs for switching between "Cards" and "Preview" in Iteration 2 (see Figure 6.8) were not as intuitive as we had anticipated, which led us to create an alternative version. The new version would preserve the question suggestions as it was initially but switch out the "Preview" tab for an element that could slide over the rest of the interface when desired. The new preview element could be opened in one out of two ways to provide a sort of redundancy and target different user behaviors. Either the preview could be opened using a small bookmark-like tab that would stick out from the right or using a corresponding button at the bottom of the page. Our initial sketches of the live preview can be seen in Figure 6.18 and Figure 6.19.

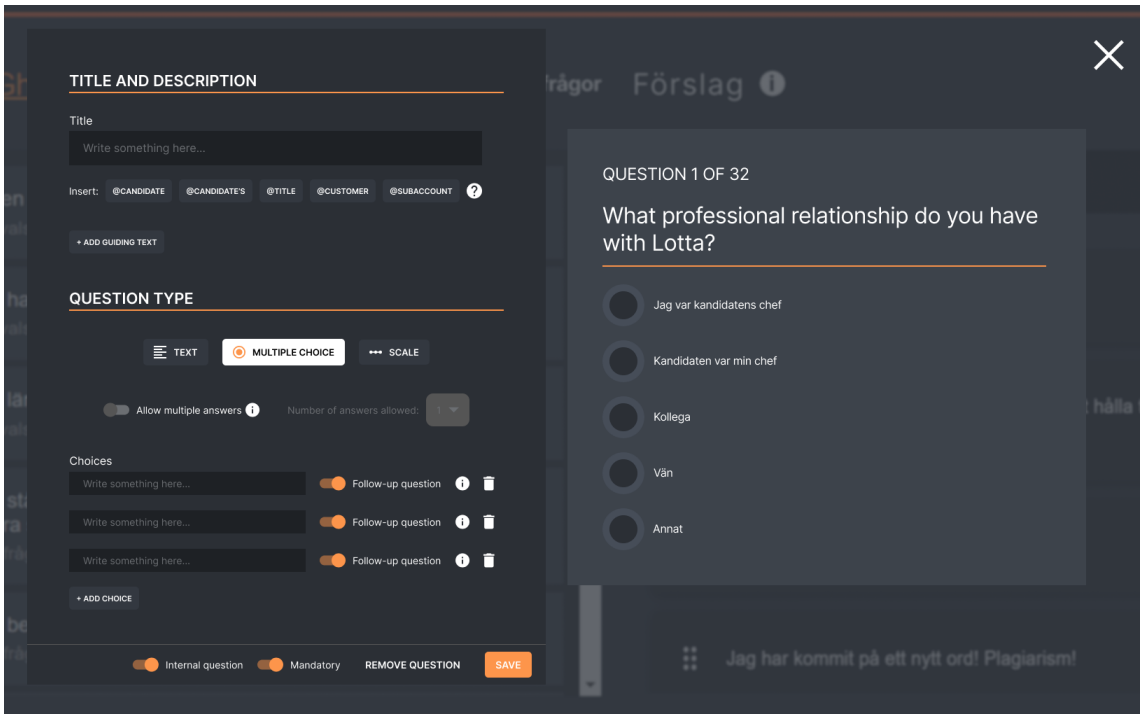

Figure 6.17: Iteration 3's live preview of a question currently being edited

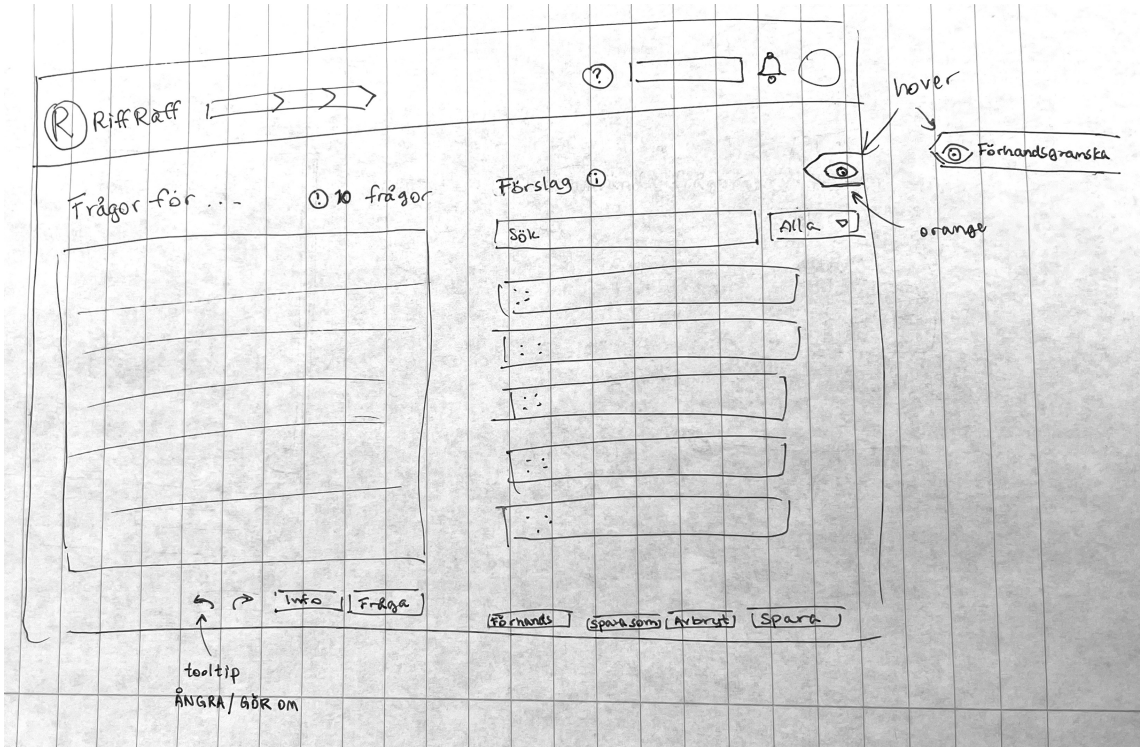

Figure 6.18: A sketch of the new live preview variant, currently closed

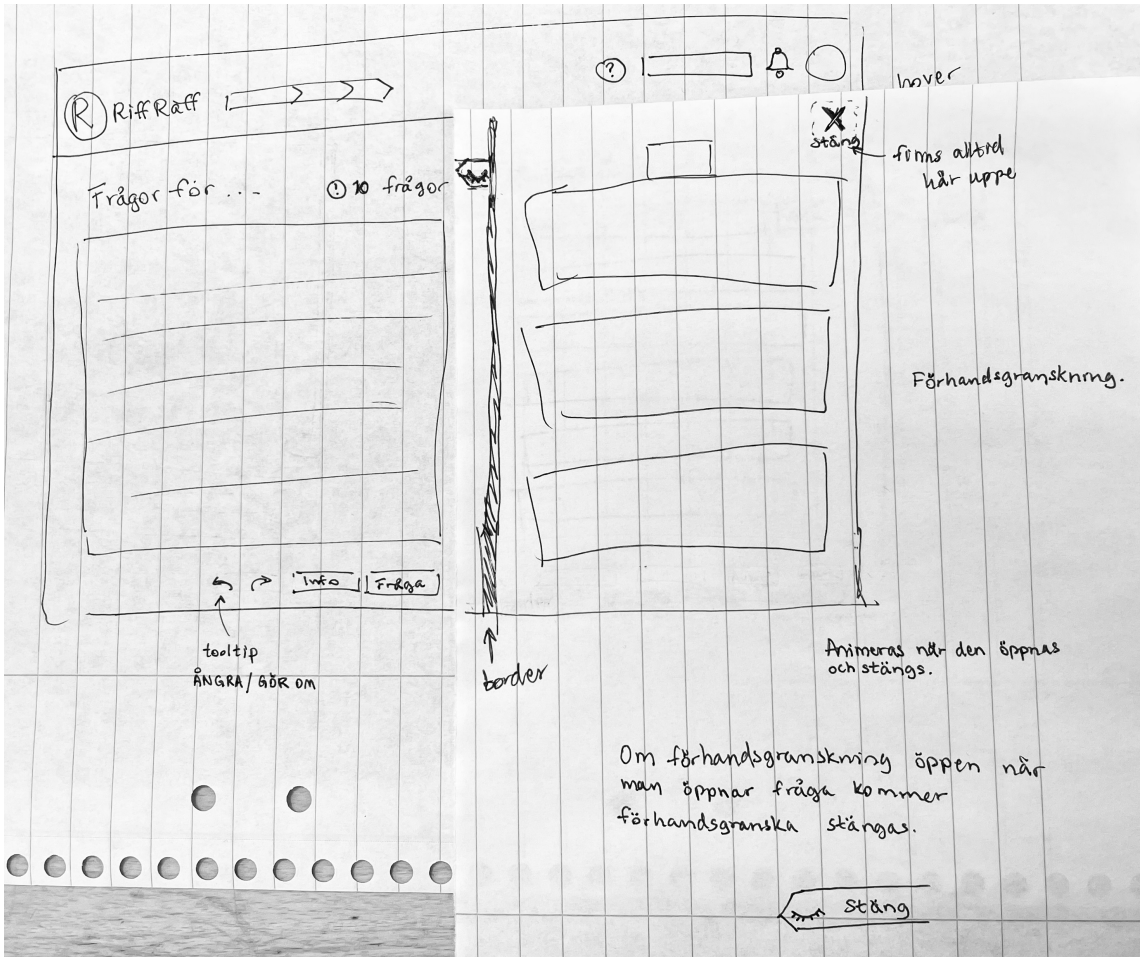

Figure 6.19: A sketch of the new live preview variant, currently open

Another change we made was to the editing of questions. In Iteration 2 we chose to remove the opening of a modal in favor of being able to see instant results in what you were editing in the live preview. One of the participants in Iteration 2 said that they probably only wanted to see the full preview in the end of making of the form but liked to be able to see instant changes. This made us rethink the opening of a modal but this time with a live preview of the specific question being edited. The sketch of this can be seen in Figure 6.20.

