

***Digital learning for smartphone language applications:  
The use of feedback in an app for Norwegians who want  
to learn Spanish***

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## Abstract

There is an increased interest in digital learning and how technology creates new possibility of combining and presenting different learning techniques. Feedback is a learning technique in traditional learning usually received by submitting a draft or getting a grade. However, digital learning creates space for students receiving feedback to learn along the way while working towards another primary goal. By learning a second language, such as Spanish in Norway, students are not exposed to the language in their everyday life and it is therefore conceivable that they need more help in terms of feedback for guidance. As a learning platform, smartphones give the opportunity for ubiquitous learning, such that you are able to learn anywhere and anytime, and which allows smartphones to be a good platform for language learning. The interaction designer's role is to design for a good user experience when learning and interacting through using a user-centered development process. This study examines language applications; digital learning with a focus on feedback and students needs and wishes for learning Spanish. A survey, interviews and usability testing are used to investigate the users' needs, wishes for learning, motivation and test interaction with an app prototype made based on theory and data presented in the thesis. *State Of The Art* shows that as Spanish is one of the world's most spoken languages (1), it is well represented on the application market with apps such as *Duolingo* (2), *SpeakTribe* (3) and *Busuu*(4). However, what we see is that there is a big variation in the quality of apps, especially when the learner wants to learn from Norwegian to Spanish. Although research available provides guidelines and techniques on how to use mobiles as learning tools, for example by using mobile apps for fitting learning into students' lives outside of classes and providing digital quizzes (5-7), what can be see is that many existing apps have not exploited the mobile platform nor taken into account basic design principles, such as Nielsen's usability heuristics (8), to design for a good user experience. Presented as the conclusion is a prototype of a language learning application showing how interaction with feedback can be used in digital learning, and developed by a user-centered design process including *State Of the Art* and user involvement throughout the development.

## Preface

“I can do all things through Christ who strengthens me.”

Philippians 4:13

This master’s research is the final thesis of a two-year master’s program in interaction design at the department of Informatics and Media Technology at Gjøvik University College. The studies’ aim was to explore possibilities surrounding how students learning Spanish can interact with feedback in digital learning. And, more specifically, to create a prototype for an app in light of existing applications, literature on digital and traditional learning, and a user-centered design process to design for a good user experience. The program has been an educational journey I am extremely grateful for.

First I would like to thank my supervisor, Cristina Sánchez Marco, for inspiration and support. A big thanks to everyone who participated in survey, interviews and usability testing. I will also send a thank you to my family and friends who have encouraged and had faith in me, it has meant a lot.

Gjøvik 1th June 2015  
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## 1 INTRODUCTION

As an interaction designer the aim of developing an app prototype is to enable the users to have a good user experience. This is not something that is guaranteed but can be facilitated for by involving users as early as possible in the process. Accordingly, this thesis first looks at *State Of The Art* (chapter 2), as this gives an overview of what exists on the language learning application market today, what is good and what could be changed. At the same time it gives an insight into traditional learning, how feedback is being used in learning today and how digital learning creates new ways of using feedback. From this and the rest of the process, the users are involved in every decision being taken. This is initially by conducting surveys to find out how learning Spanish happens today, as well as what they miss and get motivated by. Interviews are then used to gather more details about users' needs before creating a proposal for an app that has been tested in usability testing. All in all, this will conclude with showing a prototype of an app for students learning Spanish, where the main focus is to demonstrate the interaction design aspect on how to use feedback in digital learning.

Other types of knowledge the research in this thesis contributes to is; preferred forms of learning among students who are learning Spanish. It also explores the distinction between digital and traditional learning and how feedback can be used in an app. In addition to this it also looks at the analysis of language learning apps currently on the market and how they can be developed in contact with users.

In order to make an understanding of why this thesis is looking at a useful area with a value in researching, this first chapter presents an overview of the problem space. It shall focus on why it is important in relation to shortcomings and errors in existing applications interaction design, interest for digital learning, how feedback is used today and finally presenting research questions to be answered throughout the thesis.



## 1.1 Keywords

Mobile – Spanish – Technology – E-learning – Interaction – Learning – Tools – Students – Foreign languages – Language – Application – Digital learning – Techniques – Traditional learning – MALL – Feedback – Norwegian – Interaction design

## 1.2 Problem Description

There is an increased interest in digital learning and it is becoming a greater part of school education (9). Using technology to teach gives opportunities to combine different ways of learning and to present learning materials in a new way. For example, by using voice and allowing users to say out loud what is written, you could learn to pronounce the words. Other types of learning methods that are used are text, writing, translation, and drag and drop. The possibility to always have the learning tool with you is a good advantage of choosing mobile phones to learn on. Research shows that 81 % of Norwegian people owned a smartphone in the first quarter of 2014 (10). This makes smartphones a good platform to use as a learning tool. In addition previous research shows that mobile learning, m-learning, is a good tool for adapting learning into university students busy lives (5).

As students go to university to learn today, this represents the traditional learning environment. Learning in a traditional environment means that the learning takes place in a classroom located in a building, and among other things consists of a teacher lecturing a large group of students. Feedback is mainly used to guide students after they have submitted a draft, or students who have submitted an assignment are given feedback in the form of a grade to reflect their skills. However, what appears in literature about digital learning is that feedback has an important role for the development of knowledge, the student evolving and motivation (11). (12). But what is important is to present it and apply it in a way that users understand and appreciate.

Moreover, and as previously mentioned, an essential part of developing an app is to arrange for a good user experience (user satisfaction) when it comes to both learning

languages and also when one is interacting with the system. There are many applications on the market that can be used for learning a new language. As Spanish is one of the world's most spoken languages (1), it is well represented on the market. Some of the best apps on the market today are apps that provide the different methods of learning, which were presented in the first paragraph. Among them are *Duolingo* (2), *Busuu* (4) and *Rosetta Stone* (13), and these and other apps will be taken a closer look at later in chapter 2, *State Of The Art*.

But to briefly summarise a bit about current apps, something that is missing on the market today are applications for Norwegian-speaking people who want to learn Spanish. Based on interviews conducted, in the course IMT4601 (Research Project Planning) (14), with Spanish university teachers in Norway, they said that they always teach from Norwegian to Spanish and not English to Spanish. When learning from English to Spanish, it becomes unnecessarily complicated for Norwegians because there are suddenly three languages involved. Apps like *50 språk – 50 languages* (15), *Fun Easy Learn* (16) and *Fabulo* (17) are apps that offer Norwegian to Spanish learning. The main problem is that many of the apps only use one or two learning techniques. By this it is meant that they do not exploit all the opportunities learning on smartphones presents, for example the ability to combine different learning techniques, and they do not focus on speaking (pronunciation), which is a very important aspect of language learning according to my interviewees. Another confusing thing with these apps is that they do not provide an explanation on how to use the app, and this can lead to frustration. Compared to other language learning apps such as *Duolingo* (2), some of the Norwegian apps are missing a good visual design. Furthermore, when it comes to usability heuristics from Nielsen heuristics such as “Consistency and standards” (8) we see that this is lacking in, for example, *Fabulo* (17). For instance, if you are busy with learning an activity and want to go back to the previous page, it will be natural to use the back button, but if you try that in *Fabulo* (17) you quit the app.

Based on the things mentioned here, in these sections, it emerges that there is a need to look at the interaction design in apps, and how to facilitate for a good user experience

when learning languages. Therefore, this thesis will be exploring the challenges of existing tools to learn foreign languages on mobile phones, and based on quantitative and qualitative data propose new ideas on how an app can use feedback for learning Spanish. Because of this, research questions have been formulated (section 1.3) and studied to acquire the knowledge needed to create an app in a user-centered design process.

### 1.3 Research Questions

In order to create a prototype for a language-learning app focusing on feedback it is necessary to find answers to the following questions:

1. How to use smartphones to learn foreign languages?
2. How to design *for* a good user experience on a smartphone language-learning app?
3. How to develop engaging language learning apps?
4. What are the current challenges faced by existing language learning apps?
  - a. How to improve the interactive part of the design of these apps?
5. How can feedback be used differently in digital learning compared to traditional ways?

## 2 State Of The Art

*State Of The Art* describes work that is related to the thesis project in terms of literature that has been written about using mobile when learning, digital learning in general and feedback, how learning happens in the traditional classroom, techniques for learning, and also existing language learning applications (in any language). The section *Competitor Analysis* (section 2.1) looks at what is good and what is missing in today's apps. It is seen how the interaction works between the app and user, how the design influences the feeling of the app, and how feedback is used. Feedback, as it is used today, mainly consists of giving feedback on right and wrong answers. But some apps also provide an overview of what the user needs to practice more on.

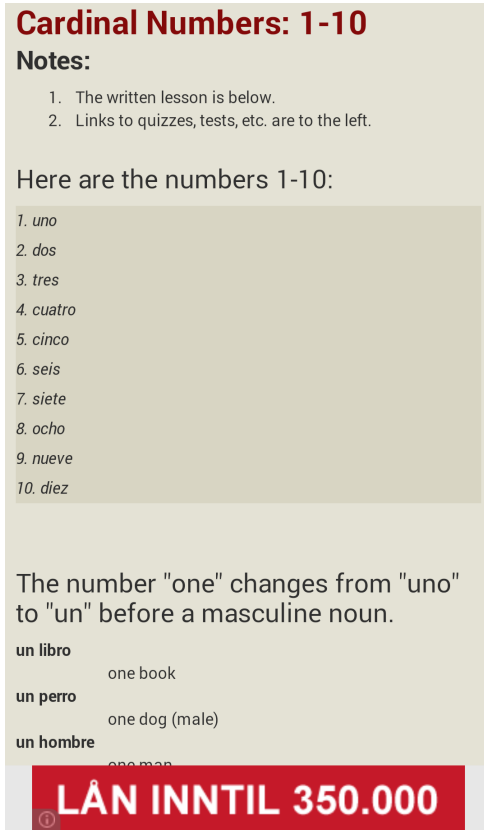
Another important part to look into is *Existing Literature* (section 2.2), which discusses what has been written about learning on mobile, e-learning and some articles that deal with existing apps such as *Duolingo* (2). What is discovered here is partly that there will not be enough teachers to teach all students who want to learn, and that digital learning therefore is very important to meet demand. Another thing that many developers do wrong when they make language apps is to transfer content directly, so that it appears as it would in a book (they think content must look exactly the same, and forget to utilise the digital platform). Others use too many techniques, hiding the content in a sea of fancy technical possibilities. The important thing is to first consider what is desired to be communicated, and then use technology to support and design for a good user experience. The final part being examined in this chapter is *Learning* (section 2.3). This refers to the nature of traditional learning, how to learn another language, and the opportunities digital learning offers with a special focus on feedback. Here, limitations in the traditional environment are exposed, and the means by which digital learning creates space for learning anywhere and bypasses these restrictions are explored. Digital learning techniques such as interactive feedback can be used more actively throughout the learning process, rather than only being triggered by assignment submission. The technology can detect mistakes and encourage change and motivation throughout the

learning process. In this way, students can learn along the way while working towards another primary goal.

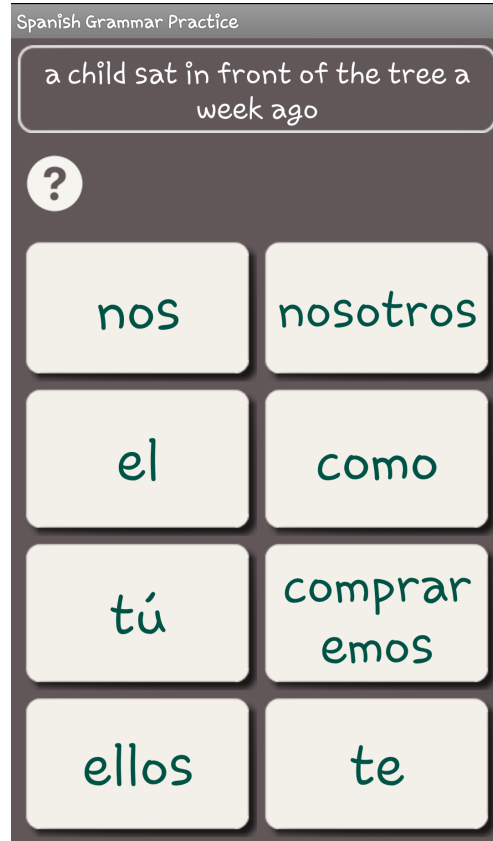
## 2.1 Competitor Analysis

There is an ocean of applications for learning languages on Google play (18). But what is found by searching and examining is that there are a limited number of applications for adults who want to learn a second language. Primarily, many of the applications are targeting children who want to learn. In this competitor analysis, the provision of existing applications will be examined; what makes them good, and areas for improvement. After the competitive analysis there will be a clear overview of what the market has to offer today. This will prevent a prototype that already exists being re-created, but rather will allow existing apps to be used as inspiration. The apps were evaluated mainly on the visual- and interactive design, and the language content that they provide the user. The list of all the applications tested is attached in appendix 1.

By looking at language apps in general and testing them it is useful to divide them into two different categories. This is because the different apps have different goals. The first category has a main focus on grammar; rules of how to use the language in a proper way. In this category there are apps like *Spanish Grammar* (Figure 1), which in Google Play is categorised as an education app (19). The first thing observed about the app is that the design is reminiscent of a traditional paper grammar book. This may provide a bad user experience for users who in the first place are not so fond of learning grammar. It would be good to see it executed in a way that made it more exciting and appealing, and stands out more from the paper book. On the other hand, the app presents a lot of useful grammar topics and is therefore a good app when it comes to content.



**Figure 1: Number learning in Spanish Grammar app**



**Figure 2: Activityscreen in Spanish Grammar Practice Free**

Another educational grammar application is *Spanish Grammar Practice Free* (20). Here, the goal of the app is to let the user practice grammar. This is realised by presenting the user with a sentence, and they have to choose the right tense and build sentences. In figure 2 we see an example of this. What is missing from the app is an introduction and guidance on how to use it. It can be difficult for the user to work out how it functions.

*The Phrasal Verbs Machine* (21) (figure 3) is an app that stand out from the others. What this app does differently from the two other grammar apps discussed above is to visualise the learning by using drawings to illustrate the actions the users should do. The following quote is taken from their description in Google Play: “However, studying unending lists doesn't seem to be the best way to learn and use them efficiently. Phrasal verbs are, more than anything, action. And action must be visual. The more visually stimulating the learning, the better we will understand and assimilate the phrasal verbs.” (21). In terms of content the app does not offer as much content, but the content it does provide it is

explained in an understandable way and is accompanied by examples of how it can be used. When it comes to design, it could be argued that it has not utilised the screen well enough. The app has small buttons and only uses the upper half of the screen while the lower part is not in use. It could also be said that there is a problem with the feedback mechanism, because if the user’s answers are wrong they get a sign that says “WRONG” (figure 4) and an unpleasant negative sound that indicates that the user has made a mistake. When tested, the tester was put off and made to feel stupid when they answered incorrectly due to the strong negative sound. This did not give motivation to continue practicing.



Figure 3: Main screen in The Phrasal Verbs app

Figure 4: Activity screen in The Phrasal Verbs app

In the second category the apps are focused on learning languages in general, and not just on grammar. However, the category may also be divided into several subcategories for apps that focus on vocabulary, pronunciation and phrases. What many of the apps have in

common is that they use different techniques for learning such as voice, text, translation, writing, and drag and drop. For example, by using voice, the user is going to repeat a word or a sentence; if they say it incorrectly, they have to repeat it (figure 5). When using text, the user is supposed to select the missing word or translate a sentence (figure 6). Touch is used by presenting the user with a series of images and a situation, thing or type of person illustrated in one of the images. The user then has to select the appropriate image. Some apps, like *English Conversation* (22), have their main focus on learning to speak, and letting the user listen to a conversation or a story while following the text.

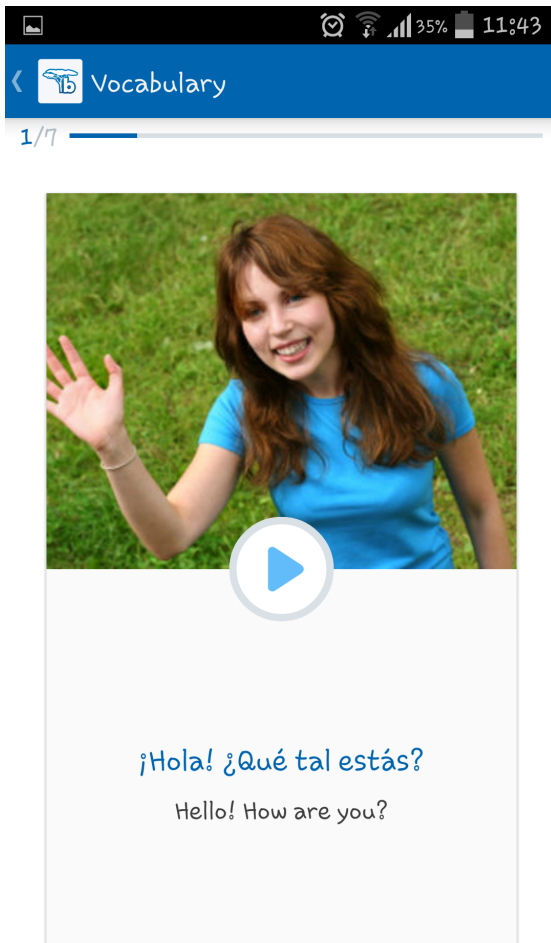


Figure 5: Learning by voice in Busuu

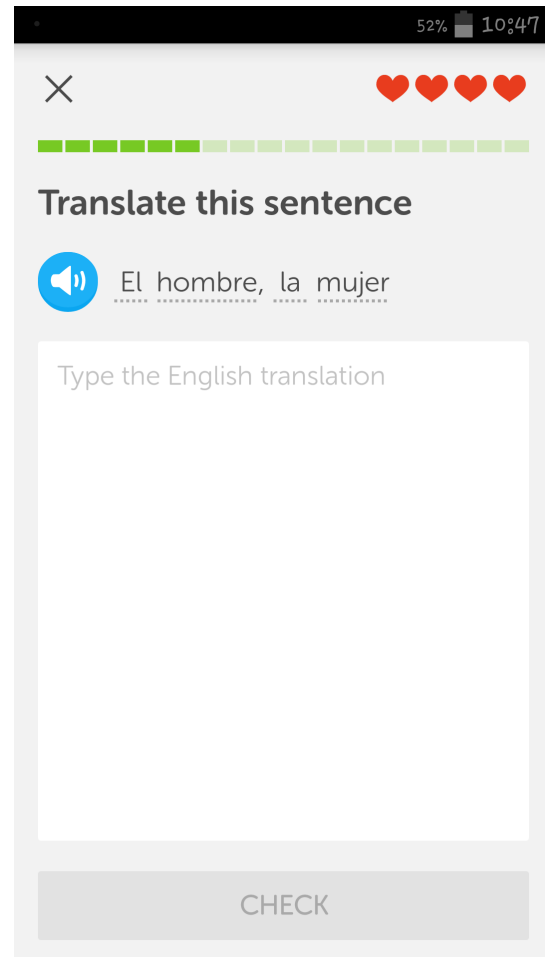


Figure 6: Translating activity in Duolingo

Some apps do not combine different learning techniques and do not focus on grammar at all. One of these apps is *Learn Spanish* (23) (figure 7). The app focuses on vocabulary by



letting you see the words and listen to them, but you do not learn anything about how you pronounce them. This means that you memorise how the words and short sentences are said so you can use them in small conversations. The design of the app makes good use of colour, and is generally intuitive to use.

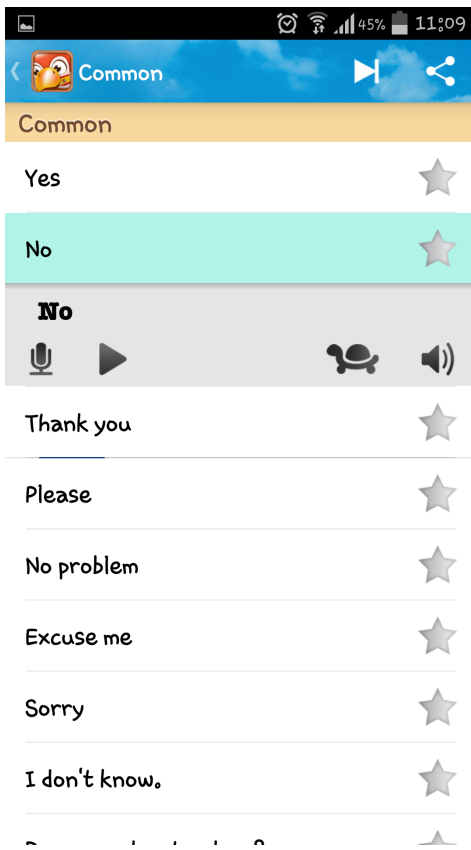


Figure 7: Listening activity in Learn Spanish-Phrase & Words

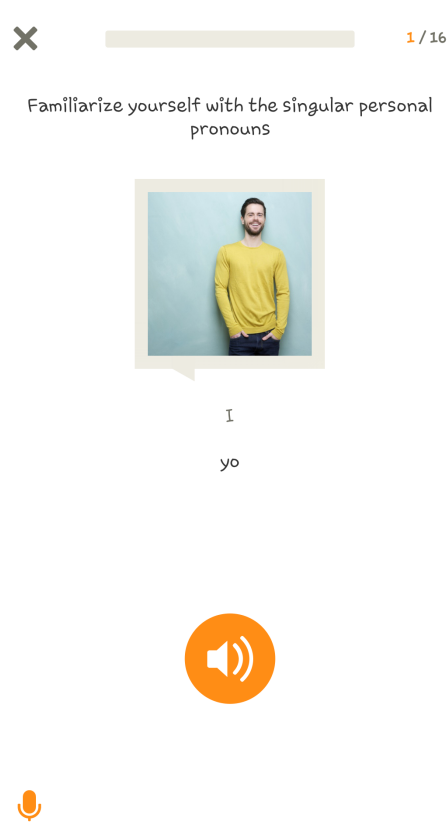


Figure 8: Reading and listening activity in Babel

*Babel* (figure 8) (24) is an app that focuses on many aspects of a language. It lets you practise words and conversations, but also grammar. Additionally, it has different categories of topic to use when learning so the user can choose to learn about things that they are interested in, such as the digital world, food and drink, media, home, and free time. The design is simple and mainly understandable, though sometimes a bit hard to navigate due to the lack of a clear homescreen.

The use of a coach is also something seen in some apps. Both *Learn Spanish with SpeakTribe* (3) and *Duolingo* (2) use this technique. *SpeakTribe* gives the user a coach that guides the user when using the app. The coach is symbolised by a smiley icon, and provides a more personal aspect to the feedback you get. Before each exercise there is a short briefing from the coach. It is formulated as if the activity is something the coach and the user are doing together. This is accomplished by using words such as *our* when referring to itself and the user. In *Duolingo* they use a type of coach or mascot called 'Duo', which is an owl (2). The user does not see Duo that much in the app but after completing an activity he presents statistics on how well you did, and gives a short motivational sentence. In the *Duolingo* shop you can also buy new clothes for Duo with 'lingots' (*Duolingo* money), which are earned through activities.

