



# **UniiLanguage**

## **IMCAT**

### **UI Document**

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# Revision History

## Version 1.0

- Added personas, scenarios, swim lane diagram, comparative analysis of interfaces, storyboards, and the generalized transition network
- Created wireframes
- Added usability, functionality, and satisfaction goals

## Version 2.0

- Fixed wording in comparative analysis of interfaces
- Completed and polished goals
- Fixed wording in scenarios
- Added one additional “teacher” persona
- Added additional Usability, Functionality and Satisfaction Goals



# Personas



## Jordan

The Online Game Enthusiast

1st grade

### About

Jordan is a second grader in his school's special education program. You can almost always find him on coolmathgames.com or playing Minecraft. He doesn't love school, but he does loves singing songs in class and playing learning games his teachers assign him.

### Frustrations

- Has trouble maintaining focus when the course material isn't interactive.
- Feels overstimulated and stressed out when games have a complicated premise or interface.
- Feels that too many games he plays are too "kiddy" — he's a grown-up too!

### Goals

- Have the most fun he can — even if he's learning or doing homework.
- Have a game he can talk to his friends about.
- Spend less time doing homework everyday.

### Favorite Websites/Apps



## Jessica

The Always-Busy Mom

32 years old

### About

Jessica is an always-busy first-time mom. She's always looking for new ways to make learning engaging for her children — from daily times tables to packing special themed lunchboxes. At home, she speaks Chinese with her child and partner stay in touch with their heritage.

### Frustrations

- Feels that current learning curricula doesn't accommodate all children.
- Finds it difficult for her child to find language learning engaging and fun.
- Finds it difficult to convince her child to play educational games.

### Goals

- Have her child participate in more inclusive and learning curriculum.
- Have her child engage more meaningfully with learning materials.
- Teach her child and partner to be fluent in Chinese.

### Favorite Websites/Apps





# Angeli

The Homeroom Teacher

30 years old

## About

Angeli is a grade special education teacher at her local elementary school. She's passionate about inclusive education and having fun. When she's not searching for the perfect classroom snacks, you can find her researching about inclusive and accessible learning tools.

## Frustrations

- Feels that existing learning curricula and tools do not accommodate all children, especially those with special needs.
- Feels like she has to learn too many different tools and learning softwares.
- Students already feel zoom-fatigued from technological learning tools.

## Goals

- Have her students engage more meaningfully with learning materials.
- Support non-traditional means of learning, especially interactive ones.
- Find a tool that integrates seamlessly into her lesson plans, with minimal time spent learning new tools and softwares.

## Favorite Websites/Apps



# Scenarios

## Target Audience Scenarios

Matthew is a 3rd grader and native English speaker. He is enrolled in special education at his elementary school, and loves spending his free time on coolmathgames.com or playing Minecraft with his friends. He has Spanish class every other day, and today his Spanish teacher assigned him word drills and Unilanguage practice as homework. After he gets home and eats a snack, Matthew logs on to his family desktop computer and completes his Spanish word drills. He then navigates to the Unilanguage website and selects "Spanish" when asked what language he wants to study. Unilanguage prompts Matthew to draw a "Perro con un Sombrero" (Dog with a Hat) in 10 second, 30 second, and 1 minute intervals. Unilanguage shows Matthew all his drawings after he completes them, and Matthew runs to the next room to get his dad and show him his silly drawings. Then, Matthew presses the "Start New Drawing Session" button and completes 2 more drawing sessions to complete his homework.

Isabella is a 4th grader and native speaking Spanish speaker. She struggles with dyslexia and ADHD, and is working on better pronouncing her English "j", "h", "ch" letter sounds. In class,



Isabella's teacher introduces a new list of animal words for the class to study. She gives the class a custom Uniilanguage code to help with some of these new words and letter sounds. When Isabella gets home, she opens up her Chromebook — lended out to her by her school — finishes her assigned word drills, and navigates to the Uniilanguage website. She enters the custom code provided by her teacher written down in her notebook. The site accepts her code, then prompts her to draw a "Chicken Wearing a Jacket". She giggles at the prompt, then proceeds to draw a chicken wearing a jacket three times in increasing intervals of 10 seconds, 30 seconds, and 1 minute. The website displays all three of her drawing attempts alongside the prompt, and asks if Isabella would like to save the images to her school computer. Isabella decides to save the images, then asks her teacher at school the next day if she can print out the pictures she saved to show to her mom. Isabella's mom is delighted to see her daughter's pictures and learn more about her daughter's learning. She hangs the printed photos on the family fridge for everyone to see.

## Reach Audience Scenarios

A high school student named Michael is taking a Spanish course. He is struggling with the course because he does not know how to study and prepare for exams. He does not have any motivation to study since he is not having a hard time memorizing them. His Spanish teacher talked to him after class to discuss his grades. His teacher recommended him to try out UniiLanguage and see how he likes the application. After trying the application, Michael seems to enjoy it since he isn't just memorizing words and is doing fun activities. After using the application for a couple of weeks, Michael's teacher sees he is improving very well in his Spanish. Now the Spanish teacher tells everyone to use the UniiLanguage if they would like to learn Spanish in a more exciting way.