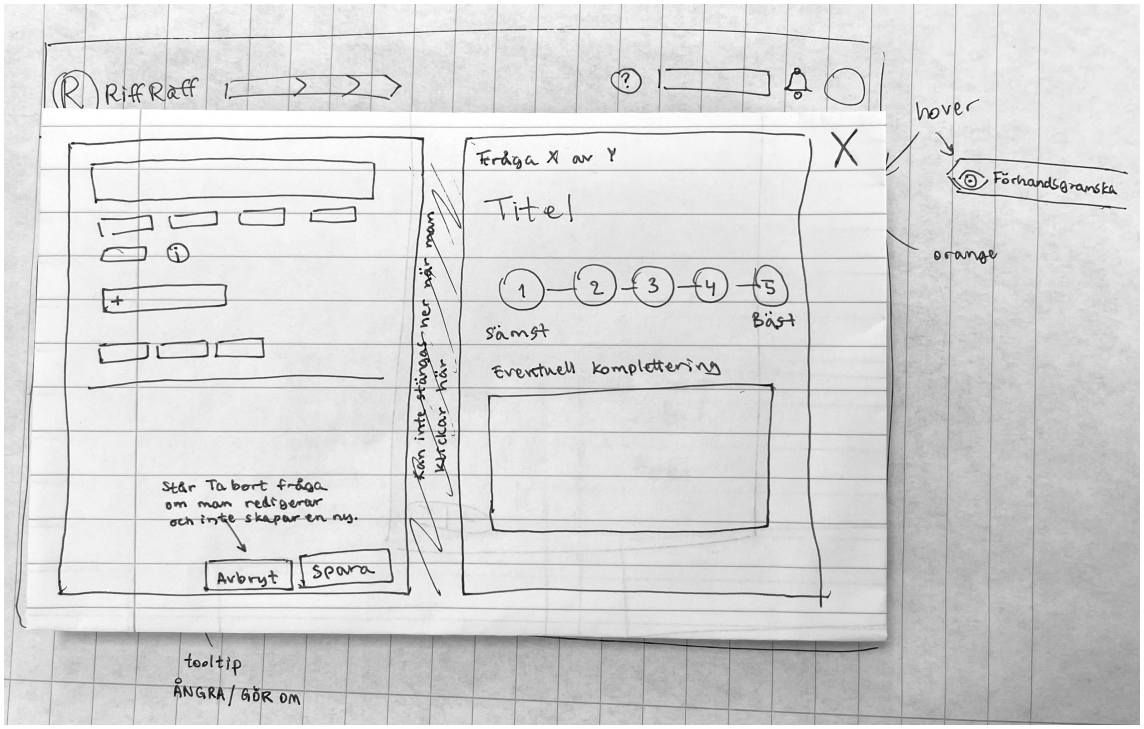

Figure 6.20: Editing or creating a question opens a modal with live preview of that question

The question editor itself also got a slight new layout. The editor was perceived as cluttered, and we wanted to give a better overview of the different parts of the question. The sketch of the new layout can be seen in Figure 6.22. We divided the title of the questions and adding of description from choosing type of question and the parts of the question the referee will be interacting with. We also chose to center the buttons used to choose the type of question to emphasize the intended top-to-bottom user flow by laying out the elements in a pyramid-like shape (see Figure 6.21). We also removed one of the dropdowns that would become active when checkboxes are activated. The tests in Iteration 2 made it clear that having both an upper and lower value for how many options the referee should choose in checkbox questions was confusing. The upper value, the maximum amount of options chosen, made sense while the lower value had no proper reason for being included.

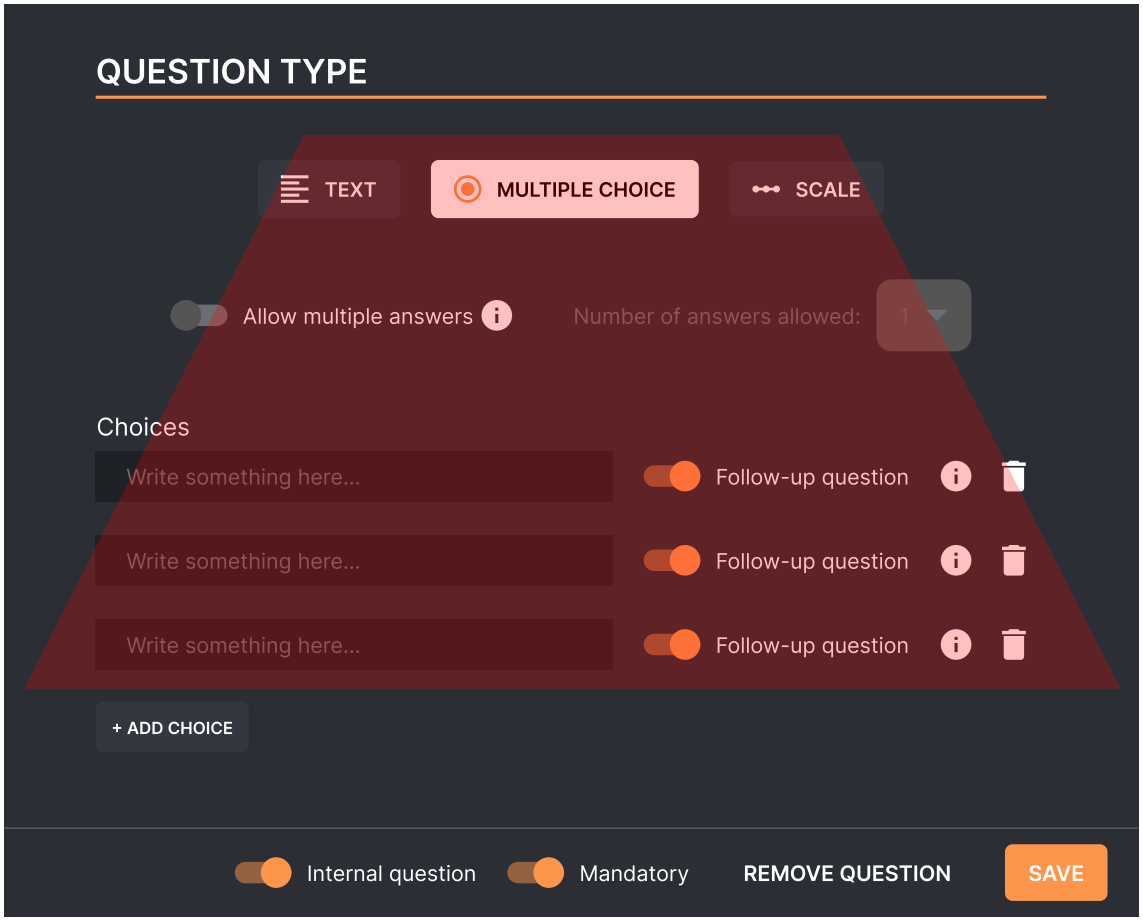

Figure 6.21: An illustration explaining the design choice behind centering the question choice buttons in order to make the user flow more clear

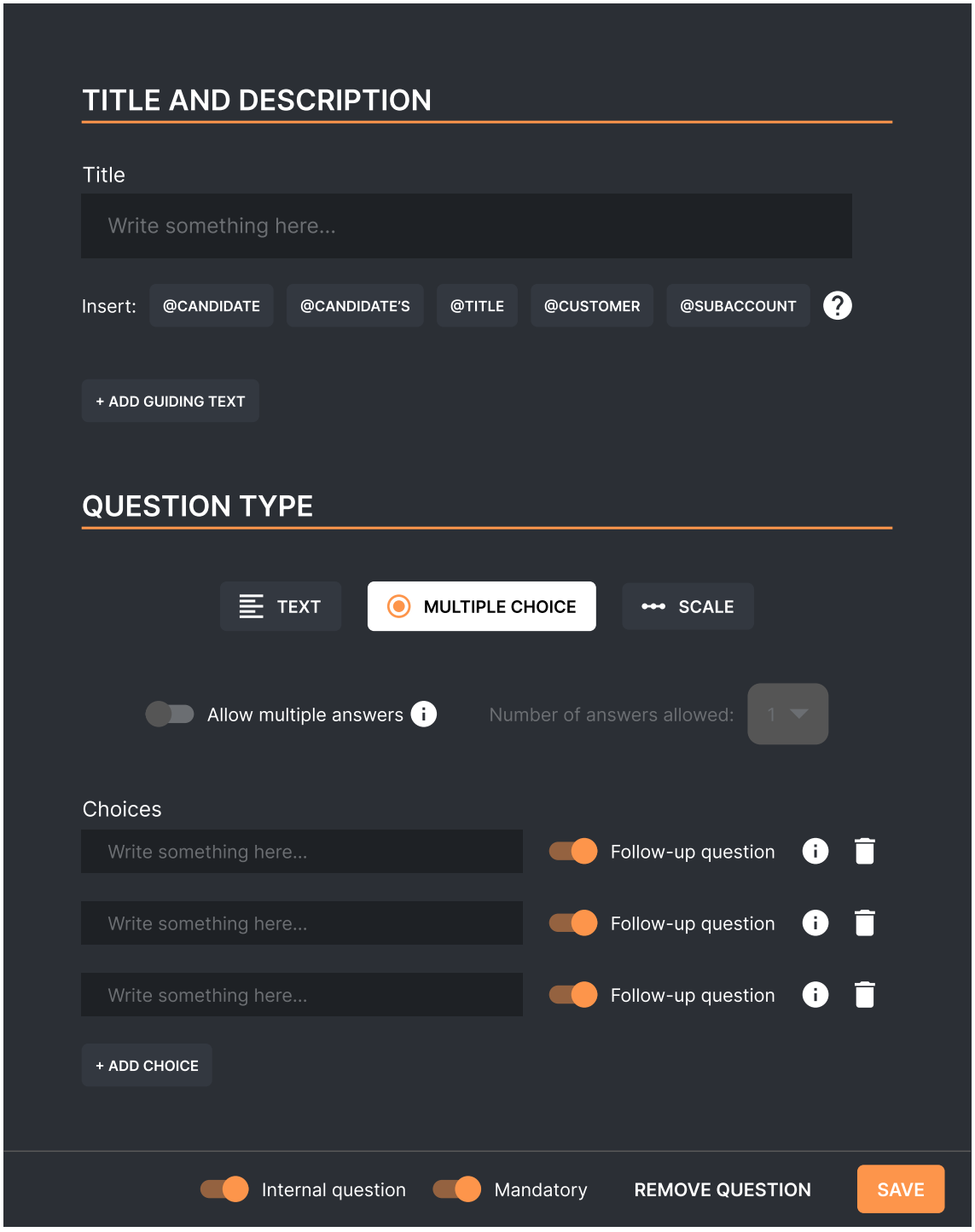

Figure 6.22: The new layout of the question editor in Iteration 3

During the tests in Iteration 2, we received a few mixed requests for more information regarding the question feedback. It was not clear what should be done to fix the problem so that any warnings or recommendations would disappear. This led to our idea of a larger tooltip that would give answers to *what* the problem was, *why* it had occurred, and how the user should solve it. An early mockup for the tooltip

can be seen in Figure 6.23.