Apps such as *Duolingo* (2), *Busuu* (4), *Learn Spanish with SpeakTribe* (3) and *Fun Easy Learn* (16) use gamification. They make the users collect something, such as money, hearts or fruit (figure 9&10) during the exercises so that the more exercises you do and the more you answer correctly, the more rewards you get. The money earned can be used to buy things in a store, for example in *Duolingo* you can buy clothes to the *Duolingo* mascot. Or in *Learn English* (25) you can unlock other topics to learn about. This use of gamification is a good way to encourage the user, and can create motivation to earn more points to unlock things. (26, 27)

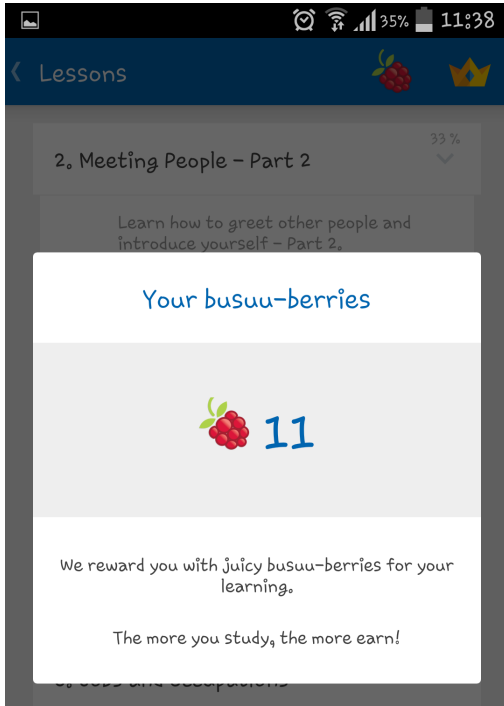


Figure 9: Earning fruits in Busuu

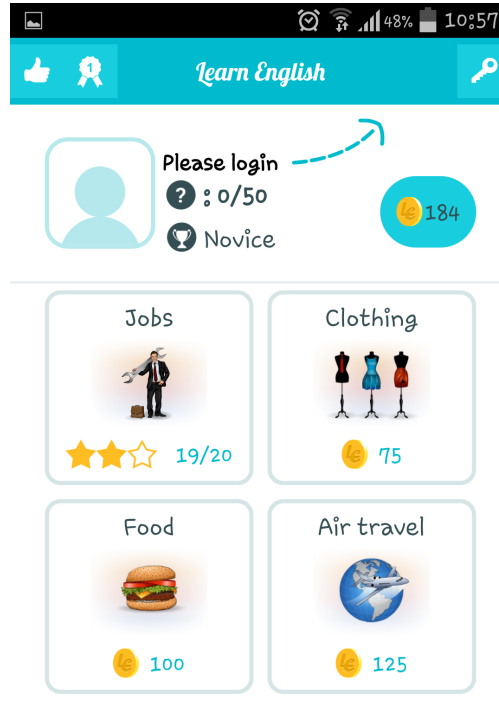


Figure 10: Redeem earned coins in Learn English

Another interesting aspect of some of the apps is that they focus on making the learning more personal, and trying to adapt their content based on the users. Some apps make you answer questions about why you want to learn, how much time you want to spend each day, and also what your interests are. *Duolingo* (2) lets the user set goals for how much they want to practise every day. The app then reminds you of this. Some apps include push notification functionality, periodically suggesting new vocabulary to prompt the user to open the app. This is a good means of user engagement and retention. In figure 11 we see that *Fun Easy Learn* (16) presents three different categories, allowing the user to select how, and about what, he or she wishes to learn. On the first line they can choose the topic, on the second line they can narrow the topic down and on the third line they can choose which learning technique they want to use.



**Figure 11: Main screen in Fun Easy Learn app**

*Fun Easy Learn* (16) is one of the apps that offers Norwegian language but there is also *50 språk – 50 languages* (15) and *Fabulo* (17). *50 språk – 50 languages* offers many different activities and combines many different techniques. The app focuses on grammar, vocabulary and offers listening exercises, but one cannot check for correct pronunciation. It can be a bit difficult to understand how the app works and how activities should be performed when there is no explanation, but in general, most activities are intuitive enough to be understood without help. On the other hand, *Fabulo* only focus on vocabulary and not on grammar or pronunciation. Also, as mentioned earlier during section 1.2 (*Problem Description*), it is very frustrating that the app closes every time the back button is pressed; just one of Nielsen’s heuristic guidelines that it does not adhere to.

Based on the competitor analysis there are four applications that in my opinion stand out from the others in terms of the quality of design, content and the way the users learn. These are *Duolingo* (2), *Fun Easy Learn* (16), *Busuu* (4) and *Learn Languages: Rosetta Stone* (13). These apps combine different learning techniques, and use repetition for the users so they do not forget the things so readily. The design is nice and the explanation for how the app should be used is sufficient. They also support learning the language rather than just memorising some words, or short sentences, like other apps do. The fact that they make learning more personalised and customised to individual interests is also an important strength.

## 2.2 Existing Literature

Looking at existing literature gives the opportunity to get an overview of articles, journals and books that have been written about relevant applications, learning in general, and how technology is being used for learning. There are few articles, journals or books on exactly the same field as this thesis such as providing research on students' needs and wishes, how to design for a good user experience and analysis of current apps (research questions, section 1.3). However, there are some websites which have published critical articles about apps such as *Duolingo* (2) and other language learning apps. A list of relevant literature is also attached in appendix 2. Although some of the literature overlaps, the existing literature can be divided into four main categories. The first is about how we learn in general, and specifically e-learning. For the second category the main focus is how we can use technology when learning, and also emphasise learning on mobile. The third is about the different techniques we can use with digital learning. And the fourth and final category is literature that criticises existing apps.

In their book on e-learning, Clark and Mayer (28) base their guidelines on the scientific theory of how people learn. This makes it a useful book to compare with the opinions of interviewed teachers on the subject (the interviews are presented in chapter 3 *Method*). Together they can help answer the questions on how people learn and what are the best techniques for learning. The book mainly focuses on the use of visuals, audio and text;

from what we have seen in the competitor analysis, these techniques are central to the apps. They also examine pitfalls when it comes to e-learning. This is something that has been discussed earlier in this thesis - some apps do not take advantage of the possibilities of digital learning, instead presenting the content as if it were a physical book. They also point out that excessive use of effects and interaction can disturb the users. Evidently, when designing e-learning systems, a balance needs to be found. Clark and Mayer focus on design for multimedia content that is quite similar to Jacob Nielsen's 10 usability heuristics (8). This approach will be taken when making the prototype.

It is interesting to see how much research has been done on e-learning. In Rory McGreal's book his view is that there is or will not be enough teachers to teach all the people how want to learn, and there will not be enough study institutions to meet the demand in higher education (29). McGreal argues that there need to be new ways to teach using the technology we have, and this is in line with the conclusions of this thesis. We must exploit the technology we have, and the opportunities it offers, so that we can use apps to learn languages. We must understand that a mobile app gives options beyond learning in the physical world. As McGreal explains, teachers want to digitise learning materials, but one can usually not just move it directly. It must be understood that a digital platform offers new opportunities to present content. As observed in some of the existing apps for learning language, they often use monotonous learning techniques and content is presented exactly the same way as in the physical world. For instance, when it comes to grammar, some of the apps appear very similar to a physical book.

The two books which have now been talked about and also this next from Crane (30) are books that amplify the assumptions about the value of a language learning app. But one would be ill-advised to make an app based upon one's own design philosophy, and assume that it will be successful from an end user's perspective. These three books helped by presenting empirical research on what works and what does not when designing for learning with technology. Primary data collected from the target group will be presented in this thesis; it will be interesting to see if there is some difference between these results and those presented in these books. The book *Using web 2.0 tools in the*

*classroom* presents some interesting tools to be used for learning, however the book was written in 2004 which means that some of the information may no longer be appropriate today due to technological advances, like the rise of the smartphone (30).

Articles such as *Twenty years of MALL project implementation: A meta-analysis of learning outcomes* (7) and *Research trends in mobile assisted language learning from 2000 to 2012* (31) provide research on m-learning and MALL (mobile assisted language learning). They support the use of technology when learning, and the data that has been collected supports useful techniques for remembering and learning a language correctly. In general there are many articles on mobile learning, showing how to use mobile to learn language and looking at different learning techniques such as through games, online forums, writing and voice.

Using gaming to learn is something that surfaces both in some of the apps previously examined, and also in the literature. Ryu states that “...learning requires repeated and collaborative interactions in the situated contexts” (32). What Ryu’s study shows is that it is not only when gaming that one can learn language, but also after the game is over when you can discuss the game. In general, using games or gamification could create a more fun way of learning; particularly for people who think it might be a bit boring to learn, techniques within game could help make it a more exciting experience.

Lardinois wrote an article on how *Duolingo* (2) can be more effective than collage classes, and he argues that it only takes a *Duolingo* user 34 hours to learn the same as they would learn in a first semester in college. The challenge is to make the users keep using the app and not give up after a couple of hours, because it can be hard to be self-motivated. *Duolingo* has apparently managed to solve this problem by retaining users, and also competes out other known apps such as *Rosetta Stone* (33). It is possible that they achieve it via a combination of different factors, such as a strong focus on repetition, offering different activities, and providing the users with motivating feedback (34).

It is interesting to consider why current apps have not applied the guidelines and followed the advice from existing literature. Something that is missing from the literature is a focus

upon the users. What the users want. What the users feel is the best way to learn. What this literature presents is mainly the more theoretical view on learning with mobile apps, and not so much the views of users or language teachers. This thesis will combine both theoretical views and also the views of both users and teachers to see what matches, and based on that, an app prototype will be created. Rossing et al. present one of the few studies on users and what they think about using iPads when learning. As the research was published in 2012, it emerges from the results that users were affected by not being accustomed to using iPads, and therefore the user spent more time working out how to use the device than the app itself. The users also responded that they liked using the iPad because it made the learning more active and they did not have to sit quietly and listening to a class but were more involved. (35). So to summarise, what is missing is user involvement and a user-centered process. As mentioned, there are many good guidelines for using mobile as a learning tool, but they lack user integration. This is also something seen in many of the apps on the market today.

## **2.3 Learning**

To be able to create a prototype of an app, one must have an overview of how learning takes place in a traditional classroom and what techniques it is possible to use in digital learning. By looking at other techniques beyond just feedback, which is the main focus, this provides a better understanding of the whole picture. This section will examine language learning and how to learn a second language, including how to measure language skills. It will continue by looking at how traditional learning works in relation to digital learning, and presenting some educational techniques that are different in e-learning compared to learning in a non-digital classroom environment.

### **2.3.1 Language Learning**

Native language, or what is commonly called first language, has a completely different learning approach than a second language. Learning your native language is something that almost happens by itself (36). This is because we are exposed to it from birth. The language is being spoken around us all the time, which enables us to understand and



communicate with it before we can even speak it. On the contrary, second language learning does not happen by itself (37, p. 15-19). What might help the process is if the language is related to your native language. For instance, Spanish is an Indo-European language in common with Norwegian, which can give an advantage compared to languages that originate from a completely different language family (such as Finno-Ugric or Austronesian languages) (36).

### ***2.3.1.1 Second Language Learning***

According to Dahl and Befring (36) there are two different approaches to language learning: informal and formal. Informal learning means that one is living in a country where the language is used, and you are exposed to it on a daily basis. The formal way is what is used in Norway to learn Spanish; this means that courses are taken to learn.

An important part of learning a language is failing, it is about learning by doing. You need to become a child again: “A child mimics people in their surroundings. But it’s not just about imitating. Children are also trying out different ways of expressing themselves and being corrected by others. In the same way, we must also be willing to experiment, make mistakes and be corrected” (36). Learning is about interaction, one cannot learn a language by being isolated, and we need to interact with others to be able to learn the language correctly. (36). This point of view is also shared by Hoff (38, 39) who also adds that learning a language should be made fun by using techniques such as gamification. As this paragraph points out, learning as children will help you learn quickly. How it may be used for adults is to start focusing on pronunciation just like children do when learning their native language. After that it will be good to start learning words and sentences, using repetition, and preferably starting to learn about things that interest the student. After this has been done, the next step will be to start with some basic grammar. This way of learning is based on the article written by Hoff (38).

### ***2.3.1.2 Common European Framework of Reference for Languages***

In Europe there is a common way of referencing which level of language skills one is able to perform at. This is called Common European Framework of Reference for Languages: Learning, Teaching, Assessment, shortened to CEFR (40). CEFR is divided into six different levels, where levels A1 and A2 are about basic users, B1 and B2 focus on independent users and C1 and C2 are the level of proficient user. CEFR is mainly used in Europe but some other countries have also taken it into use; today CEFR is available in 39 languages. (40). For example, CEFR allows students to study a language in Norway at any level, and then resume their study abroad, easily getting into learning at the appropriate level because the same reference is used.

### **2.3.2 Traditional Learning**

Traditional learning is what we call learning that happens in a classroom. It is characterised by four walls, a teacher standing in the front next to a blackboard, and several students sitting at desks. The tools that are in use are typically the blackboard, books, pen, and paper. When it comes to interaction in the traditional classroom, it is mainly a case of teachers talking and students listening (41, p. 1). The teacher may have prepared, for example, a lesson based around a topic, and presents this to the students and they usually take notes along the way. Students may interact in the lecture by raising their hand and waiting for their turn, or the teacher may ask questions or open a discussion. In terms of the actual learning, it is normal that the students read chapters and then have a test or assignment about it. There are small tests along the way throughout a semester, and usually an exam at the end, in which the goal is for the student to remember as much as possible. (12). Students are evaluated by taking exams and submitting assignments, and get grades that are supposed to represent their level in the subject.

The class or lecture is time-restricted, which means that even if a discussion is very active, it will be automatically terminated when the school bell rings and class is finished. Feedback is mainly used in the traditional classroom by assessing the performance demonstrated in assignments submitted by the students, which can be said to be a more

formal way. In some cases, lab classes are offered, in which students can get help from other students who have taken the course previously. This allows students to ask questions and work on assignments, getting immediate help for a short period of time, this can be said to be more informal and spontaneous way of using feedback. Feedback in general can be divided into two where one category is negative feedback that is used to point out things that are done incorrectly. The other category is positive feedback given about things that are done correctly. Traditionally both of these ways of giving feedback is used. It can however be argued that using feedback in both of these ways are perceived differently depending on the individual; some will respond positive and be motivated by negative feedback whereas others might be discourage and vice versa. (11)

Traditional layout is something that changes in digital learning. The concepts from a traditional classroom are still extant in the digital world, but are presented in a new way. As an illustration, the raise of hand in order to ask a question in traditional learning might be presented as a discussion forum, which is a different way of getting help and responses to questions. Another example that shows how the traditional textbook that contains many chapters and topics can be presented in digital learning environment is Wikipedia (42), which is an encyclopaedia written by its users (anyone can write). (41)

### **2.3.3 Digital Learning**

Digital learning entails a learning environment that is not constrained by a room, walls, blackboard, number of students, teacher, desks or a specific location. Every human being is different; culture, society, family, friends, experiences, age, gender, and so on, all shape us. It is therefore obvious that we have different needs and ways of assimilating knowledge. Motivation, concentration and level of skill vary between all students. In traditional classrooms, it is easier for all students do the same ting at the same time. Read the same chapter and do the same tasks at the same time like everybody is equal. We need to adjust this so that everybody can reach his or her goals because everyone is unique. (43). “We need accessible and affordable learning” (29, p. 22)

Regarding digital learning, there is opportunity for more interaction among students and learning material. As seen in the *Competitor Analysis* (section 2.1), many apps have not made use of this. Although we do not have a physical teacher in an app, the teacher's role is still important but it is changing to more a supportive one, as a mentor/coach. The students should be more involved in their learning process and interact with one another in ways such as providing each other with feedback, collaborate and facilitating each others' learning. By the same token, as Kalantzis and Cope explain, even though you might be eager to use technology in your learning it is important not to be overly zealous and use every technology technique available. What is important is first to take a look at what you want the students to learn, and then find out what will be the best technology to help them achieve this. (12)

Though the focus of this thesis in the field of digital learning is feedback for the app proposal, the following sections will look into various techniques that can be used in digital learning. It is important to understand that feedback is one technique that can be changed and used in digital learning, and that a fully-fledged learning app ideally requires focus on several aspects of digital learning.

### **2.3.3.1 Ubiquitous Learning**

If we take away the traditional learning environments and the time restrictions, we get ubiquitous learning. This is learning that is not limited by a place or a time. (12, p. 324-27). In this case, one can learn on a smartphone while on a bus at any time of day, because the learning material is available twenty-four hours a day and not limited to a period of time or place to be accessed.

One of the main reasons why apps on smartphones are a good learning platform is that it can be used anywhere and at any time. It is good to have the opportunity to learn when waiting for things, or doing things such as taking public transport. The reason that a smartphone can be used for this is that the size of the phone is relatively small, and that one does not need books or similar in order to learn. Everything you need to learn is

available on the phone 24 hours a day, 7 days a week. This makes everyday learning easier. An example might be an app that helps you create shopping lists/to-do lists in Spanish. In this way, learning becomes more integrated into everyday life.

### ***2.3.3.2 Active Knowledge Making***

Active knowledge making is about giving the students the ability to create content, rather than repeating that which already exists (44). As an illustration, in traditional classrooms it is normal to read a chapter about a specific topic and then complete a task. But, in a digital classroom, the students can find much more and varied information via the Internet compared to that in a single book. This can allow the students themselves to write the corresponding chapter on the subject rather than memorizing a chapter that others have created. Students are therefore active in creating knowledge.

Traditional curriculum books are very limited in size, and also in level of detail about different topics. There is only so much a book can contain, which means that the learner will probably learn about many different topics, but in very little depth, due to the page limit. This is understandable because we know that in the traditional learning environment one cannot carry plenty of books or have a whole library available for each student. Furthermore, the pressure of needing to memorise what you learn can be quite demanding. The content needs to be memorised because there will be a test in which the students have to demonstrate what they have learned. But can one not learn without remembering everything in a test? Often learners may ask themselves what is the purpose of learning this? Technology or smartphones have a tremendous amount of information available to them and this continues to increase every day. This information is just a search away on the cell phone that you have in your hand, no physical book needed. And it is also possible to read what different people have said about the topic, allowing the student to make up his or her own mind. The Internet also provides broader information, which gives the opportunity for increased variety in responses to a project because the learner can choose what to focus on. Giving the learner more freedom can work as a motivation and creates a more engaging learning process. The students should participate

in the process of knowledge production. (12, p. 330, 44). In *Duolingo* (2), we can see some examples of active knowledge making as the users are translating web sites and information available on the Internet.

### **2.3.3.3 Multimodal Meaning**

Multimodal meaning concerns the shift from traditional literacies to new media tools for knowledge representation. “Learning in multiple ways reinforces knowledge” (45). For instance, this means that part of the learning material can be presented in form of a video, while another may be displayed with illustrations, and a third part can be demonstrated with the aid of a game.

In the traditional classroom, text and speech has been the main tools for knowledge representation, but the digital environment permits use of several tools or modes to promote knowledge. Different modes might be layout, speech, images, text and sound. When using technology, in this case the smartphone, to present information and learning material, there are unique possibilities for the inclusion of different modes to create the content and design for a good user experience. As seen with existing applications (*Competitor Analysis* section 2.1), some of them use only text, and that would be more of a traditional way of representing knowledge. But some apps used different modes, images in particular were frequently used to visualise the contents and support the text. More variety helps us reinforce the meaning of learning. (12, p. 329-30)

### **2.3.3.4 Collaborative Intelligence**

Collaborative intelligence can be described as improving each other in terms of the final result, but also enhancing the learning along the way. It addresses how the digital environment creates the possibility of peer-to-peer learning or collaborative learning, in contrast to traditional learning that focus more on individualised learning. (46)

Regarding apps, it is also possible to use collaborative intelligence for learning languages. For now, there are not many apps focusing on this, but there are some which

include some elements of it. From the *Competitor Analysis* (section 2.1), *Duolingo* (2), for instance, includes some functionality that can be classified as collaborative intelligence. It gives users the opportunity to compete with each other, which constitutes interaction among users. Also, by translating information and websites, *Duolingo* is exploiting collaborative intelligence. Collaborative intelligence is also about students using feedback among themselves (feedback is something that is being looked at in section 2.3.3.6). Maybe it also involves a kind of motivation when you are dependent on others to learn. It sets requirements for students to participate. Together they can make each other stronger, or as Kalantzis and Cope put it: “People working together, learners working together, are able to solve problems, and be much more creative with any particular set of tasks than someone simply working on their own.” (12, p. 330-32)

#### **2.3.3.5 Differentiated Learning**

Differentiated learning is about adapting what is going to be learned to each student’s needs and interests. It deals with the shift from one-size-fits-all curricula to the paradigm that all learners are unique, and thus do not have to be learning the same thing at the same time or make similar progress. (12, p. 332-33)

Synonyms for differentiated learning are customised or personalised learning. It is basically a way to motivate students by meeting their interests and learning styles to reach them with what it is desired for them to learn. This can be implemented in an application using some of the measures that we have already seen in existing apps, including providing the users with choices so they can select both what they want to learn and how they want to learn it. In the traditional classroom it is more common and easier that all the students learn about the same thing and by the same means. But the facts are that we all are different and use different amounts of time to solve tasks, and progress at varying speeds. Digital learning can allow students to progress at their own rate, and lets them get a little extra help where necessary. At the same time people who learn more quickly can move on. In this way it becomes easier to meet everyone’s needs. (12, p. 332-33, 47)

### **2.3.3.6 Feedback**

Feedback is about assessing what you are doing right and wrong and at the same time getting pointers about how proceed to reach new heights. “It matters in all we do that we have some understanding on how we progress and how powerfully we are making meaning in the way that we intend to make it” (48).

Aside from the literature consensus on the value of feedback, the reason this thesis focuses on how to use feedback in an app is that both survey (section 4.1) and interview (section 4.3) revealed that this is something users really appreciate when learning. Users think it is important for them to get feedback both when they do things right (positive feedback), because it motivates them, and when they make mistakes so that they learn (negative feedback). Another important aspect of it is that they generally want an overview of how they are progressing during the learning process.

In order to understand how feedback can be used in contrast to traditional learning, Kalantzi and Coop (12, p. 327-29, 48) present new ways of utilise feedback in digital learning. Using feedback from multiple sources and perspectives is one of the most important points. This means that one should engage more people to give feedback than just one teacher. In particular, feedback should be provided by peers, students themselves, instructors (teachers in the traditional classroom) and experts. Learning is not just about making steps forward all the time. It is also about making mistakes and learning from them. But what is important is to provide users with systems that help them rectify mistakes on the spot instead of long after the error has been made. Feedback in an app can be used to document and provide an overview of what users are good at and what they need to work on.