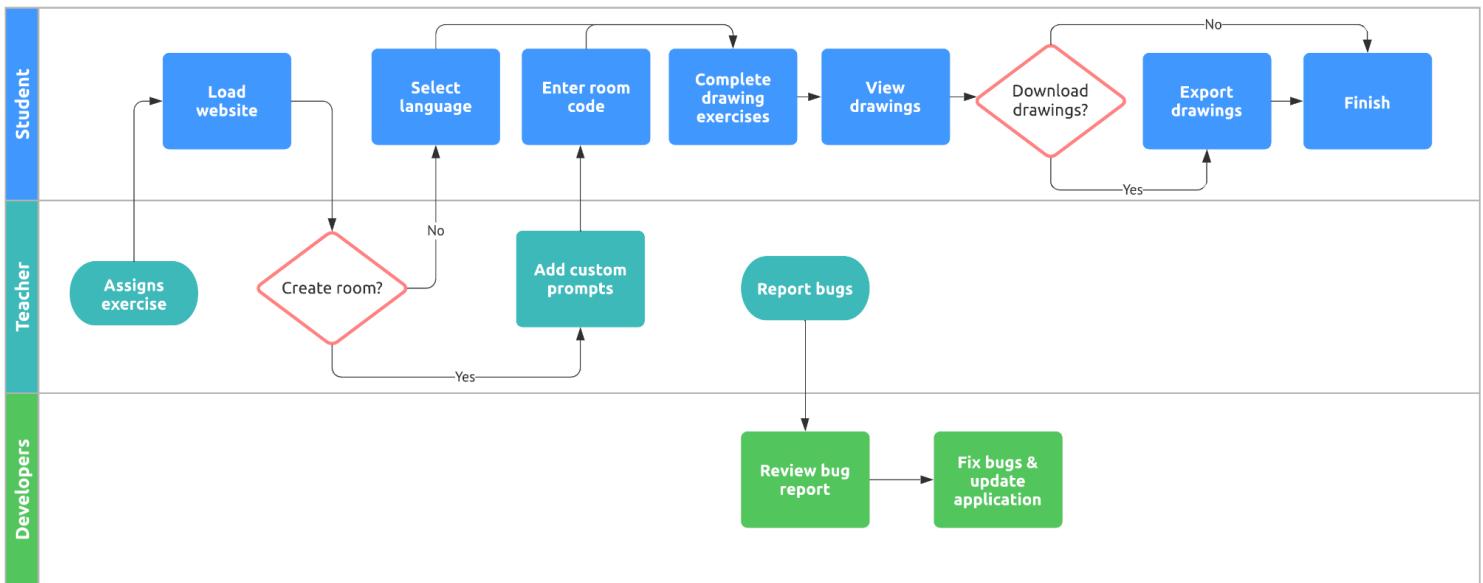
A middle school teacher is trying to find different ways of teaching their students French. She is tired of giving out exercises out of the book. She believes that the students are not paying attention as much as before. She talked to the other foriegn language teachers about her issue and the other teachers recommended her UniiLanguage. She hops online to see what UniiLanguage and finds out she can do exercises that will benefit her students and have more fun in their learning.

## Swim Lane Diagram

The following swim lane diagram depicts the stakeholders and the processes involved in completing a drawing exercise on the UniiLanguage application in an educational setting.



Teachers are expected to assign drawing prompts for the students to complete. They can opt to create a room with custom prompts or to allow the app to randomize prompts. Students are expected to go on to the website, enter the code or select a language, and complete the 10/30/60 second drawing exercises. They have the option to download their drawings as well. Teachers can also report any bugs encountered and the development team is responsible for reviewing those bugs and fixing them.



## Comparative Analysis of Interfaces

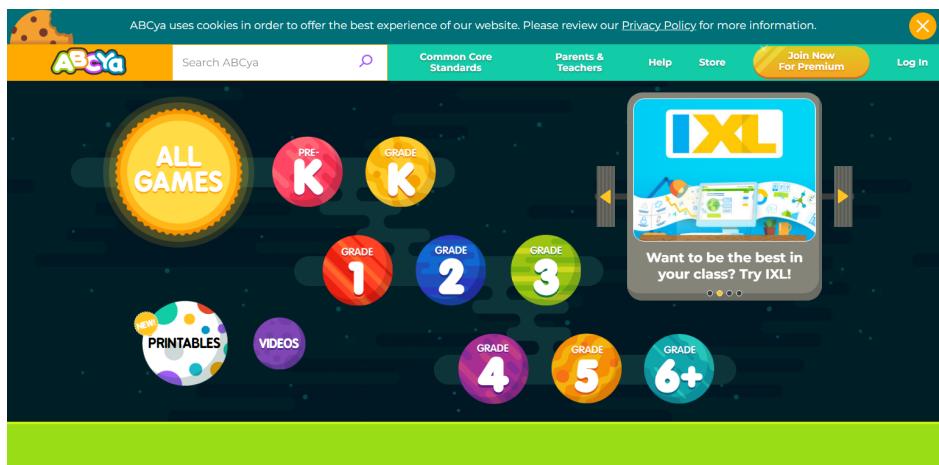
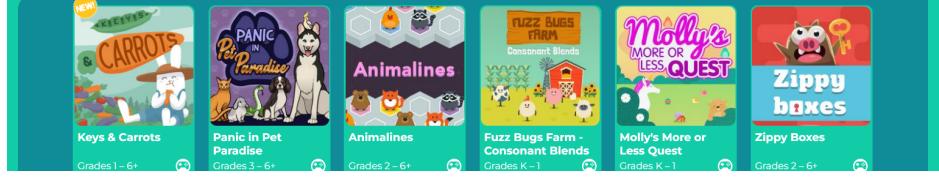
In this section, we will be comparing the interfaces of different educational websites, including websites dedicated to language learning, pre-kindergarten to 6th grade, and/or engaging teachers and students.

Two applications that our client specified that she liked were ABCya! (acbya.com) and TypingClub (typingclub.com), due to the fact that students were not required to make an account in order to use the program. We will also be analyzing a language learning platform (Duolingo) and an online flashcard tool (Quizlet).

