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Studio: VR/AR x Education

# Team 2: LangVRse

Language Immersion in VR

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## Team Members



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# Value Prop, Problem and Solution Overview



*Create an encouraging  
and immersive  
language-learning  
environment for all.*

# Values Encoded

- Equity
  - We aim to make our learning platform equitable by catering to individuals of all learning backgrounds and differences.
  - By creating tasks that appeal to different learning forms (listening vs. writing vs. reading), we offer all users a way to interact and succeed.

# Values Encoded

- Inclusion
  - We have included people of all backgrounds in our needfinding process so we can ensure that our project does not skew towards the already dominant euro-centric languages.
  - We are cognizant of centering Indigenous voices and their languages as well as varying countries that speak the same language but all have their own dialects.

# Tasks



01

# Simple Task

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Understand: “Comprehend simple phrases in a language of interest.”



# 02

## Moderate Task

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Produce: “Read and write common statements (name, introduction, etc.).”

# 03

## Complex Task

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Engage: “Answer questions and follow instructions (without context clues).”

# Usability Goals and Key Measurements

- Memorable
  - Users should be able to navigate the different tasks and remember what they have accomplished.
  - Users are aware of their current knowledge, and know what they can retain and what to work on.
- We have added a chronological sequence to scaffold the user between different tasks, using their previous experiences in practice in later tasks.
- We have added a recap activity, as well as more in-depth user statistics, so users are more aware of what they have learned and what they should remember/work on next time.

# Usability Goals and Key Measurements

- Learnable
  - Users should be able to learn more as they progress, building up their language skills gradually.
  - Vocabulary and knowledge from previous tasks should be practice and re-used to complete later, more complex tasks.
- We accomplished this by creating a sequence between our tasks, so users must accomplish the tasks in an order that optimizes their learning.
- We brought back vocabulary and knowledge from previous tasks in later tasks but through a different recall message (reading first vs. writing later).

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# Interface Design

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# Major Design Changes



## GUIDED TASKS

After seeing that users struggled to remember what tasks remaining, we used our mascot, Langu, to provide useful reminders in addition to translations.



## INTEGRATED HUMAN INTERACTION

Previously, we had not included specific people or direct interactions in our adventure.

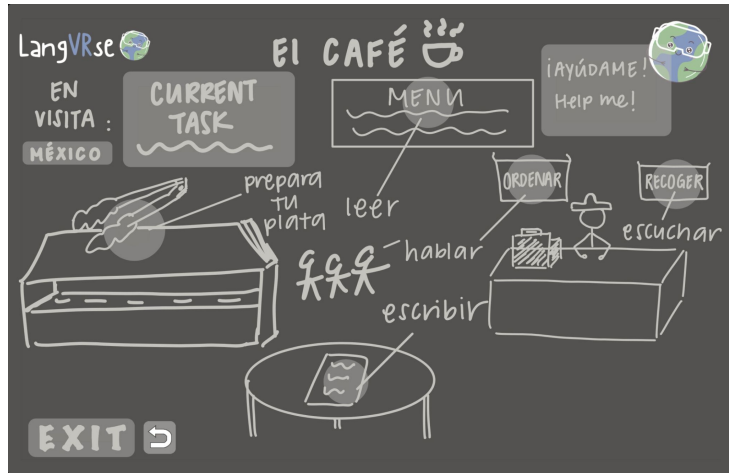


## BETTER VR SIMULATION

Our previous prototype relied more on clicks and actions rather than encouraging users to explore around them.

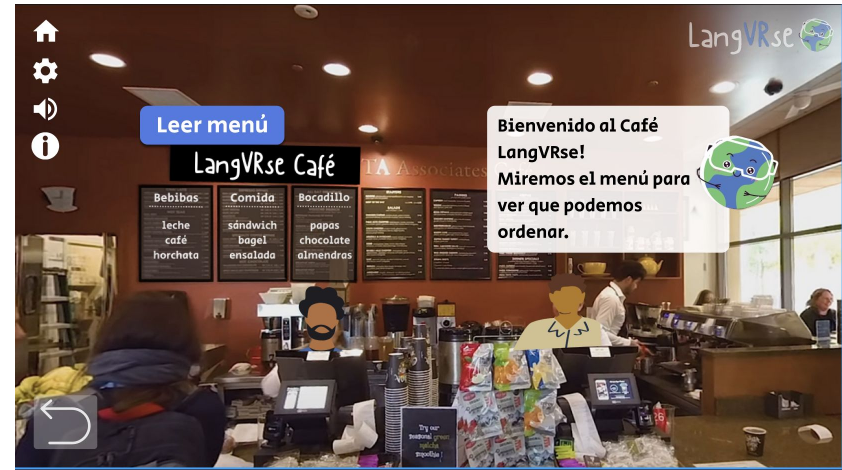
# Change #1: Guided Tasks

BEFORE



User chose their own tasks from this one page.

After



User are walked through each task in a specific order.

# Change #2: Integrated Human Interaction

BEFORE



User would hear a phrase but just see sound wave.