In a more traditional context, feedback is used after the fact when working on individual assignments because there is no continuous appraisal of the work. But in an app, the technology used can discover the mistakes immediately they are made, before proceeding help you fix it or work towards a solution. If it is more complex, without waiting until a teacher has read the whole paper and then provided feedback. Also, in a traditional



classroom where there are 30 students working on a task and only one teacher, it is not possible for the teacher to be present for each of the thirty students at the moment they need help. Therefore, if a digital tool such as an app is used in class, it will provide relief for the teacher and it can be used outside the school to meet students' needs for feedback. But providing feedback during the process of creating content (such as an assignment) is also a learning opportunity, and one that should be seized. The idea is that if feedback is being utilised, it can be a powerful tool for improving learning, and benefits for students.

More specifically directed towards applications, most existing apps on the market today in some way use feedback. The main way they do this is to provide a green colour or a sound that the users associates with a positive outcome if they do things right. When they have the wrong answer they get a red colour or a sound that is associated with something negative. Part of what is seen to be very important about feedback is that it needs to motivate the user rather than leaving them feeling stupid, depressed and wanting to give up. This kind of negative effect of feedback is something which was discovered in the app *The Phrasal Verb Machine* (21) from *Competitor Analysis* in section 2.1. *Duolingo* (2) is one app that gives encouraging feedback along the way. Another thing they do is to provide additional training on what they call *weak words*. These are words that users have made some errors with during the various tasks. What is lacking from this way of giving feedback is that it should be possible to correct the errors as soon as one made it and not long after. The interviews, survey, and literature agree that it is desirable that one gets an explanation of what was mistaken.

All in all, feedback is used in the traditional classroom primarily by delivery of a draft and receipt of feedback on it or, submission of a finished assignment and receipt of feedback in the form of an assessment with a grade. However, with digital learning tools such as apps, the possibility of an extended version of feedback is opened up. This includes the ability to have an overview of the user's progression, use of colour and sound as a means to illustrate the right and wrong responses. And also distributing a feedback system between different sectors such as peers and experts, the ability to detect

errors as soon as they occur, and discussion forums where users, and possibly some experts, have conversations concerning difficult issues and challenges.

## 3 METHOD

This chapter provides an overview of the methods that are used to collect data about the users' needs and wishes. They have been applied to collect both qualitative and quantitative information. The first method presented is *User-Centered Design Process* (section 3.1), which shows more detailed information about how the user-centered development process, mentioned in the preceding chapters, works. The three further sections *Survey* (section 3.2), *Interview* (section 3.3), and *Usability Testing* (section 3.4), are structured so that first is presented how the method works and why it was chosen, followed by a description of how the method was used.

### 3.1 User-Centered Design Process

The design process is a user-centered process, which means that it has four basic activities:

1. Establishing requirements
2. Designing alternatives
3. Prototyping
4. Evaluating

These four activities are not steps you tick of and then proceed to the next activity, but you go back and repeat them during the process to make sure you have the user in focus following each iteration of your design (43). The first point, establishing requirements, was accomplished through several steps in this thesis. Firstly, by gaining background knowledge of the *State Of The Art* (chapter 2), and then by using a survey and some interviews for confirmation and to involve users. Then design alternatives were developed using interviews before making a proposal for a prototype. The last step in this thesis user-centered design process was the evaluation in terms of usability testing, where the interaction design of the prototype was evaluated and changes were made based on that analysis.

## 3.2 Survey

The first method used was a survey. This is because, compared with other methods, a survey allows the collection of a large number of responses quickly, which helps getting to know users and thereby starting with a user focus early (49). Another important reason to use a survey early in the process is that after testing different existing applications there was a desire to ask people in the target group what they thought about different techniques. This would help make the choice to take a technique further or argue that the technique is not appropriate for the users. By presenting different techniques in the survey it provided a lot of responses quickly and this gave the opportunity to go further in focusing on what users were interested in. It is also easy to send the survey out online, which helped to reach language students from around Norway. To get an overview and to be able to rely on the answers it was hoped to receive approximately 40 replies. The aim of this survey was to collect quantitative data on the needs and behaviours of smartphone-equipped Norwegian adult students, specifically regarding the learning of Spanish as a second language and their familiarity with existing apps.

### 3.2.1 Conducting The Survey

There were a total of 31 questions and approximately five of them were voluntary to answer. The survey was sent by email to six universities and colleges in Norway with a small text explaining the purpose, a request to have it sent out to students studying Spanish, and a link to the survey. The survey was reported to NSD (Data Protection Official for Research) because Google, the survey tool provider, may collect personal data such as the IP-address. In general the survey is anonymous and the only data collected that relates to the person is the gender and age. In the results of this survey their location, name, what level they study at, or the university they are attending is unknown. In appendix 4 the whole survey is attached. The questions were divided into four categories of questions.

The first category was about the use of the telephone and contained three questions. The aim was to get an overview of how they use their phone, what they use it for, how often they use it and when they use it.

As for the second part, the goal was to get an insight into how they learn language. This section featured ten questions. Questions that were asked were about different learning techniques and what they thought about them. For example opinions were sought on learning techniques such as translating assignments, visualisation, personal learning, and writing assignments. This section also shed light upon how much time they were willing to spend on learning in a day and in a week. Some of the questions were as follows: “If you could choose, what would you rather focus on when learning the language?” (Q8). “Would you like that you were reminded that you must remember to practice the language?” (Q13). “When learning, do you prefer assignments where you should write text?” (Q7).

The third category was about existing language learning apps. Here, six applications were presented (*Duolingo*, *Busuu*, *Rosetta Stone*, *50 språk – 50 languages*, *Fun Easy Learn* and *Fabulo*), and they were asked to grade their familiarity with them. In this section there were also two open voluntary questions asking whether they had used some other tools to learn Spanish, and if they had used any apps, what was their opinion on them.

For the final category, the aim was to find out more about their motivation for learning Spanish. Questions about why they want to learn, what level of skill they wanted to achieve and if they take initiative to learn outside of the course were asked. At the end there were two open voluntary questions again, asking about what they think is the best thing about learning Spanish, and what is the most difficult. The results from the survey are presented in section 4.1.

### **3.3 Interview**

Interview is a good tool to use to get to know the users better by finding details about what they think is important when learning and using technology. For this purpose it was decided that qualitative interviews would be the best way of gaining such knowledge. Even though there are different ways of conducting interviews, the choice of a semi-structured interview format was made for language teachers and language learners (users). The reason for this is that semi-structured interviews give the opportunity to ask both closed and open questions, as well as leaving room to ask for clarification and add questions, because you only have a basic script for guidance (50, p. 189).

Two different types of interview have been conducted with different target groups. One interview type was aimed at Spanish language teachers (section 3.3.1) and the other was oriented towards students at universities and colleges learning Spanish in Norway (section 3.3.2).

#### **3.3.1 Conducting Interview With Language Teachers**

As preliminary research it was in course IMT4601 (Research Project Planning) (14) conducted semi-structure interviews on Norwegian university teachers learning Spanish to students. Contact was made with two university Spanish teachers and interviews arranged with them, one on one via Skype. The aim of these interviews was to get to know how teachers teach Spanish in schools today, and also to investigate the use of technology. Another wish was to get some input on how teachers perceive the motivation of students, and how they structure the study. Each interview started with some explanation about the research for the thesis and some pointers about what the goal for the interview was. Then there was a section with general questions about which university degree they are a professor of, what level of Spanish they teach, and the goal of each course. After that there were some questions regarding what type of students they have in their classes, age, background knowledge and goals. For the main part of the interview, the conversation was about the structure of the course, what the program contains and what learning techniques they use in class. Finally were questions about the

use of technology in class. The interviews concluded by thanking them for their time. All the fourteen questions are attached in appendix 3. The results from the interviews are presented in section 4.2.

### **3.3.2 Conducting Interview With Language Learners**

To get more information from students studying Spanish at universities and colleges in Norway, semi-structured interviews were conducted to get qualitative data.

The goal of these interviews was to get a deeper insight to the users' needs and to be able to start on a prototype based on the interviews. What also was desired was the opportunity to ask students about things from the survey to get some deeper information and to be able to ask questions about things that might have been surprising from the survey results. Contact with relevant interviewees was made in the final survey question asking whether someone was interested in participating. 11 participants were contacted and five of them participated in the interview. Google Spreadsheets (51) was used to coordinate the interviews with the available time slots. The interviews were conducted in Norwegian using Skype (52), and, with the approval of the interviewee, the sound was recorded using QuickTime Player (53) and transcribed afterwards.

All the interviews started off with an introduction of the project and an explanation about the purpose of the interview, the interviewee's rights to not answer or withdraw at any time, and confirming whether it was okay to record the sound. Then it continued with some questions in relation to the study, such as the students' goals, what they find difficult, learning techniques, the use of CEFR, and how their study is structured. In the second part, the goal was to ask about the recent use of language applications. They were asked whether they had used apps or not, and then some follow-up questions for each on the different answers. For the last section, the questions were formulated so that they indirectly were aimed towards techniques or functionality that could be used in an application. Topics such as grammar, motivation, time, and visualisation were discussed. All the twenty-one questions are attached in Appendix 5. After the interviews were

conducted they were transcribed and translated into English. The results from the interviews are presented in section 4.3.

### **3.4 Usability Testing**

After making a prototype based on knowledge gained from the literature, apps, survey and interviews, the next step was to prepare questions and tasks to constitute a usability test for use on the prototype, focusing on feedback. Usability testing is central to a user-centered design process because it is important to interact with the users and get feedback on the design and their general thoughts on a product, in this case an app. Usability testing consists of both providing users with tasks so they can test a product, and can also be combined with questions to explore the user experience. (49, p. 229). In general, the goal of the usability test is “to test whether the product being developed is usable by the intended user population to achieve the task for which it was designed” (50). There are many different types of usability testing. For instance, you can test everything from a paper prototype to a nearly finished product. Additionally, some of the tests are expert (expert-based testing), which means that the people participating are interface experts (49, p. 476). As this is a user-centered design process, the decision was made to undertake user-based testing. User-based testing is something that can be done at any time during development, and is recommended to do at an early stage when it is easy to make changes based on the outcome (50).

The making of the prototype is documented in section 5.3. The prototype was interactive and presented on a smartphone to get the most realistic scenario possible. Furthermore, as the product is an interactive app, it was important to test its interactions as well as its structure, and therefore the prototype was a high-fidelity prototype (49, p. 395). Based on the usability testing, it is intended that there will be changes made in the prototype and a final prototype version created. This will be a concrete result in the thesis, demonstrating how to use feedback in a language app.



### 3.4.1 Conducting The Usability Test

To find usability problems (accessibility, user-friendliness, ease of use) in the prototype, a user-based usability test was conducted. There are different opinions on how many users one needs to include, because it depends on various factors such as how large your user group is, and that you do not know how many interface flaws may exist. But it is said that if you have five users it will reveal roughly 80% of the usability problems, so five users were enlisted for the test. (49, p. 477, 50, p. 263). When it comes to the usability test location, it was preferable to meet the users in a place that was natural for them and not in a fixed laboratory. This means that the test was performed in cafeterias, at home, and in group rooms where they were in familiar environments. Both the survey and interview conducted earlier had been targeted towards users studying Spanish at universities today. However, since the usability test was dependent upon observing users while they used the applications, it required obtaining users that it was possible to meet face to face. So the users tested are not studying Spanish at universities today, but are either learning Spanish at a language school, or have learnt Spanish from lower secondary school and secondary school. The usability test was divided into three main sections, outlined below. The full usability guide is attached in appendix 7.

The first part was the introduction. This is where the purpose of the test was presented, along with a description of the thesis. It also presented the rights to anonymity and to withdraw anytime. The users were asked to think aloud, and they knew that they were being observed and that notes were being taken.

The main part of the test consisted of assignments, which contained five sets of tasks to be performed by the user. This was the part where they looked around the application. Each task contained questions about what they were thinking, what things meant, and what they thought would happen next. For example, one of the tasks was to find the activity *Følelser* (Feelings) and learn about it. Sub-questions for this part were: “How do you think the task works?”, “What do the blue words mean?”, and “What response do you expect if you answer incorrectly?”. Another big part of the questions and test was to

point at different icons and asking what it would show or what it meant. Some of the icons and functionality that were presented are shown in figure 12.



Figure 12: Some of the icons and functionality that were presented to user

The last part, *Afterwards*, was a part where they got questions about the use of the app and the experience. Questions that were asked were: “How did it feel to use it?”, “What could have been different?”, “What was good about the prototype?”, “What was bad about the prototype?”, “Name one thing that can be changed.”, “How difficult do you think the tasks you got were?”, “Were you distracted by getting comments along the way?”, and “What impression are you left with?”. The results of this usability test are presented in section 4.4.

## 4 RESULT

This results chapter presents all the data that were collected using the methods that are described in the previous chapter (chapter 3). Since this is data gathered from users (and language teachers), the answers are important in terms of making choices for the prototype, and justification for including and excluding functions and design features. *Survey Results* (section 4.1), includes responses from 51 participants. Briefly, it appears that the phone is used evenly throughout the day for communication, students think one of the best parts of learning a language is to achieve mastery, and few have heard about or used existing apps. The *Teacher Interview Results* (section 4.2) provides an insight into how language learning works in the traditional classroom today. There, among other things discovered was that while it is rarely mandatory in courses, the best way to learn is to be in a country where the language is used, and that there is minimal use of digital tools.

As for the *Language Learners Interview Results* (section 4.3), where there is a more detailed insight into the students' needs and wishes, it emerges that more people are taking initiative to learn beyond that required in school, learning quickly is more important than learning perfectly, and as much feedback as often as possible is appreciated. The last results presented in this chapter are *Usability Testing Results* (section 4.4). These are results that refer specifically to the prototype, based on whether it was understandable in terms of what could and couldn't be touched/swiped/tapped (interaction), and what the meaning is of various actions. Some of the responses suggested that the prototype was easy to understand, straightforward, good that users can correct and learn about mistakes when they occur, and that there was good feedback on right and wrong answers. Some changes that were suggested included that it could be easier to locate the home screen, more swipe functions would be appreciated, and some design changes were proposed.

## **4.1 Survey Results**

When it came to looking at the results from the survey, a descriptive analysis was carried out. To analyse the results SPSS (50) was used. This is software for advanced statistical analysis of large datasets. The summary of responses that Google forms provide was also used. In total the survey got 51 responses: 12 man and 39 women. The age varied from 19 years to 55 years, but 82% of the responders were 24 years or younger. Below, the results are presented under the categories used in the survey.

### **4.1.1 Mobile Use**

68% of the respondents use their phone from around two to three hours or more on a daily basis. 40 participants, the majority, use their phone evenly throughout the day. Next we have evening phone use, which got 10 replies. It is important to remember that this was a question where respondents could give several answers. The next question also had the opportunity to check off several alternatives. Figure 13 shows results for Q5, which shows that two participants did not say that they use their phone for communication purposes. Generally using the phone for communication (96%), listening to music (84%) and social media (80 %) is the most common use of the phone. To watch movies (4%), read books (4%) and play games (18%) are the least used areas on the phone.



Figure 13: What do you use your phone to?

These results indicate it may not be a good idea to provide users with tasks with a lot of video or reading. On the other hand, it could be good to take advantage of communication, social media and music; all popular things to do on a smartphone. Another thing we know now is that the audience has no marked preference on the time of day they use their phone. This evidence supports the view that smartphones are an accessible tool to use as a learning platform.

#### 4.1.2 Language Learning

Questions presented in this section are able to provide answers that should be taken into account in an app as they refer to user learning preferences. 46 participants think it is useful when learning to translate text from Norwegian to Spanish and vice versa. 94% of the participants responded with yes, that they like to write text when learning, or with yes, but not too long texts. When looking at whether they would like to focus on just writing or talking, 86% of the participants preferred to focus on both writing and talking when learning the language. Figure 14 and 15 show results about visualisation and

everyday learning. 43 of the participants (84,3%) would like to have visualisation in their learning; moreover 43 participants would like more personalised learning. 73% would like to be reminded that they should practice the language, whereas 16% disagreed. With regards to having a mascot or mentor to encourage them when learning, 69 % said yes or yes just as long it is not too much, but 22% said no and 10% I don't know. 94% said that they would like that the way they teach and the content of what they learn to relate to their everyday life.

**Ville du likt at det du lærer blir visualisert?**

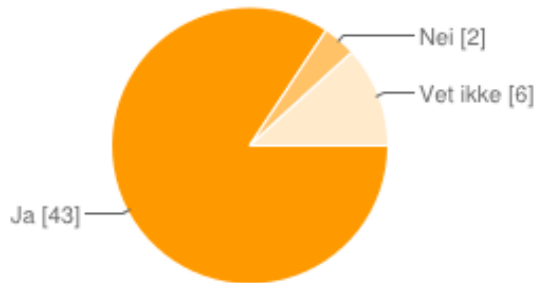


Figure 14: Question if you would like that what you learn is visualised

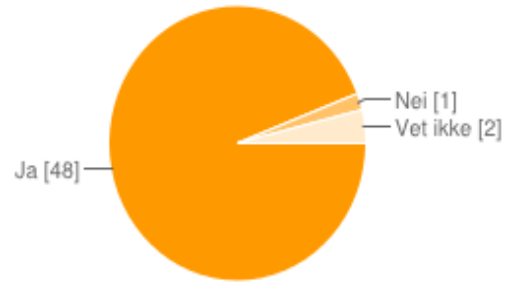


Figure 15: The result from the question if users would like that the way they learn and what they learned could relate to their own life

Regarding how much time students are willing to spend on learning per week, 55% are willing to spend one hour or more in a day to learn the language. 45% are willing to use half an hour or less and only 2%(1 participants) are willing to use 10 minutes. Figure 16 shows the graph for Q11 and illustrates that 24% are willing learn the language 7 days a week; 24 % are willing to learn 5 days a week, and that 80% are willing to use 4 or more days to learn the language in a week.

### Hvor mange ganger i løpet av en uke er du villig til å lære språk?

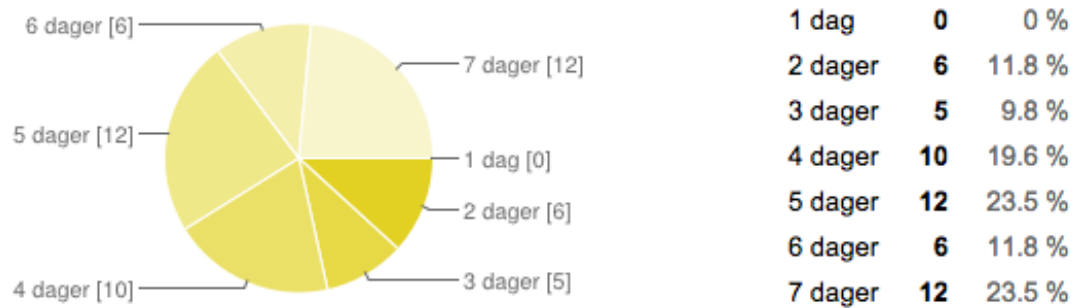


Figure 16: Question about how many times during a week are they willing to learn Spanish

For the most part, these answers provide specific actions that can be used differently or included/excluded in an app. This means that among other things, we see that users prefer visualisation and that they have a desire for more personal or facilitated learning. At the same time the results show that users are willing to engage in language learning several times a week for around 30 minutes, or more, each day. This shows that users in general want to spend a fair amount of time learning.

#### 4.1.3 Existing Applications

In the section on existing applications, students were presented with a selection of apps from the *State Of The Art* section (chapter 2). The results from two of the apps, shown in figures 17 and 18, show that 67% of the participants have heard about, or are using *Duolingo* and that 33% have not heard about it. 90% have not heard about *Busuu*; 76 % have not heard about *Rosetta Stone*, which is generally considered to be one of the most famous language applications on the market today. 96% have not heard about *50 språk – 50 languages* which provides Norwegian language; 90% have not heard about *Fun Easy Learn*, which also provides Norwegian, and 94% have not heard about *Fabulo*, which is the third app offering Norwegian that was looked at in the *State Of The Art* chapter. In the open text question asking if they have used something else than the apps mentioned, some replied *Babbel* (2 replies), *Memrise* (1 reply), *UTalk* (1 reply), *tritrans* (1 reply). Four respondents also mentioned translate programs such as *Google Translate*. The response to using *Duolingo* was generally favourable, but that it was maybe best suited to

beginners. There was however some negative feedback: too much focus on singular words, and a slow progress rate compared with how fast users learn. There were also bugs in the speech functionality: the app seemed to give both false positives and false negatives. In addition, the app should present grammatical structures before they need to be used, and too much repetition can make progress slow. There could also be more long sentences. In short, the main flaws are the slow progress rate compared to how the user feels that they are progressing, resulting in the feeling that it fits beginner level best.

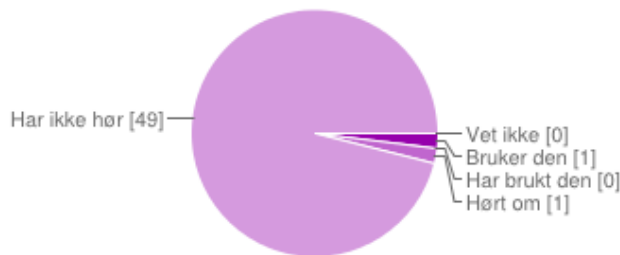


Figure 17: This graph shows that there are 49 students who have not heard of the app 50 språk - 50 languages, which offers Norwegian language

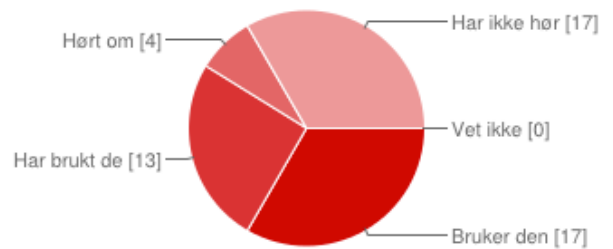


Figure 18: Here we see that there are some more students that have heard about or used Duolingo compared to ex. 50 languages

What was interesting about the results in this section was how they showed a general lack of knowledge of current language apps among the participants, as even the apps that are categorised as most known on the market are not known to students. It is clear that *Duolingo* is the app that is most used or known among those presented, but despite this, there are 17 participants who had not heard about *Duolingo* either.

#### 4.1.4 Motivation For Language Learning

When participants were asked why they wanted to learn Spanish, the answers were distributed, amongst other reasons, between becoming a teacher, travelling, for fun, for work, and interest in the culture. Figure 19 presents the different language levels they wanted to achieve. What we can see is that 25% want to achieve the highest level (C2) in the CEFR, 35% want to achieve level C1, 29% want to achieve level B2 in the CEFR and that 10 % want to achieve level B1 in the CEFR.