### ABCya!

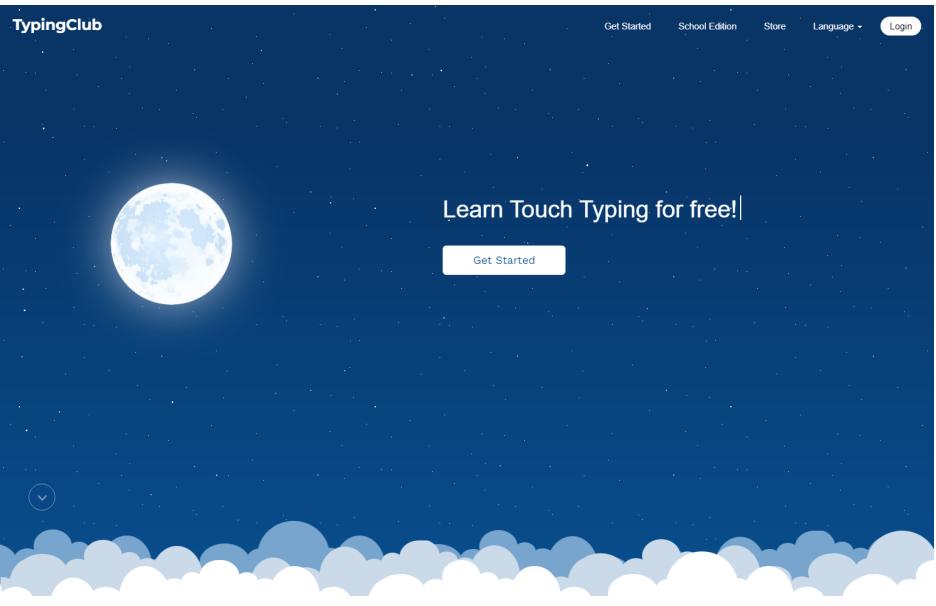
Description	ABCya! is a website that provides educational games for pre-kindergarten to 6th grade students.
UI	The app is designed for students to easily access and play learning



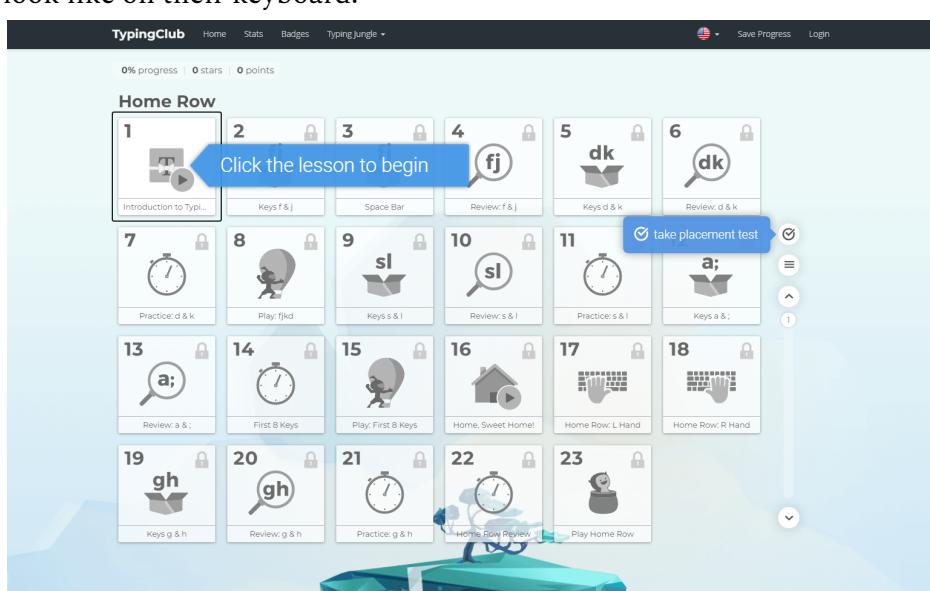
	games. The UI is very simple and colorful.
<b>Homepage</b>	When first entering the website, there are buttons that allow students to select their current grade or to view “all games.” If you scroll down further, you can view games listed in different categories   
<b>Requires an account?</b>	No
<b>Content</b>	After choosing a game, the page with the game loads. There is a menu page, and sometimes the game will display simple instructions on how to play the game. There are oftentimes clear and simple instructions at each step. Upon completing the game, there is an ending screen, oftentimes with a button to play again or to go to the next level. There is music playing in the background to engage the children as well as.