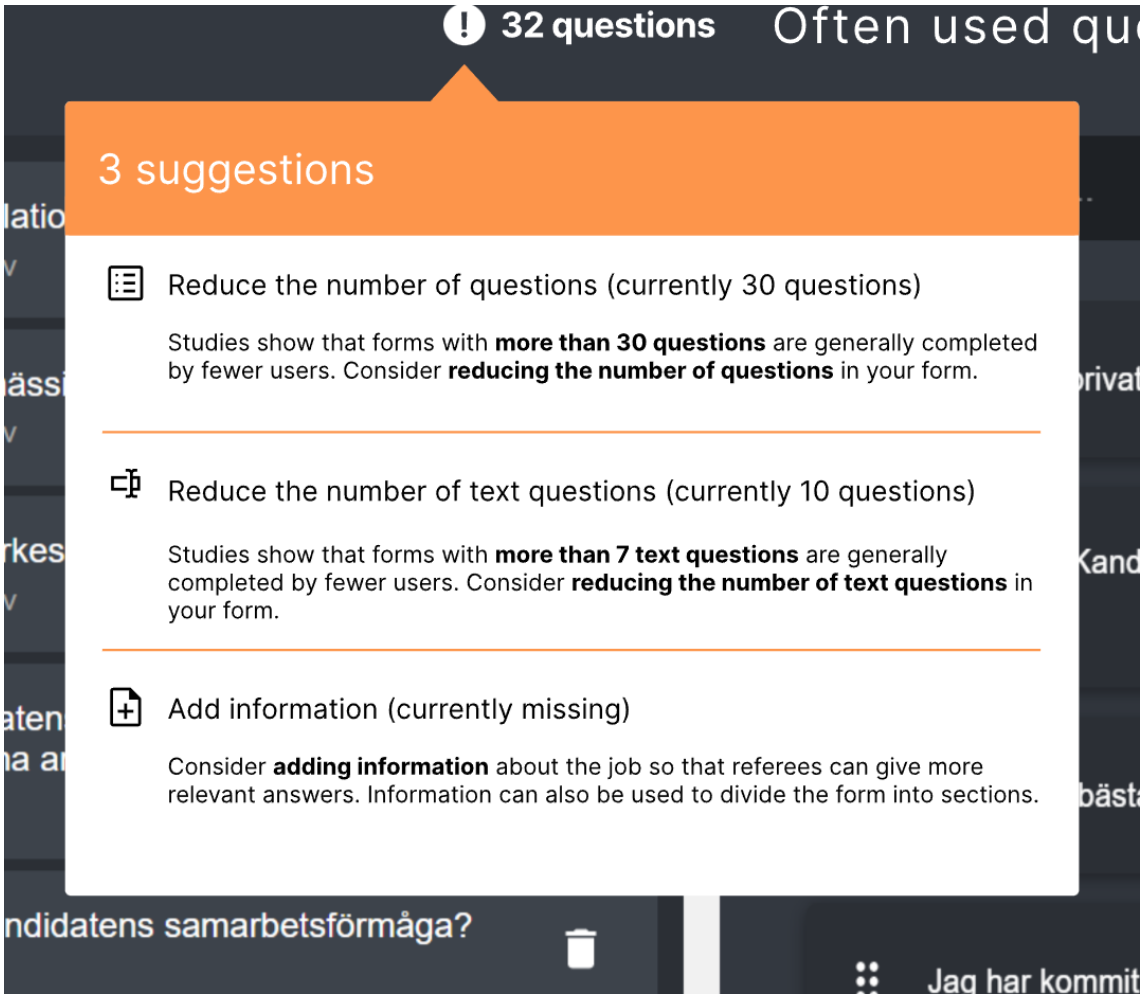

Figure 6.23: The feedback tooltip presents information regarding what the problem is, why it occurred, and how you can solve it

6.3.3 Prototyping

In addition to the form editing tool, we had to make modifications to the form itself for testing with referees (secondary users). Consequently, we reintroduced the progress indicator from Iteration 1 (see Section 6.1.3), as well as the information cards and checkboxes from Iteration 2 (see Section 6.2.1), which were previously tested only with recruiters (primary users). The progress indicator can be seen in Figure 6.24, the information card in Figure 6.25, and the checkboxes in Figure 6.26.

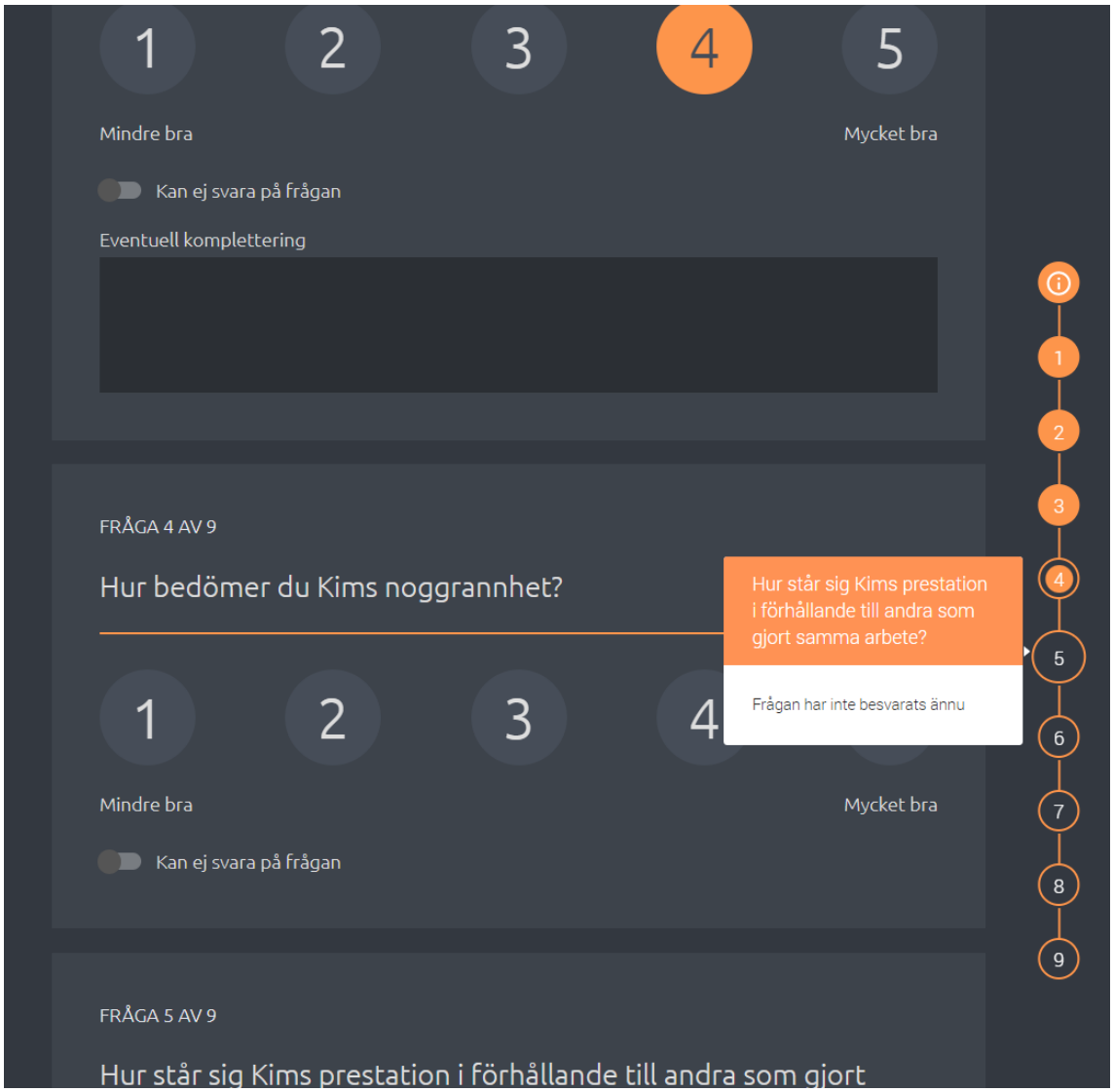

Figure 6.24: The progress indicator shows where there is information, which questions have been answered, and the current question

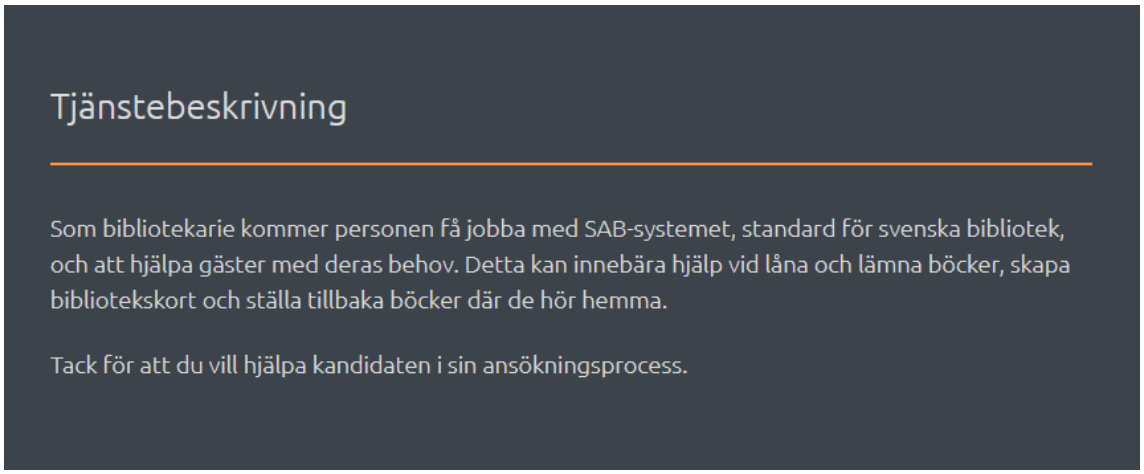

Figure 6.25: An information card in the form sent out to referees

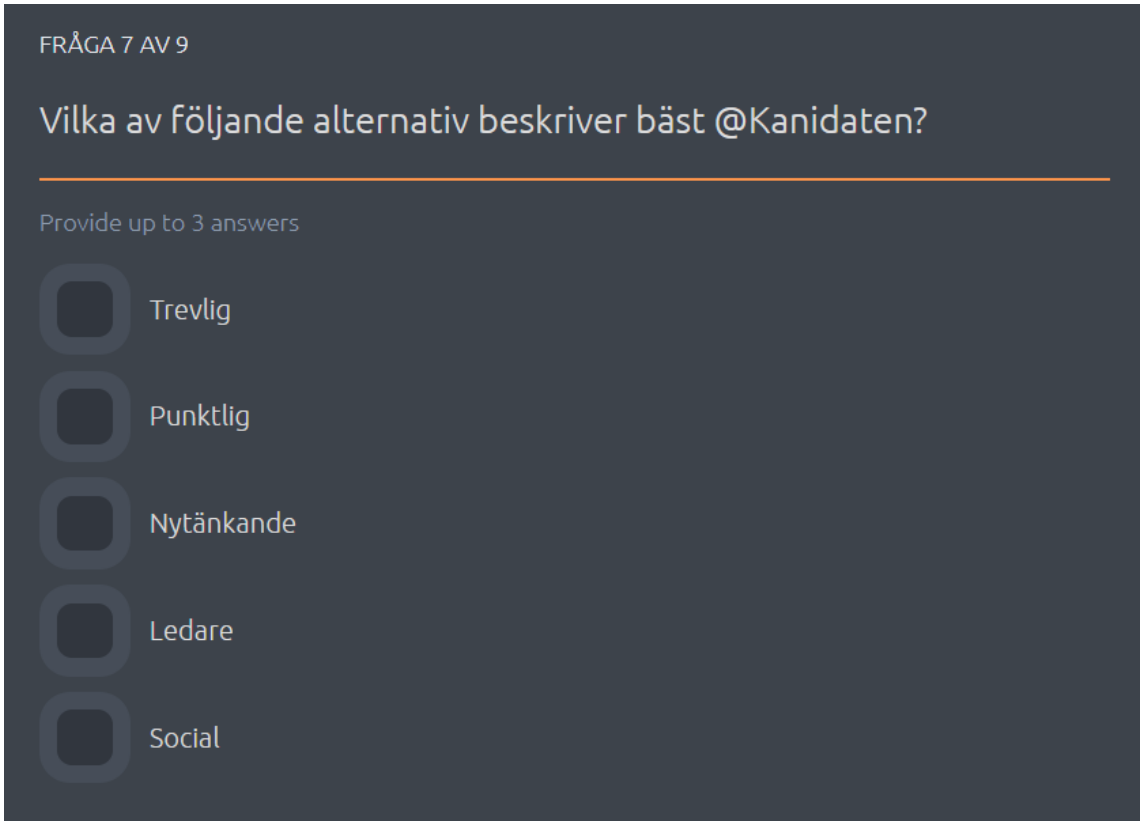

Figure 6.26: Checkboxes indicated by their square shape instead of round in form sent out to referees