### Hvilket nivå ønsker du å oppnå med spansken?

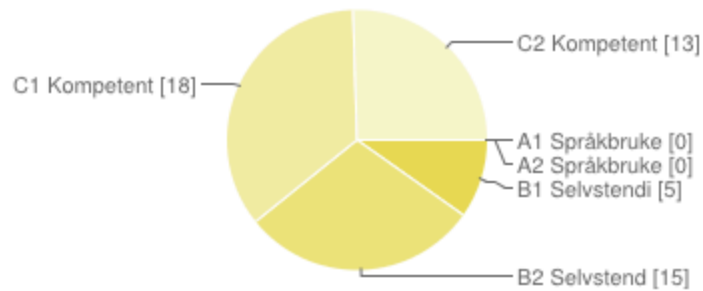


Figure 19: The different CEFR levels and what the students want to achieve

Whilst 75% take initiative to learn more than is compulsory in the subject, 25% responded saying either they do not do this, or rarely. While 45 % of the participants said that they need monitoring/follow-up to undertake a language learning process, 43% said maybe. 88 % said that they would like to be in contact with a Spanish speaking person to practice communication. Within this, 41% wished to practice speaking, 6 % wanted to practice writing, and 39% would like to do both.

Moving on to the responses about the best worst parts of learning Spanish, grammar is definitely the thing that most students think is most difficult. Some also say that it takes too long to get to the level where they can speak meaningfully. The sense of empowerment is something positive that several participants mention. Some said that when they are able to use the language in Spanish speaking countries, it grants them opportunities. Another good thing respondents reported about learning Spanish is the feeling they experience when they discover that they have made tangible progress.

Table 1 is comparing the different CEFR levels with how long time they are willing to spend on a daily basis and how many days a week. B1 level is willing to use between 30 minutes and one hour a day to learn and between 6 to 7 days, but closer to six days every week. B2 level is also willing to use between 30 minutes and one hour a day to learn and between 4 and 5 days but closer to five days. C1 level is willing to use between 30 minutes and one hour a day to learn and between 4 and 5 days but closer to four. C2 level is willing to use between 30 minutes and one hour a day to learn and between 5 and 6 days a week but closer to five. What we see in these results is that there are no big

differences in the amount of time a person with B1 goals and C2 goals are willing to spend on learning. Nor is there a significant difference in the number of days they are willing to utilise. But we do actually see that a person with B1 goals is willing to use more days a week than a person on a higher language level.

Level	Time per day	Days per week
B1	30-60 min	6-7 days
B2	30-60 min	4-5 days
C1	30-60 min	4-5 days
C2	30-60 min	5-6 days

**Table 1: Comparing CEFR levels with how long time a day and days a week students are willing to learn**

The next two questions were about whether people like to be reminded that they should practice the language, and if they feel that they need monitoring in order to complete a language learning process. The results show that five participants answered no to the first question but yes to the second question. Generally speaking, as has been seen in the statistics provided earlier in this section, participants are interested in having some supervision when learning.

#### **4.1.5 Conclusion And Summary**

Overall, the results from the survey show that students in the target group are using smartphones throughout the day, mainly for communication, music and social media. Another important point is that the participants have a desire to achieve the high language levels and are also willing to use several days each week to attain their goals. It is conceivable that this has a correlation with motivation. What is seen is that when students feel a sense of empowerment stemming from being able to use the language, it gives them enthusiasm. Conversely, meeting resistance from grammar and other linguistic rules creates an adverse environment for learning. All in all, the results provide confirmation of what was anticipated based on application testing, interviews with teachers, and literature studied. Therefore the results can justify inclusion and exclusion of various techniques and functionality in an e-learning language application. This can be exemplified by the fact that students are using the phone on a daily basis, and have it with them throughout

the day; it can be argued that the mobile phone is actually a learning platform where learning can happen anywhere and any time. Another example is that students do not use the phone very much to watch videos and read books, and it can therefore be assumed that apps including too much of these types of content will not appeal to users. Something else salient is that users desire to learn both speaking and writing, thereby making it clear that it is important to not only focus on writing, as many existing apps do today (section 2.1). It is also seen that students appreciate supervision (feedback) by the teacher. A last example of how the results of the survey can be used to justify inclusion of something in the app prototype is the response regarding visualisation. From the results it emerges that it is appreciated if content to be learned is visualised. In other words, this is a specific feature that can be included in a language learning app.

#### **4.2 Teachers Interview Result**

Some of the main points of note from these results are that both teachers interviewed use the Common European Framework (54) as criteria to measure the level of language skills in students. From the teachers' knowledge of the students, most take the course either to become teachers themselves, to learn more about Latin America, or to be prepared for travelling. The teachers use different learning techniques such as analysis of text, writing, answering questions, listening to songs, gap-filling exercises, and reading, but spoken communication is most important for learning the language. One of the teachers said that it is more difficult in Norway than a Spanish-speaking country to get the students' spoken language to a high standard, while it is easier to tutor them in written and grammatical aspects of Spanish. Both teachers agreed that the best way to learn a language is by travelling to the country and talking to people for whom it is a native language.

There are no mandatory lectures but there are a lot of lectures provided. A semester normally consists of 13 weeks, and from four to nine hours a week at the lower levels. The reason there are many lectures is that foreign languages require practical courses, so they need more time than other disciplines. There is minimal use of technology in the classroom. Neither of the Spanish teachers use much technology, but sometimes use

videos, either with exemplar Spanish speech, or Spanish subtitles, because this is a good way of learning pronunciation and facial expressions. Applications are something that neither of the two teachers have used, or know much about. One of them thinks that the students do not use tools as apps or the Internet for learning. The other one has looked at some apps but thinks that it is not good that you have to pay for them, feels that there are no perfect apps available, and finds that the vocabulary in the apps differs from the Spanish speaking area the app is focusing on.

Something that stands out from the results from the interviews is that both teachers are clear that it is challenging to learn Spanish, and that the students need time to learn it. Therefore, it is strange that there are no compulsory lectures, which most likely is because it is higher education and it is more normal that students have responsibility for their own learning. Also what emerges is that there is little use of technology and that this might be because of lacking technological knowledge among the teachers. Finally, it should be mentioned that both Spanish teachers make it clear that the best way to learn the language is to speak it, and preferably use Spanish in everyday life. This fits very well with the everyday learning that was found to be desired by the students in the survey (section 4.1).

### **4.3 Language Learners Interview Result**

Results from these interviews shows that no personal data were collected about the interviewees; the only things that were recorded about them were their confirmations that they were actually studying Spanish, and since they participated in the survey it is possible to infer that they have an age between 19 and 55. Of the five participants, two of were male and three were female. What follows is a presentation of the results divided into the three categories of question described earlier. In order that interviewees may be differentiated for discussion purposes, they have been assigned numbers 1 to 5.

### 4.3.1 In Relation To Your Studies

A student's motivation to learn a foreign language should have an impact upon the methods used to learn it. This is why some of the first questions raised are about their motivation and ambition. Two of the interviewees want to get certificates of competence in Spanish and three of them would like to use it for work. One would like to become a Spanish teacher at middle school/lower secondary school and the last would like to go on exchange and be able to use it there. Two of them also have a strong desire to become better at grammar.

The interviews revealed that three of the interviewees think the most difficult aspect of learning Spanish is memorising vocabulary. The other two both knew Spanish before they started their courses. For one of these, the most challenging part is learning all the rules they pointed out that Spanish follows rules more rigidly than Norwegian. The other is challenged by finding time to study and practice the language while holding down a job at the same time. All five think it is good to use some type of level measurement, regardless of whether or not they are using CEFR today. No. 1 said that when on exchange they get divided into different groups based on their language level, and thinks this is really good because then you get learning tailored to your skill level. No. 2 talked about how level measurement can be difficult, because one may have different skill levels in different aspects of language. Thence one can have a very good grasp of spoken language but inferior written skill; this would lead to a lower overall grade. This is why interviewee no. 3 would like to have different levels for both spoken and written performance, allowing them to be individually evaluated.

Those who knew some Spanish prior to starting their course think that the lectures are too basic, and should include, among other things, more advanced grammar. Two of them mentioned that they would prefer more frequent lectures to, learn even more. No. 1 said that the way they learnt Spanish at secondary school was just by focusing on grammar and rules, and thought that was not good because it didn't facilitate good spoken Spanish; it just engendered good technical knowledge. No. 2 agrees that that the best way of learning the language is to start speaking, without getting hung up on the rules and

grammar. No. 1 also mentioned that when undertaking group work, it is good to be in groups with people of a similar skill level as oneself; if one's group-mates are more proficient it can be embarrassing to speak.

Talking about question 6 involved discussion of different learning techniques used in classes, including group discussion, listening to songs, multiple-choice activities, listening to Spanish speakers speak, translation, role play, watching movies and writing about them, and writing academic papers. When it comes to what the students think is the best technique for them, three of them (60%) said that using the language when speaking is best. One said that talking about oneself or familiar topics is great. Two of them appreciate listening to sound clips for comprehension purposes and also to translation of text.

Listening to music is something that three of the five like to do outside of what is required at university (Q9). Two of them also talk to Spanish speaking friends, and one is going to an event where you meet Spanish speakers wanting to learn Norwegian and thus learn each others' languages. Another one has switched their phone language to Spanish. Most people already know how to navigate their phones, so no. 1 suggested that this is a good way to learn new words. All of them agree that the way they learn best (Q10) is by speaking, and using the language. Also, one of them said that it is good to have a lecture and then complete a relevant task right away. Another thought that doing some preparation for a lecture, then attending the lecture, and then reading over the notes is a good way to learn. The importance of learning the language (Q11) is mainly the ability to communicate with people, since Spanish is a widely spoken language and it opens many possibilities when it is known.

#### **4.3.2 Use Of Language Applications Today Or Earlier**

A significant part of the aims of the interviews was to gain a better insight into students' relation to applications. One of the interviewees, who had recently acquired a smartphone and therefore had little experience of applications, used some web pages, but not much.

Another one used one app that presented a lot of verbs and taught how they are used, and this was considered a useful feature.

#### **4.3.2.1 Duolingo**

Three of them (60%) has used or are using *Duolingo*. One thought it was really good but that it did have some bugs. This includes among other things, that the app is too finicky on the writing part when writing a sentence. Since *Duolingo* must be used in English, the user's English has to be perfect as well, according to no. 4. What is appreciated is that it includes all four elements: writing, speaking, translating and listening. No. 4 appreciated short sessions using the app, but could use it several times a day. Another student used *Duolingo* more at the outset of learning and then forgot to use it later on. No. 1 thought the app was good, but that it got boring when a task had to be repeated multiple times until it was correct. They thought it then became stressful, which led to mistakes. It would also be preferable to have an app allowing direct learning from Spanish to Norwegian, because sometimes the English was limiting the user, and leading to wrong answers. No. 1 would like an app where one could jump to the desired level, but also an app that could be used to prepare for class; if for instance tomorrow's class will be about verbs, the app could be used to get some preliminary knowledge in that area. One interviewee thought that it would not be possible to use *Duolingo* alone to learn Spanish because of its lack of focus on speaking and grammatical rules. A second thought *Duolingo* was good because it can be used whenever is convenient, for example on a bus. But they also, as mentioned by others, thought it used too much repetition; it is important to repeat things but too much gets tiring.

#### **4.3.3 Using Application To Learn**

As for the following section, the goal was to use the answers to provide evidence for including or excluding different types of functionality. It was also desirable to find a more specific aim for the thesis in general.

Four of five (80%) thought it important that they learn quickly and not perfectly rather than perfectly and slowly (Q13). Some of them pointed out that if you just learn some phrases or words then you can use this and just practice to get better, learning by failing. One also pointed out that as one learns, one's goals change: first you are for example, fine with just being able to communicate, but as the time goes you might want to be able to use the language properly. Another one thought that learning Spanish is a life study and fast results are less important and it is okay with to take some time to learn.

Talking about grammar (Q14), the results of the interview show that most of the interviewees thought it a bit difficult and boring to learn. Two of them knew other languages (German and French) and thought that this was helping them learn Spanish grammar. Grammar is something cannot be escaped, was the conclusion from the interviewees, and one said that students must be made to understand that it is an important part of learning the language. Two of them (40%) suggested making it more exciting by having some kind of game where point may be earned, or/and a prize may be won. Getting out of the books and doing more practical things like quizzes, going to the blackboard and writing endings, and practicing with others who can correct and explain things are also suggestions that some of them shared.

When it comes to feeling a sense of empowerment (Q15 & Q16), there are two things that were mentioned specifically. The first is the ability to use the language when talking to people without feeling compelled to change to Norwegian or English to be understood, or the ability to read a book or watch a movie in Spanish. The second way of feeling empowerment is by getting feedback in the form of both compliments and constructive criticism. They said that when they got feedback, they saw what they were good at and what they need to work at. If there was something they had to work at and then finally managed to achieve it then that gave them a great deal of empowerment. One of them mentioned that giving feedback would probably be easier on an app, because more reminders and encouragement could be made available along the way. At university the studies are more individual. When asked about what an app or teacher could do to remind students of achievements and this sense of empowerment, one suggested repetition,



because then the learner may experience successful assimilation of knowledge. Having a test that shows that they were moving forward was also something they appreciated. No. 3 suggested that an app could have an overview of what has been achieved, and what should be practiced more. In general, encouragement that not only sees the mistakes, but also notices the good things is desired.

Looking at the time the interviewees were willing to spend on learning on an app (Q17), they all said that they could use it up to every day, but that depended on the time it would take. The time they were willing to spend varied from 10 minutes to one hour per day. Question 18 discussed where they like to sit when studying, and they answered that at school, at home, on a bus, or when they had time to spare were all good options. Two of them said that it could be stressful to study at school or at a peaceful spot found while taking a walk because of the number of books that would be necessary.

Question 19 raised the topic of personalised learning, in that the learning is adapted to everyday life, one of the participants answered this: “I would like that. This is what we need. We need it in everyday life.”. All five said yes to integrating the learning with their everyday life by doing things such as making shopping lists, taking notes, learning about hobbies, and other common everyday activities. One of the participants first said that activities like making grocery lists were so boring, and would not be fun to do on a Spanish learning app, but after reflecting a bit more no. 2 ended up answering: “But at the same time it's one thing you have to do. And a thing that must be done is often a little more fun if you do them in a slightly different way. So in this way it is all okay, actually.”.

Some of the participants also answered questions about what the perfect teacher would be like. They responded that it would be a person that showed an interest, was engaging, wants them to learn, and patient so that if something needs repeating many times they will not give up. And it should also be someone who uses examples and preferably has Spanish as a native language, because they then know how the language should be used in everyday life. Another question was about the use of their smartphone, and they all

said that they do not use the phone for movies or books because the screen is too small, and they principally use it for communication and music.

#### **4.3.4 Conclusion And Summary**

To summarise what the interviewees responded, they have different goals for what they wanted to use the language for. Some wanted to get qualifications to prove that they knew the language, some were interested in going on exchanges, and some just wanted to learn it because it is a major language. All thought it was a good idea to use some type of scale to measure skill levels, but that it maybe should be separate for writing and speaking. In schools we saw that many different learning techniques such as group work, listening, music, translating, tasks, videos and writing were used. There was no doubt that motivation was an important factor both for the student and also that the teachers were motivating when teaching a second language. This was not just proven by the survey and these interviews but is also supported by Dörnyei (40).

Some things that they were very clear about is that the best way to learn the language is to practice it and to get it more integrated into their everyday lives. That is why they responded with enthusiasm when we talked about making it a bigger part of their life. And also what seen is that they are willing to do things outside of school, like talking to Spanish friends and practicing writing correctly, listening to music and changing the phone language to Spanish. The topic of grammar and language rules is something that they thought could be better if it were made more practical, and could for instance work like a game or something else where rewards are available. When it comes to using apps today, most of them have used or were using *Duolingo* and thought it good but that it contained too much repetition and was too finicky about the English.

Everything they have shared is important and can be taken further. But in this context, things need to be chosen that can contribute towards the development of an the app focusing on feedback. They thought it good to use apps when on the bus, or in general when they had some spare time, which means that short sessions could be nice. They

were also very eager to connect the learning with things they did in everyday life. In general they wanted more personal learning, as long as they also learnt some of the more general knowledge. As a final thing, feedback was an important part for them and was something the students were passionate about. It was preferable to get feedback both to encourage when something has been done well, and also to get constructive feedback on mistakes. And it was also desired to have some kind of control over how one develops.

#### 4.4 Usability Testing Results

To begin with, there were five users who participated in the usability test: two female and three male. One of the participants was not ethnic Norwegian, but understood and spoke Norwegian. Regarding their age, four of them were in their twenties, and one was of a slightly greater age. The length of the test was no more than 30 minutes, and all of the users could speak Spanish to varying degrees, mainly in A1-B1 range, though one of them had a higher level. In general their language level is not that important, as it is not the Spanish content that was being tested, but the interactive design of the app.

Task 1 was about describing the home screen, asking what different icons meant, and finding the activity *Følelser* (Feelings, learn to explain how you feel). Everyone described the main page as it was meant to be. They all understood where the menu was and what the information icon was. Some thought that the information icon was for general information about the app. Also, some of them were missing an explanation at the beginning of the app which could explain what was going on, a short introduction. When finding the activity *Følelser* (Feelings) (figure 20), three of them first pressed the menu to look for it there. After that they found the activity, while the other two did it immediately.



Figure 20: To find activity *Følelser*, the user must scroll down the page and not look under the menu in the top right corner



Figure 21: The blue words are intended to represent words that it is likely that users do not know already. Clicking the word gives an explanation

The second task asked about how a task about *Følelser* (Feelings) worked, what the blue words (figure 21) meant, what response is expected by selecting the wrong answer, and from solving the task. All of them understood how the task worked, that you should press the play button and then answer. When asked what the blue words meant, all of them understood that these were links. Two of them, however, thought that they would be taken to another page if they pressed them. The other three of them said that they thought they would give some explanation. One wondered why not all the words were blue, and suggested to make them dotted lines, because a solid line is reminiscent of a link to a different page. When asked what they expected if they answered wrongly, four of them expected some kind of a red colour, and one also said that in general they expected to get friendly feedback. Some mentioned also that green is the colour they would expect when answering correctly. Two of them said that they did not expect any feedback there and

then, but since there was a progress bar visible, they expected a summary at the end of the activity instead. When going further to the next task, one tried to swipe and did not understand that the button must be pressed to proceed. Based on this, it might be useful to include the ability to swipe the sides to go back and forth, in addition to being able to press the next button.

Afterwards, task 3 was about finding the activity *Møte folk* (Meeting people), finding information about the task, solving the task, pointing at the progress bar and asking what they think it means, finding out what happens if they answered incorrectly, talking about the feedback guide (figure 22), and asking what they thought about the results page. Everyone was able to find information about the task and describe what the progress bar was immediately. One said that showing the progress when doing tasks was good because it is a common standard. Four of them appreciated that it came up with an explanation of what they had done wrong and that they could take a guide immediately to learn about the error before proceeding. Regarding the results page they were generally satisfied with it and that it is good with an encouragement and a reward. Some of the more technical errors that were mentioned in this part were that the text introducing the guide could be better formulated, the progress bar showed 3 parts and that the results should not be part 3, but be an extra part separated from the progress bar. Also mentioned was that there could be an exclamation mark after the *Congratulation*.



Figure 22: If the user makes a similar error repeatedly they get tips about taking a guide to learn a little more about what they do wrong. For example about verbs

Then task 4 focused on finding their progression and explaining what they thought about the use and functionality of that page. All managed to find their way to their progression and understood what the page was presenting them with. One was wondering what the percentages meant, whether it was mistakes or some tasks not completed, and if it was possible to take the test for achieving A1 level before everything was 100%. One said that it was good to have an overview of what had been learned and that the feedback showing progress was good. A second said that it was good that you had to get 100% on every part so they get good at everything and not just something. When getting back to the home page again, two of them looked in the menu for a home button and three (four with one of those who first looked in the menu) tried pressing the logo to go home. Task five was to log out of the app, and they all managed that fine.

The final part included questions to reflect on the test and use of the app. In general, they thought that the tasks they were given were easy to conduct, and that getting comments during the activities did not distract them. Some of the positive things that were mentioned included that it was easy to use, clear how to use, the scroll function and the information function were appreciated, it was fun to use (not too serious), useful with the guide to learn about mistakes, and it generally had good explanations. Some of the constructive feedback was that it would be good to have some introduction in the beginning, that the four learning elements (reading, writing, translating and listening) could be the main learning activities, and that food, feeling and so on could be sub-choices. Other things that were mentioned were that it could be possible to find the guides regardless of whether answers were wrong or not, and the progress could be presented on the front page because if not it is not obvious that it exists.

#### **4.4.1 Conclusion And Summary**

To sum up, the fact that this was an unfinished app and had some technical errors made it a bit difficult when the users were uncertain where they found things or wanted to find their way on their own. But in general, the usability test provided a lot of useful feedback, both to confirm choices that were made and also to find usability errors. An important thing about the test was that the users were interested in using this app, and found generally that it was simple, clear, useful and straightforward. The two following lists present some of the feedback given, and also what will be fixed in the latest version. What is good to remember is that things in the lists are not only based on feedback that interviewees gave, but also on the observation that was made.

Points confirming that already existing choices are approved

- Red is what they expected when answering incorrectly
- Green is what they expect when answering correctly
- Friendly feedback is appreciated
- It is appreciated that encouragement and rewards are used in the app.

- The ability to take a guide to learn more about mistakes made is a well-liked functionality.

Points which confirms that there is a need for some changes

- Making a dotted line instead of a solid line on the blue words
- In the menu, there should be an option called *Hjem* (Home) so that when a user presses here they are taken to the home screen of the app.
- More space between response alternatives
- The results page from an activity should not be included in the progress bar but instead appear as an extra page.
- Grammar can be presented as a separate category
- The four learning elements can be separate categories, or one could choose to do a task that focuses on the different elements when clicked on inside the progress screen.
- It could be good to be able to swipe to the next task during the activities, in addition to having the opportunity to use the next button.



## 5 DESIGN PROPOSAL

This is the chapter where the process of developing a prototype for an e-learning language app focusing on feedback for Norwegians who want to learn Spanish is shown. Everything that has been seen in the previous chapters has prepared for this part. The reason for this is that now all the background knowledge has been covered, which was necessary to develop a product in a user-centered design process. Looking into current applications and technology available, as well as analysing the target user group to find out about potential users' needs makes it possible to create a prototype based upon what has been learnt, and to have an emphasis on users.

The chapter is built up by first taking a look at *Design Heuristics* (section 5.1) where some heuristics to strengthen interaction are selected to focus on, based on what users have suggested is important to them through results from the survey (section 4.1) and interview (section 4.3). Then *Usability-And User Experience Goals* (section 5.2), which is also created in accordance with data gathering, to design for a good user experience and to meet users' needs. After this, it looked at how the first proposal (section 5.3) for the prototype was designed and the app is presented before the last section (section 5.4) where changes made to the app based on results from the usability testing (section 4.4) are presented.

### 5.1 Design Heuristics

Jakob Nielsen's heuristics (8) was mentioned in section 1.2 because it was shown that there are failures in terms of interaction design in some existing apps. This means that some of the existing apps had not taken into account basic usability principles to arrange for a good user experience. What is important to understand is that these heuristics for User Interface Design are not mandatory, but are guidelines to ensure better interaction for users (8). One does not have to follow all of them, the important thing is that developers are aware of them and have the heuristics in mind when designing interfaces.

In the making of *SpanskNO* (the thesis prototype) some heuristics were chosen to be focused on, and these are presented in the following sections along with the prototype.

