

# Mobile language learning for integration – A case study of Babbel as a complementary tool

## Final report

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## Abstract

This case study investigates the implications of using the mobile language learning app Babbel to complement a traditional language learning course in Sweden. Our project scrutinizes how participants in a Swedish as a Foreign Language (SFI) course for migrants in Sweden used Babbel's app to supplement their classroom learning. During twelve weeks, 24 highly educated adults with 19 different first languages used the app outside of their beginner Swedish course. In order to target various dimensions of use, we applied several qualitative methods, such as language tests, questionnaires, interviews, and logged server data. Our analysis provides insight into usage from the participants' perspectives. The results show that learners are eager to use a mobile application for language learning. The outcomes showed that Babbel enhances language learning outcomes for those who are dedicated and consistent in using the app regularly.

### Key Findings:

- Participants who used Babbel extensively improved their intonation and flow in spoken Swedish.
- Non-native English speakers in the experimental group were successfully able to use English as a display language (L1) to improve comprehension of Swedish and intonation and flow.
- Using Babbel improved learners' comprehension of Swedish nouns and adjectives/adverbs.
- The overall user experience was positive towards using a mobile app for learning Swedish, and a majority would be interested in continued practice with Babbel.

## Introduction

The widespread use of smartphones has already allowed millions of people to learn languages by means of mobile applications (apps). Mobile Assisted Language Learning (MALL) implies learning a language whenever and wherever there is an opportunity for the learner (Burston, 2015; Kukulska-Hulme, 2013; Rosell-Aguilar, 2017). The mobile learning app Babbel is one of a number of e-learning tools specifically designed to provide language training.

For migrants who have moved to a country with a less common language such as Swedish, learning the language is important for integration into society (Bradley et al., 2017). For this reason, learning guidelines are provided by the National Agency for Education and Swedish as a Foreign Language (SFI) courses are offered for any adult migrants of working age who move to the country.

The purpose of this case study was to investigate the effects of Babbel when used as a supplementary learning tool with Swedish as a Foreign Language course (SFI). The study focuses on receptive and productive language skills: Participants demonstrated their comprehension of meaning, i.e., understanding of basic Swedish vocabulary, as well as oral production, i.e., proficiency in pronouncing selected phrases and sentences from an SFI course.

## **Babbel's App and Pedagogical Method**

The following section contains information from the Babbel website ([Babbel.com](https://www.babbel.com), 2017). With over one million paying subscribers worldwide, Babbel is described as one of the most popular language learning apps. Their app, available for both mobile phones and web browser versions, currently offers 14 "learning languages" (L2s), including Swedish, which can be learned via seven display languages (L1s). Babbel's lesson content is created and optimized by a team of over 100 language teachers, linguists and instructional designers.

The aim of Babbel is to offer meaningful language training for real-life conversations and communicating with native speakers of the desired L2. Therefore, Babbel is largely based on the communicative approach to language teaching ([Babbel.com](https://www.babbel.com), 2017). In contrast to many other apps, which could be more accurately described as vocabulary trainers, another aim is to instill useful productive and receptive skills for real-life situations. The programme contains idioms and phrases that are relevant, from beginner to advanced level. It also offers guidance on pragmatics of using the language, like when to use more formal forms of address or contractions in everyday speech (Heil, et al., 2016).

Babbel attempts to cater to diverse interests and needs, allowing users to choose their own path forward through its courses, based on their current level and interests, including travel, business and culture. Finally, the app seeks to model pronunciation and fluent speaking with realistic dialogues recorded by actual native speakers.

Babbel's chief method for vocabulary revision is the Review Manager feature. The Review Manager is based on the empirically proven concept of Spaced Repetition in vocabulary acquisition (Miles and Kwon, 2008). Spaced repetition means reviewing words at regular but increasing intervals of time to better facilitate the memorization of vocabulary. Words that students encounter in Babbel lessons are automatically added to their individualized review manager and tested successively at ever increasing intervals until they are mastered.