6.3.4 Testing and Analyzing

For the final iteration, we decided to proceed with two separate tests. The first one was an observational test with six recruiters (primary users), and the second one involved sending out two forms and a questionnaire to twelve referees (secondary

users). For the referees we set up the criteria of them having to be at least 22 years old or have at least three years of work experience. This was because we wanted them to be plausible referees in real life.

Testing with Recruiters

In the observational test, we presented recruiters (primary users) with a scenario where they were tasked with recruiting a librarian, and provided them with a few requirements. The form they were to create should include at least seven questions and one of each question type, as well as information about the applied position. The choice of profession was made arbitrarily to have minimal impact on the test. To eliminate any potential design bias, we split the participants into two groups, with half completing the task in Refapp (the way it looked when we first started the thesis) first and then in Riffraff (the prototype for Iteration 3), while the other half started with Riffraff followed by Refapp. Participants were free to use the product without our guidance but were allowed to ask for help if needed. After completing the task in both designs, we conducted a brief interview with each participant to gather feedback about their experience and the differences between Refapp and Riffraff. The protocol for the tests can be found in Appendix G.

The results from the observational test were analyzed using thematic analysis and compiled in the following list:

- **Layout**: Better layout overall in Riffraff. Users seemed to perceive a clearer structure in the interface compared to Refapp.

- **Aesthetics**: The sharper contrast in Riffraff was appreciated. One participant noted that Riffraff feels more modern. It seems like the right things are standing out in both Refapp and Riffraff, helping the participants find the most important features.

- **User friendliness**: Riffraff was appreciated more than Refapp overall. Several participants thought Riffraff was easier to work in. Riffraff was described as simple, pleasant, user-friendly, easy to work in, comfortable, and better overall.

- **Insert buttons**: It seemed more intuitive to have the insert buttons open and visible like in Riffraff, it made the functionality more noticeable. Overall, it was preferred to have the buttons visible and was perceived as smoother, simpler, and perhaps more likely to use the feature.

- **Adding info**: The feature is needed if there is a need and want to add information. Trying to solve it by adding a question doesn't work well, it's not intuitive, and many had to ask for help to complete this task in Refapp.

- **Question feedback**: Easy to miss but perceived fairly well when shown and asked about it in the interview. The reason for missing it could be due to

there being a lot of new information and the function being very subtle. The goal was previously not to make these recommendations too aggressive, which seems to have succeeded.

- **Undo/redo**: The feature is positively received, but the design of the test seems to have made it unnecessary to use the buttons, only one participant made use of them. When asked about it though, many of the participants said they often use the functionality in other programs and find it helpful. It's difficult to draw any conclusion beyond the fact that they weren't in the way. They are supported by theory, so it may be a good idea to include them [16, Ch. 15] [39, Ch. 8].

- **Editor preview**: It was positively received and not perceived as something that was in the way. It was actively used during the test by inserting "@Candidate" among other things. It becomes a bit of a security factor/a way to confirm the result.

- **Preview**: Few participants used the preview during the tests, but during the interview, when both versions were presented, Riffraff's solution was preferred.

- **Follow-up questions**: Requested and used when it was available in Refapp. It would have been good to include the functionality in Riffraff.

- **Drag-n-drop interaction**: Intuitive and seems user-friendly based on observations. We confirm that it was a good choice by Refapp to use this model from the beginning.

- **Changing order of questions**: Good functionality that most participants understood on their own. Just a few used the functionality but that could be because of several reasons, such as the design of the test and them not being fully invested in the final outcome of what they created.

- **Using existing questions**: It was confirmed that the existing questions in the right hand panel was useful and was a good choice made by Refapp. It was intuitive, easy to access, and a way to help the participants since they were given an empty form to begin with. It was used frequently.

- **Add/edit question**: The button seemed easy to find, thanks to the Vox Restorff effect. It was not entirely obvious to find editing by clicking on a question, however creating questions did not pose significant issues.

Testing with Referees

The referees (secondary users) were sent a questionnaire with links to the two Refapp forms we had constructed based on one of the recruiter (primary user) tests. We wanted the final iteration tests to be as close to reality as we could make it and having a recruiter set up the forms for the referees felt like a reasonable choice to

make the connection.

Half of the participants were instructed to start with original Refapp and the other half was to start with Riffraff. The modifications included the progress indicator, checkboxes and information boxes which we had help implementing into the real product from our supervisor at Talentwise. To make sure they each started with the correct form they were provided with one link at a time through different sections in the questionnaire. When they had filled in both Refapp and Riffraff they finished the questionnaire with a few questions regarding their experience.

Among the questions was one about the perception they had of Refapp and Riffraff. They were asked to rate on a scale of 1-5 regarding the aesthetic appeal, ease of use, good overview, effectiveness of the response methods, and whether it was easy to understand. The results for each category can be found in the graph in Figure 6.27 and in the graph in Figure 6.28, as well as their corresponding mean values. There was a total of twelve participants meaning each mean value was calculated by adding to the sum of each category and dividing by twelve. We also calculated the overall mean for both Refapp and Riffraff where all points from all five categories were added together and divided by 60 (twelve participants times five categories). This gave Refapp a mean value of 4.37 and Riffraff a mean value of 4.75. With this, and the information in the graphs mentioned above, we can see that Riffraff scored higher than Refapp in all categories as well as overall, but not significantly.

Other questions include which of Refapp and Riffraff they preferred overall, where 11 out of 12 answered Riffraff. We also asked about how easy it was to understand the difference between radio buttons and checkboxes and learned that 11 out of 12 gave a 5/5 and 1 out of 12 gave a 4/5, indicating it was easy. Finally we asked in which ways the progress indicator was used and the results can be found in Figure 6.29.

6.3.5 Findings from Observations and Interviews

From the observational tests we can gather that many ideas implemented in Riffraff was received positively by the participants. Some design choices that were made in Refapp by the developers at Talentwise was also confirmed to be well made, such as the pre-existing questions that can be used and the drag-n-drop functionality. However, some functionality did not get properly tested such as undo/redo and preview which could partly be because of the design of the test. Overall, Riffraff was preferred over Refapp.

From the tests with the referees (secondary users) we can gather that our modified version of Refapp was preferred over actual Refapp in most cases with our 12 participants. Our added features did not pose a problem in understanding functionality and as can be seen in Figure 6.29, the progress indicator was being used.

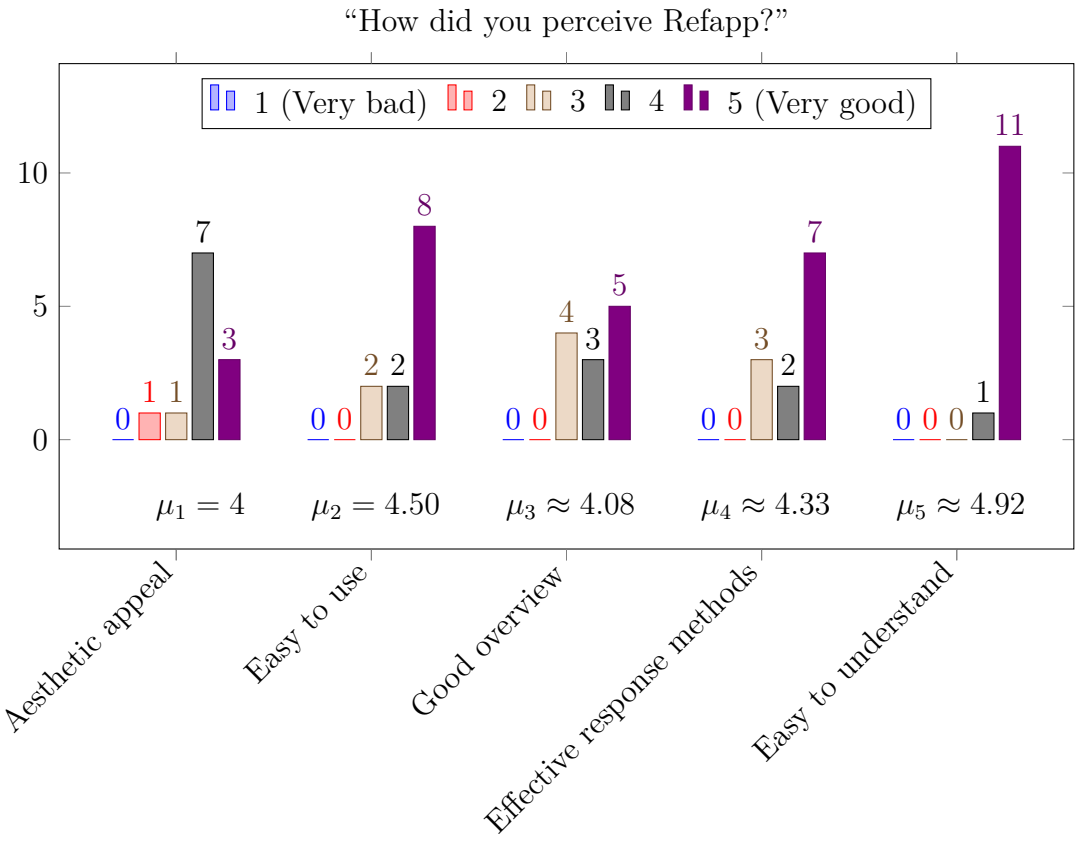

Figure 6.27: User ratings (and average scores) for the evaluation of five aspects of Refapp