The first heuristic is *Consistency and standards*, which states that users should not be confused and left wondering what things like words, situations and actions mean. The next is *Recognition rather than recall*, focusing on minimising the users' memory loads by making everything visible and easy to find and understand. *Aesthetic and minimalist design* is the third heuristic chosen, because it focuses on only providing the user with necessary information. The last heuristic is *Help users recognize, diagnose, and recover from errors*, which is about explaining errors to the user in a way that is understandable and that helps them to move on. (8)

## 5.2 Usability- And User Experience Goals

Before making the actual design it is wise to be clear on what the goal of the design/interaction is. Here there is discussion about the visual aspect, and it is not necessary to account for the app focusing on feedback. Finding usability and user experience goals is an important part of an interaction design process. Usability goals are typically rhetorical questions to ensure that interaction is optimised so that users get to do the tasks they are supposed to do in the app. The usability goals are based on wishes from the survey and interviews with the target group.

This first usability goal is important for providing good and sufficient learning:

Is the app giving the users enough functionality to learn Spanish? (Having good utility).

The second goal is important because this is an app that users are supposed to use several times per week: When users first learn how to use the app, is it easy to remember how to use it even if there were to be long periods between each use? (Easy to remember how to use). The last usability goal that was decided to focus on during the development of the app is about learnability: Is it easy to understand how the app works? (Easy to use). (49, p. 19-23)

User experience goals are a set of desirable and undesirable goals one has for a product under development. These goals are also prepared in accordance with user feedback from the interviews and survey. Thus, it was natural that desirable user experience goals include an *engaging* experience, because the users should be interested in learning; a *motivating* experience, something the target audience think is very important for completing a learning process; and finally an *enjoyable* experience, because it is desirable that users will find it fun to learn. Some user experience goals that are not desirable are that the app gets *boring* so they will not use it, that it makes users *feel stupid*, and that users should not feel that things in the app are *annoying* because that can get in the way of actual learning. These goals mentioned are often not specific things to be done, but goals that developers should take with them during the development of products such as an app. This is because it keeps the focus on what is desired to be achieved, and thereby makes it more likely that the end product will appeal to the users. (49, p. 23-5)

### **5.3 First Prototype**

After conducting both the survey and the interviews, there was a lot of useful feedback on what could be done with an app to support language learning. Since there was no chance to take account of all these responses and make the ultimate app for language learning, some of them had to be selected to be focused on.

#### **5.3.1 Low-Fidelity Prototype**

Simultaneously with the process of choosing what to focus on in the app based on existing learning techniques and the responses of users suggesting what they appreciate when they learn, began the process of creating low-fidelity prototype. The reason it is low-fidelity is that it was made on paper, simple and quick to produce (49, p. 391-92). As shown in figure 23 there were a lot of different designs made, and this gave the opportunity to try out ideas and also have fairly clear design before a more advanced prototype was made that would be used for usability testing. Based on the survey and interview results (section 4.1 and 4.3), there was a clear need for more feedback. This

was something they often felt they were not getting enough of in a traditional classroom today. Therefore, based on user feedback, existing applications and literature, a first paper prototype was developed before making an interactive prototype for the usability testing.



**Figure 23: Making low-fidelity prototype on paper to test design and ideas in a fast and easy way**



### 5.3.2 High-Fidelity Prototype

After the low-fidelity prototype was done, a high-fidelity prototype was created using a design platform provided by UXPin (55). The high-fidelity prototype (49, p. 395-96) takes a little longer to make than a low-fidelity one, but it looks more like the final product and needs to be used for the usability testing. It was important in this prototype to give an impression to users of how it was supposed to work. Thus it is a good solution to create an interactive prototype so that in use it will be similar to a real application. Feedback was the focus that was most important to test on the prototype, but for the users to get the overall picture, it was created with some more content. Figures 24 to 34 show the prototype used for the usability test and will be presented in the next section. As a

rule, in the prototype the focus was on interaction design and not graphic design, instead focusing on showing how feedback can be used and not the linguistic tasks, they are just used to illustrate.

### 5.3.3 Presenting SpanskNO

The app is called *SpanskNO*, which is an indication that one learns Spanish from Norwegian, and also in Norwegian it can be interpreted as meaning “learning Spanish now”. The design heuristic *Aesthetic and minimalist design* is reflected in the app. Although based on feedback from users, more information was wanted on how to do tasks compared to what is in existing in apps such as *Duolingo* (2), it is important that it is not superficial information but only what is useful. Another aspect that reflects *SpanskNO* is the design principle *findability* (49), concerning how easy it is to find things in the app. This has been taken into account in that there are not so many levels of depth in the app. By this it means that when a user is on the home screen they can only get two levels deeper into the app, making it possible to arrive rapidly back to the home screen both directly and by using a back button. When this principle is met, chances are low that the undesirable user experience will arise. One of the main points about the app is that it can be used regardless of time and place, in contrast to a traditional classroom environment.

The app contains lots of different activities that are presented on the home screen in figure 24, here users can scroll down to see more activities and select the preferred category they want to learn about. This way of letting users choose what they want to learn about rather than having to complete one category before the next is unlocked is partly inspired by existing apps such as *Fun Easy Learn* (16) and *Bravolol* (23).

Throughout the app, images are used to visualise content because that is the preferred way of learning based on the survey and interview results. Figure 25 displays the primary navigation screen, which means that it does not change, (56) and is therefore available on all pages in the app. What should be discussed is why the menu only contains icons and not text for explaining. Watrall and Siarto talk about how text needs to be added to icons

if the icons are confusing (56). Sometimes an icon means different things to different cultures/nations, but since this is an app for Norwegians it was desirable to test whether users would understand what the icon meant, and based on the usability testing they did. The menu includes only the most necessary functions such as *Utvikling* (progress). *Utvikling* is shown in figure 26; this is a way to provide feedback to users on how they stand in relation to reaching different CEFR (40) levels. The idea is that users must reach one hundred percent on the different elements (speaking, writing, translating and listening) before they are able to take a test to see if they achieve the CEFR level. For practicing on specific tasks concerning one of the elements, they can press on the relevant heading and do exercises about it. This function is inspired by section 2.3.3.6 where feedback in digital learning should be used to provide users with an understanding of how they are performing and how they develop.



Figure 24: Home screen where users select what they want to learn about

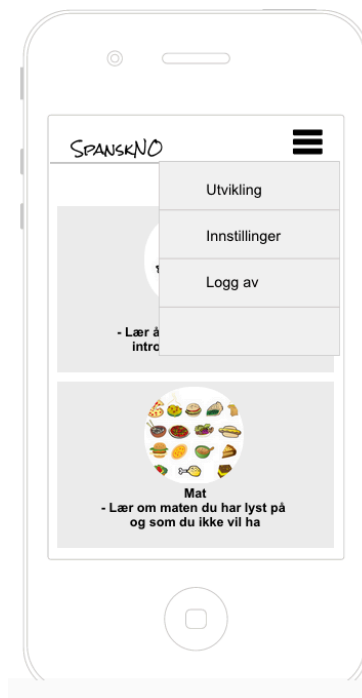


Figure 25: Menu where one can log off, find settings and see the progress

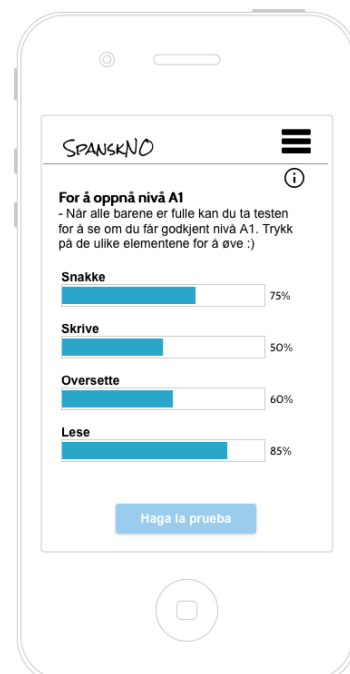


Figure 26: *Utvikling* is the place where you see how far you are on track to reach a CEFL level

The tasks presented here are not necessarily the best for learning the language but are used as examples to show feedback in *SpanskNO*. Figure 27 is an example on a task

within an activity. What is shown is the use of a combination of image and text as tools for helping users understand what the task is about, and that cartoon images are used to meet the user experience goal *enjoyable*. Figure 28 shows what happens when you press the information icon in the right corner below the menu. Then you get some additional information about how to complete the task. This is something that interviewees missed in existing apps they had used, and is therefore included. The reason this information is hidden behind an icon is to meet the design heuristic about aesthetic and minimalist design. Hiding it under an icon makes for a cleaner page because the information that is already on the page should be sufficient to understand the task, and this is just additional information for users who want it. Seen in figure 28 the next button (*Siguiente*) is transparent when the task has not been answered, and that in figure 29 it is no longer transparent, so the user knows it can be used and that the task is completed. This is what in interaction design is called *constraints* which are about restricting users so they know which actions are to be used and which are not. Also, some existing apps have this feature, which makes it a familiar phenomenon. This is also a way to provide feedback to users so they understand how to move forward, which is a design principle (49, p. 25).

*Constraints* and feedback are also in use in figure 29, where when answered correctly the answer is highlighted by the other response options being toned down. Feedback is given by the correct answer getting a green colour, and there is a sound that is meant to be associated with something positive. This way of using feedback is known in existing apps and partly inspired by *Duolingo* (2). At the correct answer, some positive words also appear, as seen in figure 29, which are meant to encourage users. This is about meeting the user experience goal *motivation*.

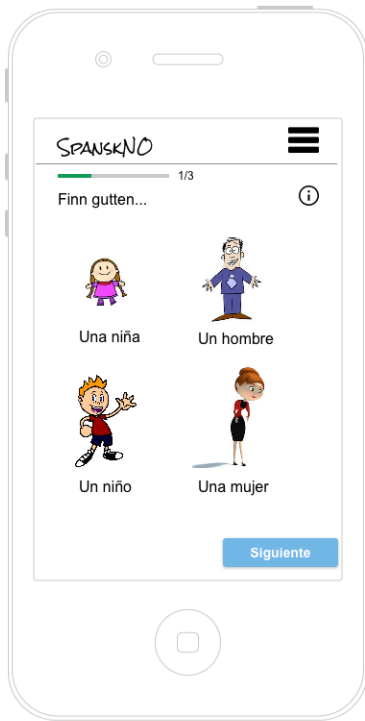


Figure 27: Task 1 in activity *Møte Folk*



Figure 28: Displaying additional information about what to do to complete the task in the Activity *Møte Folk*

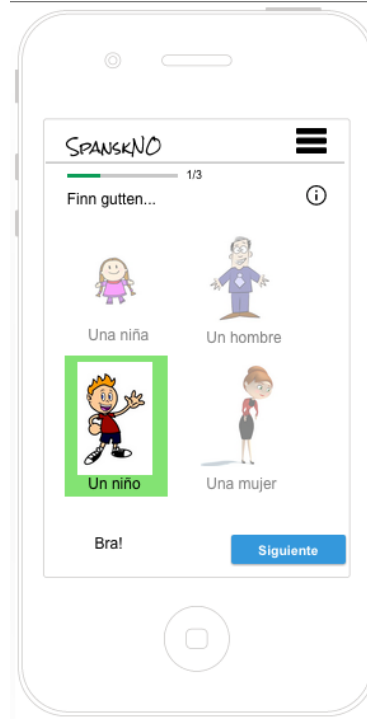
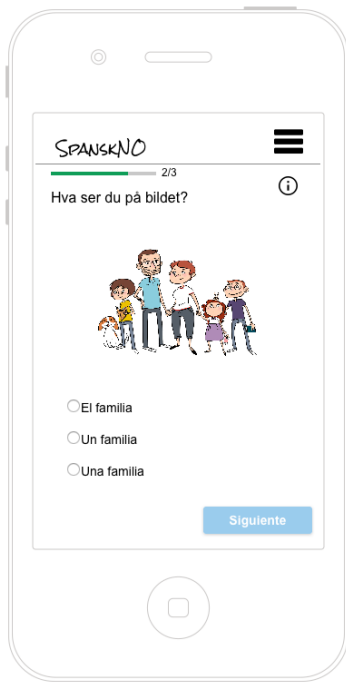


Figure 29: When users answer correctly the answer gets green and it is played a short sound that is supposed to be associated with something positive. Here shown in the activity *Møte Folk*

Figure 30 shows a task where the user is supposed to explain what they see in the picture. An important thing here was to provide enough space between the answer options since they are presented in a list and users use their finger to press the correct answer rather than a mouse on a computer. Radio buttons were used, which are by convention used when users only are allowed to submit one response, the alternative would have been a check box. In figure 31 we see how feedback is used if the user makes several similar errors. Based on both existing literature about feedback and interviewees, it was revealed that it is good to correct mistakes and learn about the error on the spot. Therefore, the user will get an information box displayed that explains exactly what is wrong and that it is recommended to take an additional guide with exercises that teach the user more about what is wrong before continuing with the activity. When the guide is completed, the user will return to the task where the mistake was made. This way of using feedback is, as



seen in section 2.3.3.6, a way of letting the students learn along the way, while they are learning something in a bigger picture. In a traditional classroom this might have been more challenging to achieve, but a digital tool can detect errors right there and then. Compared with *Duolingo* (2), they also have a way to rectify the mistakes made. What they do differently from *SpanskNO* is that they provide this at the end of each activity and not immediately. The final screen after each activity is a summary, as shown in figure 32, of the tasks completed and here also there will be some encouraging words, whether or not the user has been correct or made mistakes. The point is that users will be left with a sense of motivation, and know how they are doing in regard to learning Spanish.



**Figure 30: Task 2 in activity *Møte Folk***



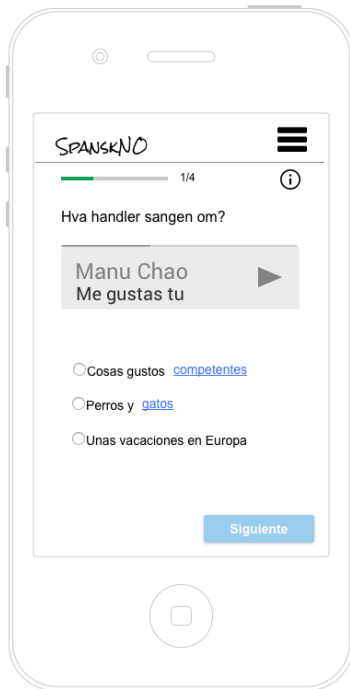
**Figure 31: When a similar error is repeated it becomes visible an information box with tips on taking a guide to improve skills on what was wrong**



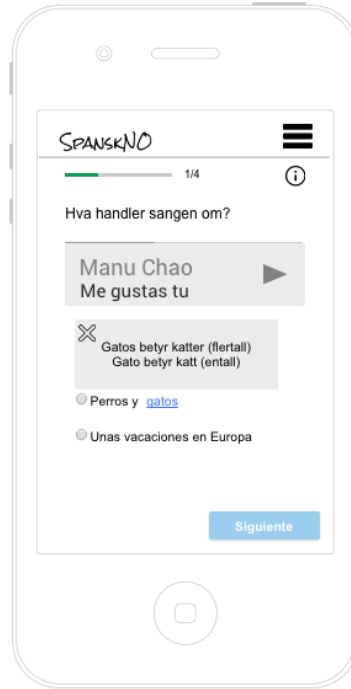
**Figure 32: When finished with the activity appears result with recap on how it went and some encouraging words**

In figure 33 we see that some of the words are marked with a blue font and solid underline. If the user presses this they see what is shown in figure 34. This is an explanation of what the word means, which is also something interviewees missed in current apps. The reason why only a few words are blue and not all is that these are words

which have not been used previously in the app, and therefore might need some explanation. Also directly below the headline, *SpanskNO*, is a progress bar that is used to provide feedback to users on how they are progressing in towards completion of the activity. It was chosen to additionally use numbers that show how many tasks the user has been through and how many tasks there are in total for that activity.



**Figure 33: An example of a listening task with some blue words that are clickable and provides an explanation of what it means because it is words that has not been used before**



**Figure 34: Example of what happens when tap(click) on the blue words**

To sum up the way feedback is used in *SpanskNO*, it is first of all always used to provide feedback on progress in each activity. Colour and commentary are also used to provide feedback for each task, and a summary for each activity is given. The guide functionality gives the users constructive feedback on what should be practiced more, and helps users learn about the mistakes there and then. *Utvikling* is the overall feedback location where users see their progression in a wider context, achieving language levels. Here they can see what needs to be practiced more and what they have already mastered.

## 5.4 Final Prototype

As the usability test had been conducted and feedback had been received, it was time to make changes based on the result. Section 4.4.1 shows a list of some of the things that were good about the prototype that did not need to be changed. But it also shows some points that interviewees wanted to be different, or that based on observation was seen that needed to be changed. Figures 35-39 show the changes made and what is seen both here, and in the section earlier when writing about the results from the usability test, is the scale of changes. There are not necessarily big changes that have to be made on the interaction design, but as we looked at in *State Of The Art* (chapter 2) there are small things that can prevent the users from having a good user experience. Therefore it is essential that we take the time to get to know the users and do user testing so that most of the usability problems can be discovered and fixed before launching a final product. Happy customer equals good business.

Figure 35 shows how the blue words are now presented, with dotted lines instead of a solid line, which was the case in the first design. Another useful change based mainly on observation, because it showed confused interviewees, is seen in figure 36, where a fourth choice has been added to the menu, that is *Hjem* (home). This means that users can now come to the home screen both by tapping the logo and by going through the menu.



Figure 35: Regarding blue words the line is switched from solid to dotted

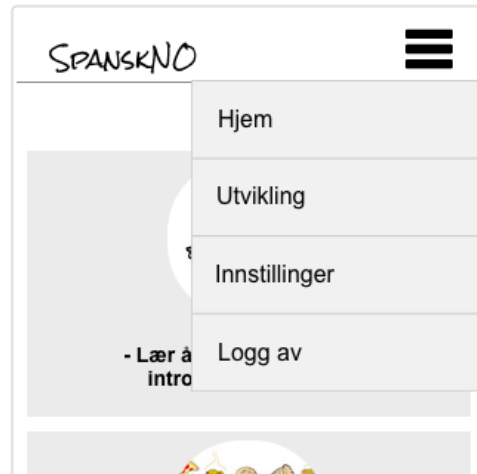


Figure 36: Before you could not get to *Hjem* from the menu but now you can

In figure 37 we see that the progress bar is not displaying anymore on the results page. This is because it made the users confused. So now the results page is an additional page at the end of an activity, not shown in the progress bar. Although it was taken into account that there had to be space between answers, especially when options are presented in lists, in figure 38 even more space has been made as a result of the usability testing. The last change that was made, and is possible to display as an image, is shown in figure 39, where more descriptive text has been added. This is to display to users that they can press the various elements, and the headings for each element had been made italics to distinguish them from otherwise plain text.



Figure 37: The result page for an activity is no longer included in the progress bar

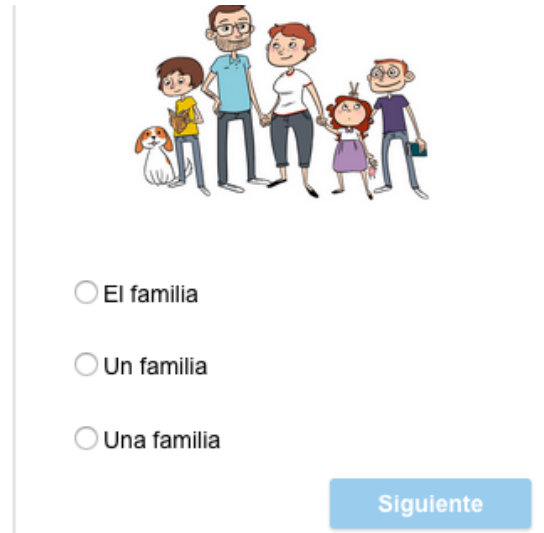


Figure 38: There is now more space between the various answer options

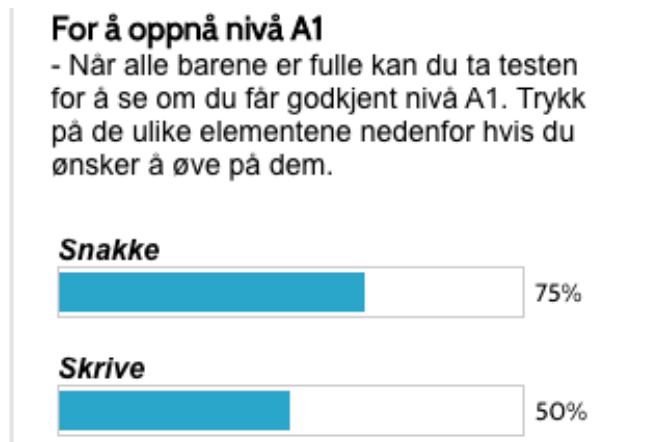


Figure 39: *Utvikling* have been italicised text and more explanatory note to make users aware that they can tap the items

## 6 Discussion & Conclusion

This chapter is a summary as well as an evaluation of the thesis. Planning methods and creating research questions is something that happens early on in the process. One must therefore assume that some things, such as an unstructured interview, will be good methods to acquire knowledge needed to make a language learning app prototype for interacting via feedback. Some things may change along the way, and one can see in retrospect that things could be done differently.

Therefore, this is a chapter with light discussion to reflect on choices made, results, and further research that could be done. *Discussion And Evaluation* (section 6.1) reflects on the choice and performance of methods in addition to using the contents of the thesis to answer the research questions. The last thing written about in this section are interesting discoveries and topics that emerged during the work of the thesis that can be researched further. The final part of the chapter is *Conclusion* (section 6.2) and this wraps up the thesis by summarising what has been written about.

### 6.1 Discussion And Evaluation

In this section about discussion and evaluation, a closer look is taken at how the methods (section 6.1.1) worked relative to what was expected when they were selected. It also evaluates the results (section 6.1.1), which examines what could/should have been done differently in regard to participants and reliability. Then a form of response or discussion is presented, considering the research questions (section 6.1.2) created in section 1.3. Last but not least, its looking at how the research in this thesis makes room for new research questions to be asked and topics to be researched (section 6.1.3).

#### 6.1.1 Evaluation Of Methods And Results

Before starting the actual data collection, one must prepare and choose the methods that can be leveraged to solve the overarching goal of the thesis. The overall target of this thesis was to understand users' needs and wishes and see how feedback can be used in an

app for Norwegians learning Spanish. Even if you have chosen a method and prepared to execute it, it is not always true that the results are completely as they should be. This may be for various reasons, for example, that the method did not fit, or questions should have been worded differently.

#### **6.1.1.1 Survey**

*Survey* (section 3.2) was the first method selected, except that the whole process was going to be a user-centered process. Overall the chosen method was fitting in relation to wanting to collect many answers from users to use the results as support for inclusion and exclusion of features from the app. One thing that could be done differently in terms of the questions is that they were very general and thus the result will also be general and not very detailed. But at the same time it was desired to get confirmations and disprove theories from existing literature and apps, and therefore needed the more general questions to cover the whole range. But it could be considered to carry out another survey to get more details, such as feedback, after the first results had been analysed.