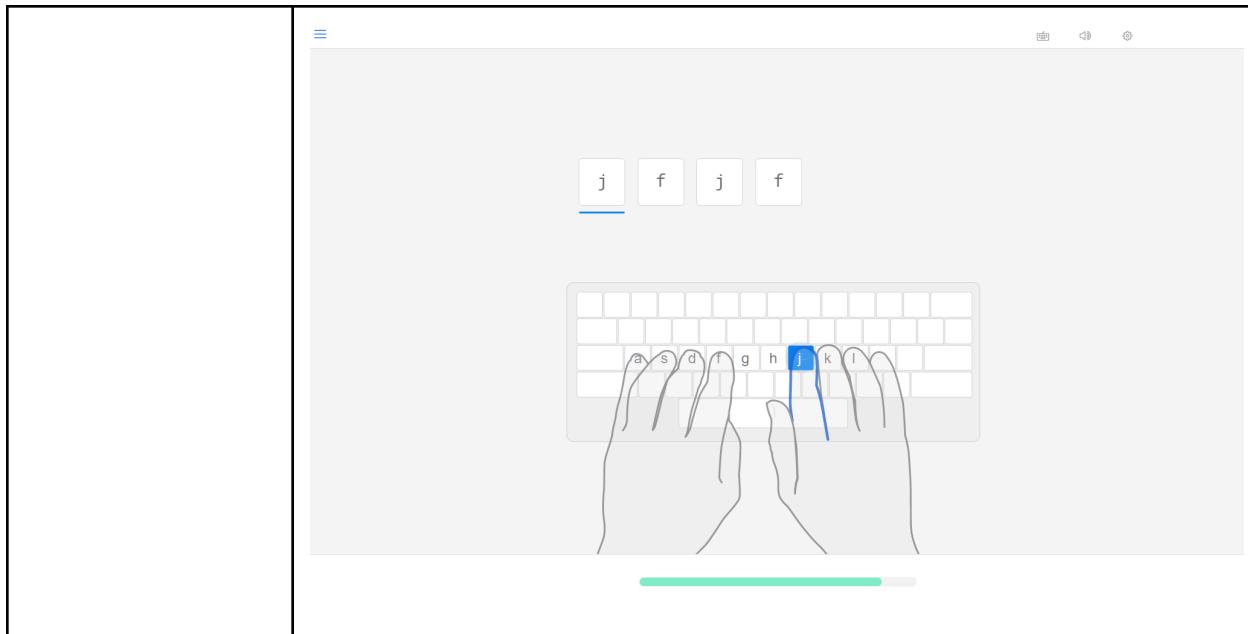


## TypingClub

<b>Description</b>	TypingClub is a website dedicated to teaching people how to type.
<b>UI</b>	Overall, the UI is very minimalistic and based on a mostly monochrome color scheme with pops of color to highlight important information. It engages multiple senses (touch, hearing, sight) to assist with learning. There are also positive feedback/reinforcement ("Good job!").
<b>Homepage</b>	The homepage is very simple. There is a single call-to-action button located in the middle of the page. If you scroll down, the website provides more information about itself and how it is effective.  A screenshot of the TypingClub homepage. The background is a dark blue night sky with a full moon and stars. At the top, there is a navigation bar with links for "Get Started", "School Edition", "Store", "Language", and "Login". In the center of the page, there is a large white button with the text "Learn Touch Typing for free!". Below the button, there is some smaller text and a small "Get Started" button. The bottom of the page features a decorative pattern of white clouds.



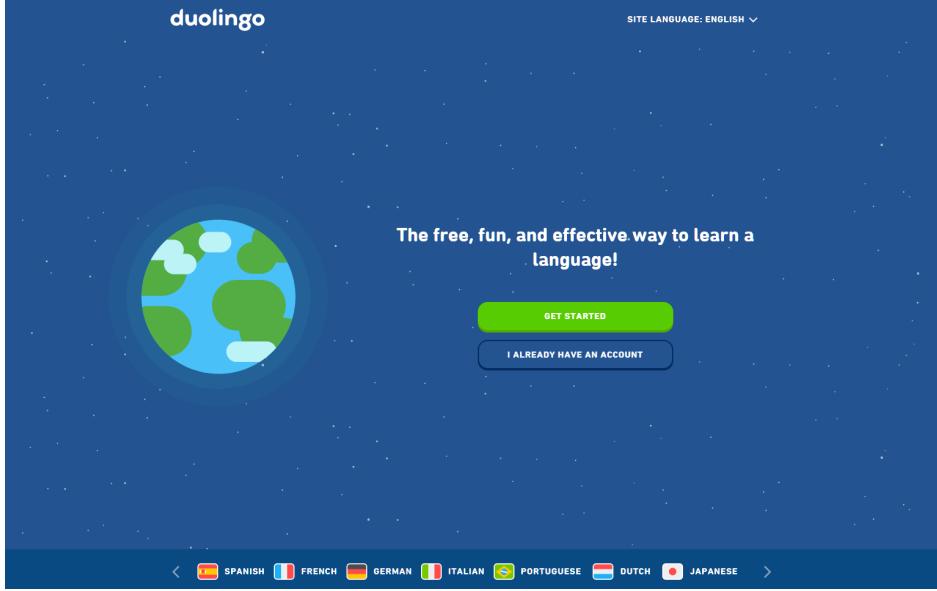
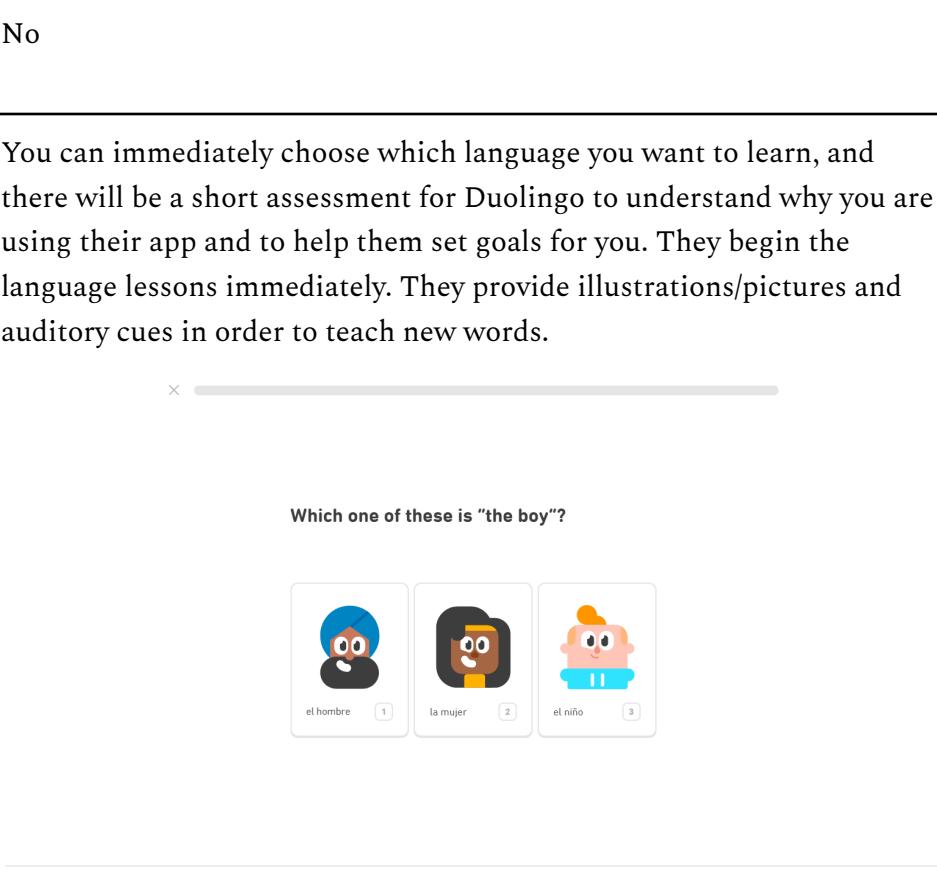
Requires an account?	No
Content	<p>There are different levels that students can go through. They can also decide to take a placement test to skip some levels.</p> <p>There is an intro video that provides instructions by showing how to place your fingers. The illustrations are simple and display the basics to typing. This can be effective for visual learners.</p> <p>For each lesson/level, there are prompts, with a clear indicator of what to type. Additionally, there is a depiction of a keyboard and hands on the screen in order to convey to the student what their hands should look like on their keyboard.</p> 



