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The UX/UI Process in Designing a Language Learning Platform

Romina Roxana Kolarovszki-Ion

Abstract: *Mobile apps are almost impossible to avoid in daily life as they impact almost all aspects of it. Regarding MALL (Mobile Applications for Language Learning), the market is oversaturated, making it difficult to choose the right app that will cater to one's needs. This article is based on the author's master's thesis with the same name, and it aims to address the UI/UX perspective in prototyping a platform for mobile language learning. The research has opened two research questions. To answer to these topics, a questionnaire has been created and analysed. Along with a short study of the competitive market, these will set the foundation for the design of a German learning mobile app. In this "conclusion" of the research, the reader will be able to identify all the problems that have come up in the process and see all the steps for correction that have been taken, to come up with an app that is both user-friendly and effective in the learning process.*

Keywords: *mobile app, UI/UX, user interface, user experience, app design, language learning app*

1. Introduction

Sight has always been the most important sense of man. From cave paintings to antique jewellery to odd advertisements, humankind has always leant towards visuals.

Even in the digital world, the same idea is dominant. Brianna Flavin offers a short and accurate definition of this field: "In simple terms, graphic designers create visual elements for communicating certain messages. These visual structures can be as simple as a logo or as complicated as the layout of a website (Flavin, 2023).

As for the branches of graphic design, these can be found in all fields that contain visual elements. Examples of such branches are logo, editorial, web, visual identity (brand design), advertisement, animation design and of course, the most relevant for this thesis, mobile app design (Flavin, 2023). For online platforms, the most important types are UX and UI design.

UI refers to the interface created for different devices (e.g., mobile phone, computer, tablet, smart watch etc.). The interface consists of a software that translates the information given by the system of operation, to "maximise the user experience" (Nurpalah et. al, 2021). As the name suggests, user experience refers to the user's interaction with the application, website or any other software (Nurpalah et. al, 2021).

Nurpalah et. al. (2021) emphasises the importance of following specific steps in the UX/UI process.. Firstly, the designer will study the market and analyse the user type that the platform should target. The competition analysis can offer a broader understanding of the goal for the app to be created. Following this step, a wireframe of the flux, i.e. the exact process the user must go through in that particular system, should be mapped out.

Only after this prototype is finished can the UI/UX expert focus on design, mainly on a more detailed image of what should be the finished product. As a last step, all results will be presented, from beginning to end, so that the app can move on to being implemented by a

programmer. Overall, the timeline looks like it can be seen in figure 1.1 (Nurpalah et. al, 2021):

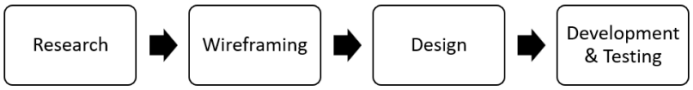

Fig. 1. UI/UX Design Process

Thomas and Devi (2021) describe the cycle of developing apps for mobile phones. They have identified seven key steps regarding this process. As a first step, the exact role of the app should be established. Basics, like target group, competition analysis, scope, added benefit and even the technology needed should be discussed and agreed upon. Only after that crucial first step can the expert move on to design and creating the prototype.

The UI part refers to how the users will interact with it. In this wireframing stage, there are three important parts. Information design means the logical structuring of information, so that the user can browse intuitively. It is all about creating the links between pages and the operations that appear on the screen. Finally, the interface design includes the designing of different buttons that will maximise the usability (Thomas & Devi, 2021).

2. Research methods

In order to properly understand the theoretical aspects and to get a grasp on how everything works in the addressed field, I followed some steps of collecting information. Following this, two questions for research have been used.