It can be seen in retrospect, when the result from the survey (section 4.1) was analysed, that it would have been advantageous to have had even more questions. This may have something to do with the fact that when you acquire more results, you find new questions and issues, which in turn can be investigated and seen in comparison with other questions. It is conceivable that one often anticipates what the participants are going to respond, but what happens is that users respond differently or look at issues in a way that the researcher did not think of. This is one reason why interaction designers involve users through user-centered processes rather than guessing what users want. In addition, the survey was conducted before it became clear that feedback was going to be the main focus of the app, as this was something that came forward based on users' needs and desires. It would therefore be desirable to have a survey that focused more on feedback and questions that could relate to that.

### **6.1.1.2 Interview**

Interview was chosen both in contact with students (section 3.3.2) and teachers (section 3.3.1). Since many of the questions were formulated so that the interviewee can come out with reflective responses, it has the advantage that the interviewer has the ability to ask more extended questions around the answers that are given. So based on this it can be said that the method suited the purpose. On the other hand it might have happened that one of the last interviewee responses guides the interviewer to discover new important questions, and thus do not get to ask all interviewees about this. This happened halfway through this thesis' interviews with students, which meant that there were only three people who got the two extra questions. Perhaps one way of solving this could be to ask interviewees whether it could be possible to contact them later if new important questions should emerge.

Regarding results of the interviews with language teachers (section 4.2), it is understandable that since there were only two teachers who were interviewed, it is not enough participants to say that something is determined for definite. However, at the same time it still provides an indication of how learning takes place today, and this was the goal of interviewing the teachers. As for the results from the interviews with students (section 4.3), one thing that could have been done differently is that a focus group could have been used instead so that interviewees could engage each other, and that might have brought up other reflections that an interview cannot bring out when there is only one person. On the contrary it can have a negative impact on the results, because interviewees are affected by each other and might consent to what others say for instance, because it sounds reasonable, instead of introducing their own opinions.

### **6.1.1.3 Usability Testing**

In general, usability testing (section 3.4) is a good method to choose when there is a focus on interaction design for the prototype. The aim was to find usability problems and to get comments on how feedback was used, and this was also what came out of the testing. Seen in retrospect, it would be useful to ask more questions about what participants



thought would happen or appear when they touched/swiped on different things on the app. It could also be desirable to find even more out about what they felt about the user experience, whether by using more questions or using any aids such as various smileys to determine this better.

To summarise what has emerged in this section (6.1.1) about evaluation of methods and results, it is generally desirable to have even more user involvement. The idea is that the more you include users, the greater chances there are for that product, in this case a language app, to be taken into use.

### **6.1.2 Evaluating Research Questions**

The research questions were formulated in the first chapter (section 1.3). The objective of these was to acquire the knowledge needed to show how feedback can be used in a language learning app. This section is a summary of this knowledge in relation to the research questions.

First of all it was a target to gain knowledge about the use of mobile technology in second language learning (Q1). As seen there is already literature available (section 2.2) that deals with how to use mobile technology for learning. What might be lacking is newer literature, since the mobile phone has changed and is changing. However, it is demonstrated based on results from the survey and interviews (section 4.1 and 4.3) that a smartphone can be and is appropriate to use for learning languages. But the way one learns needs to change from the traditional approach. On mobile phones, short sessions are preferred, and it is, among other things, not desirable to read long texts or watch video on a small screen.

As for the next research question (Q2), the aim was to investigate how to design for a good user experience. What is clear is that one cannot design a good user experience but it is possible to facilitate it. What can be difficult is figuring out how to do that. But on the other hand it is conceivable that if one develops a product using a user-centered

design process, this creates a close relationship with users. And the more you know the users, the more you find out about what they need and want, and when users are satisfied it can lead to a good user experience.

This next question (Q3) is related to the previous one (Q2) because it is about how to develop engaging language learning apps, which also can be an initiative for a good user experience. It is possible that what engages a user is very personal. For some it might be by using gamification, others by getting motivational feedback, and some might like a strict regime with a lot of reminders to practise. Conversely it might be an engaging app by utilising interaction and varied learning techniques, and this might make up for lack of gamification, for example. But based on user involvement it can be seen to be wise to focus on personalised learning adapted to each student. This can be done by giving more choices in the app and for instance by focusing more on what goals the users have for learning. Developers need to determine what the target group is motivated by and what makes them complete their learning process.

The next question is divided into two (Q4 and Q4a), and deals with existing applications and how to improve them. What seen is that some existing language apps have lack of visual design, variety and presentation of the learning material. What seems to be a missing factor in apps is little knowledge on how to utilise digital technology to learn. Also according to answers to the survey (section 4.1), the problem is that university students have not heard of or used a lot of apps. It can therefore be argued that we cannot blame visual deficiencies, lack of interaction, or variation in learning techniques because there has not been contact with users of all the apps tested. But in this thesis users of *Duolingo* (2) have been contacted, and that is an app that is considered to be one of the best on the market. When users have some problem with *Duolingo*, it may well be sensible to assume that other apps with shortcomings in various areas do not provide the best experience either.

The last research question (Q5) was about how feedback can be used in digital learning compared to traditional approaches. And what emerged is that there are many ways

feedback can be used differently in the digital classroom compared to the traditional environment. What might be most interesting is that in digital tools such as an app, there is the opportunity to give feedback as soon as a user makes a mistake, compared to the traditional world where one must wait to discover mistakes until the task has been submitted. What is a disadvantage of digital feedback is that one loses the personal relationship with a teacher. This is something that needs some time to figure out how to do, because in some responses, interviewees said that they value feedback from teachers higher than from an app. But overall, feedback can be used more frequently in digital learning than in the traditional counterpart. Other ways feedback can be used in digital learning is the ability to have an overview of the user's progression, use of colour and sound as a means to illustrate the right and wrong responses. And also distributing a feedback system between different sectors such as peers and experts and discussion forums where users, and possibly some experts, can have conversations concerning difficult issues and challenges.

### **6.1.3 Further Research**

Good research leads to the emergence of new topics and questions that can be investigated and answered. There are many new issues and topics that have been raised by this thesis, and some of them will be mentioned here.

First and foremost, even more on ways to incorporate more digital learning techniques can be explored beyond just feedback, and how to combine different learning techniques without it being too much. It would also be exciting to look more at how to use games when learning on mobile platforms. This is something that was examined in *State Of The Art* (chapter 2) and also something the target group was interested in. Based on results that came in from the survey and interviews (section 4.1 and 4.3), there are plenty more questions that can be looked at. For example, it would be interesting to investigate why the participants have not heard about and used very many apps. What is causing this? Is it lack of something in the apps? For example, bad marketing or unsatisfying products they offer? In the teacher interview, one said that it is harder to get the students on a high

spoken language level than it is to excel at a written and grammatical level. The students, on the other hand, responded that they prefer to learn the spoken language first, and that the written language is the most difficult. One last point mentioned here, which can be researched more, is how to facilitate personalised learning. This is because students have different needs and wants, so how do developers meet this.

## 6.2 Conclusion

All in all, the purpose of this master's thesis was to explore how to adopt digital learning and use it for creating e-learning language applications with a particular focus on how to use feedback. By looking at existing applications, it was found defects in apps mainly because they do not exploit the digital platform by combining various learning techniques. But also that they do not follow design principles for designing for good user experiences, by for example following Jacob Nielsen's heuristics (8). It was further seen that there is some literature on the use of mobile technology when learning, and that presents advice for how to take advantage of digital platforms. Then the differences between digital learning and traditional learning were examined, and how traditional learning is more constrained to a set time and place, while digital learning can be used anywhere and any time. It has been illustrated how feedback in digital learning environments can be used as overview for the user's progression, colour and sound for illustrating right and wrong answers, and also including rapid feedback by mistake. After this it went on to become better acquainted with the target group, and found among other things that visualisation of what is to be learnt, motivation and feedback are very important for them.

The result was a prototype of an app, *SpanskNO*, where looked at how feedback could be used when learning Spanish. The app was developed with inspiration from existing apps, advice from existing literature, and a close cooperation with potential users through a survey, interviews and usability testing. Feedback was used in many different ways, among other means by keeping the user up to date on how they progress in an activity, how they progress generally in the learning process, and how one has the opportunity to

correct mistakes and learn from them as soon as they are made rather than after an activity is finished.

To conclude, what appears through this thesis, both in the development of the prototype (chapter 5) and the evaluation chapter (chapter 6) is the importance of user involvement throughout the design and development process. Because what seen is that this might be where many existing applications have failed. Other things that have been found out in this thesis is preferred forms of learning languages, analysis of the current language apps, how feedback can be used and how to facilitate a good user experience when creating a language app. For the thesis generally, the big picture can be summarised by the title: *Digital learning for smartphone language applications: The use of feedback in an app for Norwegians who want to learn Spanish.*

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## Appendix

### Appendix 1: Application List

A table made for the researcher when existing applications were tested.

App name and URL	Strengths	Weaknesses	Other
<b>50 languages</b> <a href="http://play.google.com/store/apps/details?id=com.goethe.f50languages">http://play.google.com/store/apps/details?id=com.goethe.f50languages</a>	- Many different learning styles (voice, text, touch)	- Must be used online - No guidance for how to use it. A little hard to understand - The design is not so appealing	- Basic User (A1 & A2)
<b>Learn For Free</b> <a href="http://play.google.com/store/apps/developer?id=Learn+For+Free">http://play.google.com/store/apps/developer?id=Learn+For+Free</a>	- Learn sentences	- Need Internet - Too fast - Just YouTube videos	
<b>ALMCalle</b> <a href="http://play.google.com/store/apps/developer?id=ALMCalle">http://play.google.com/store/apps/developer?id=ALMCalle</a>		- Not attractive design - Small selection	- Expectations from the description does not match the actual product - Supposedly for Erasmus
<b>Hallberg Ryman - Fabulo</b> <a href="http://play.google.com/store/search?q=Fabulo&amp;c=apps">http://play.google.com/store/search?q=Fabulo&amp;c=apps</a>	- Uses words and pictures	- To quickly with repetition (Fun easy learn is better) - Not so much focus on design	- At the beginning level
<b>Bravolol</b> <a href="http://play.google.com/store/search?q=Bravolol&amp;c=apps">http://play.google.com/store/search?q=Bravolol&amp;c=apps</a>	- Useful words and phrases	- It is only speech that is the focus.	- Commonly-used phrases & vocabularies
<b>Lær engelsk for nybegynnere (Learn English for Beginners)</b> <a href="https://play.google.com/store/apps/details?id=com.wendy">https://play.google.com/store/apps/details?id=com.wendy</a>	- Use voice, writing and images - Repeats - Provides positive comments when you answer correctly - Great that the letters go away as you press on them. Then it will be easier.	- Not always possible to hear the word again. - Commercials that must see after one has completed a Category	- Gamification - Nouns and verbs
<b>Learn Languages: Rosetta Stone</b> <a href="https://play.google.com/store/apps/details?id=air.com.rosettastone.mobile.CoursePlayer">https://play.google.com/store/apps/details?id=air.com.rosettastone.mobile.CoursePlayer</a>	- User pictures and audio that the user must answer - A positive sound when answering correctly	- Need to create account with "much" information - Poor design. Must be used horizontally - Difficult to understand how it is	- Only a little that is available for free

		used.	
<b>Babbel</b> <a href="https://play.google.com/store/apps/developer?id=Babbel">https://play.google.com/store/apps/developer?id=Babbel</a>	<ul style="list-style-type: none"> <li>- Many different learning styles (voice, text, touch, writing, images)</li> <li>- Much material</li> </ul>	<ul style="list-style-type: none"> <li>- Just a little test run without account.</li> <li>- Need to download courses.</li> <li>- Unnecessary use of "ok" button (especially when we are write the word)</li> </ul>	<ul style="list-style-type: none"> <li>- For beginners and advanced learners</li> </ul>
<b>How to Speak Real English</b> <a href="https://play.google.com/store/apps/details?id=com.modernenglishstudio.HowToSpeak">https://play.google.com/store/apps/details?id=com.modernenglishstudio.HowToSpeak</a>		<ul style="list-style-type: none"> <li>- When they use video, it is expected that you keep track of what is right and wrong answers.</li> <li>- Difficult to know how it works</li> </ul>	<ul style="list-style-type: none"> <li>- Video Lesson and some flip cards</li> <li>- Not good....</li> </ul>
<b>Learn Spanish</b> <a href="https://play.google.com/store/apps/details?id=com.speaktribe.spanish">https://play.google.com/store/apps/details?id=com.speaktribe.spanish</a>	<ul style="list-style-type: none"> <li>- You get a coach</li> </ul>	<ul style="list-style-type: none"> <li>- Much sound when you answer correctly</li> <li>- Getting constantly up having to install additional software</li> <li>- Difficult to hear what they say sometimes</li> <li>- Multiple choice. Do not feel like it is teaching me anything</li> </ul>	<ul style="list-style-type: none"> <li>- Gamification</li> </ul>
<b>English Grammar Book</b> <a href="https://play.google.com/store/apps/details?id=com.zayaninfotech.english.grammar">https://play.google.com/store/apps/details?id=com.zayaninfotech.english.grammar</a>	<ul style="list-style-type: none"> <li>- Much grammar</li> </ul>	<ul style="list-style-type: none"> <li>- Bad feedback</li> <li>- Not for beguines</li> </ul>	
<b>English Conervation</b> <a href="http://play.google.com/store/apps/details?id=cbbgroup.pool.english.conversation">http://play.google.com/store/apps/details?id=cbbgroup.pool.english.conversation</a>	<ul style="list-style-type: none"> <li>- Interesting to hear a short story while having the text in front of you.</li> <li>- Some words are repeated a lot in the text, this can probably help to remember it better</li> </ul>	<ul style="list-style-type: none"> <li>- Much advertising</li> <li>- The voice is to quick</li> </ul>	<ul style="list-style-type: none"> <li>- Six levels of difficulty, which range from very easy to very challenging.</li> </ul>
<b>Lær Engelsk vokabular gratis/ Learn English vocabulary for free</b> <a href="https://play.google.com/store/apps/details?id=net.languagecourse.vt.en">https://play.google.com/store/apps/details?id=net.languagecourse.vt.en</a>	<ul style="list-style-type: none"> <li>- The app asks you questions to know about your purpose of learning. Good if it adapts to what I want to learn.</li> <li>- Has very good range in difficulty</li> </ul>	<ul style="list-style-type: none"> <li>- User needs to download content</li> <li>- Design could be better</li> </ul>	<ul style="list-style-type: none"> <li>- Different ways of learning</li> </ul>
<b>Buffalo Software</b> <a href="https://play.google.com/store/apps/developer?id=Buffalo+Software">https://play.google.com/store/apps/developer?id=Buffalo+Software</a>	<p><i>Idoms &amp; Phrases</i></p> <ul style="list-style-type: none"> <li>- Very good for people who will be living in the country</li> </ul> <p><i>Spanish Grammar</i></p> <ul style="list-style-type: none"> <li>- A lot of good and useful information</li> </ul>	<p><i>Spanish Grammar</i></p> <ul style="list-style-type: none"> <li>- Slightly dull presented</li> </ul>	

<p><b>Wlingua – Learn Spanish</b>  <a href="https://play.google.com/store/apps/developer?id=Wlingua">https://play.google.com/store/apps/developer?id=Wlingua</a></p>	<ul style="list-style-type: none"> <li>- Good use of text with image</li> <li>- Much choice of words</li> </ul>	<ul style="list-style-type: none"> <li>- Hard to get back to the menu when you press a lesson</li> </ul>	<ul style="list-style-type: none"> <li>- No internet connection is necessary</li> </ul>
<p><b>Learn Like Kids – Spanish in a Month</b>  <a href="https://play.google.com/store/apps/developer?id=Learn+Like+Kids">https://play.google.com/store/apps/developer?id=Learn+Like+Kids</a></p>	<ul style="list-style-type: none"> <li>- Keeps track of statistics</li> <li>- Good use of different teaching methods</li> </ul>		<ul style="list-style-type: none"> <li>- You're supposed to figure out the meaning like children learn to speak. They link what they hear with what they see and learn the meaning of each word or phrase comparing the differences between actions or things.</li> </ul>
<p><b>Lingua.ly – Learn new Vocab</b>  <a href="https://play.google.com/store/apps/details?id=com.lingualy.lingualymobile">https://play.google.com/store/apps/details?id=com.lingualy.lingualymobile</a></p>	<ul style="list-style-type: none"> <li>- Translate words/sentences if you click on them while reading an article.</li> <li>- Fun exercises</li> </ul>	<ul style="list-style-type: none"> <li>- To quick exercises</li> </ul>	
<p><b>Learn English – Voxy</b>  <a href="https://play.google.com/store/apps/details?id=com.voxy.news">https://play.google.com/store/apps/details?id=com.voxy.news</a></p>	<ul style="list-style-type: none"> <li>- Personalize the courses</li> <li>- Basing it on my interests</li> <li>- Good use of text and image to learn</li> </ul>	<ul style="list-style-type: none"> <li>- Could have been better design</li> <li>- And easier to understand</li> </ul>	<ul style="list-style-type: none"> <li>- Adapts to students' and employees'</li> </ul>
<p><b>Learn to speak other languages</b>  <a href="https://play.google.com/store/apps/details?id=com.usefull.phrasestranslate">https://play.google.com/store/apps/details?id=com.usefull.phrasestranslate</a></p>	<ul style="list-style-type: none"> <li>- Easy to use</li> </ul>	<ul style="list-style-type: none"> <li>- Distracting advertising</li> <li>- Only text and voice. You listen and can simultaneously read</li> </ul>	<ul style="list-style-type: none"> <li>- Very basic</li> </ul>
<p><b>Codegent</b>  <a href="https://play.google.com/store/apps/developer?id=Codegent">https://play.google.com/store/apps/developer?id=Codegent</a></p>	<ul style="list-style-type: none"> <li>- Nice design</li> </ul>	<ul style="list-style-type: none"> <li>- You only listen to words and phrases</li> </ul>	<ul style="list-style-type: none"> <li>- Can add words to favourites</li> </ul>
<p><b>Busuu Limited</b>  <a href="https://play.google.com/store/apps/details?id=com.busuu.android.enc">https://play.google.com/store/apps/details?id=com.busuu.android.enc</a></p>	<ul style="list-style-type: none"> <li>- Many different levels of difficulty</li> <li>- Fun with drag and drop</li> <li>- Both words and conversation</li> </ul>		<ul style="list-style-type: none"> <li>- Gamification</li> </ul>
<p><b>Duolingo</b>  <a href="https://play.google.com/store/apps/details?id=com.duolingo">https://play.google.com/store/apps/details?id=com.duolingo</a></p>	<ul style="list-style-type: none"> <li>- Many different learning styles (voice, text, touch, writing and images)</li> <li>- Fun design</li> <li>- Good repetition</li> </ul>	<ul style="list-style-type: none"> <li>- Must be used online</li> </ul>	<ul style="list-style-type: none"> <li>- A college-quality education</li> <li>- Gamification poured into every lesson</li> <li>- Learning phrases and grammar</li> </ul>

<p><b>Fun Easy Learn</b>  <a href="https://play.google.com/store/apps/developer?id=Fun+Easy+Learn">https://play.google.com/store/apps/developer?id=Fun+Easy+Learn</a></p>	<ul style="list-style-type: none"> <li>- Do not need Internet for beginners.</li> <li>- Many different learning styles (voice, text, touch, writing, images and games).</li> <li>- Good repetition</li> </ul>	<ul style="list-style-type: none"> <li>- Best for learning words</li> </ul>	<ul style="list-style-type: none"> <li>- Three different levels of difficulty</li> <li>- Gamification</li> <li>- Must collect flowers to open up harder levels</li> </ul>
<p><b>Lingibli</b>  <a href="https://play.google.com/store/apps/details?id=com.lingibli.app">https://play.google.com/store/apps/details?id=com.lingibli.app</a></p>	<ul style="list-style-type: none"> <li>- Ubiquitous learning</li> <li>- You print out QR-codes and stick them to things around you. Such as a QR-code, paste on your table.</li> <li>- For each word you learn, you learn five different ways to use it.</li> </ul>		<ul style="list-style-type: none"> <li>- I really like the idea that one makes use of language learning in everyday life.</li> </ul>

Learning Spanish Made Easy

<https://play.google.com/store/apps/details?id=backbencherlabs.flashcard.learnspanish>

Learn Spanish

<https://play.google.com/store/apps/details?id=com.mobilefusion.learnspanishinternational>

Learn and play. Spanish free

[https://play.google.com/store/apps/details?id=free.langame\\_es.rivex](https://play.google.com/store/apps/details?id=free.langame_es.rivex)

## Appendix 2: Relevant Literature

A list of literatures that was seen as relevant and were examined at the beginning of the thesis.

Benyon, D. (2010) *Designing Interactive Systems: A comprehensive guide to HCI and interaction design*: Pearson Education Limited.

Burston, J. (2014) Twenty years of MALL project implementation: A meta-analysis of learning outcomes. In: *ReCALL*, FirstView p. 1-17.

Chen, X.-B.&G. Kessler (2013) Action Research Tablets for Informal Language Learning: Student Usage and Attitudes.

Cook, V. (2013) *Second language learning and language teaching*:

Duman, G., G. Orhon&N. Gedik (2014) Research trends in mobile assisted language learning from 2000 to 2012. In: *ReCALL*, FirstView p. 1-20.

Godwin-Jones, R. (2011) Emerging technologies: Mobile apps for language learning. In: *Language Learning & Technology*, 15(2), p. 2-11.

Joseph, S. R.&M. Uther (2009) Mobile Devices for Language Learning: Multimedia Approaches. In: *Research and Practice in Technology Enhanced Learning*, 4(1), p. 7-32.

Kaur, M. (2011) Using Online Forums in Language Learning and Education. In: *Student Pulse* [online], 3(03). URL: <http://www.studentpulse.com/a?id=414>

Kukulska-Hulme, A. (2009) Will Mobile Learning Change Language Learning? In: *ReCALL*, 21(2), p. 157-165.

Lardinois, F. (2013) Study: Learning Spanish With Duolingo Can Be More Effective Than College Classes Or Rosetta Stone. URL: <http://techcrunch.com/2013/01/17/study-learning-spanish-with-duolingo-can-be-more-effective-than-college-classes-or-rosetta-stone/> (7 December 2014).

Lazar, J., J. H. Feng&H. Hochheiser (2010) *Research methods in human-computer interaction*. Chichester: John Wiley.

Rossing, J. P.et al. (2012) iLearning: The Future of Higher Education? Student Perceptions on Learning with Mobile Tablets. In: *Journal of the Scholarship of Teaching and Learning*, 12(2), p. 1-26.

Ryu, D. (2013) Play to Learn, Learn to Play: Language Learning through Gaming Culture. In: *ReCALL*, (2), p. 286-301.

Sharples, M.&J. Roschelle (2010) Guest Editorial: Special Issue on Mobile and Ubiquitous Technologies for Learning. In: *IEEE Transactions on Learning Technologies*, 3(01), p. 4-6.