## **Research design**

This section describes the setting, design of study, methods, and limitations of the study.

### **Design of study**

For the case study, an experimental group and a control group were randomly selected from among 52 participants in an SFI evening course. The experimental group used Babbel during

12 weeks in parallel with their SFI course, which ran during one term.

This study was set up in collaboration with Babbel. The company provided free codes for the participants who were engaged in the study. Babbel also provided logged server data regarding how frequently participants in the experimental group used the app. However, the analysis was carried out independently by a research team of three persons. In addition, the language tests and questionnaire were designed by the research team, without input from Babbel.

The participants in the experimental group were instructed to use the programme as a complement to their Swedish course. In order to ensure participants could use Babbel in the L1 English, they needed to have a minimum level of spoken English upper-intermediate (B2) according to the Common European Framework of Reference for Languages (CEFR), the European standard for describing language ability.

In August 2017, researchers and a representative from Babbel visited the SFI course in person to introduce the study and help participants install their codes. Participants signed a consent form which stated that they would remain anonymous. Their names would not be revealed and none of their personal information would be able to be traced back to them. At that point, participants also filled out a background survey and were introduced to the Babbel app, registration, customer service, downloading of courses and the Review Manager, and some best practices for app-based learning. The participants were informed that they should use the app regularly and short periods of time. This is a principle that is suggested to lead to positive results (e.g., Vesselinov & Grego, 2016).

Both experimental and control group participants were given a pre-test to assess their knowledge in Swedish vocabulary and pronunciation before the study started. The exact same test was given to the participants after 12 weeks had elapsed. During the course of the study, the participants received regular emails from a Babbel employee. The emails were designed as a pep-talk, containing suggestions and tips for further training and links to external sources, e.g., the Swedish radio. Apart from these emails, participants were to learn autonomously with Babbel and continue regularly attending their SFI course. The research team returned after the 12 weeks to do the post-test, hand out a post-questionnaire and conduct interviews with the participants.

### **Setting**

The participants in the study were recruited from an SFI evening course for beginners. This particular course targeted learners with a higher education background. The course took place in Gothenburg, Sweden, during the autumn of 2017 and language classes were held twice a week, on Monday and Wednesday evenings.

During the introduction week, 52 people in total signed up to participate in the study. There was a great interest in using the mobile phone for additional language training when already being part of a language learning program. All in all, 38 persons carried through all 12 weeks of the

study, 24 in the experimental group using the Babbel app, and 14 in the control group who did not use Babbel. Both experimental and control groups were randomly selected.

From the original group of 52, 9 dropped out within the first weeks of their SFI course (4 in the experimental group and 5 in the control group), and were thus not part of this study. Another 5 from the experimental group were excluded towards the end of the study, since they had also dropped out of SFI. There were different reasons for terminating the SFI course, however, in this particular group it was mainly due to changed work conditions. From the experimental group, 2 people finished SFI two weeks before the Babbel study was completed. They were contacted separately and could complete the study. The same accounted for 3 members of the control group. Otherwise, the rest of the experimental and control group (38 in total) in the study took the post-questionnaire, test and interview in connection with their SFI class.

On order to participate in the study, participants had to be:

- Willing to use Babbel for at least 12 weeks in parallel with their SFI studies
- English speaking migrants on at least level B2, according to CEFR guidelines

In addition, in order to participate in the experimental group, participants must have their own mobile device (smartphone or tablet) with regular internet access, i.e. with the ability to connect to wifi at least once per day in order to obtain Babbel lessons. There were no restrictions in using any other external digital sources of learning in parallel during the period of the study.

The background questionnaire consisted of the following questions, covered in the next sections: age, gender, how long the person had been in Sweden, language skills (first language as well as additional languages spoken), educational background, and profession.