To collect data, a search was conducted on Google Scholar using the following keywords: “UX/UI design process,” “UX/UI mobile apps,” “mobile learning apps,” and “language / German learning apps.” Results were restricted to the years 2019-2023, and further filtered based

on relevance and language (English and German). Only scientific articles were selected, excluding books, reviews, or PowerPoint presentations. Additional filtering focused on article titles, keywords, and abstracts. Short analyses were conducted to identify articles relevant to the UX/UI process for mobile apps, particularly those presented at conferences or published in journals, that included keywords related to UX/UI processes, study cases, or relevant research. Articles from teachers' perspectives were also considered. After filtering, ten relevant results remained for this thesis.

Following a thorough review of these articles, two research questions were formulated:

Question 1: What is the current status of learning a new language through mobile technology among Romanian users?

Question 2: How are the stages of UX/UI highlighted in creating an app for learning German?

To address the first question, a questionnaire was developed for Romanians who are currently or have previously used mobile apps to learn a foreign language. The form included nine progressively specific questions and was created using Google Forms. It was distributed via social media (Facebook, Instagram, and WhatsApp), resulting in responses from 125 participants.

For the second question, a series of steps were followed. First, a competitor analysis was conducted. This provided insights used to wireframe the app's structure and partial information architecture. Finally, the app pages were designed, and a prototype was created.

Questionnaire

The nine questions were the following:

- Have you ever learned or are you currently learning a foreign language?
- Through which methods have you learnt or are you currently learning a foreign language?

- Which mobile app for language learning have you used or are you currently using?
- Do you agree that learning a language through a mobile app can fully replace a face-to-face course with a teacher?
- In which of the following aspects has a mobile app for language learning helped you?
- How much time were / are you willing to allocate towards learning a language using a mobile app?
- Would you recommend learning a foreign language using a mobile app?
- On a scale from one to five, how easy has it been / is it to use the language learning app?
- How do you prefer the pages of a language learning app to be, regarding the design?

This form managed to showcase the users' preferences regarding design, but content on a mobile app for language learning as well. Through this method potential weak points and the importance of utility were identified. Other results from this questionnaire showed the difficulty in acquiring grammatical knowledge, even though this is a problem that surpasses the digital field and has been around since people have first started to learn foreign languages. Still, it is important to the respondents and need to be considered. The answers to the last question were divided between the wish for a very colourful app, others wanted pastel colours and a third main group chose minimalism and lack of colours. Taken everything into account, what an app needs is balance more than anything.

3. Results

Graphic interface for language learning
Competitive Market Analysis

For a better understanding when it comes to market and competitors four German learning apps (exclusive or not to German as the only subject) were chosen. All selected apps have at least one million downloads on Google Play and a rating over 4,0. A particularly important criterium in the selection process was the different approaches towards the learning process. Thus, different principles of graphic design can be observed. The analysed apps are: DW Learn German, Learn German – 5,000 Phrases, Memrise and Drops. For each app I also found a study case, to have another's perspective as well.

The first app belongs to the famous news channel Deutsche Welle and their notoriety was considered enough, knowing that the app will be downloaded by many. Even if apparent simple in design, as well as easy to follow, the user interface contains quite a few interruptions in the user's flow, as well as elements that do not necessarily have a purpose. The user experience constantly comes to a halt by needing to scroll or by lack of vital information on the same page. On some pages, the hamburger menu even appears twice. The only characteristic that "saves" the app is the learning material, as it results from Sulistyorini and Pratomo's analysis *The Utilization of the Deutsche Welle Learning Application in Teaching German Vocabulary* (Sulistyorini and Pratomo, 2022). Even so, sometimes the logic in browsing through the levels appears to be missing and the user is not encouraged in any way to continue using this app.

Learn German-5,000 Phrases is a really interesting platform, regarding the structural aspects of the design. It appears a bit chaotic to the eye regarding the user experience and interface. Even more than in the first app, the user needs to allocate time for understanding how everything works. A positive aspect in this case is the presence of a live

tutorial when first using the app, but a one-time tutorial is not enough to memorise all the weird elements and how they work.