Sharp, H., Y. Rogers&J. Preece (2011) *Interaction design: beyond human-computer interaction*. Chichester: Wiley.

Steel, C. (2012) Fitting learning into life: Language students' perspectives on benefits of using mobile apps. In: *Future challenges, sustainable futures. Proceedings ascilite Wellington*, p. 875-880.

Taylor, D. (2011) Slovakian startup Lingibli makes language learning QR code friendly URL: <http://thenextweb.com/apps/2011/12/15/slovakian-startup-lingibli-makes-language-learning-qr-code-friendly/> (3 December 2014).

### Appendix 3: Interview Guide For Teachers

Guide that was used by the interviewer and is therefore written in an oral form.

**Interview** -An semi-structured interview so I can ad questions along the way

1. Which University degree are you a professor of?
2. What level of Spanish do you cover in your courses, based on the Common European Framework if you use that?
3. What kind of people signs up for your course?
  - What are their goals? What will they use it for?
  - Do they have any background knowledge?
  - Age?
4. What is the goal of each of your courses?
  - To what extent will they be able to speak the language after completing the course?
5. How are the studies structured in relation to lectures and self-study?
6. What types of tasks you give them?
7. Is there any difference in the results you get on the tasks based on which tasks you give them? For example, a translation task provides higher grade than an essay?
8. What methods do you use when you teach?
  - Which method do you think is the best to use?
9. What do you think is important when learning a new language?
10. Is there a difference in the way (methods) to teach a bachelor program versus master program?
  - Do you use the same methods?
11. Can you explain a bit how the different courses are constructed?
12. Do you know of any technology ways of learning that you recommend?
  - Applications, websites or similar?
  - Do you have any experience using them/technology when you are learning?
    - Do you feel any frustrations when using technology?



- Do you think it would be useful for you to have some kind of application to teach

13. In a perfect world where you could use any way to teach your students. What would you do or use?

14. Anything to add?

**Further**

For my master theses this spring I am going to send out a survey with some questions about learning languages. Would it be possible if you could give this to your students if I send you a link?

I would also need to do some interviews with people learning Spanish, would it be okay if I maybe contacted you again in the spring about that as well?

## Appendix 4: Survey

### Spørreundersøkelse om det å lære et nytt språk

For å ta denne spørreundersøkelsen må du holde på eller skal starte å lære spansk. I tillegg er det en forutsetning at du har en smarttelefon.

Dette er en spørreundersøkelse i forbindelse med en mastergrad i Interaksjonsdesign ved Høgskolen i Gjøvik med tittelen ”Smartphone application for Norwegian adults who want to learn Spanish”. Målet med masteroppgaven er å lage en applikasjon (app)([http://en.wikipedia.org/wiki/Mobile\\_app](http://en.wikipedia.org/wiki/Mobile_app)) som man kan bruke for å lære spansk.

Jeg setter stor pris på om du tar deg tid til å svar på de følgende spørsmålene. På forhånd tusen takk!

Om behandlingen av svarene:

- Opplysningene behandles konfidensielt og informasjonen blir bare delt mellom student og veileder
- Det er frivillig å delta og man kan trekke seg når som helst
- Prosjektslutt er 01.01.2016 og da vil data anonymiseres
- Har du noen spørsmål kan de sendes til: Camilla Tuft Grov, [camilla.grov@hig.no](mailto:camilla.grov@hig.no)

#### 1. Kjønn \*

- Mann  
 Kvinne

#### 2. Alder \*

### Spørsmål om mobil bruk

#### 3. Hvor mye bruker du cirka telefonen din daglig? \*

Her er det snakk om aktivt bruk så selv om du har telefonen i lommen eller i en veske hele dagen vil ikke det si at du bruker den 24 timer daglig.

- 15 min eller mindre cirka  
 Cirka 20 min  
 Cirka 40 min  
 Rundt 1 time  
 Nærmere 2 timer  
 Nærmere 3 timer  
 3 timer eller mer  
 Andre:

**4. Når i løpet av en dag bruker du (stort sett) telefonen din? \***

- Om morgenen
- Rundt lunsj tider
- Ettermiddag
- Kveld
- Stort sett jevnt gjennom hele dagen

**5. Hva bruker du telefonen din til? \***

- Kommunikasjon (ringe, SMS, Facebook Messenger, Whats app, Viber)
- Sosiale medier (Facebook, Snapchat, Instagram)
- Spille spill
- Utdannings apper (som for eksempel å lære språk, ordbok, hjernetrim)
- Trening og helse relaterte apper
- Lese bøker
- Se film
- Høre på musikk
- Informasjons apper (eks. buss oversikt, kino oversikt)
- Leser nyheter
- Organisering (eks. kalender, gjøremål)
- Andre:

**Spørsmål om det å lære**

**6. Når du lærer språk hva synes du om å skulle oversette tekster fra norsk til for eksempel spansk eller omvendt \***

- Synes det er nyttig for å lære språket
- Synes det er gøy
- Det er kjedelig
- Synes IKKE det er nyttig
- Føler IKKE det er relevant for å lære et språk

**7. Når du lærer språk liker du oppgaver hvor du skal skrive tekster? \***

For eksempel skrive et essay eller en artikkel

- Ja
- Ja, men ikke så lange tekster
- Nei
- Vet ikke

**8. Hvis du kunne valgt, hva ville du helst fokusert på når du lærer språket? \***

- bare skrive
- bare snakke
- begge deler

**9. Ville du likt at det du lærer blir visualisert? \***

For eksempel bruk av bilder til å illustrere en brannmann når man lære det spanske ordet for brannmann. Eller illustrere handlinger.

- Ja
- Nei
- Vet ikke

**10. Ville du likt å fått en mer personlig læring? \***

For eksempel at det du lærer tilpasses dine interesser. Er du opptatt av kunst vil det være flettet inn i undervisningen.

- Ja
- Nei
- Vet ikke

**11. Hvor mange ganger i løpet av en uke er du villig til å lære språk? \***

- 1 dag
- 2 dager
- 3 dager
- 4 dager
- 5 dager
- 6 dager
- 7 dager

**12. Hvor lang tid er du villig til å bruke på å lære språk om dagen? \***

- 10 min
- 20 min
- 30 min
- 1 time
- mer enn 1 time
- Andre:

**13. Ville du likt at du ble påminnet at du må huske å øve på språket? \***

- Ja
- Nei
- Vet ikke

**14. I en eventuell språk applikasjon ville du likt å ha en form for mentor eller maskot som oppmuntrer deg underveis mens du bruker appen? \***

- Ja
- Ja, bare det ikke blir for mye
- Nei
- Vet ikke

**15. Ville du likt at måten du lærte på og det du lærte kunne relateres til din egen hverdag? \***

For eksempel kunne du laget handlelisten din på spansk.

- Ja
- Nei
- Vet ikke

### **Spørsmål om språk apper**

**16. Har du kjennskap til Duolingo <https://www.duolingo.com/> ? \***

- Bruker den
- Har brukt den litt
- Hørt om
- Har ikke hørt om
- Vet ikke

**17. Har du kjennskap til Busuu <https://www.busuu.com/enc/> ? \***

- Bruker den
- Har brukt den litt
- Hørt om
- Har ikke hørt om
- Vet ikke

**18. Har du kjennskap til Rosetta Stone <http://www.rosettastone.eu/mobile-apps> ? \***

- Bruker den
- Har brukt den litt
- Hørt om

- Har ikke hørt om
- Vet ikke

19. Har du kjennskap til 50 språk - 50 languages <http://www.50languages.com/> ? \*

- Bruker den
- Har brukt den litt
- Hørt om
- Har ikke hørt om
- Vet ikke

20. Har du kjennskap til Fun Easy Learn <http://www.funeasylearn.com/> ? \*

- Bruker den
- Har brukt den litt
- Hørt om
- Har ikke hørt om
- Vet ikke

21. Har du kjennskap til

**Fabulo** <https://play.google.com/store/apps/details?id=air.com.hallbergryman.fabuloSpanish> \*

- Bruker den
- Har brukt den litt
- Hørt om
- Har ikke hørt om
- Vet ikke

22. Har du brukt noen andre språk apper enn de som ble nevnt ovenfor?

23. Har du brukt noen av appene ovenfor til å lære spansk? Hva synes du i så fall om dem?

**Spørsmål om motivasjon for å lære Spansk**

24. Hva er hovedgrunnen til at du vil lære spansk? \*

- For å bli lærer

- For ferie bruk
- Bare for moro skyld
- For å fylle opp studentpoeng kvoten min
- Andre:

**25. Hvilket nivå ønsker du å oppnå med spansken? \***

Basert på Common European Framework of Reference for

Languages, [http://no.wikipedia.org/wiki/Det\\_felles\\_europeiske\\_rammeverket\\_for\\_spr%C3%A5k](http://no.wikipedia.org/wiki/Det_felles_europeiske_rammeverket_for_spr%C3%A5k)

- A1 Språkbruker på grunnleggende nivå. Begynnernivå, forstå og bruke kjente hverdags uttrykk
- A2 Språkbruker på grunnleggende nivå. Elementært nivå
- B1 Selvstendig bruker, mellomnivå
- B2 Selvstendig bruker, høyere mellomnivå
- C1 Kompetent språkbruker, avansert nivå
- C2 Kompetent språkbruker, språkferdigheter nesten på nivå med morsmålsbruker

**26. Tar du selv initiativ til å lære språket utenom det som er obligatorisk i faget? \***

- Ja
- Nei
- Sjelden

**27. Føler du at du er en person som trenger oppfølging for å gjennomføre en språklæringsprosess? \***

- Ja
- Nei
- Kanskje

**28. Kunne du tenke deg å blitt satt i kontakt med en spansktalende person så du kunne øve på å kommunisere med språket? \***

- Ja, det hadde vært fint å kunne øve på å snakke
- Ja, kunne vært greit å øve på å skrive (en form for Facebook Messenger med en spansk person)
- Ja, det ville vært fint å kunne øve på å snakke og skrive
- Nei, det ville ikke jeg likt
- Vet ikke

**29. Hvis det er noe, hva synes du er det kjedeligste/verste med å lære Spansk?**

**30. Hvis det er noe, hva synes du er det beste/gøyeste med å lære Spansk?**

**31. I forbindelse med min masteroppgave skal jeg utføre noen intervjuer (anonyme) hvor jeg har litt flere spørsmål angående det å lære spansk. Hvis du kunne tenke deg at jeg stilte deg noen spørsmål (eks. via skype) hadde det vært veldig fint og du kan da skrive inn e-postadressen så tar jeg kontakt. På forhånd takk!**

Epost

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## Appendix 5: Interview Guide For Language Learners

Guide that was used by the interviewer and is therefore written in an oral form.

### **Intro:**

Hello, and thank you for taking the time to be interviewed. I do these interviews in connection with my thesis and the goal is that I'll get a better understanding of what users are looking for in a language application. In the thesis I examine how we can use digital learning in contrast to how language learning and learning takes place in the traditional classrooms.

You can retire anytime from the interview and you can also choose to not answer questions if you like. The interview will be presented anonymously in the thesis and there is nothing that can be traced back to you. It will be me and possibly my supervisor who will work with the interviews. So that I should not have to take notes while I ask you questions, I need to record the sound of our conversation. Is that okay for you? (Yes = turn on the recording of sound).

### **In relation to your studies**

1. It is true that you study Spanish, what was the reason you chose to study this?
2. What is the goal of the study for you?
3. What do you think is the hardest to learn when it comes to Spanish?
4. Do you use The Common European Framework to measure your language skills? What do you think about that?
5. What do you think about the structure of your study?
6. What do you think about the learning techniques (method) that is used to enable you to learn?
7. What learning techniques (method) do you think is the best for you?
8. How do you study, what methods are you using? Writing notes, browsing, or similar?
9. Do you do anything other than what is required in the subject to learn the language?  
Ex. Watching movies, listening to music, apps, websites.
10. How do you think that you learn best?
11. What do you think is important about learning a language?

### **Use of language applications today or earlier**

12. Do you or have you used any apps to learn languages?

Yes

- What do you think about the different apps you've tried or used

- If you use someone today, how much/often to you use them?

- What is good about them?

- What is bad about them?

No

- Is there a reason why you don't use anything?

### **Questions about using application to learn**

13. What do you think about the time it will take to learn a language? Is it important to you that you learn fast, but happily not perfect rather that it takes a long time to learn?

14. Grammar is something that many talks about being the most difficult to learn and perhaps the duller by learning the language. - What is your relationship to it? - Do you have any thoughts on how we can make it easier and more fun to learn the grammar?

15. Sense of empowerment is a key factor when learning a language both in relation to motivation and that you feel you are using your time reasonable. How do you think you can achieve a sense of empowerment when you learn the language?

16. Is there anything you think that an application or a teacher can do to make you get a sense of empowerment / be reminded of your achievements?

17. Imagine that you are using an application for learning the language how many days a week would you like to use it?

- How long do you think you would use it at a time?

18. Where do you like to sit / be when you learn something / study?

- Is it somewhere you could imagine sitting but of somehow do not fit to study there?

19. Let's say that a Spanish app to learn from is related to you everyday life. What would you like to use it for?

- In what everyday activities would you like to use it?

20. Do you like that your progress is visualized in some way?

21. Do you know what augmented reality is?

If yes then, would you like to use it when learning?

**Closure:**

Thank you for taking the time to participate. It means a lot for my research. I wish you continued success with your studies. I wish you good luck with your studies.

## Appendix 6: Transcribed Interview With Students

Transcribed interviews for the researcher to have a better overview of the results. (Slightly freely translated from Norwegian to English to display points from the interviewees, results have been presented properly in section 4.3)

### Interview subject no1

#### In relation to your studies

**1. It is true that you study Spanish, what was the reason you chose to study this?**

Yes, I am taking a Spanish year program because I want to be a Spanish teacher.

**2. What is the goal of the study for you?**

I want to be good enough to become a Spanish teacher at middle school/lower secondary school (ungdomsskolen).

**3. What do you think is the hardest to learn when it comes to Spanish?**

Vocabulary is hard. To remember all the words we need to have a communication.

**4. Do you use The Common European Framework to measure your language skills? What do you think about that?**

Yes we use it. B1 or B2 is where we are now. I like that we use this system. Like right now we are on exchange and we are divided in different groups based on or language level. This is useful. Then you get to learn what you need.

**5. What do you think about the structure of your study?**

Before Christmas the language part was divided in two. One course focused on grammar and another focused on speaking. This was really good. Because in secondary school you only learn grammar and rules and not how to use it. But that is not good when you are not able to talk. So in the study program I am in in now we focused more on speaking as well. And that is good. Dividing grammar and speaking is a good ide.

We don't have group work. We talk in group at school. I think it works when all in the group are on the same language level. But if someone is better than me I get nervous and do not dare to speak so much. If someone is worse than me it also works fine. I sometimes use my phone when we are in group as a dictionary if there is a word I do not know. But we also help each other and the teacher helps.

**6. What do you think about the learning techniques (method) that is used to enable you to learn?**

Talking in group. Listen to music, having the text. Or listening to a song getting some text options and we are going to find the correct text. Also reading and talking about it afterwards.

**7. What learning techniques (method) do you think is the best for you?**

I like sitting in small groups practising talking. Having topics to talk about or talk about your self what you like to do, in general talk about known topics.

**8. How do you study, what methods are you using? Writing notes, browsing, or similar?**

Taking notes in class. But if there is a lot on information I like to just listen. Because sometimes it is hard to take notes in Spanish. But they post the PowerPoint so I can use that when I come home and make notes.

**9. Do you do anything other than what is required in the subject to learn the language? Ex. Watching movies, listening to music, apps, websites.**

Trying to listening to music. Thinking about watching movies. I put my phone on Spanish. That helps. I learn new words, because I know where everything is and what it is in Norwegian.

Now I am in Spain on exchange. I notice a big change in my Spanish when I am her practising. I live with a Spanish family. I learn a lot of new words. In Norway it is easy that I switch over to English or Norwegian if there is something I don't know but here I need to try to explain it anyways.

**10. How do you think that you learn best?**

To have a lecture. First someone talking about it and then having a task about it. I need to do the task right away and not the next day. Because then I remember it better.

**11. What do you think is important about learning a language?**

There are a lot of places in the world that speaks Spanish. So it is good to know so you become more integrated where you are and you can speak with the locals.

**Use of language applications today or earlier**

**12. Do you or have you used any apps to learn languages?**

Yes

- **What do you think about the different apps you've tried or used**

- **If you use someone today, how much/often to you use them?**

- **What is good about them?**

- **What is bad about them?**

Used Duolingo. More in the beginning. I forget to use it now. I think it is really good but it gets boring when you can not move forward when you know something and you have to do tasks and then it becomes a little stressful and you do mistakes and have to do it over again. And I wish I hade something from Spanish to Norwegian. Because sometimes the English is limiting me and making me get wrong answers. I wish I could jump further in the levels. And if for example that tomorrow we will have an hour of the past (verb) and then I could have gone to Duolingo and learned about that. Instead of learning about adjectives if I was not getting longer than that.

I don't know what I like. But you learn a lot of words. See how they structure sentences and learn a lot of things.

I do not think that I could learn Spanish with just using Duolingo. There are some brief explanations and one needs to know a bit more rules than just what comes there. I would like to learn it on a course or school than on an app. Because it is not enough. It needs more focus on speaking also. Have not tried Duolingo speak function. But one need to practise how to say it and not just hoe it is written.

Also used a webpage called "Learn Spanish" I think. I like that a lot. Then everything is explained and you can do tasks afterwards.

No

- **Is there a reason why you don't use anything?**

### **Questions about using application to learn**

**13. What do you think about the time it will take to learn a language? Is it important to you that you learn fast, but happily not perfect rather that it takes a long time to learn?**

It is good that it takes short time and then you can learn along the way. Learn by failing. Just trying. Try to speak. This is better then sitting in a classroom for four years and not practice.

**14. Grammar is something that many talks about being the most difficult to learn and perhaps the dullest by learning the language. - What is your relationship to it? - Do you have any thoughts on how we can make it easier and more fun to learn the grammar?**

Grammar is hard. But many times I understand it in class. But it is hard to use it when I am writing or speaking. Because then I forget how to use it right. I don't know how to make it easier. Practical tasks could be used to make it more fun. So that you do not just sit with your book. Have a quiz or that students need to go up to the blackboard and write endings. And you understand better when I am in Spain. I fell that the Spanish have a much easier way to explain it. Because now I suddenly understand much more than I have done a whole year in Norway.

In general studying in Norway it is much better to study abroad. Because in Norway you learn it in school and then you go home and only speaks Norwegian. I have heard that to learn a language, one must hear in a lot every day. And you do not get that in Norway.

**15. Sense of empowerment is a key factor when learning a language both in relation to motivation and that you feel you are using your time reasonable. How do you think you can achieve a sense of empowerment when you learn the language?**

When I get positive feedback. Or when there is something I have worked with for a long time that was difficult and then suddenly I got it. Then I get a sense of empowerment. For example now I have learn syntax then I feel a sense of empowerment.

**16. Is there anything you think that an application or a teacher can do to make you get a sense of empowerment / be reminded of your achievements?**

A teacher could encourage me. Not only see the mistakes you do but remind you about the right thing you do. But on a app I do not care that much if it says "That's good". With a teacher, they are more enthusiastic and you can see it on them, that they actually think that we are good and then I feel a sens of empowerment.

For my part I do not think an app would help me ther.

**17. Imagine that you are using an application for learning the language how many days a week would you like to use it?**

**- How long do you think you would use it at a time?**

I would try to do it everyday. But it is not always easy to do that. If you are dealing with a difficult topic it is easy that you put it away and do not use it again in some time. I would like to choose the topics I am going to learn myself.

I could use it for 15 minutes or half an hour, then I think I would get board.

**18. Where do you like to sit / be when you learn something / study?**

**- Is it somewhere you could imagine sitting but of somehow do not fit to study there?**

Like sitting on school in a group room or outside if it is nice weather. Not home, It is to much distractions there. Could use an app on a bus but there are also things that distracts me on a bus which makes me lose the concentrations.

**19. Let's say that a Spanish app to learn from is related to you everyday life. What would you like to use it for?**

**- In what everyday activities would you like to use it?**

I would like that. This is what we need. We need it in the everyday life. That is important not to learn a lot of things that you never need, things that do not concern me in my life. Both shopping list and to do list would be good. Small things. In general more integrated into everyday life so it fits into what I normally does.

**20. Do you like that your progress is visualized in someway?**

Yes. It is good to see that you are getting better. In an app feedback is not that important I only need a line that shows that I am getting better. But with teachers I like more feedback.

**21. Do you know what augmented reality is?**

**If yes then, would you like to use it when learning?**

No.

**22. How is the perfect teacher?**

Someone how knows the language very well so they are saying things correctly. Someone how uses examples, because then I understand it better. Are positive and patient. Are able to teach me it teen times if I need it and don't give up. They need to be understanding, kind and knows what they are talking about. It would be better if they are

from a Spanish speaking country. Because then they know how the language is being used in the everyday life. For example this form you need to know but it is not being used that much in the spoken language. A native person knows more about that.

**23. What do you use your phone to, and what do you not want to use your phone for?**

Use my phone for news Facebook, Snapchat, Instagram, music. Not for film or books, it is too small for that. I do not like reading on screens. I like to have it in my hands in paper so that I can comment and write directly in the text.

## **Interview subject no2**

### **In relation to your studies**

**1. It is true that you study Spanish, what was the reason you chose to study this?**

The reason for studying Spanish, lived 1 and ½ year in Latin America. Want to get prove that she is able to practice the language. Get more academically. Also to learn more rules like grammar that you don't learn when you learn orally.

**2. What is the goal of the study for you?**

Want to work with aid and intercultural learning. Contact with other cultures. Then it is good for me to have some papers that I know another language.

**3. What do you think is the hardest to learn when it comes to Spanish?**

All the rules. Spanish follows the language rules much more than we do in Norway. I don't like to memorize rules and stuff. I like to speak or write and let people correct me then.

**4. Do you use The Common European Framework to measure your language skills? What do you think about that?**

Do not use CEFR. Think it is good and bad to use this type of measurement. I see the point with it. So that people know what level you are in. But many have different ways of experience language. For me I have an orally language so if I took a test I might not get a high score because am not that good in the written. But I have a high level of Spanish so I then think it would show the wrong image of my skills. It would be better to have to different measurement scales. One for the written and one for the spoken.

**5. What do you think about the structure of your study?**

Some minor things am not that happy about. But I think that the study is adapted to people coming straight from secondary school, level 1 and level 2. I would like one lecture about phonetics, one about grammar and maybe a third about society and history. In general more grammar.

But maybe I have some other needs than the other students since I have some more background knowledge.



**6. What do you think about the learning techniques (method) that is used to enable you to learn?**

Last year we saw to movies and was writing a abstract about that. Lectures. Before we had more a secondary school frame, which means a lecture and then a assignment.

We don't practice the orally that much. We have a lot of group work. We had role-play, to make a conversation, that was fun. Now we are writing a academic paper as a group. Writing assignment is the best.

**7. What learning techniques (method) do you think is the best for you?**

I like to practice the language and let people correct me along the way.