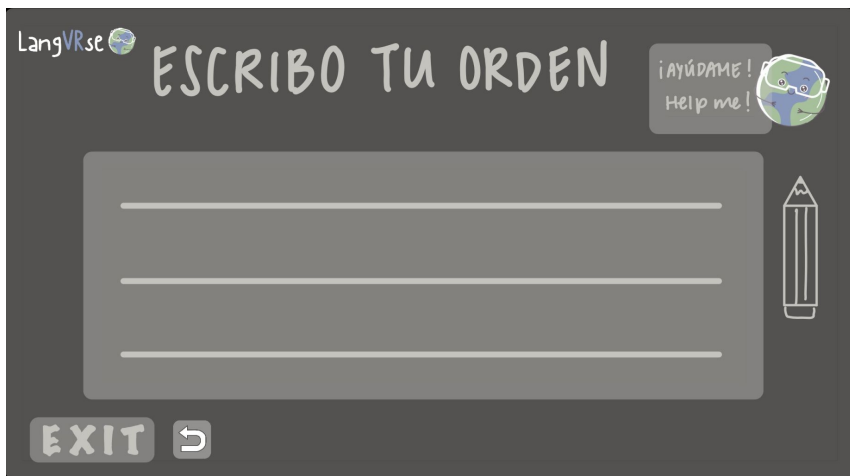
After



User are greeted by the person speaking.

# Change #3: Better VR Simulation

BEFORE



Experience looked similar to a mobile app (clicking/tapping).

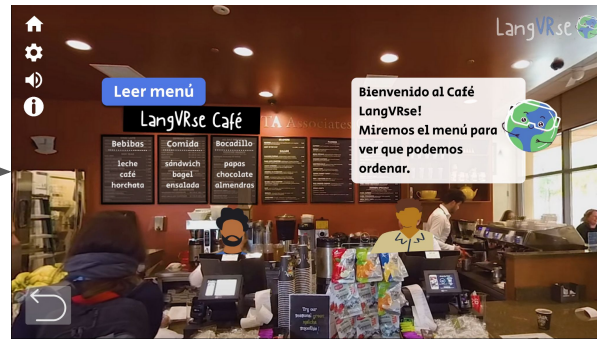
After



User can better see how they should interact in VR.



# Task Flow #1: Understand Simple Phrases



Users are asked to choose an adventure / place and then are asked to read the menu at the Coffee Shop. They are tasked with understanding the short phrases that lead them through these steps.

# Task Flow #2: Read and Write Common Statements



Users are asked to recall what they have learned by writing down their order. This is a moderate task as they must remember the items they read previously and

# Task Flow #3: Answer Questions and Follow Instructions



Users are asked to follow directional instructions and converse with a person in the cafe who asks them what they recommend. This is a complex task because users must recall what they remember from the menu, practice speaking their order, and hold a conversation in the language they are learning.

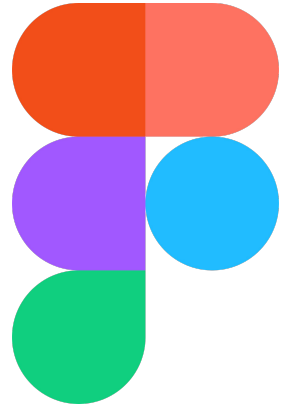
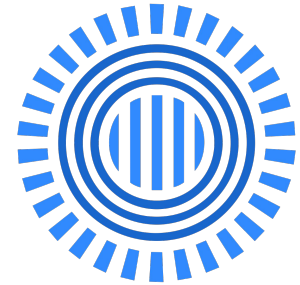
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# Prototype Overview

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# Design / Prototyping Tools

- Canva
  - We utilized this resource for designing our menus and editing the background scenes. We also used this resource for their customizable characters. Nothing was particularly difficult with Canva.
- Figma
  - We ultimately decided to use Figma for ease of convenience and it was free of cost. It was easy to link transition slides but difficult to create authentic VR experiences. We tried to mimic VR movement using 'look to the right/left' arrows and smart animations features.



## Details + Reflections: Limitations/Tradeoffs

- It is difficult to replicate VR with still images. Limitations include not being able to integrate sound and audio in the background + autoplay, despite multiple attempts with plug-ins. We opted for smart transitions and alternative methods of engaging with our app.
- This prototype only has the option for the user to go to Mexico City and learn Spanish in a cafe. Other adventures can be created easily if we simply translate all existing Spanish screens to a different language, but adventures with different storylines will require a lot of time to develop.
- We were also limited by the number of images we could access that had 360-degree rotation and even more so limited by our access to photos of relevant scenes in other countries.

# Details + Reflections: Wizard of Oz Techniques

- We recommend users to use Zoom and share screen to utilize the 'Annotate' feature on Zoom for our writing portions of the tasks.
- For the listening parts, we assume that native audio will be played, a feature that we cannot implement with Figma.
- We assumed that the left and right buttons would be a representation of movement in VR when a user turns their head/the VR controller buttons.

## Details + Reflections: Hard-Coded Features

- Some scenes of the adventure show the user's hand (eg. holding a cup or pen) with a specific skin-color. We hope to create a more inclusive experience by allowing the user to select their skin color and customize their avatar beforehand, something difficult to implement with Figma.
- Customizing other parts of adventure based on user selections is difficult in Figma as well, as it would require us to create many additional scenes and collect their audio data. We worked around this in the “order” activity by giving the user a hard-coded order number, rather than attempting to say the items they order aloud.
- The backgrounds we used in this prototype are hard-coded still-images, but we hope to later include real movement of characters and audio (background noise) suitable to the setting.
- Another hard-coded feature was the user statistics scene. We hope to have an animated stats screen that accurately reflects their progress and allows users to better visualize it.

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# THANKS!

Do you have any questions?

CREDITS: This presentation template was created by [Slidesgo](#), including icons by [Flaticon](#), infographics & images by [Freepik](#)

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