A platform for learning more languages, not only German, Memrise stands out through the use of AI in the learning process. Not only that, but the design of the user interface positively stands out as well. The humoristic and slightly playful character of this app manages to really engage the user. The natural flow is not interrupted by unnecessary things and any unclarities are swiftly explained. Its functionality is backed up by a simple, yet beautiful design.

Drops is an app belonging to Kahoot!, the globally used platform for online quizzes. Its app for language learning is incredibly attractive to a younger audience, due to the colour palette, which is in strong and contrasting colours, like purple, bright orange and teal. From a UX/UI perspective, there is room for improvement, as some things can lead to confusion. Also, even if fun and colourful, exactly this choice of design can quickly lead to tiredness of the eyes, which not something a user wants.

Visual design and prototype

The first step involved creating a wireframe, a critical initial stage to identify potential issues and facilitate feedback from both the client and prospective users. This step, which should not be skipped, allows for the "personal exploration" of ideas, serves as a tool for "communicating abstract concepts," and acts as a "mechanism for evaluating initial feedback" (Cuello and Vittone, 2023).

After developing a wireframe for the desired app based on the guidelines outlined earlier, the process moved to the design and prototyping phase. Prototypes serve as representations for internal or user testing, helping to identify usability issues (Cuello and Vittone, 2023). The design and prototype were created using the online platform Figma, which included the following screens: splash screen, landing page, login page, homepage, calendar page, feed page, profile page, and an exercise page with a pop-up window.

One of the primary considerations was the respondents' preference for ease of use. A key issue identified in previous analyses was the complexity of navigating to the homepage. To streamline this process, as shown in Figure 2, the design allows users to move from the landing page to the login (with an expedited option via Facebook) and then directly to the homepage.

In terms of design elements, simplicity and relevance were prioritized. The logo incorporates the colors of the German flag, with yellow as the dominant color for its cheerful association. The font of the logo and iconography feature a handwritten style, as illustrated in Figure 2, which displays the initial screens.

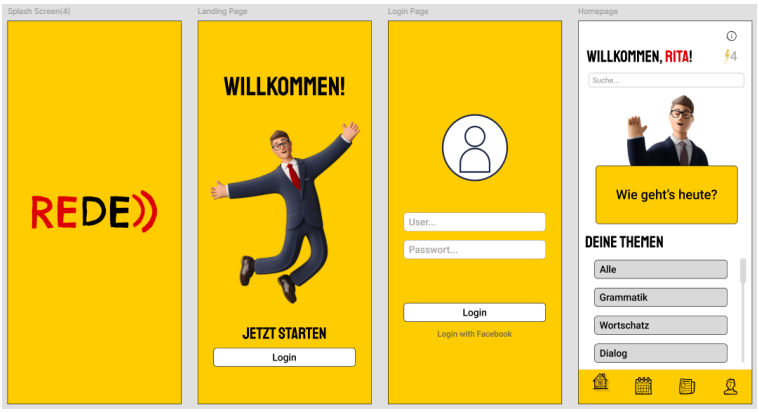

Fig. 2. Splash screen, landing page, login page and homepage

The concept of immersion was a particularly important one to creating this app, as it should help the user in accumulating knowledge and in setting his mind to only think in German when learning. It is not recommended to constantly translate between two languages when trying to acquire new linguistic information.

This is why the entire app is in German, with the possibility-only if necessary, to click the information icon and see a translation of the page. The choice of vocabulary is one that should be logic and understood, even with no or little knowledge. This is also because the structure is according to Beaird's principle of „intuitive browsing" of the

app (Beaird, 2007). It is clear to see that the text is easily understandable and the flow of browsing is obvious, so that the user does not have to stop and analyse the app and what to press next. This is clearly shown in figure 3. Either through suggestive icons, simple choice of words, logic layout of the information or even process bars, it is simple to understand the app.