We got some secondary school work for Spanish rules. I thought that was good for me.

I think that the prior knowledge I had has helped me a lot to learn the language in general but also with the rules and grammar. I have a friend who has learn Spanish since eight grade. She knew all the rules and was very good at memorizing but she could not speak the language. She didn't know how to use it in practice. So for me to go the other way by starting to speak it then learn the rules is good.

When came to Latin America (Costa Rica) I did not know anything and they were bad at English. So in the beginning I run around with a dictionary and used the body language. I had to learn the language to talk to people.

I prefer to work alone. Write text and see what I do wrong and right. Writing is most important for me since I already know the spoken language.

**8. How do you study, what methods are you using? Writing notes, browsing, or similar?**

**9. Do you do anything other than what is required in the subject to learn the language? Ex. Watching movies, listening to music, apps, websites.**

No, not really. I talk to my Latin American. I learn to write on Internet first and then I used the Internet language (not whole words and stuff). But now I try to write the correct words and not use the Internet language.

Listen to a lot of music.

**10. How do you think that you learn best?**

In conversation. In class also by using conversation. I always want to use conversation and not having to memorize. Feeling that you have a dialogue with the teacher rather than read or memorize or other typical school assignments.

**11. What do you think is important about learning a language?**

You open your own understanding. You open for new opportunities. When you learn Spanish you learn about the culture as well. You can learn two words but they don't mean the same or it can mean different things. When learning a new language you get a whole new amount of people you can talk with. And it is there are so many interesting people

out there that you can talk with if you know the language. The cultural understanding, the human understanding and the sense of empowerment (mastering).

### **Use of language applications today or earlier**

#### **12. Do you or have you used any apps to learn languages?**

**Yes**

**- What do you think about the different apps you've tried or used**

**- If you use someone today, how much/often to you use them?**

**- What is good about them?**

**- What is bad about them?**

Have used Duolingo. It is okay, simple and straightforward. You can use it when you want, if you are on the bus for example. And you can choose the level you want. Have not used it so much for learning Spanish.

It is a long time since I have used it so I don't remember it that well. But I remember that you can get a little tired of it because it is so much repetition. I understand why, so that you learn the word well, but maybe they do it a bit too much. When learning basic words it will probably be good. It shows how words are written and said.

I don't feel like the app is for an advanced level.

Used memorize for a period of time. A friend recommended it. Duolingo was better. Memorize looked more like amateur. And you selected a course, and when you had that right you for example got some flowers, you were intended to grow a garden. It sounded fun. But was not too fun doing it. Wanted more style over it.

**No**

**- Is there a reason why you don't use anything?**

### **Questions about using application to learn**

#### **13. What do you think about the time it will take to learn a language? Is it important to you that you learn fast, but happily not perfect rather than that it takes a long time to learn?**

Yes, it is important for me to be able to learn fast but not perfect right away. The first thing that was important was to be able to communicate, speak, talk, and explain. Eventually it is important that I can use the language correctly but not in the beginning. Since I've become a little older, it is more important to me that I be taken seriously with my Spanish, I could use it in a professional setting.

As you learn more the goals change. First, you are often fine with being able to communicate a bit but then it develops into a wish to use the language properly.

**14. Grammar is something that many talks about being the most difficult to learn and perhaps the duller by learning the language. - What is your relationship to it? - Do you have any thoughts on how we can make it easier and more fun to learn the grammar?**

I too think that grammar is hard and boring. I don't know what to do. The important stuff is that everyone finds his or her way of learning. We've all have different ways to acquire knowledge, different learning techniques. For me when it comes to grammar I like to talk to a friend about the grammar, what we have learned and she can explain to me. That I work with people how can explain it to me or more close monitoring instead of lecture.

**15. Sense of empowerment is a key factor when learning a language both in relation to motivation and that you feel you are using your time reasonable. How do you think you can achieve a sense of empowerment when you learn the language?**

I love compliments, constructive criticism and to get encouragement. I am dependent on getting it quite often. If not, I lose motivation and sees no progress. Getting great sense of achievement to get constructive criticism and get it right afterwards. It is probably easier to do this on an app where you can get a kind of image that says; hey great!, when you actually get it.

It is also probably easier to do it on high school and secondary school than at a university. Because at university it is more individual study. Your responsibility.

**16. Is there anything you think that an application or a teacher can do to make you get a sense of empowerment / be reminded of your achievements?**

**17. Imagine that you are using an application for learning the language how many days a week would you like to use it?**

**- How long do you think you would use it at a time?**

**18. Where do you like to sit / be when you learn something / study?**

**- Is it somewhere you could imagine sitting but of somehow do not fit to study there?**

I like to learn on bus. When I did not have a car I used the bus to read and to prepare for class and used Duolingo there. Also when I was waiting for the bus, waiting to get picked up and in general all places you are waiting. It is good to use Duolingo. Except from that, it is sitting home and getting concentrated. I learn best when I get a reward. Lets say if I study a map for one hour then I can eat candy.

When I am walking I find places I would like to sit down because it is peaceful and quiet. It would be amazing to learn something there. But it is impractical to have books or a computer there to learn with, you need so much stuff.

**19. Let's say that a Spanish app to learn from is related to you everyday life. What would you like to use it for?**

**- In what everyday activities would you like to use it?**

I am very fond of facilitated learning. Very. In my ideal world all classes would be divided into smaller groups and divided by interests, level, etc. so that everyone could get a mastery feeling. When you have a class of 20 students all have so incredibly many

different needs and different preferences on how we like to learn and how we are comfortable learning.

It would be interesting to use it for the everyday life. On a plane before arriving to a holiday it is easy to learn on an app. I do not know but I think that for my part it would have been a bit useless to have it very tied to everyday life. That it would be something negative. For my part, I think it's really boring to write shopping list for example and for me to do it via an app had not been tempting. But at the same time it's one thing you have to do. And things that must be done is often a little more fun if you do them in a slightly different way. So in this way it is all okay, actually.

**20. Do you like that your progress is visualized in some way?**

Yes, that is really good because then you see the progress you make. And that is very motivating. At school, it is not always so easy to see your progress. But to have a record to see, this I learned and this I must improve. Is very useful.

**21. Do you know what augmented reality is?**

**If yes then, would you like to use it when learning?**

NO

### **Interview subject no3**

**In relation to your studies**

**1. It is true that you study Spanish, what was the reason you chose to study this?**

I take Spanish as an elective course. I like languages and Spanish is a big and important language. So I thought it would be good to know it. I could not Spanish already.

**2. What is the goal of the study for you?**

I want to be medium good in Spanish so I can use it in an formal and unformed way. Could also like to use it for work.

**3. What do you think is the hardest to learn when it comes to Spanish?**

The new words that I need to remember. Everything I need to remember is difficult. Grammatik.

On the other hand I do not think the pronunciation is hard to learn.

**4. Do you use The Common European Framework to measure your language skills?**

**What do you think about that?**

We don't use it now. They used it last year I think. I think it is a good idea to use this type of measurement. It is good to know where you are and how far your skills are going.

**5. What do you think about the structure of your study?**

I like it. One lecture a week and one group hour. No group work. One written assignment and two oral every semester. I think it is fine with lectures but could easily have been

more. Requires part study. I am maybe not the best student. But use around six hours a week . The course is 7,5 credits  
We do not use video or music.

**6. What do you think about the learning techniques (method) that is used to enable you to learn?**

We are translating. Trying to make the class active. We listen to sound clips. And we will listen and find things in the text.

**7. What learning techniques (method) do you think is the best for you?**

I like to listen to the sound clips. Trying to find things.

I thing it is useful to translate text. We should to more of that. We often read Spanish text. But not translate.

To lean the oral we first go through what we should learn that day and then we try to use it in either groups or in pairs.

**8. How do you study, what methods are you using? Writing notes, browsing, or similar?**

I am reading, then I do some tasks. And listen to a CD following the books.

**9. Do you do anything other than what is required in the subject to learn the language? Ex. Watching movies, listening to music, apps, websites.**

I listen to some Spanish music. Then the speak normal. In the textbooks cd they are speaking a little more slowly.

**10. How do you think that you learn best?**

Easy preparation for a lecture. Go to lecture and maybe ask questions. Then read over it when the lecture is done.

**11. What do you think is important about learning a language?**

The desire. You must have a reason for it. The main thing is to be motivated.

**Use of language applications today or earlier**

**12. Do you or have you used any apps to learn languages?**

Yes

- What do you think about the different apps you've tried or used
- If you use someone today, how much/often to you use them?
- What is good about them?
- What is bad about them?

No

**- Is there a reason why you don't use anything?**

Not much. I used one called four thousand and one Spanish verbs. An interactive verb book. Then you can see all the verbs and how they are used. I liked that a lot.

### **Questions about using application to learn**

**13. What do you think about the time it will take to learn a language? Is it important to you that you learn fast, but happily not perfect rather that it takes a long time to learn?**

I don't care about the time. For my part this is a life study. I don't think I will be good in Spanish in a half year. I need to work with it. It is okay that it takes time. I don't need fast results. As I see it i am not going to us it in the near future.

**14. Grammar is something that many talks about being the most difficult to learn and perhaps the duller by learning the language. - What is your relationship to it? - Do you have any thoughts on how we can make it easier and more fun to learn the grammar?**

It is hard. Not much to say about it. You just have to learn it. To give me more motivation it could be like a game or something. To get a price or something.

**15. Sense of empowerment is a key factor when learning a language both in relation to motivation and that you feel you are using your time reasonable. How do you think you can achieve a sense of empowerment when you learn the language?**

It would be good to get small test every week. Do them and get feedback on what you know and what you have to work more with. So feedback in general is good.

**16. Is there anything you think that an application or a teacher can do to make you get a sense of empowerment / be reminded of your achievements?**

An app could have a overview of what you have achieved and what one should practice more on. Then you see it more easy.

**17. Imagine that you are using an application for learning the language how many days a week would you like to use it?**

**- How long do you think you would use it at a time?**

I could use it everyday or five to seven days a week. And use it for half an hour a day.

**18. Where do you like to sit / be when you learn something / study?**

**- Is it somewhere you could imagine sitting but of somehow do not fit to study there?**

Home or at school at the library. I am fine with that. It would be good to learn at a beach. But there are not as many of those here in Norway.

**19. Let's say that a Spanish app to learn from is related to you everyday life. What would you like to use it for?**

**- In what everyday activities would you like to use it?**

I would like that. Would be incredibly fun. Writing shopping list and notes in Spanish.

**20. Do you like that your progress is visualized in someway?**

Yes, that is good.

**21. Do you know what augmented reality is?**

**If yes then, would you like to use it when learning?**

No.

**22. How is the perfect teacher?**

That is hard. An active teacher in the learning process would be good. Monitoring is important. Is essential to ensure that I work.

**23. What do you use your phone to, and what do you not want to use your phone for?**

Use my phone for communication. Do not use it for books or movies. It is too small, the size is the problem. Have not looked at it as an option even. Have a Kindle for reading.

**Interview subject no4**

**In relation to your studies**

**1. It is true that you study Spanish, what was the reason you chose to study this?**

Yes, or I take a Spanish course not a program. I'm going on exchange to South America so therefore I take it.

**2. What is the goal of the study for you?**

To learn Spanish enough to be able to go on exchange. I did not know anything before starting this course.

**3. What do you think is the hardest to learn when it comes to Spanish?**

Remembering the words. I practice most of the verbal now.

**4. Do you use The Common European Framework to measure your language skills? What do you think about that?**

Yes, this course is level A1. It is good that we use this type of system to measure. Because then you know what level you are at wherever you are on a course.

**5. What do you think about the structure of your study?**

I like it. Only two hours a week since it is a 5 credit course. 1 hour of lecture and 1 hour with (lab?). It is not enough to learn as much as I want to learn but I think it is enough to get on a A1 level.

**6. What do you think about the learning techniques (method) that is used to enable you to learn?**

We listen to music and general a lot of talking. We listen to songs, children songs, to hear Spanish speakers speak Spanish.

**7. What learning techniques (method) do you think is the best for you?**

I think speaking is really good.

**8. How do you study, what methods are you using? Writing notes, browsing, or similar?**

I am writing notes.

**9. Do you do anything other than what is required in the subject to learn the language? Ex. Watching movies, listening to music, apps, websites.**

I am going to something called “Språktandem”. Two people how want to learn each other’s languages. First we talk 20 minutes in Norwegian and then we talk 20 minutes in Spanish. This is very useful because then I learn from someone who actually have it as a native language.

**10. How do you think that you learn best?**

When using the language and hearing it.

**11. What do you think is important about learning a language?**

Being able to communicate. Make me understood and understand other. Also to understand the culture.

**Use of language applications today or earlier**

**12. Do you or have you used any apps to learn languages?**

Yes

- **What do you think about the different apps you’ve tried or used**
- **If you use someone today, how much/often to you use them?**
- **What is good about them?**
- **What is bad about them?**

Using Duolingo. I think it is really good, some bugs, but in general really good. Bugs are like sometimes it is to finicky on the writing part when you are writing sentences. At least when one learns in a basic level.

I like that it has both writing, talking, translating, listening. It has all the four elements.

I use Duolingo sometimes several times a day and sometime once a week. Use it for approximate 5 minutes. I like short sessions.

I do not mind learning from English to Spanish. I think it is better. I think it's because when I learn not from native speakers to something completely different, but from something a little different to something that is more different. I learn German from English.

No

- **Is there a reason why you don’t use anything?**

**Questions about using application to learn**



**13. What do you think about the time it will take to learn a language? Is it important to you that you learn fast, but happily not perfect rather that it takes a long time to learn?**

I like that it takes a short time. I'm like, when I have learned ten words then I use those ten words to everything. Then it just will sound better gradually.

**14. Grammar is something that many talks about being the most difficult to learn and perhaps the duller by learning the language. - What is your relationship to it? - Do you have any thoughts on how we can make it easier and more fun to learn the grammar?**

We don't have that much grammar. The little I have learned I do not think is so difficult. But I can speak German and it is similar in many ways. But I do not think it is the most fun to learn. I don't have any suggestions for how we could make it fun. You just have to.

**15. Sense of empowerment is a key factor when learning a language both in relation to motivation and that you feel you are using your time reasonable. How do you think you can achieve a sense of empowerment when you learn the language?**

When I am at "Språktandem" talking to the Spanish guy and feel that I am able to use the language more and do not have to switch over to English.

**16. Is there anything you think that an application or a teacher can do to make you get a sense of empowerment / be reminded of your achievements?**

Yes, well repetition in general is good. Because then I experience that I know stuff. And discover that you have learned new things.

The teachers help me with feeling this by using things we have learned and basing it on new stuff.

**17. Imagine that you are using an application for learning the language how many days a week would you like to use it?**

**- How long do you think you would use it at a time?**

I should use it every day, but. It is like now, sometimes I use it several times a day and sometimes it can go weeks between. I wouldn't like it to take more than 20(?) minutes to use.

**18. Where do you like to sit / be when you learn something / study?**

**- Is it somewhere you could imagine sitting but of somehow do not fit to study there?**

I like studying at school. But it is difficult to get up when you don't have lectures and also I have to carry a lot of stuff (heavy books)

**19. Let's say that a Spanish app to learn from is related to you everyday life. What would you like to use it for?**

**- In what everyday activities would you like to use it?**

That would be good. Think it is extremely useful. Sometimes I switch my phone over to Spanish and try to navigate with that.

**20. Do you like that your progress is visualized in some way?**

I don't think I need that. I just need to feel that I have progress.

**21. Do you know what augmented reality is?  
If yes then, would you like to use it when learning?**

I do not know what that is.

**22. How is the perfect teacher?**

Someone who is engaged. Who wants us to learn. And that preferably has the language as their native language. They need to be able to teach us. They must be engaged in me, that I get follow-up, I like that.

**23. What do you use your phone to, and what do you not want to use your phone for?**

I basically use it for reading messages.

I do not want to use it for watching movies or reading books, it is too small for that.

## **Interview subject no5**

### **In relation to your studies**

**1. It is true that you study Spanish, what was the reason you chose to study this?**

I can a little Spanish already but want to get better at grammar and gets papers showing that I know the language for work or something that may show up in life.

**2. What is the goal of the study for you?**

Better grammar and papers.

**3. What do you think is the hardest to learn when it comes to Spanish?**

To get the time to study on your own. I work as well so the Spanish course is in my spare time. And it is hard to get time for it.

**4. Do you use The Common European Framework to measure your language skills?  
What do you think about that?**

They do not use the framework. Not as I know. I guess it is practical to have this type of measurement.

**5. What do you think about the structure of your study?**

I am not so pleased with the structure. It is too much basic grammar and in general basic. I don't need that. More practice in the different times for my part.

**6. What do you think about the learning techniques (method) that is used to enable you to learn?**

I have not been to that much lectures because I don't have the time. But I think it should be more mandatory work because than I have to go. For me it is better if there for example is an assignment every week and a orally assignment every other week.

**7. What learning techniques (method) do you think is the best for you?**

I like to translate texts. Because then you see the details in every word and sees the sentence structure. Also listening is good because the Spanish in south America is a bit more slow and easy to understand but Spanish in Spain is harder with a different dialect.

**8. How do you study, what methods are you using? Writing notes, browsing, or similar?**

Reading books and writing down words I don't know. Also have a Spanish reading box divided in different sections.

**9. Do you do anything other than what is required in the subject to learn the language? Ex. Watching movies, listening to music, apps, websites.**

Sometimes. Sporadically. Watch a movie, read a book or talk to Spanish people at work or friends.

**10. How do you think that you learn best?**

Travel to a Spanish speaking country and talk to people. Meeting people that you have to talk Spanish to, then you have to talk Spanish.

**11. What do you think is important about learning a language?**

The most important is the oral, being able to talk to people. Understand what they are saying and being able to answer. And then on the second level it is important to be able to write and understanding the grammar.

**Use of language applications today or earlier**

**12. Do you or have you used any apps to learn languages?**

Yes

- What do you think about the different apps you've tried or used
- If you use someone today, how much/often to you use them?
- What is good about them?
- What is bad about them?

No

- Is there a reason why you don't use anything?

No have just gotten my first smartphone.

Have used some webpages but just in-between noting regular.

**Questions about using application to learn**

**13. What do you think about the time it will take to learn a language? Is it important to you that you learn fast, but happily not perfect rather that it takes a long time to learn?**

Yes I think it is good that you learn quick that you feel that you are moving forward. It is better that you learn quick than learning correct.

**14. Grammar is something that many talks about being the most difficult to learn and perhaps the duller by learning the language. - What is your relationship to it? - Do you have any thoughts on how we can make it easier and more fun to learn the grammar?**

I already know French and I think that that helps me a lot because it is very similar to Spanish grammar. I don't know how to make it easier to learn. Make it more fun we could use an app to make it as a game. Maybe get points for the correct answers you get. But it is boring. You kind of just have to do it. Just make people understand that it is an very important part of the language. To be good at Spanish you need to learn the language. Just try to convey that.

**15. Sense of empowerment is a key factor when learning a language both in relation to motivation and that you feel you are using your time reasonable. How do you think you can achieve a sense of empowerment when you learn the language?**

You need to feel that you have learn something. For example that you learn and then you are able to read a book in Spanish or watch a movie. And that you notice that you are learning.

In general if you also use the language and you notice that you are able to use the language more. If you just are able to say hi, that is not giving such a good feeling.

**16. Is there anything you think that an application or a teacher can do to make you get a sense of empowerment / be reminded of your achievements?**

Yes I think. I don't know what but maybe something daily or every week or two times a week.

The perfect teacher for me would be someone who motivates me. That has a good learning plan and has goals. And test that you feel that you are moving forward. Not big tests but small that shows progress. How you doing and what have you done.

**17. Imagine that you are using an application for learning the language how many days a week would you like to use it?**

**- How long do you think you would use it at a time?**

That depends on how long you are using it every time. If it like an hour that not that often maybe just one day. But if it is like checking words and stuff then I can do it on the bus everyday, like ten minutes.

**18. Where do you like to sit / be when you learn something / study?**

**- Is it somewhere you could imagine sitting but of somehow do not fit to study there?**

It depends on what I study. When it comes to languages I like using the bus. And in general when you have some time to spare. For example a bus or train travel.

No I don't think that there are some places I would like to study but cant. Home and at the bus is good.

**19. Let's say that a Spanish app to learn from is related to you everyday life. What would you like to use it for?**

**- In what everyday activities would you like to use it?**

I like to be able to read words. Things that have with travel to. Spare time. Hobby. For grocery list could also be good. But maybe when you are traveling then it is useful to know the grocery names.

Personal learning is good in a way. But not to much. Because you want the general information as well.

**20. Do you like that your progress is visualized in someway?**

I think so. Absolutely.

**21. Do you know what augmented reality is?**

**If yes then, would you like to use it when learning?**

I do not know what that is.

## Appendix 7: Guide For Usability Testing

### Intro:

- Presentere masteroppgaven min
- Forklarer hva som skal skje her
- Presentere rettigheter, kan trekke seg når som helst, anonymt, tid
  
- Jeg observerer når de bruker appen
- Skriver notater underveis og til spørsmålene
- Be dem tenke høyt, må minnes på underveis.

### Oppgaver:

#### Oppgave 1: Hjem skjerm

- Hva ser du?
- Hva tror du du vil finne under *Hamburgeren* (pek på ikonet)
- Hva tror du ”dette” ikonet (info) betyr?
- Nå skal du finne aktiviteter og lære om *Følelser*.

#### Oppgave 2: Aktivitet Følelser

- Hvordan tenker du at denne oppgaven fungerer?
- Hva tror du de blå ordene som er understreket betyr?
- Hvilke respons forventer du hvis du svarer feil på oppgaven?
- Prøv å løse oppgaven og gå deretter videre.

#### Oppgave 3: Aktivitet Møte folk

- Finn aktiviteten og lær om å Møte folk
- Finn mer informasjon om oppgaven
- Løs oppgaven og gå videre
- Hva tror du ”den” betyr (fremdriftsbaren oppe, jeg peker).
- Hva tror du svaret er på oppgaven.
  - o Tror de feil, la de trykke og spør hva de tenker
  - o Tror de riktig, be de trykke feil for å se hva som skjer.
  - o Hva ville du gjort? Tatt guiden?
  - o Ta guiden
  - o Bare se, evt trykk men så gå videre
  - o Løs oppgaven og gå videre
  - o Hva tenker du om denne informasjonen som blir presenter nå?
  - o Hvor forventer du å komme når du trykker på knappen?

#### Oppgave 4: Utvikling

- Finn informasjon om din progresjon ved å lære språket
- Hva tenker du?
- Forklar hva denne siden går ut på.
- Kom tilbake til oppstartssiden

Oppgave 5: Logg av appen

**Etterpå:**

- Hvordan føltes det å bruke den? Hva føler du?
- Hva kunne vært annerledes?
- Hva var bra ved prototypen?
- Hva var dårlig ved prototypen?
- Nevn en ting som du synes trenger forandring.
- Hvor vanskelig synes du oppgavene var?
- Ble du distraheret av at du fikk kommentar underveis?
- Hvilket inntrykk sitter du igjen med?