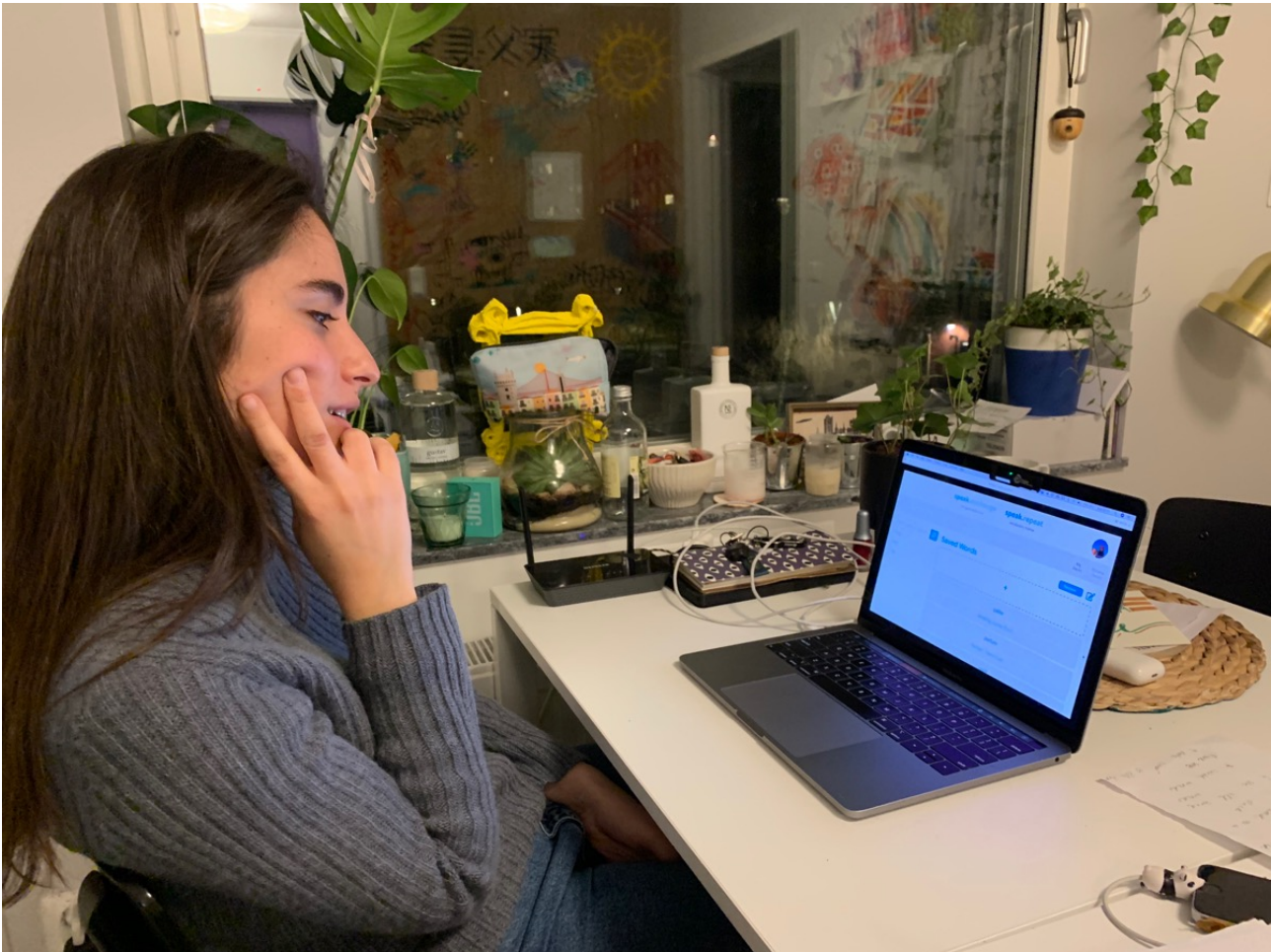


## speak.exchange prototype user evaluation



*Our participant evaluating speak.repeat.*

To evaluate our prototype, we created and carried out a usability test on one participant based on Steve Krug's *Rocket Surgery Made Easy*<sup>1</sup>. We first established research goals before conducting these tests. We also established a test script and made prepared our prototype for testing using Adobe XD. We devised recruiting and interview plans, and an interview schedule.