## Duolingo

<b>Description</b>	Duolingo is a language-learning platform.
<b>UI</b>	The UI is very minimalist, utilizing a monochrome color scheme with some pops of color. There are positive feedback/reinforcement messages (e.g., “Good job!”, the color green, a “ding” as an auditory cue). The platform also utilizes gamification to assist in language learning.
<b>Homepage</b>	The homepage is very simple and has clear call-to-action buttons at the middle of the page. If you scroll down, they provide more information on Duolingo and its effectiveness, as well as other relevant information.

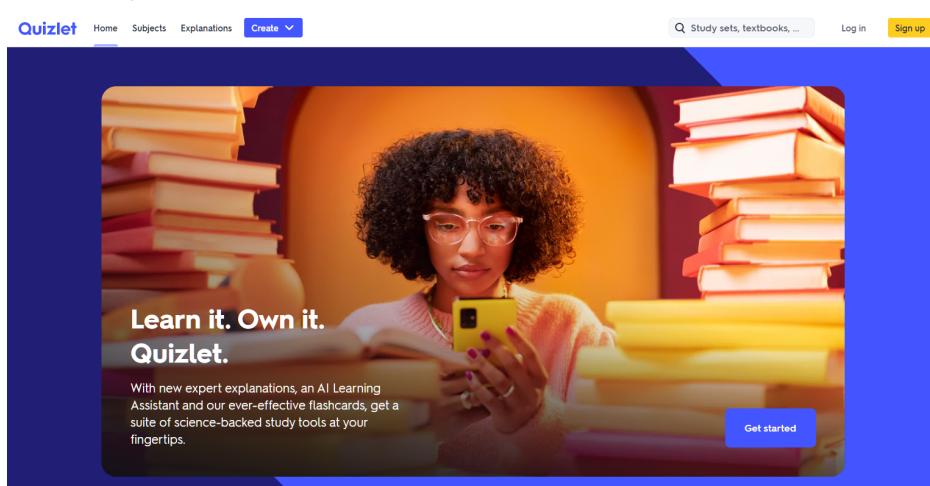


	 A screenshot of the Duolingo homepage. The background is dark blue with a central green and blue globe icon. The text "The free, fun, and effective way to learn a language!" is displayed above two buttons: "GET STARTED" (in green) and "I ALREADY HAVE AN ACCOUNT" (in white). At the bottom, there's a row of language flags and names: SPANISH, FRENCH, GERMAN, ITALIAN, PORTUGUESE, DUTCH, and JAPANESE.
<b>Requires an account?</b>	No
<b>Content</b>	<p>You can immediately choose which language you want to learn, and there will be a short assessment for Duolingo to understand why you are using their app and to help them set goals for you. They begin the language lessons immediately. They provide illustrations/pictures and auditory cues in order to teach new words.</p>  A screenshot of a language lesson. The question "Which one of these is 'the boy'?" is displayed above three options: a boy with blue hair labeled "el hombre" (option 1), a woman with brown hair labeled "la mujer" (option 2), and a boy with pink hair labeled "el niño" (option 3). Below the options are "SKIP" and "CHECK" buttons. A note at the bottom states: "The order of the lessons are depicted clearly and there are also daily goals and streaks that help encourage learners to keep coming back."

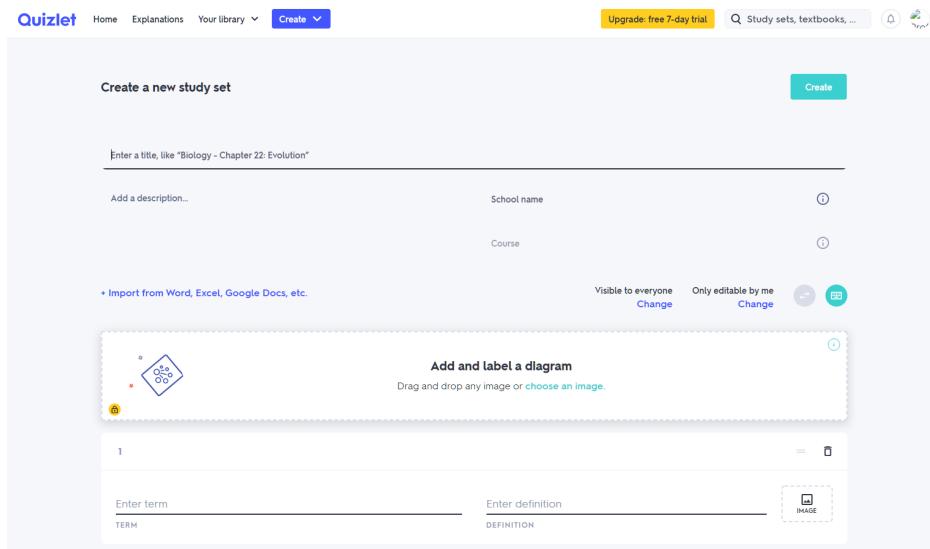
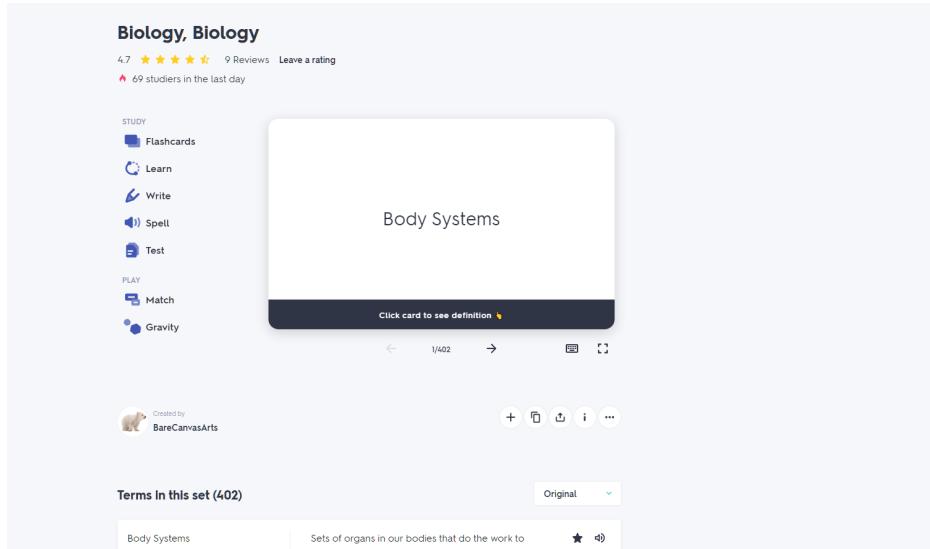