## Age

The participants constituted a homogeneous group in terms of age. Of the 38 participants who finished the study, only 2 were below 25 years old and none were over 45. The members were distributed as follows in Table 1 (experimental group) and Table 2 (control group):

*Table 1. Age distribution among participants in experimental group*

Age in experimental group	Number
18-25	1
26-35	15
36-45	8

*Table 2. Age distribution among participants in control group*

Age in control group	Number
18-25	1
26-35	12
36-45	1

## **Gender**

Concerning the gender distribution, the experimental group was evenly distributed with 12 women and 12 men. In the control group, the distribution was 6 women and 8 men.

## **Length in Sweden**

The majority of the participants had been in Sweden no more than six months. Of those who had been in Sweden between six months and one year, this group was larger in the experimental group. In the experimental group there were two persons who had been in Sweden six years or more. Many participants who had been in Sweden for several years reported that their busy professional lives prevented them from attending a beginner level SFI course. With strong English skills, it is possible to get around with in Sweden to a large extent. Many of the participants use English at work and speaking their native first language at home, often leaves little reason to engage in Swedish language learning.

## **Language skills**

Generally, the participants were quite skilled in another language apart from their native language. Out of the 38 participants, 33 spoke at least one other language in addition to their first language. There were only 5 who did not speak a second language, all of whom were native English speakers. The majority of participants, 21 in total, spoke two languages. 9 spoke three languages, and 2 participants claimed to speak as many as five languages.

The participants displayed a wide variety of languages. All in all, there were 19 different first languages spoken in the experimental and control group together (14 in the experimental and 10 in the control group).

**Experimental group:** Catalan, Chinese (2), Dutch, English (4), German, Greek, Hindi, Italian, Luganda, Portuguese, Romanian, Russian, Spanish (6), and Tamil (2).

**Control group:** Bosnian, Croatian, English (3), German, Hindi (2), Malayalam, Portuguese (2), Spanish, Telugu, and Turkish.

As described above, one of the prerequisites for participating in this study was having ample English language skills corresponding to level B2 according to the CEFR. This was essential in order for participants to follow Babbel lessons' explanations of grammatical concepts in English. Background information from both SFI, the participants' self-evaluations of their English skills (see Figure 3), and their level of education verifies this level. In addition, the participants were also interviewed in English, where they demonstrated that the stated level of English corresponded with what was provided in their self- evaluations. In the distribution of the participants' self-evaluated English skills, the majority stated that they were fluent or had very good English skills (see Figures 3 and 4 below).

## Educational and professional backgrounds

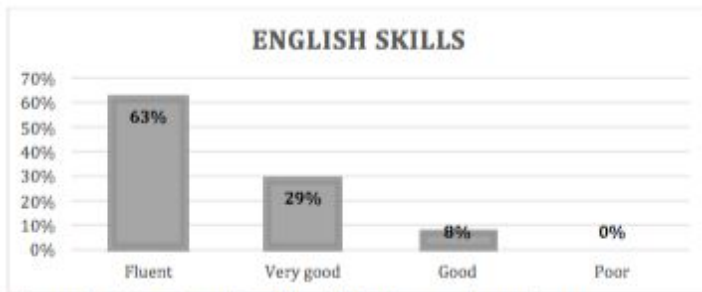


Figure 3. Self-evaluated English skills in the experimental group.

The picture was almost the same in the control group as the experimental group (see Figure 4). The control group were stated to be even stronger in English than the experimental group.

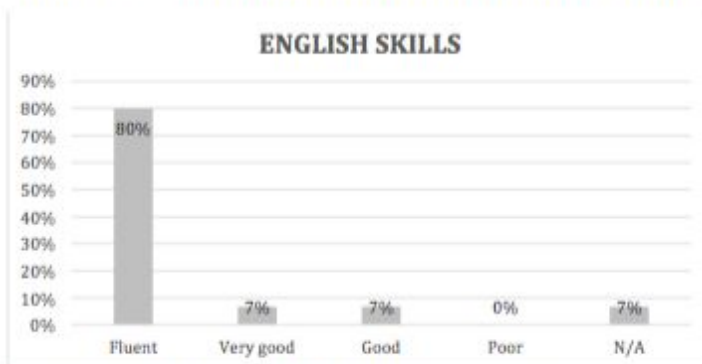


Figure 4. Self-evaluated English skills in the control group.