### Research goals

There are several key goals we aimed for when designing and carrying out the usability testing. The first was to gauge whether our service had an easy learning curve, i.e. could a user work out the purpose and available functionality of the app quickly and without assistance? We also wanted to ensure our design minimised time spent on navigating in and between speak.exchange and speak.repeat, and that the user spent their time simply using the apps. Vitally, we wanted to make sure that the user understood the connection between the two apps, and utility of connecting them for the user.

### Recruiting plan

We aimed to target a user who was fluent in either French or English, and was learning or had learned the other language. This user would also be acquainted with existing online bilingual dictionary tools, as well as learning-by-flashcard and/or spaced-repetition systems. This would allow us to test the learning curve of our website by testing a user who was already acquainted with the domain (i.e.

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<sup>1</sup> Steve Krug. 2009. *Rocket Surgery Made Easy: The Do-It-Yourself Guide to Finding and Fixing Usability Problems* (1st. ed.). New Riders Publishing, USA.

translating words, learning/memorising new words through an SRS-based flashcard system), as well as preventing any data being skewed by a user's potential unaccustomedness to the domain.

### **Interview plan**

We screened and found a participant who matched our target user through outreach in an international student WhatsApp group with over 250 members. This participant was a 23-year-old female Master student from Portugal, whose mother tongues were Portuguese and French, with English being her second language. She claims to use Google Translate to translate to English at least three times a week, and to look up definitions of English words at least once a week. She has used both electronic and paper-based flashcard systems extensively in the past, when she was learning Chinese six months ago. She states that she would use flashcards again in the future if needing to memorise something as they're "very useful".

A debriefing session was held immediately after the usability evaluation was finished. We used a Macbook Pro to record audio and share the screen to the observers. One person in our Interaction Programming group was the interviewer and another was a remote observer. Our test was conducted in-situ at the participant's home living room to emulate a natural-use environment on March 30. Our report was written on March 30.

### **Test script**

We adapted a script written by Steve Krug in "Rocket Surgery Made Easy".

Hi \_\_\_\_\_, my name is \_\_\_\_\_ and I'm going to be walking you through the session today! We've asked you to be here today because you're the kind of person that we are looking for to test our new website.

Before we begin, I have some information for you, and I'm going to read it to make sure that I cover everything. You probably already have a good idea of why we asked you here but let me go over it again briefly. We're asking people to try to use an online translation service, so we can see whether it works as intended. The session should take half an hour. The first thing I want to make clear right away is that we are testing the service, not you. You can't do anything wrong here. In fact, this is probably the one place today where you don't have to worry about making mistakes. As you use the service, I'm going to ask you as much as possible to try to think out loud: to say what you're looking at, what you're trying to do, and what you were thinking. This will be a big help to us. Also, please don't worry that you're going to hurt our feelings. We're doing this to improve the service, so we need to hear your honest reaction.

If you have any questions as we go along, just ask them. I may not be able to answer them right away, since we are interested in how people do when they don't have someone sitting next to them to help. But if you still have any questions when we're done, I'll try to answer them then. And if you need to take a break at any point, just let me know with your permission, we're going to transmit what happens on the screen and our conversation. The transmission will only be used to help us figure out how to improve the site, and it won't be seen by anyone except the people working on this project. And it helps me, because I don't have to take as many notes. Also, someone from our usability evaluation team will be observing the session in another room. They can see us and the screen. If you would, I'm going to ask you to sign a simple permission form for us. It just says that we have your permission to transmit images of you, and that the transmission will only be seen by the people working on the project.

[Give consent form and pen]

Do you have any questions so far ? Okay.