A screenshot of the Quizlet homepage. At the top, there's a navigation bar with icons for LEARN, STORIES, DISCUSS, SHOP, MORE, and user stats (level 10, 0 XP, 0 coins). Below the navigation is a "Choose your path!" section with two options: "Intro" (purple gear icon) or "Placement test" (green building icon). It also says "Beginners start at Introduction. Advanced learners take a short test." To the right is an "XP Progress" section showing a yellow progress bar for a "Daily Goal" at 0/20 XP, with an "EDIT GOAL" button. Below that is a box prompting users to "Create a profile to save your progress!" with "CREATE A PROFILE" (green) and "SIGN IN" (blue) buttons. The main content area shows five circular icons for "Phrases", "Travel", "Restaurant", "Family", and "Shopping".

## Quizlet

<b>Description</b>	Quizlet is a platform that provides tools for studying and learning, specifically mimicking how flashcards are used.
<b>UI</b>	The UI is quite complex compared to the previous platforms/websites I have analyzed above. Additionally, it is intended to be used by older students, presumably in high school and/or college. Quizlet uses mostly white and blue hues throughout the interface.
<b>Homepage</b>	The homepage is pretty simple with a call-to-action button at the bottom right.  A screenshot of the Quizlet homepage. The top navigation bar includes links for Home, Subjects, Explanations, Create, and a search bar. On the right are Log In and Sign Up buttons. The main visual is a woman with curly hair wearing glasses, looking at her phone, surrounded by stacks of books. The text "Learn it. Own it. Quizlet." is displayed over the image. Below the image, a small paragraph reads: "With new expert explanations, an AI Learning Assistant and our ever-effective flashcards, get a suite of science-backed study tools at your fingertips." A blue "Get started" button is located at the bottom right of the main image area.



Requires an account?	Yes
Content	<p>Quizlet allows you to create your own flashcard set or to search for specific courses or pre-made sets others have made.</p> <p>The image below depicts the UI when you're creating a new set:</p>  <p>The image below is an overview of a pre-made set. It lists the actions that can be performed on the flashcards, what the flashcards actually look like, and a list of all the terms/definitions.</p> 