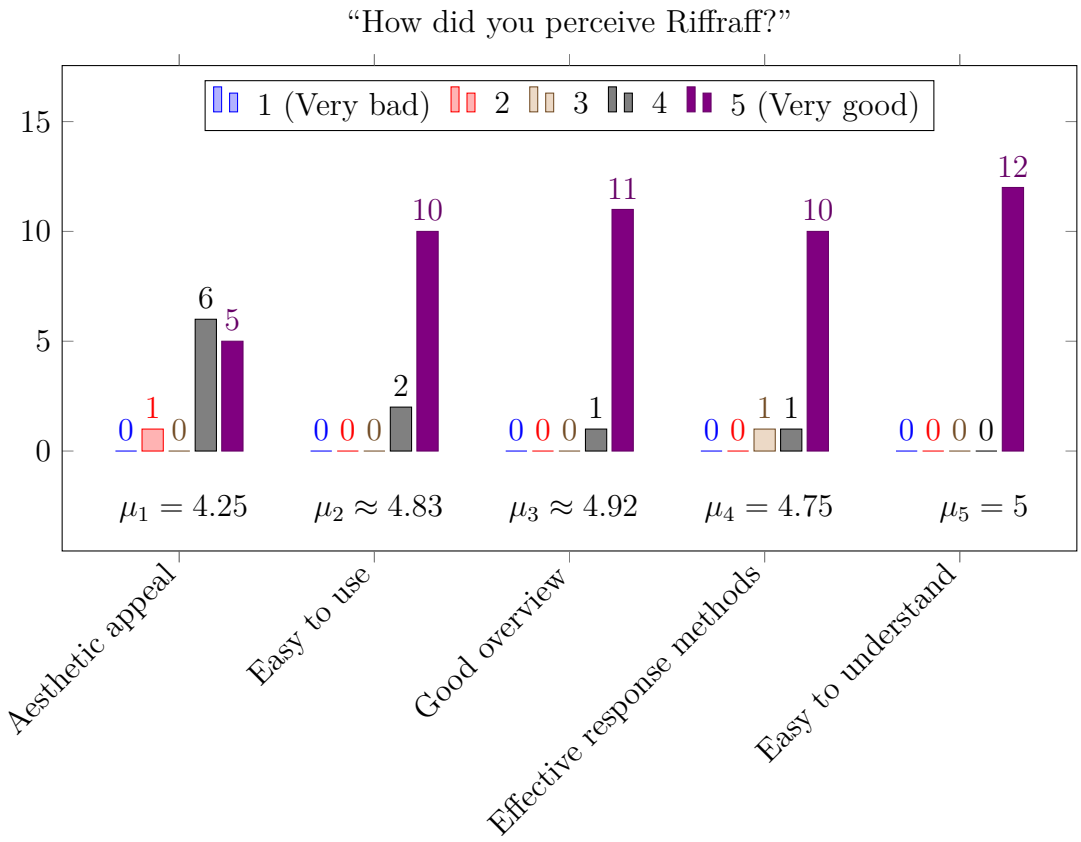

Figure 6.28: User ratings (and average scores) for the evaluation of five aspects of Riffraff

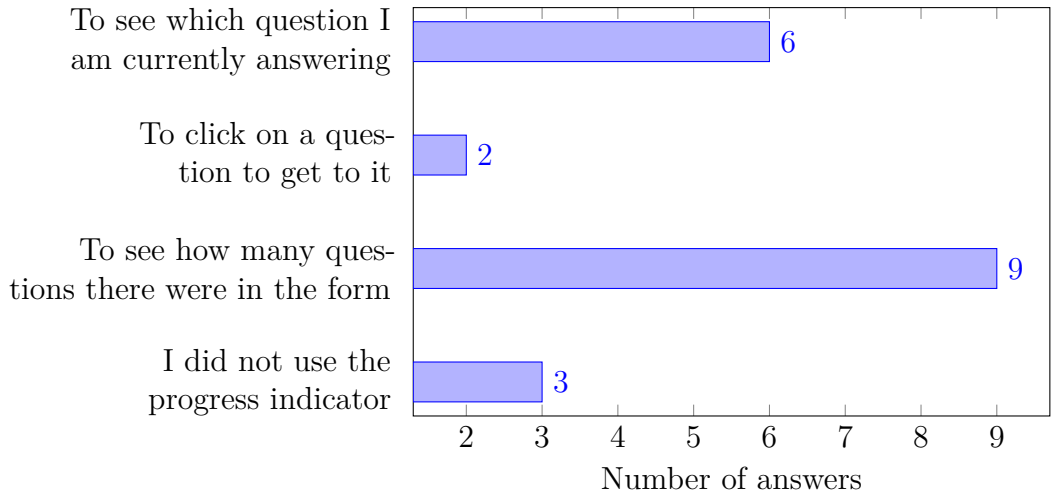

Figure 6.29: User responses to the question regarding what way(s) they used the progress indicator

7

Results

This chapter presents 10 guidelines as the official result of this project and an answer to our research question. These are further elaborated upon by presenting examples and reasons for why they were chosen. In order to show that our findings are relevant to a range of systems, we use the word *content* to encompass all types of content found in this and similar systems including CMS and LMS platforms. This includes everything that a user may create, such as texts, images, questionnaires, and so on.

When reading this chapter, we would also like to remind the reader what defines a primary and secondary user in our sense. A primary user is the type of user who will likely spend the most time interacting with the application. Their actions will dictate a large portion of the experience of the other. In contrast, secondary users primarily consume the content created by the primary user. As such, they may not spend as much time within the application but may have vastly different experiences depending on how well the primary user has completed their task.

7.1 10 Guidelines to Rule Them All

The guidelines presented below are based on our observations and tests conducted during our three iterations. It should be noted that we had a limited number of participants throughout the project, and that the subsequent findings may only hold true for our specific context. The following list is not presented in any particular order, and the numbering is solely for the purpose of making it easier to reference to individual guidelines:

1. Eliminate unnecessary elements (for transient applications)

2. In cases where content creation follows a particular order, create a layout that directs users through the process in a natural manner

3. Consider responsiveness as essential when users may access the application on devices with varying screen widths

4. Provide tools for both primary and secondary users that enables them to get a clear overview of the content, especially if it is very extensive

5. Ensure labels, buttons, and other components have accurate and unambiguous wording to avoid mistakes and misunderstandings

6. Deliver helpful advice in a non-obtrusive manner

7. Whenever possible, offer visual feedback, such as live previews to primary users as they work on the final output of any content

8. Implement undo and redo functionalities to be more forgiving and promote exploration of the interface

9. Present features in an open and visible manner to promote ease of use and user recognition, simplifying the process of finding functionality, while also avoiding any conflict with Guideline 1 that might lead to clutter

10. Provide the primary user with pre-made components or content, as well as the option to create their own, making it easier for users to begin creating

Guideline 1: Eliminating Unnecessary Elements

Initially, we viewed recruiters (our primary users) as experts who would devote considerable time to using Refapp. However, throughout the design process, we discovered that this assumption might not have been very accurate (see Section 6.3.1). Upon consulting with employees at Talentwise, we learned that the idea behind Refapp was that it should be simple, efficient, and straightforward. Recruiters were expected to use the application infrequently (sometimes just a few times a year), quickly creating forms, adding candidates, and sending it out. As a result, we want to emphasize the importance of our first guideline; to understand who you are designing for. This will likely vary between systems, which is why we cannot simply say that all applications should be designed this way. Some users, such as a teacher using an LMS, may need to add, update, and remove content to a higher degree than recruiters.

Guideline 2: Order-Driven Layout

From our experience in this project, we've found that certain sequences of content creation may simply make more sense for the user. For example, when creating a question in Refapp it is sometimes more suitable to first enter the title, determine the question type, and then include specifics related to that type (e.g., choices for a multiple-choice question). If a particular order like this exists, it could be beneficial to support this mental model through the layout, ensuring it aligns with the most probable user flow.

Guideline 3: Responsiveness

Responsive web design is nothing new but still something that is very important to consider. For systems like Refapp, where content is shown on screens of different sizes, it becomes even more crucial. Our tests revealed that Refapp would likely be accessed using a wide range of devices with different properties. Consequently, it is crucial to keep in mind that even an excellent design might not perform well if responsiveness is not taken into account.

Guideline 4: Comprehensive Overview

It is not uncommon for systems like Refapp to end up with a lot of content. From our testing phases, we discovered that some recruiters expressed the desire to get a better overview of what had been created so far. When introducing the progress indicator (see Section 6.1.6) we experienced a similar desire from its positive feedback from referees. We thus believe that giving both primary and secondary users the ability to overview content is an important factor when designing a successful CMS, LMS, or similar. Our findings indicated that this is especially true when dealing with very large amounts of content, such as a very long form in Refapp.

Guideline 5: Unambiguous Wording

Throughout our testing phases, we received numerous comments suggesting that the phrasing of certain labels, buttons, and other elements could be improved. One such example was one of the tabs introduced in Iteration 2, see Section 6.2, called "Cards". Although we expected that users might not understand that this was an umbrella term for both questions and information, their feedback (along with other comments) emphasized its impact on the overall user experience. Additionally, using icons should not be underestimated. By simply adding icons to the buttons for choosing a question type (see buttons for choosing question type in Figure 6.21) it seemed that the users perceived them as clearer and with more visual appeal (although this was not tested explicitly).

Guideline 6: Unobtrusive Advice

Striking a balance in providing users with guidance at an appropriate level can be challenging. With our question feedback (Figure 6.23), we have found that it can easily become too intrusive, even with just the wrong choice of color. We thus propose that designers once again think about who they are designing for; while supporting users in their role using tips and advice is great, some people might expect less guidance than others. In case users seem to need it, tooltips and similar aids should be clearly visible but unobtrusive. If a designer finds the need to use them extensively, they may also consider modifying its interaction. For instance, if tooltips are triggered by mouse hover, adding a slight delay before they appear could prevent them from being activated with every mouse movement.

Guideline 7: Visual Feedback

Iteration 2 introduced a live preview feature that allowed recruiters to view the final result while creating their questions (see Figure 6.17). Despite potential layout limitations such as including too much on the screen at once, the feature was generally well-received. During the expert review in the same iteration, we received a comment about visual feedback, which could be considered related to this. The comment highlighted the possible difficulty for recruiters to differentiate between radio buttons and checkboxes if there isn't a clear visual response when toggling the switch. In essence, it is crucial that users understand the function of any button, switch, or feature-driven component when interacting with it. In addition to following Guideline 5, we would like to suggest that designers employ direct visual feedback whenever possible (preferably modeless to avoid being too obtrusive [16, Ch. 15]). This approach is intended to assist primary users in gaining confidence regarding the final presentation of the outcome.

Guideline 8: Undo and Redo

Upon exploring the application ourselves, we quickly noticed that Refapp enabled users to delete questions from the form without any confirmation prompt or means to reverse the action. GUI theory suggests that undoing and redoing actions is an important tool for enabling exploration and to be more forgiving towards the user; even though it is not part of the user's mental model, mistakes happen [16, Ch. 15] [39, Ch. 8]. As a result, undo and redo buttons were added quite naturally (see Figure 6.13). However, these features were not fully implemented until the final iteration due to limited time. Although not heavily utilized, most users were very positive about the existence of these buttons. They found them familiar and useful as a safeguard in case something went wrong. Since our findings suggest that these features do not cause any harm, we would like to recommended to include them, providing primary users with more freedom to make mistakes without fear of consequences.