So now I just want to go over the difference between the two main components of our website: speak.exchange and speak.repeat. Speak.exchange is a bilingual dictionary which lets you translate

words between French and English. It features a history of the words you have already searched before, as well as a list of all the words you have saved for the future. speak.repeat is a spaced-repetition flashcard system which allows you to create, edit and practice flashcards and memorise their definitions. These flashcards are collected and decks. You can rename edit and create decks.

Is all of that clear for you? Do you have any questions?

Okay, great. We can start looking at things.

I'm going to ask you to try some specific tasks. I'm going to read each one out loud and give you a printed copy. As much as possible, it will help us if you can try to think out loud as you go along.

[Hand participant task list, and read the first one aloud. Allow the user to proceed until you don't feel like it's producing any value, or the user becomes very frustrated. Repeat for each task or until the time runs out]

[Tasks:]

So you're at work and your English speaking friend just forwarded to you a fascinating article from the guardian about this growing trend of people creating organic greenhouses in the heart of Paris. You're intrigued that such a bustling city could be home to such a trend but English is not your first language and you want to double check what greenhouse means. You go online to speak.exchange to test it. Start by logging in.

Now search for the meaning of the word 'greenhouse'. Turns out your idea of what it was is indeed correct. A few minutes later and you're thinking of what you're cooking for dinner. Maybe you'll try that delicious recipe for tabouleh you tried at your friends place the other day. How do you say tabouleh in English you wonder? Search for the meaning in the website.

You want to remember this word later when you google for a nice recipe so you add it to saved words. You wonder what other saved words you have, so you go to all your saved words.

You come across one particular one: "sillage", and you wonder if that's the only meaning that the word can have. How might you go and search for more meanings of this word?

Once you've seen the different meanings the word can actually have, you go and edit the deck so you can add more meanings to the translation of sillage.

You remember that you don't want to forget the word you search for before, "greenhouse," and you add it to the deck.

You realise there is a word you don't need to have saved in that deck, "odeur," so you delete it.

You go back to your decks and you want to practise words you have in your "Saved Words" deck. You practice two different words and then you go back to the main speak.repeat view.

Now go ahead and delete the saved words deck.

[Closing questions]

Overall, how easy was it for you to use speak.exchange?  
How hard or easy was speak.exchange to learn how to use?

Overall, how easy was it for you to use speak.repeat?  
How hard or easy was speak.repeat to learn how to use?

Can you describe how the link between speak.exchange and speak.repeat works?

Do you have comments you would like to share about speak.exchange and/or speak.repeat?

Finally, is there anything we haven't asked you about that you would like to talk about ?

Thanks, that was very useful. If you'll excuse me for a minute, I'm just going to see if the observer has any follow-up questions they'd like me to ask you.

[Call observation room to see if the observer has any questions]

[Ask the observer questions, then probe anything you want to follow up on]

Do you have any questions for me now that we're done?

[Give them their incentive]

[Stop the screen sharing software and save the file]

[Thank them and escort them out]

### **Research findings**

We observed the following:

- The user could easily understand the audio and word-saving functionality of speak.exchange.
- The format of word definitions on speak.exchange was initially confusing for the user; it took time for the user to understand that s.e. was not in fact a dictionary but a translator. She initially mistook the examples to be the definition of a word, but upon closer inspection after having searched a few words, she realised that the examples were just that and that speak.exchange didn't provide the definitions but translations instead.
- The distancing/layout between words and examples was initially confusing for the user.
- The user found the navbar to be very clear and easy to use.
- The user expected the search bar for speak.repeat to search words in a given deck and not within the whole speak.repeat site.
- The user experienced great difficulty understanding the difference between the edit button and the "Review" button on speak.repeat, not understanding the difference between the card view and the flashcard view.
- The user expected the flashcard view to be more 'upfront' and 'focused upon' rather than a functionality that was 'tucked away'/hidden and requiring to be accessed by first accessing a deck.
- The user was thoroughly confused by the "Delete" button when in "edit deck" view; she was not sure whether this meant deleting a single card or the whole deck, despite the evident appearance of the trash icon by each card.
- The user thought it was very clear and easy to understand how to add a card, however...
- The user was very confused and frustrated with editing and typing in cards.
- The user preferred having cards shown as squares in a grid than in a row in a single column.
- The user thought it confusing that she could add/edit the "Saved Words" deck; she thought that saved words should only include the words she had saved from speak.exchange.
- The user expected her "saved words" to be persistent across both speak.exchange and speak.repeat.
- The user did not understand the role of the accents above the search bar on speak.exchange (n.b. the user's mother tongue is French and is learning English)
- The user needed to click around and explore speak.repeat to understand what it does.
- The user completely failed the task of editing a card; she simply had absolutely no idea how to do so.
- The user finds that speak.repeat is much harder to learn and understand than speak.exchange, and thinks that it requires practice to master.