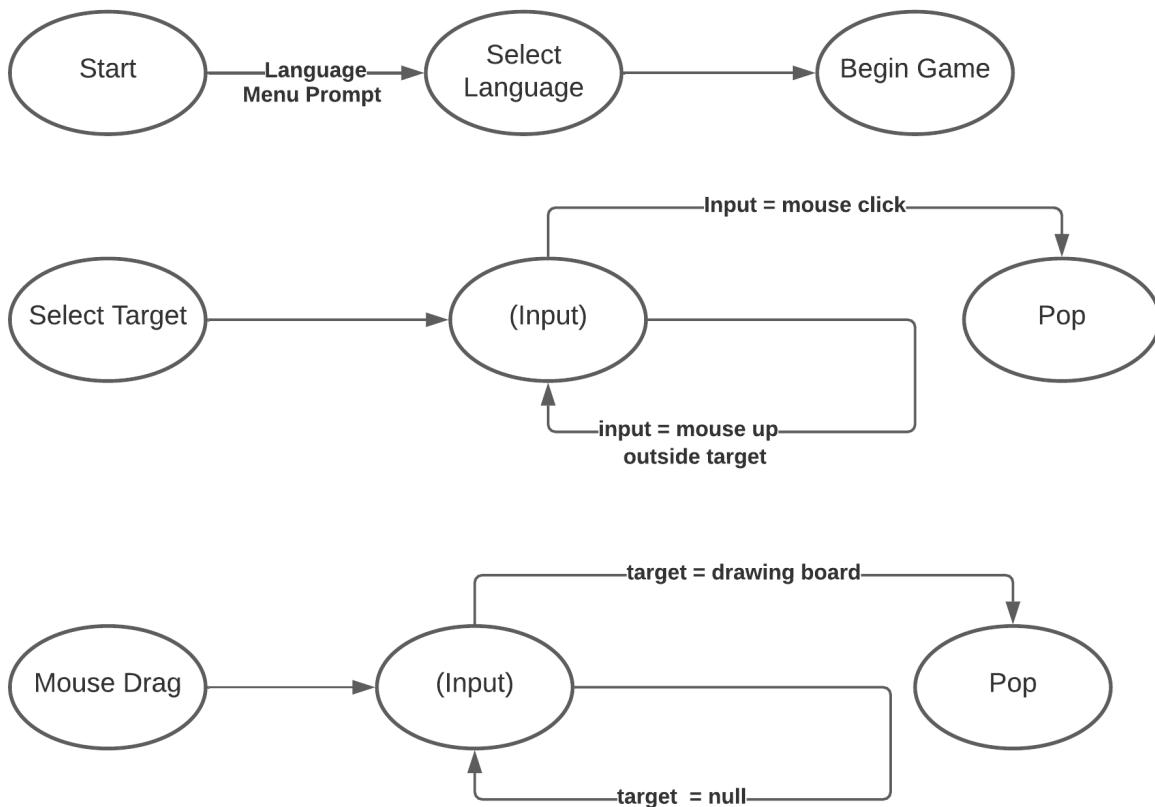


## Storyboards





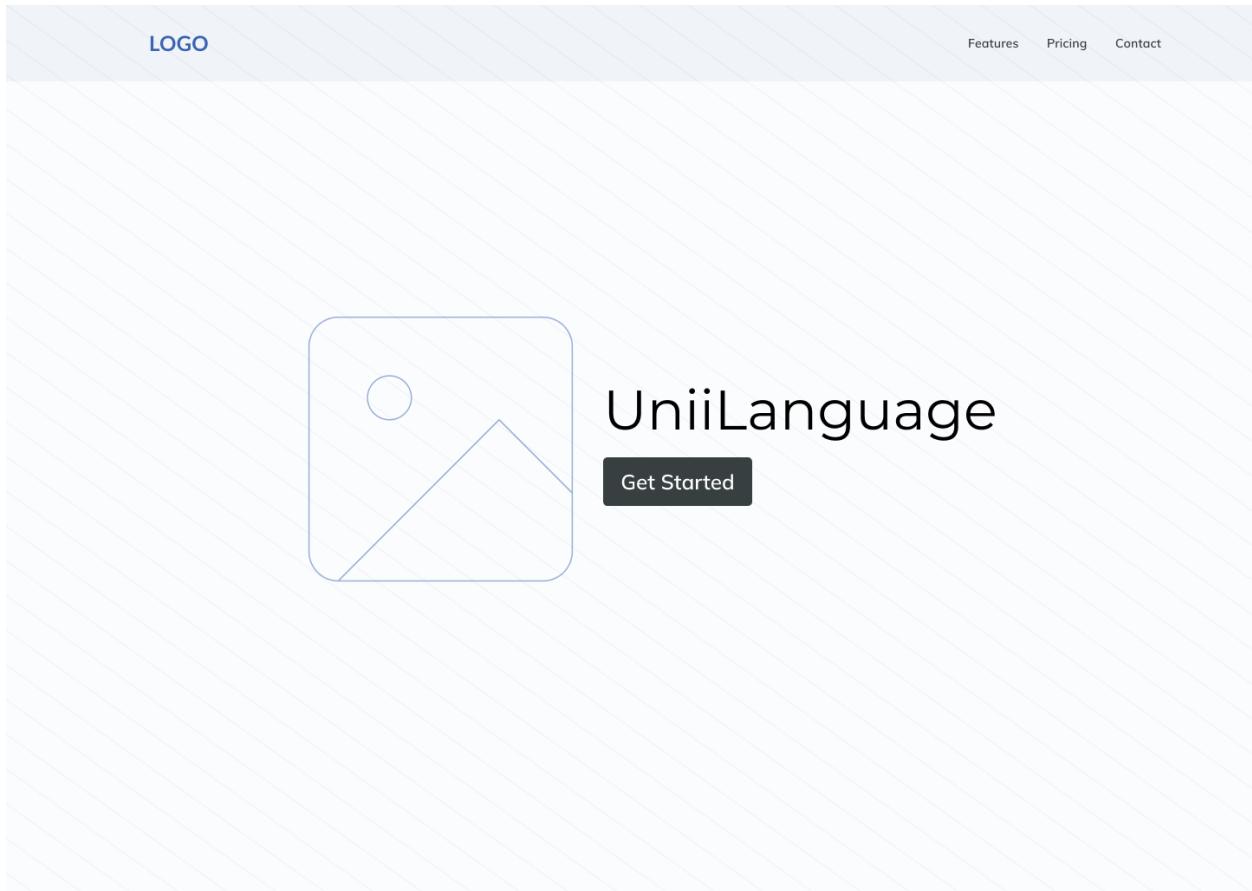
## Generalized Transition Network





# Wireframes

## Homepage

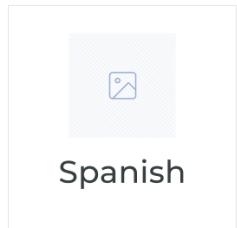


A wireframe representation of a website homepage. At the top, there is a header bar with a light gray background. On the left side of the header is a placeholder text "LOGO". On the right side, there are three menu items: "Features", "Pricing", and "Contact". Below the header, the main content area features a large, rounded square placeholder for an image or video. To the right of this placeholder, the text "UniiLanguage" is displayed in a large, bold, sans-serif font. Below this text is a dark rectangular button with the white text "Get Started". The background of the entire page has a subtle, light gray diagonal hatching pattern.

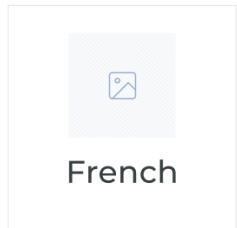


Select a Language

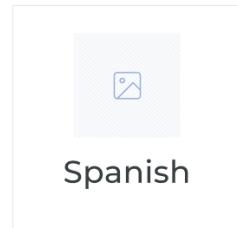
Select a language to practice



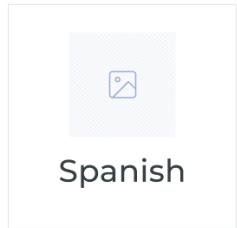
Spanish



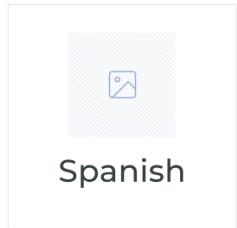
French



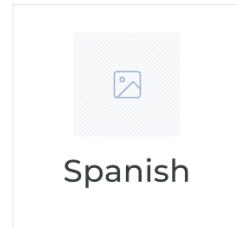
Spanish



Spanish



Spanish



Spanish



## Instructions

# How to Play

Lorem ipsum dolor sit amet, consectetur adipiscing elit. Aliquam ut vel augue sollicitudin mauris et luctus.