Guideline 9: Presenting Features

It is not unthinkable that a CMS may include numerous small features used to create the content such that it meets the primary user's expectations, for example changing font weight, inserting images, etc. In cases where these are features that are expected to be used often by the user, we propose that they are not hidden away to the extent that users forget about them or find them challenging to access, even though this may create a cleaner look. In our case, we realized this when splitting up the dropdown element used for inserting @-variables in Refapp into separate buttons (see the buttons next to "Insert" in Figure 6.13). Other potential solutions that exemplify this could include toolbars or similar menus that distribute buttons and other interactive components for better visibility. However, it is important to note that this should not be followed in such a way that it creates too many clashes with Guideline 1, since this may lead to clutter in the interface.

Guideline 10: Convenient Content Creation

During the tests in the last iteration where they started to become more realistic, we observed the benefit of giving the primary users some initial help. Almost every recruiter had begun by using the list of often used questions (see Section 6.3.5) to build a quick outline of the form. This list was made by Talentwise and existed since before this project but proved to be a great way for the primary users to get into the right mindset. Opening up any content editor and effectively being presented by a blank canvas might prove challenging to many, which is why we would like to propose that the designer makes sure that the primary user is provided with pre-made components or content aside from the ability to create their own to lower the barrier to entry.

8

Discussion

This chapter includes discussions about data validity, decisions that might have improved the design process, prototype fidelity, some ideas that were scrapped, and our recommendations for future work and what requires more research.

8.1 Data Validity

There is one factor that could have affected the validity of the data collected from recruiters in this project. It did not take long until we realized that it was going to be very difficult to find recruiters who met the requirements and were willing to participate in observations and interviews. Since the alternative would be that no tests would be conducted at all, we had to make compromises in this phase of every iteration. This meant that we had to talk to users with somewhat less experience in recruitment than initially planned for. Consequently, this also seemed to have led to the tests being less about the recruitment process and if the tool worked well for that purpose, and more about its general usability. With greater access to recruiters working actively in the industry, we would likely have seen a different result.

Furthermore, we believe that the results of each iteration would have been more impactful if we had the capacity and resources to involve more people in the testing process. Conducting tests with only a few individuals could skew the representation towards a particular user group, failing to provide a fair representation of the entire user population.

Finally, due to the difficulty in finding willing participants, both recruiters and referees, we had to rely on our personal contacts, which may have introduced some selection bias. While we made an effort to select a diverse group from our own network the fact still stands that we actively chose some people. Moreover, given their connection to us, it was crucial that we didn't disclose which parts of the designs were our creation to avoid biasing their responses.

8.2 Improvements to the Design Process

Reflecting on our preliminary study, we now realize that we should have also interviewed a few individuals from Talentwise, in addition to the three recruiters we spoke with. This realization came to us at the end of Iteration 1 when some ideas that we had developed were things that they were already working on, and obtaining information about the frequency of Refapp usage by each individual could have provided deeper insights. This would also have helped us uncover the fact that the users of Refapp most likely were not expert users, as mentioned in Section 6.3.1.

8.3 Prototype Fidelity

Using an appropriate level of fidelity in your prototype has been discussed numerous times by other researchers [40] [15, Ch. 12]. We suspect that we sometimes might have fell victim to the disadvantages of using a prototype of too high fidelity, especially in Iteration 2 where it seemed that users were overly focused on the details. They were also quick to give criticism on parts that we had not touched. Of course, this is most likely based on the fact that we observed and interviewed many employees from Talentwise. In hindsight, one solution could have been to rebrand the prototype to make it distinct from the real product, or to remove all branding completely so that test would solely be about layout and user interactions.

8.4 Future Work

We believe that the research conducted in this thesis has provided valuable insights to the field of interaction design under the specific context described in Chapter 1, but it is by no means exhaustive. There are several things that could be done from here, such as letting users test our final prototype for a longer period of time and thereby evaluate memorability. This would also allow us to evaluate the use of features, such as undo and redo, that were less frequently used in short observations like in Iteration 3. Of course, further testing with a higher number of users should also be considered. We did not have the opportunity to include as many people as we initially wanted, and as described in Section 8.1, it would likely have been more beneficial to test on a larger variety of people.

One might also find new and more refined ways of defining the metrics that are used to evaluate the user experiences for both recruiters and referees. It is possible that other metrics could provide a more thorough understanding of their experiences and thereby better support (or disprove) our guidelines in Chapter 7. Although being a possibility, we did not use any software metrics as described in Section 4.4.3. With an already established user base, Refapp could have been modified to give us more anonymous quantitative data directly connected to its use in real life. As mentioned, this would require us to operationalize the UX metrics further, but you could get access to things such as mean time spent on specific type of questions in the form, most used features, and other behavior patterns within the app.

Finally, we also want to recognize the fact that Refapp is an evolving product where features are added as time goes on. It would have been interesting to continue working on some of our ideas that we ultimately did not have time for, such as:

- **Quick guide**: a module that is shown as the users enters the app for the first time, supporting the on-boarding process that Talentwise otherwise maintains with new customers.

- **Asking complementary questions**: a feature that would allow recruiters to send out an additional e-mail to referees who had given an interesting response that deserved to be elaborated further.

9

Conclusion

This project began with the intention to explore and improve the user experience for both primary and secondary users, as defined in Chapter 1. This was done in the context of Refapp, a digital platform for reference checking created by Talentwise. Based on our initial research, it seemed that accounting for a secondary user, a person exposed to content created by another user group, was not as well-explored as other more popular areas of interaction design. This was rather interesting since similar systems exist and are being used on a daily basis. We followed a user-centered methodology, incorporating feedback from both recruiters (primary users) and referees (secondary users) of Refapp. By doing so, we were able to regularly integrate their feedback, ensuring our work remained in sync with their experiences and needs.

The project unfolded over three iterations, spanning a period of 12 weeks. We engaged in a variety of activities from understanding the problem, to creating and testing prototypes via observations and interviews, and analyzing the results that we gathered. This finally allowed us to address our research question, formulated as:

What guidelines can help to ensure a good user experience on a digital recruitment platform without direct control over the created content?

Based on our test results and theory, we thus created 10 guidelines that covered a broad range of topics. These touch upon things such as constructing transient applications, guiding the user in unobtrusive ways, and presenting visual feedback. They also cover more specific things in the context of CMSs, such as making the content creation convenient for the user, presenting features in appropriate ways, and using unambiguous language throughout the application. A complete list and more thorough explanations for each guideline is presented in Chapter 7.

As a final remark, we believe that our research highlights the complexity of UX, similar to other areas in this field, and indicates a potential need for further exploration or research. Due to the limited number of users, our results are likely most applicable in contexts similar to that of Refapp. To ensure the relevance of our guidelines across different contexts, additional testing is recommended.

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A

Protocol Prestudy Interviews

Since the interviews were held in Swedish, the protocol is presented as it was written.

1. Hälsa välkommen och tacka för deltagande. Presentera oss själva. Förklara syftet med intervjun.

2. Presentera deltagarkontrakt, vad gäller, möjlighet att dra sig ur, etc.

3. Be om tillåtelse att samla in data (vi spelar in samtalet) - om personen inte känner sig bekväm med att spela in ansikte är ljud helt ok.

4. Intervju:

    - Berätta lite om dig själv; hur länge har du jobbat med rekrytering? Vilket företag jobbar du på och vilken bransch ligger ni i?

    - Hur utför ni referenstagning idag och hur har det sett ut senaste 5-10 åren (beroende på mängd erfarenhet)?

        – Hur stor andel av referenstagningen sker digitalt? Alltså, ej över telefon, SMS eller intervju.

    - Vad är ditt intryck av Refapp?

    - Kan du beskriva din arbetsprocess från från första kontakt tills att du gjort klart referenstagningen?

        – Använder du även andra program i ditt jobb, vilka och hur fungerar de i så fall i relation till Refapp?

    - Finns det något du tycker är särskilt bra/dåligt med Refapp?

        – Något i systemet som inte känns logiskt eller skapar förvirring?

    - Finns det något du saknar i systemet så som det ser ut idag?

- Finns det något i systemet som du tycker är överflödigt?
- Vad tycker du om anpassningsmöjligheterna i Refapp? Är de tillräckliga för att fylla de behov ni har?
  - (Om personen behöver förtydligande: Hade du exempelvis velat göra formuläret mer personligt eller tydligare i den mån att det framgår vilket företag och person som ber om referensen?)
  - Upplever du att du förstår hur slutresultatet (formuläret) kommer att presenteras?

5. Tacka så mycket för deltagandet och fråga om de har några frågor eller övriga funderingar.

B

Protocol Focus Groups

Since the focus groups were held in Swedish, the protocol is presented as it was written.

1. Hälsa välkommen och tacka för deltagande. Det finns fika för alla som vill. Presentera oss själva. Förklara syftet med fokusgruppen.

2. Presentera deltagarkontrakt, vad gäller, möjlighet att dra sig ur, etc.

3. Kolla så att alla har använt Refapp via länk som skickats ut och samla in användardata (se nedan).

4. Påminn om att vi spelar in diskussionen med ljud. Om inte detta är ok trots vad som accepterats innan är det helt ok att gå (man får ta med sig fika i så fall).

5. Be alla som blivit tillfrågade att vara referens innan att räcka upp en hand så vi får en överblick.

6. Fråga om det är någon som har en tid de måste gå. Ibland händer det att en grupp har det väldigt trevligt och diskussioner tar längre tid. Det är helt okej om man inte kan mer än en timma bara vi vet det så vi kan försöka styra diskussionen och försöka hålla det lite kortare.

7. Fokusgrupp med öppna frågor:

    - Spontana tankar om referenstagningen i Refapp?

    - Vad anser ni är det viktigaste med en sån här tjänst för er som referenser?

    - Upplever ni att ni skulle svara annorlunda om ni hade fått samma frågor om det varit i en telefonintervju istället?

    - Kändes den personlig/motiverande? Alltså, förstod man syftet med informationen man lämnade och för vem?

- Vad fick ni för tankar kring hur ni kunde identifiera er? Kändes det rimligt? Hade ni velat kunna göra det på något annat sätt?

8. Tacka så mycket för deltagandet och fråga om de har några frågor eller övriga funderingar.

C

Prestudy Findings

This list contains our own thoughts and notes from the prestudy interviews and focus groups. The content is obtained from the result of the thematic analysis and was translated from Swedish.