- The user understood the relationship and link between speak.exchange and speak.repeat, however she thinks that the “search history” in speak.exchange is also tied to a deck in speak.repeat like “Saved Words”.
- The user liked the aesthetic design of the website (colours, layout), however she expressed that she would like the search bars in both websites to ‘align’/‘match’ by being on the gray bar, so as to give ‘more space’ to the cards.
- The user expressed that she really liked the flashcard system and layout, and reiterated that she would really like there to be more focus on this feature and more obviously accessible, and that it “should be more highlighted”
- The user initially failed to notice how to ‘flip’ a flashcard, only going back and forth in cards without really considering that she could flip the card.

### **Recommendations**

- Cards should make it very evident that they can be edited, either by changing colour, adding an edit icon or indicating that a user can/should “type a definition/word here”.
- Implement deletion handling by asking if a user is certain they would like to delete a deck.
- Change the word ‘Review’ to ‘Practice deck’ or ‘Review flashcards’
- Flipping a flashcard should be made more visible and obvious, perhaps with a different colour than grey and with an arrow icon; instead of ‘flip’, it should be called ‘reveal answer’; the flip should be animated.
- Add headers to speak.exchange to indicate what is an example, a definition, etc.
- Remove ‘saved words’ list on speak.exchange.
- Change ‘save word’ functionality to ‘add to deck’ functionality on speak.exchange and allow user to decide which deck; have a modal pop up to allow user to decide which deck to add to.
- Change “start typing to search” to “search decks” on speak.repeat.
- Change “browse decks” to “community decks” on speak.repeat.
- On deck square card, have a button to immediately review flashcards on speak.repeat, e.g. have either ‘edit deck’ or ‘review flashcards’ in speak.repeat.
- Upon saving edit changes on a deck, it should go back to the previous page.

### **Prototype (working document)**

<https://xd.adobe.com/view/bd5cfa9c-a3d0-427a-672e-b3d5f7714618-cb6d/>

## Consent form: Usability evaluation of speak.exchange

For participants – 18 years and older.

You are invited to participate in a usability evaluation being conducted by the student evaluators listed on the bottom of the page. In order for us to be allowed to use any data you wish to provide, we must have your consent.

In the simplest terms, we would like to ask you questions around you, this service, and observe and evaluate your actions and experiences of the service to be analysed at KTH Royal Institute of Technology for the course DH2642 Interaction Programming and the Dynamic Web. This will involve:

- Transmitting your actions through screen capture and a video call to a remote observer.
- Recording your actions by writing through a remote observer.

The researchers and teaching staff will be able to look at our records (in written word) for the purposes of this project. You may stop participating at any time and ask for your information to be deleted and destroyed at any time.

You may consent to participating in this usability evaluation by checking off all the boxes that reflect your wishes and signing and dating the form below.

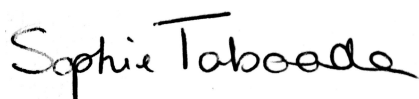
☒ I agree that any response I make may be recorded in writing and/or video to be analysed, discussed and seen by the evaluators of this usability evaluation and the teaching staff of DH2642 Interaction Programming and the Dynamic Web.

☒ I agree to be observed by usability evaluators at a pre-arranged location.

Name [please print]

Sophie Taboada

Signature



Date

March 30, 2020

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