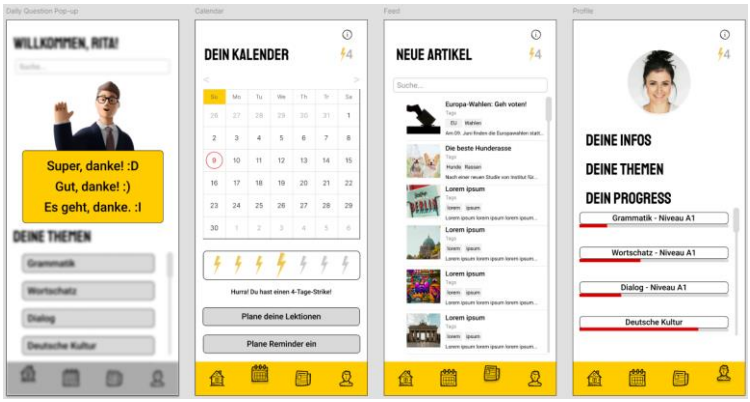

Fig. 3. Pop-up window, calendar page, feed page and profile page

The application should motivate and thus contain a gamification aspect. This has been done through the weekly streaks of using the app. The user received a lightning bolt for each consecutive day exercising. Once he has gathered seven lightning bolts, a fun fact about Germany or the German vocabulary is unlocked. This contributes to raising interest toward the German culture as well, as it is part of the immersion concept and it is the best way to learn a language. Other choices of content also support this concept, such as the feed page with articles (based on user's level) in German and having learning categories dedicated to culture as well.

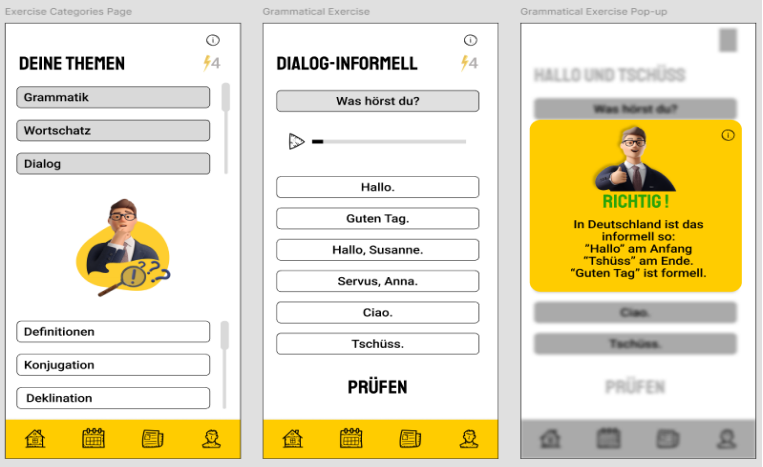

Fig. 4. Learning categories, exercise page and pop-up window for checking exercise response

In figure 4, it can be seen that the exercise layout is very similar to most apps. It is extremely hard to come up with a new perspective regarding such layouts, and would not necessarily be useful, as could be seen with Drops. What makes the exercise layout for Rede special, is the separate categories of learning with solely theoretical information that can be read only if chosen to. Furthermore, when checking the answer to an exercise, the pop-up window will always contain little theoretical information. Through this method, it can be ensured that the correct answer was not just a coincidence, and that the whole concept and rules are fully understood.

4. Conclusions

This paper aimed to identify the strengths and weaknesses of mobile language learning apps through market research and a questionnaire targeting users who have either previously used or are currently using such apps for language learning.

This research informed the design of an app prototype, developed according to the steps outlined earlier. The app reflects user preferences and includes some unique contributions.

One central concept, often overlooked in language learning, is the idea of full immersion in the subject. A significant percentage of respondents reported challenges with learning grammar through apps, which guided my efforts to address this issue. Drawing on three grammar principles from Zeyer et al. (2015) — "simple explanations, grammar in context, and grammar learning through personal discovery" — I developed a process allowing users to learn grammar, potentially without consciously realizing it. From both a UI/UX and didactic perspective, this platform aims to create an optimal learning environment and foster positive learning outcomes.

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