The participants were homogeneous in terms of their educational background. In both the experimental as well as control group they had a background in higher education, from bachelor level up to PhD level.

Concerning professions among the participants, generally they were employed with the kind of job they had before they came to Sweden. In the experimental group, for instance, 11 stated they were engineers in different disciplines.

## Methods

The analysis is based on a combination of qualitative methods; background questionnaire, pre and post-tests of vocabulary and pronunciation, post-questionnaire, interviews, logged server data with statistics of each participant, such as app usage and lessons completed in the app.

The two language tests (vocab and pronunciation) were based on content from the SFI course literature and with guidelines from Swedish National Agency for Education, as well as research within Swedish as a Second Language (Thorén, 2014). The tests were verified by two SFI teachers. In addition, one of the three members on the research team, who also verified the content, had recently participated in an SFI course as a student, adding a bottom-up approach to this verification.

The vocabulary test comprised 30 common words from the following parts of speech: nouns, verbs, and adjectives/adverbs. The voice recorded pronunciation test comprised six sentences of everyday context, composed to cover all vowel sounds in Swedish as well as some of the most challenging consonant combinations for speakers of non-Swedish background. The same vocabulary and voice recording tests were given first as pre-test and as post-tests to investigate progress in order to compare how participants' vocabulary and pronunciation skills evolved over time.

The post-questionnaire with the participants' self-evaluations complemented the statistics from the logged server data. The questions consisted of both open text fields and checkboxes. The interviews were individual and semi-structured, where each person taking the post-questionnaire were asked three follow-up questions from the post-questionnaire questions.

The analysis was founded on Rossell-Aguilar's (2017) framework for evaluation of language learning apps. This framework discusses evaluations from following aspects: language learning, pedagogy, user experience and technology.

### **Limitations of the study**

The participants were engaged in different language learning activities that had an impact on their language learning progression over the 12 weeks of the study. Not only were they taking their SFI course, they also had jobs where they were working in teams with Swedes where they could practice talking some Swedish as well as being exposed to a great deal of other external sources that affected their language learning, such as TV, news, and being among Swedish speakers all day in society. All these activities together affected their language learning and they are impossible to disregard. This study, however, focused only on the use of Babel.

## **Results**

This section displays the logged server data of usage statistics, the results of the vocabulary test and voice recordings, the outcomes of the post-questionnaire and interviews.

### **App usage**

*Table 5. Activity in Babel among the participants in the study.*

<b>Participants use of Babel in the study</b>	<b>Number</b>
High activity during entire study	11
High activity during first 3-4 weeks	6
Some activity during the entire study	4
Little activity	3
Total	24



### Vocabulary test and voice recordings

Concerning the vocabulary pre- and post-test, the results show that both experimental and control group improved their results after 12 weeks. The improvement was larger among those who used Babbel in combination with their SFI class, compared to the ones in the control group (see table 6).

Table 6. Results from the vocabulary tests.

	Pre-test correct results	Post-test correct results	Improvement
Experimental group	24%	41%	17%
Control group	12%	21%	9%

The analysis of the post-test between the experimental and control groups display that there was a statistical difference in the way participants answered nouns and adjective/adverbs but not verbs. Overall, those using Babbel improved comprehension of Swedish nouns and adjectives/adverbs.

Concerning the voice recordings of the six sentences, both experimental and control group improved their speech (pronunciation, intonation and flow) slightly during the test period. However, there was a difference in intonation and flow among those participants in the experimental group who had trained their skills using Babbel to a large extent during the study period. Consequently, those who used Babbel extensively more greatly improved their intonation and flow. However, pronunciation errors still remained. This corroborates the results in a previous study of Arabic speaking beginners of Swedish (Bradley et al., 2017) where migrants had an enhanced intonation and flow in speech after ten weeks. These results suggest that it takes a long time to master correct pronunciation in phonetically challenging languages like Swedish.