Thoughts and Conclusions

- Do recruiters take security for granted? The references mentioned suspicion regarding identification, but the recruiters just said that it's good to get a warning for potential fraud.
- No recruiter mentions anything about progress indicators or encouraging comments.
- (A recruiter suggests more support in their workflow through the system) How long should a form be? Is there any statistics on it?
- Both user groups are satisfied with the clean and minimalist design.
- Can branding also mean highlighting recruiters as individuals so that there is more of a relationship with them?
- Few referees seem to prefer being called when they have clicked into a form. This statement is supported by a recruiter (they say it's under 5% who choose to be called instead).
- Referees mentioned that it would be good to get more information about the specific position the person is applying for. It's not something recruiters mention. Could this be a customization option?
- No recruiter mentioned anything about honesty. Do they assume that they always get honest answers regardless of the method?
- Referees are afraid of just "getting lost in the crowd". Recruiters do not

mention this. Can satisfaction among references be increased?

- Both parties perceive the design as clean.
- The referee's view of digital reference checking is not always accurate. They expressed that you probably need more than one form for more difficult positions, but a recruiter said they use the forms for all their positions.
- Several referees commented that it was a very short form with little room to express themselves. This could be on us for sending out a very short standard form that didn't have open-ended questions. However, there was a possibility for supplementary responses to the Likert scales.
- Can we take existing input methods and tweak them to get more information in a similar way (without putting more work on the recruiter)? Free text responses may be good for referees, but not for recruiters (when it comes to analysis).
  - It's not entirely impossible that imagination sets the limits for what's possible. The user study is based on an existing system and does not test any new ways of collecting data.
  - There were few referees who said that a scale was enough - lacking adjectives and descriptive words.
  - One referee believed that the input methods were sufficient and that more were not needed.
- There were many thoughts about being able to ask follow-up questions. Recruiters believed that more detailed information could be obtained over the phone (but that it takes longer to analyze). Referees believed that more information could have been given to the recruiter over the phone.
  - One referee explicitly said they missed follow-up questions that can come with traditional reference checks.
  - Our interpretation: it is a balancing act between leaving detailed information and being able to analyze it quickly and efficiently.
- Both recruiters and referees see similar risks with template-based questions: that the answers may appear flat and that trust in this as a basis for a good impression may be lacking - can you really get a good picture of the candidate?
- A recruiter stated that about 50% of referees fill in supplementary responses to the scales. At the same time, one referee stated that they found it difficult to understand if the grade in the scale or the supplementary response was

more important for the outcome - is the quantitative or qualitative data most important?

Suggested Features

- A function where you can easily send follow-up questions to references.
  - For example 4 supplementary questions that can be sent out quickly and easily. With just a few clicks, additional material can be sent back.
- Integrate video interviews into the system for those who want to use it.
- Ability to modify controlled sentences such as "André has listed you as a reference" as there seem to be hardcoded sentences.
- Possibility to remove the option to be called back.
- Email templates need to be more editable.
- Ability to brand with more color, etc.
- Make it clearer if identifying yourself is voluntary.
- Is there another option for identifying yourself other than Facebook/LinkedIn/BankID?
- Encouraging comments along the way.
- Progress indicator.
- Show approximately how long it is expected to take to fill out the form.
- Provide a chance to describe with more adjectives. Use descriptive words.
- Likert scale with an even number of steps so that you cannot choose the middle.
- More steps on the Likert scale.
- Speech to text.
- Picture of the person applying for the job?
- Make it more personal?
- Establish contact with the recruiter?

- It should be clearer how information is stored and what the referees see.
- Templates based on frameworks and the like.
  - Known HR methods, such as Malin Lindelöv's competence module.
- It should be clearer which features are new in the system.
  - Preferably avoid pop-ups; perhaps new buttons could light up/glow to indicate that this feature has recently been added (modeless feedback).
- A bit more support in the system, preferably fact-based.
  - How many questions are okay?
  - What do references appreciate/not appreciate?
- Provide more information about the role the candidate is applying for.
  - I want to know what to emphasize when I am contacted.
  - It should be short and concise, I have to be able to read it.

D

Protocol Iteration 1 Referees

Since the tests were held in Swedish, the protocol is presented as it was written then.

1. Introduktion

   (a) Tacka personen, hälsa välkommen och presentera projektet och dess syfte (förklara dock inte specifikt vilka ändringar vi har gjort).

   (b) Beskriv testets upplägg.

      i. Vi kommer att leda dig genom hela testet, så tanken är att du får uppgifter som du successivt jobbar dig igenom allt eftersom de kommer.

      ii. Om du vill testa någon funktion som verkar intressant eller göra något utöver våra instruktioner uppskattar vi om du frågar först.

      iii. Slutligen får du väldigt gärna tänka högt (think-aloud) i den mån det går, så att säga. Detta hjälper oss att förstå valen du gör och gör det även lättare att analysera i efterhand.

   (c) Påminn om att testet kommer att spelas in och att det är okej att dra sig ur när som helst.

      i. Om okej, ställer vi frågan: Då godkänner du det som står i kontraktet som skickats ut till dig innan detta test? - Testperson får då svara ja.

   (d) Försäkra oss om att personen sitter ostörd vid en dator och att internetanslutningen är bra.

2. Be dem dela hela sin skärm.

3. Skicka länk till formulär till testpersonen och be hen öppna denna i en webbläsare.

4. Ge instruktioner och anteckna beteendet under tiden. Vi ber testpersonen att:

   (a) Följ instruktionerna på skärmen fram till att du kommer till fråga 1.

   (b) Fyll i 3 frågor

   (c) Du tittar nu på kommande två frågor och kommer till slutsatsen att du vill hoppa över dessa för tillfället.

   (d) Fyll i ytterligare 7 frågor

   (e) Du kommer nu på vad du skulle svara på frågorna som du hoppade över tidigare, ang. Carolas tre utvecklingsbara sidor och hennes viktigaste styrkor, så du går tillbaka och fyller i dem.

   (f) Fortsätt där du var innan du rättade till frågan.

   (g) Fyll i 3 frågor till.

   (h) Du kommer på att du totalt missbedömt din skattning av Carolas noggrannhet så du går tillbaka och rättar till det.

   (i) Kolla med testpersonen om hen kan svara på vilken fråga vi befinner oss på och var man kan se detta.

   (j) Fyll i resten av formuläret.

   (k) Skicka in ditt svar

5. Förklara att observationen nu är över och att vi nu tänkte ta en kort intervju angående upplevelse och uppfattning av tjänsten.

   (a) Vad är ditt allmänna intryck av Refapp?

   (b) Hur upplevde du identifieringen? Varför gjorde du just det valet du gjorde (BankID, LinkedIn, Facebook, eller inget alls)?

   (c) Kände du att det var lätt att navigera sig fram och tillbaka mellan frågorna?

   (d) Fråga om skala 1-6 i jämförelse 1-5.

   (e) Visa exempel på en brandad version av formuläret och be om åsikter.

i. Ändrar detta ditt intryck? I så fall hur?

ii. Känns det proffsigare?

iii. Upplever du att man får en närmare kontakt till företaget?

6. Avslutning

   (a) Tacka igen för deltagandet

   (b) Erbjud möjlighet att ställa frågor eller komma med annan feedback (förslag på förbättringar exempelvis)

E

Protocol Iteration 1 Recruiters

Since the tests were held in Swedish, the protocol is presented as it was written.

1. Introduktion

   (a) Tacka personen, hälsa välkommen och presentera projektet och dess syfte (förklara dock inte specifikt vilka ändringar vi har gjort).

   (b) Beskriv testets upplägg.

      i. Vi kommer att leda dig genom hela testet, så tanken är att du får uppgifter som du successivt jobbar dig igenom allt eftersom de kommer.

      ii. Om du vill testa någon funktion som verkar intressant eller göra något utöver våra instruktioner uppskattar vi om du frågar först.

      iii. Slutligen får du väldigt gärna tänka högt (think-aloud) i den mån det går, så att säga. Detta hjälper oss att förstå valen du gör och gör det även lättare att analysera i efterhand.

   (c) Påminn om att testet kommer att spelas in och att det är okej att dra sig ur när som helst.

      i. Om okej, ställer vi frågan: Då godkänner du det som står i kontraktet som skickats ut till dig innan detta test? - Testperson får då svara ja.

   (d) Försäkra oss om att personen sitter ostörd vid en dator och att internetanslutningen är bra.

2. Be personen dela sin skärm. Skicka länk och inloggningsuppgifter till testpersonen och be hen att öppna sin webbläsare och logga in.

3. Ge instruktioner och anteckna beteendet under tiden. Vi ber testpersonen att:

   (a) Öppna referenstagningen för Receptionist

   (b) Redigera frågeformuläret för denna jobbposition för att lägga till några frågor till formuläret

      i. Din chef älskar det personliga mötet man får under traditionell referenstagning men förstår att det är mer effektivt att göra det digitalt. Hen har bett dig skapa en fråga där du frågar referenterna om kandidatens personliga egenskaper. Då behöver du alltså en fråga där referenten kan välja två eller tre alternativ samtidigt.

         A. Formulera frågan t.ex. Vilka är kandidatens främsta egenskaper?

         B. Kravet är dock att man måste kunna välja mer än ett svar samtidigt

         C. Om personen gör fel, ställ kontrollfråga: kan man välja mer än ett svar samtidigt m.h.a. Flerval?

      ii. Nu vill vi att du skapar en en fråga med en skala. Du kan formulera frågan som något i stil med Hur skulle du bedöma kandidatens ambitionsnivå?.

   (c) Under dina tidigare referenstagningar har du fått önskemål från de som svarar att de gärna vill kunna se jobbannonsen som kandidaten söker till. Lämpligast tänker du att detta ska finnas med i mailutskicket som görs till referenterna. Var går du för att lägga till detta?.

      i. OBS om de inte hittar, förklara att det ligger under projektets inställningar.

   (d) Slutligen, testar vi det nya brandingverktyget. Skicka länk till Figmaprotoypen och låt dem klicka sig runt.

      i. Börja med verktyget

      ii. Beskriv kontrastförhållande

      iii. Gå sen över till listan med stilmallar.

   (e) Sammanfatta vilka de nya funktionerna var.

      i. Flervalsfrågor med flera svar.

ii. Skala 1-6 istället för 1-5.

iii. Länka jobbannonsen

iv. Branding-verktyget

4. Förklara att observationen nu är över och att vi nu tänkte ta en kort intervju angående upplevelse och uppfattning av tjänsten.

   (a) Vad tror du om det nya branding-verktyget som du precis fick testa? Var det svårt att förstå eller använda? Vad tror du det kan medföra och tror du det spelar någon roll för den som fyller i formuläret att du som skapar det ges större friheter i det visuella?

      i. Om personen inte jobbar på Refapp: Skulle företaget du representerar använda den här funktionen om den fanns tillgänglig?

   (b) Vad tyckte du om möjligheten att skapa en flervalsfråga där referenten kan ge mer än ett svar? Kan det vara en användbar funktion eller hade du velat ändra det på något sätt?

   (c) Att ge svar i en skala 1-6 istället för 1-5 medför att det inte längre går att lägga sig i mitten. Vad tror du om detta?