Nulla arcu enim, scelerisque est vitae. Nec aliquam pulvinar phasellus vitae purus hendrerit morbi pulvinar.

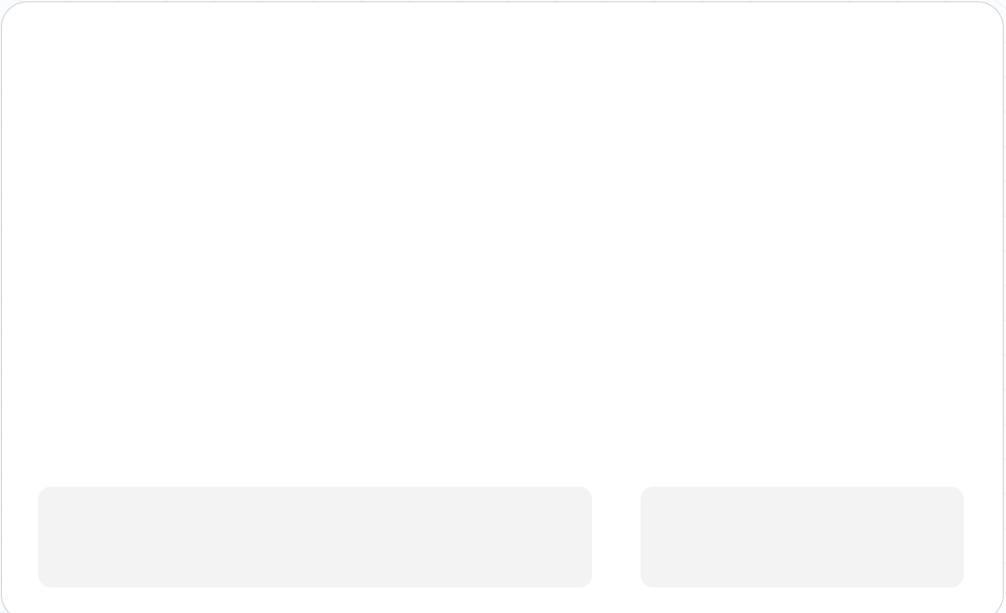
**Begin game**



Drawing Exercise (10 seconds)

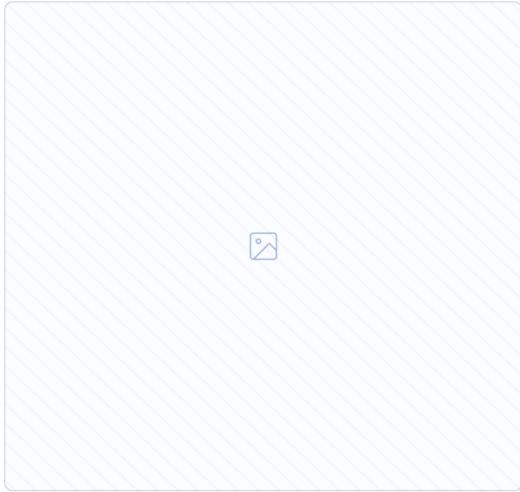
You have 10 seconds to draw: el niño

10





## Post-game Page



**Good job!**

**Play again! C**

**Save drawings**



# Usability, Functionality and Satisfaction Goals

These goals assess the success metrics and overall usability, functionality, and satisfaction goals of Uniilanguage's interface and overall user experience. The overall purpose of Uniilanguage is to serve as a new, accessible, and engaging learning tool which allows users to engage closely with multi-sensory learning methods. Therefore, the goals below highlight this focus into quantifiable goals from which a “successful” user interface and experience should be determined.

## Usability Goals

**Accessibility:** Uniilanguage shall be able to be used by users of all different backgrounds and abilities, including and especially users with different disabilities. This includes implementing a screen-reader friendly interface, dyslexic-friendly typefaces, friendly UI components, large button targets, etc.

**Intuitive:** The experience interacting with Uniilanguage shall be streamlined and make intuitive sense to the user, meaning that users shall be able to engage with and play through Uniilanguage in all its entirety with little confusion on the application’s functionality. This includes following standard UI conventions and ensuring the applications primary user flow is simple and straightforward. The application should be able to be easily navigated by all audiences, including and especially young children.

**Engaging:** Users should feel engaged and entertained by the application’s interface and design. It shall augment the application’s user experience and overall feelings of enjoyment and fun. The application shall strive to make learning engaging to its users, encouraging multiple drawing sessions and sustainable language practice.

## Functionality Goals

**Language Acquisition and Retention:** Utilizing an Orton-Gillingham-related approach to instruction, Uniilangue should be designed with multi-sensory and interactive UI elements in order to facilitate language acquisition and retention in its users. This can be achieved through interactive UI elements such as: state animations, clear user feedback, and accessible visual design.

**Modularity:** As this project is to be incorporated into a larger system of language drills and exercises, Uniilanguage shall strive to be modular as possible, with the ability to modify the system itself and its different features to fit into future designs and iterations.



**Reliability:** The final product should be reliable, and a focus should be made on preventing avoidable errors, bugs, and crashes, in order to mitigate both the frequency and impact of any interruptions to the learning experience of its users. This can be addressed by conducting routine performance testing, server maintenance, etc. Users shall be able to reasonably expect that the application function as-intended with each use.

## Satisfaction Goals

**Overall Effectiveness/Learnability:** The “success” of Uniilanguage shall be measured broadly by how effective it is as a multi-sensory learning tool, and how well it facilitates language acquisition and retention in its users. Ideally, users shall be able to demonstrate language acquisition over multiple sessions and retain this information past each individual drawing session. This can be determined by conducting qualitative user research on users and classrooms that utilize Uniilanguage routinely.

**“Fun”/Positive User Experience:** Success shall also be measured by how positive the application’s user experience is. Ideally, users should genuinely and thoroughly enjoy their experience interacting with Uniilanguage and participating in drawing sessions. This metric shall be measured by positive feedback via usability testing and (potential) in-system reviewal functionality.