In the analysis of users' activities, spread over the whole course, and in particular engagement that showed even participation, three people were identified as Babbel "power users." A power user is characterised by high frequency of participation throughout the studied period, and for two of them, beyond the reported actual study. Progress in their actual take of lessons, indicate progress as seen in what the lessons targeted. These three users display even participation regarding time spent with Babbel.

Also noteworthy is that logged user data also show that three other participants used another one of Babbel's L1s for their learning of Swedish: two used Spanish and one German. Questionnaire data reveals these learners chose to learn Swedish from their native languages rather than from English.

To find out how active the experimental group was outside of their scheduled SFI-studies, researchers asked participants which external resources they used during the study, apart from Babbel. The most common answers were TV and newspapers online but also speaking Swedish with workmates during coffee breaks.

## **Discussion and conclusions**

The participants in the study were active and goal oriented, many engaged in learning Swedish in order to advance in their professional life. Having entered into the SFI programme demonstrates an effort to integrate into Swedish society. Using Babbel's app was part of this larger context, as one of the learning resources they used. Embracing an app as an additional learning source was a tempting idea for the large number of persons who signed up to participate in our study. They were positive when the study started and remained positive to this idea all through the study, even among those who did not use Babbel as frequently as they had anticipated themselves.

Further, our results show that those who made an effort using the programme regularly increased their language skills more than the ones who did not. Those in the experimental group who used the app only occasionally had the same results progression in our tests as the ones in the control group, which reflects that all participants attended a language learning course to learn Swedish.

Since SFI courses typically have a large intake and a large number of drop-outs after a term, we strived to find a large group to start with. However, this particular SFI course was an evening course, tailor made for higher education, which catered for participants remaining throughout the duration of the course. Accompanying such a programme with an app is adding on to sustainability in maintaining an interest in proceeding with such studies, something that our interviews showed of the use of the Babbel app. It also turned out that this particular group was quite dedicated and a fairly high number carried through the course. This was potentially also related to the fact that the group was quite homogeneous in terms of age, education and professional background, which is not always the case in SFI courses. This majority of the participants were well-educated and had advanced degrees, and therefore have long experiences of studying.

It is challenging measuring learning outcomes of what MALL tools, for instance an app, bring to a learner, since the engagement with an app is rarely isolated from other learning that is happening. Although critical voices are raised at such tools, e.g. DeWard (2013), providing a combined picture of what the learning context is like, with what other activities the learner is engaged with, will provide more insight into how the app is situated. A majority of the users expressed that they would like to use Babbel after the study. This could be observed in ten users that continued, with high frequency, after the completion of both the course and the study itself, visible in these users' logged data.

Some participants kept a high engagement, visible in logged data, but decreased after the first couple of weeks. A positive remark was made about the possibility to use their first language in Babbel, to learn Swedish. Three participants used this kind of language bridge to enhance their learning of Swedish, due to the option of changing interface language. All participants had a good working level of English, B2, which indicates that the interface language English, has not affected the use of Babbel negatively. Users with low use of Babbel, indicated how the lessons selected for practice remained at beginner's level, though it can be assumed that their learning has progressed during the course beyond beginner level. The participants had high expectations of using Babbel for their own individual learning, as a flexible option, and as complementary to attending a course governed by a strict schedule.

Another question for future development is to explore the participants' histories concerning language learning, and assumptions about language learning processes, to investigate their potential links to their use of Babbel. Since English works well in most parts of everyday life and in many parts in working life in Sweden, motivation to learn Swedish is a factor that cannot be overlooked when discussing the data from this study. The overall user experience was positive towards using a mobile app for learning Swedish, and a majority would be interested in continued practice with Babbel.

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