   (d) Att länka jobbannonsen gör att referenten bättre och lättare kan se vilken tjänst kandidaten söker. Känns det som en rimlig sak att kunna göra? Och hade du velat kunna göra det på ett annat sätt?

5. Avslutning

   (a) Tacka igen för deltagandet

   (b) Erbjud möjlighet att ställa frågor eller komma med annan feedback (förslag på förbättringar exempelvis)

F

Protocol Iteration 2

Since the tests were held in Swedish, the protocol is presented as it was written then.

1. Introduktion

   (a) Tacka personen, hälsa välkommen och presentera projektet och dess syfte (förklara dock inte specifikt vilka ändringar vi har gjort).

   (b) Beskriv testets upplägg.

      i. Vi kommer att leda dig genom hela testet, så tanken är att du får uppgifter som du successivt jobbar dig igenom allt eftersom de kommer.

      ii. Om du vill testa någon funktion som verkar intressant eller göra något utöver våra instruktioner uppskattar vi om du frågar först.

      iii. Slutligen får du väldigt gärna tänka högt (think-aloud) i den mån det går, så att säga. Detta hjälper oss att förstå valen du gör och gör det även lättare att analysera i efterhand.

   (c) Påminn om att testet kommer att spelas in och att det är okej att dra sig ur när som helst.

      i. Om okej, ställer vi frågan: Då godkänner du det som står i kontraktet som skickats ut till dig innan detta test? - Testperson får då svara ja.

   (d) Försäkra oss om att personen sitter ostörd vid en dator och att internetanslutningen är bra.

2. Be personen dela sin skärm. Skicka länk till testpersonen och be hen att öppna sin webbläsare.

3. Ge instruktioner och anteckna beteendet under tiden.
   Du befinner dig i situationen att du är rekryterare och har fått ta över ett projekt från en kollega. Det är alltså deras formulär du ska redigera och fixa till. Du jobbar på Slimetastic AB och ni ska rekrytera en ny Ghostbuster.

   (a) Vid första anblick känns det som din kollega har lagt in alldeles för många frågor. Kan du se hur många det är?

      i. Om de själva inte nämner den röda texten och ikonen: Varför tror du att texten är röd? Skulle du kunna göra något med den?

         A. Varningen visar att det är för många frågor och föreslår att ta bort några. Skulle du kunna göra något för att åtgärda varningen? De kan ta bort från botten.

         B. Varningen visar nu att det är för många textfrågor med förslag om att byta till annan typ av frågor på några av dem.

   (b) För att bli av med varningen om för många textfrågor tar du en godtycklig textfråga och gör om den till en skalfråga. De kan tex skriva Hur troligt är det att Kandidaten kommer i tid?. De får själva välja om skalan ska vara 5 eller 6 steg.

   (c) Du tänker att det hade varit bra att veta hur formuläret ser ut. Kan du öppna upp förhandsgranskningen av formuläret?

      i. Guida vid behov till fliken.

   (d) Det är fortfarande för många textfrågor. Skulle du kunna ta en annan textfråga och göra om den till en flervalsfråga. Man ska bara kunna välja ett svarsalternativ åt gången. De kan tex skriva Umgås ni privat?. De får skriva in alternativen själva.

   (e) Skulle du kunna ta en tredje textfråga och göra om även den till en flervalsfråga, men den här gången ska man kunna välja upp till tre svarsalternativ samtidigt. De kan tex skriva Välj upp till 3 egenskaper som stämmer bäst in på Kandidaten. De får själva välja alternativen, det ska vara minst 5 alternativ.

      i. Om de inte väljer på switchen att ha flera samtidigt kan man prompta att testa i förhandsgranskningen hur många svar man kan välja.

   (f) Det verkar som att din kollega inte har lagt till information om tjänsten kandidaterna söker. Du känner att det hade varit bra att ha med. Lägg till information om vad det innebär att jobba som Ghostbuster i formuläret. Titel skulle kunna vara Information om tjänst. De kan tex

skriva En tjänst som Ghostbuster innebär mycket kontakt med människor och att städa upp slime.

i. Om de inte väljer att lägga till infokort, fråga om det finns andra sätt att göra det på än så de gjorde.

ii. Be dem att lägga kortet längst upp i flödet av frågor.

(g) Du känner att det är något som saknas men du kan inte komma på vilken fråga. Du väljer vyn för kort och filtrerar till de mest relevanta frågorna. Där väljer du en fråga och lägger till i formuläret.

(h) Låt oss säga att du inte är nöjd med de senaste två ändringarna du gjort i formuläret. Vad skulle du göra för att åtgärda det?

(i) Om du sen skulle komma på att två steg tillbaka var för många, hur skulle du gå tillbaka?

4. Förklara att observationen nu är över och att vi nu tänkte ta en kort intervju angående upplevelse och uppfattning av tjänsten.

(a) Hur uppfattade du arbetsvyn? Ser du några för- eller nackdelar med den? Hur står den sig i jämförelse med den faktiska produkten?

i. Rörigt? Smidigt? Bra överblick? Svårt att hitta?

(b) Gick det att förstå skillnaden mellan de olika flervalsfrågorna?

i. Om det var otydligt, vad hade hjälpt?

(c) Hur uppfattade du feedbacken du fick av formuläret om antalet frågor?

(d) Vad tror du om möjligheten att ångra sina ändringar?

i. Hur förväntar du dig att det ska fungera?

(e) Vad tyckte du om informationskortet? Användbart? Ocnödigt?

(f) Vad tyckte du om att kunna välja mellan jämnt och udda antal steg på skalan?

(g) Vad tycker du om benämningen Kort på fliken? Hade du velat kalla det för något annat?

(h) Vad tycker du om knapparna för att infoga @Kandidaten mm?

(i) Vad tycker du om ordningen på saker i vyn för att redigera frågor? Känns

det naturligt i flödet eller skulle du vilja ha det i en annan ordning?

(j) Övriga kommentarer?

5. Avslutning

(a) Tacka igen för deltagandet

(b) Erbjud möjlighet att ställa frågor eller komma med annan feedback (förslag på förbättringar exempelvis)

G

Protocol Iteration 3 Recruiters

Since the tests were held in Swedish, the protocol is presented as it was written then.

1. Introduktion

   (a) Tacka personen, hälsa välkommen och presentera projektet och dess syfte (förklara dock inte specifikt vilka ändringar vi har gjort).

   (b) Beskriv testets upplägg.

      i. Du kommer få testa två designer efter varandra och utföra samma uppgift i båda två. Vi kommer vid behov guida dig medan vi observerar. Efter att du testat båda designerna kommer vi ställa några frågor kopplade till din upplevelse.

      ii. Slutligen får du väldigt gärna tänka högt (think-aloud) i den mån det går, så att säga. Detta hjälper oss att förstå valen du gör och gör det även lättare att analysera i efterhand.

   (c) Påminn om att testet kommer att spelas in och att det är okej att dra sig ur när som helst.

      i. Påminn om att testet kommer att spelas in och att det är okej att dra sig ur när som helst.

   (d) Påminn om att testet kommer att spelas in och att det är okej att dra sig ur när som helst.

   (e) Försäkra oss om att personen sitter ostörd vid en dator och att internetanslutningen är bra.

2. Be personen dela sin skärm. Skicka länk till design A till testpersonen och be hen att öppna sin webbläsare.

3. Ge instruktioner och anteckna beteendet under tiden. Notera hur många gånger de ber om hjälp.
   Du jobbar som rekryterare på Göteborgs Bibliotek och har fått i uppdrag att anställa en ny Bibliotekarie. För att försäkra er om att ni gör en bra rekrytering ska du skapa ett formulär som du skickar ut till referenser kopplade till kandidaterna. Detta är alltså sista steget i rekryteringsprocessen (digital referenstagning). Formuläret ska:

   - vara minst 7 frågor långt
   - det ska finnas minst en av varje frågetyp
   - minst två frågor ska du göra helt själv, alltså inte ta från frågebanken till höger
   - Formuläret ska också innehålla information om vad tjänsten som bibliotekarie innebär så att referenserna får en bättre inblick och kan svara på frågorna med rätt utgångspunkt. Ni söker en trevlig person som har tidigare erfarenhet av att jobba med människor. Personen ska vara pålitlig och noggrann.
     Som bibliotekarie kommer personen få jobba med SAB-systemet, standard för svenska bibliotek, och att hjälpa gäster med deras behov. Detta kan innebära hjälp vid låna och lämna böcker, skapa bibliotekskort och ställa tillbaka böcker där de hör hemma.
     Du har nu fria tyglar att skapa detta formulär. Om du undrar något kan du fråga och vi kommer att guida dig. Kom ihåg att du gärna får tänka högt under tiden du jobbar.

   Kort uppvärmning. Hjälp dem att brainstorma lite vad för frågor de kan tänkas ha med.
   Okej innan vi sätter igång tänker vi att vi bara kan spåna lite om vilka frågor man skulle kunna ställa till någon som är referens för en blivande bibliotekarie. Har du några idéer?
   Försäkra oss om innan de får länken att de har koll på läget och scenariot.

4. När personen är klar, skicka länk till design B och be testpersonen öppna länken i det delade fönstret.

5. Ge instruktioner och anteckna beteendet under tiden. Notera hur många gånger de ber om hjälp.
   Du ska nu utföra samma uppgift igen. Formuläret gäller för jobbet som Bibliotekarie. Det ska ha minst 7 frågor och innehålla minst en textfråga, minst en flervalsfråga där man endast kan välja ett svarsalternativ, minst en flervalsfråga där man kan välja upp till 3 svarsalternativ samtidigt, och minst en skalfråga.Formuläret ska också innehålla information om vad tjänsten som bibliotekarie innebär. Du har igen fria tyglar och kan fråga om du behöver

hjälp. Kom ihåg att försöka tänka högt när du jobbar.

6. Förklara att observationen nu är över och att vi nu tänkte ta en kort intervju angående upplevelse och uppfattning av tjänsten.

   (a) Du har nu fått testa att jobba i två olika versioner av samma verktyg. Var det något du tyckte var extra bra eller extra dåligt med någon av dem?

   (b) Förhandsgranskningen:

      i. Om de använde den: Vad tyckte du om förhandsgranskningen?

      ii. Om de inte använde den: Vad var anledningen till att du inte använde förhandsgranskningen?

   (c) Om de använde infogaknapparna: Vad ansåg du om skillnaden mellan sätten att infoga tex @Kandidaten?

   (d) Var någon version lättare att jobba i? Varför?

   (e) Vad tyckte du om att direkt se dina ändringar när du redigerade en fråga?

   (f) Vad tyckte du om att få hjälp från verktyget i form av tips? Saknade du det i versionen som inte hade det?

   (g) Upplevde du att systemet var förlåtande, att du hade kunnat göra fel och enkelt kan åtgärda det?

   (h) Övriga tankar eller åsikter? Allt är bra att veta.

7. Avslutning

   (a) Tacka igen för deltagandet

   (b) Erbjud möjlighet att ställa frågor eller komma med annan feedback (förslag på förbättringar exempelvis)