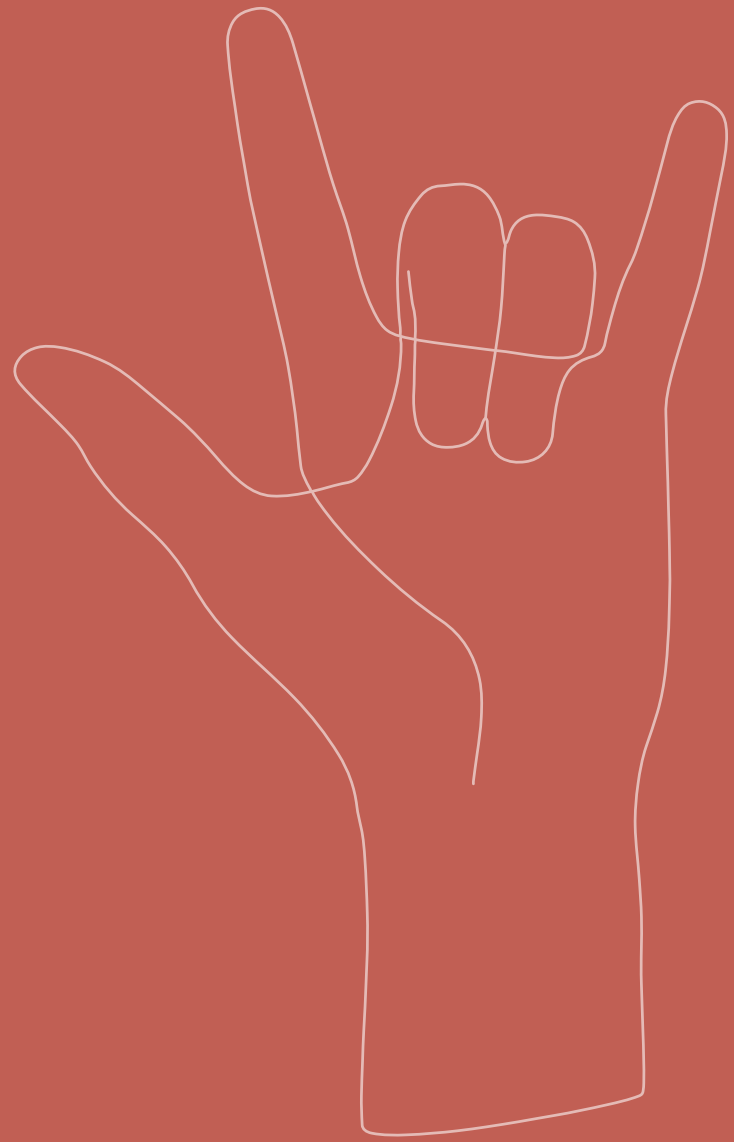
a sign language app
for parents
with too little sleep.



CASE STUDY

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BABYSIGN

BABYSIGN

ROLE UX RESEARCHER AND DESIGNER **PROJECT DURATION** 1 MONTH

above: a stylized version of American Sign Language sign for I Love You, used as a symbol for the app

overview

BabySign is a native app for new parents learning basic sign language to connect with their infant. While teaching vocabulary, the tool seeks to provide encouragement, flexibility, and ease to an otherwise overwhelming and sleep-deprived time of life. Users are able to create an account, review vocabulary using the in-app library of signs, add their own words with custom notes, as well as set personal goals and reminders to stay motivated while learning at their own pace.

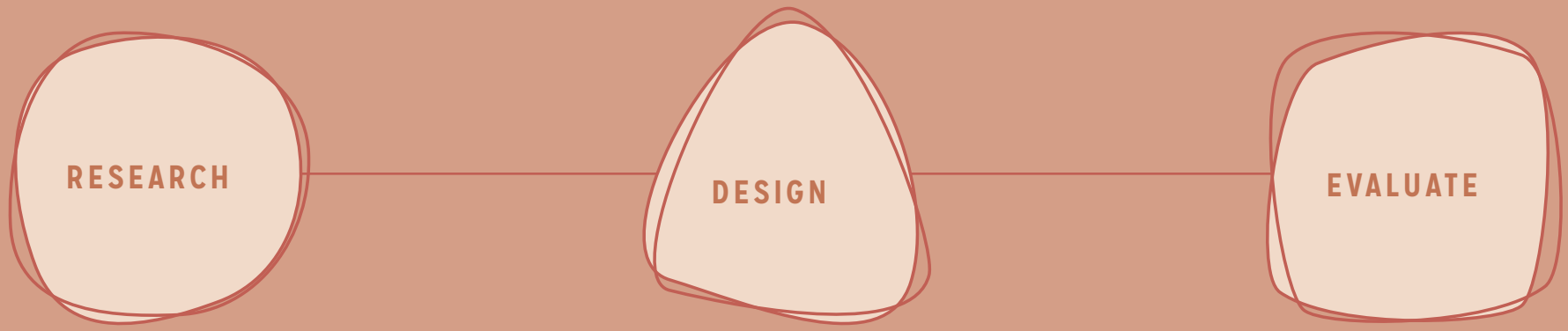
purpose & context

This a personal project I researched, wireframed, and tested for my studies through CareerFoundry to demonstrate my understanding of the **user experience design mindset and process**. Design criteria and feature requirements were dictated by the course brief, but the baby sign language niche was my own angle informed by my competitive analysis and personal experiences as a new parent in the COVID era.

objective

The aim of the project was to build a **low-fidelity prototype** for a flashcard-style vocabulary app to add to my professional portfolio. I was personally interested in exploring the potential of an untapped niche in the marketplace, while learning industry standard prototyping tools.

Project Elements



- **Competitive Analysis:**
  assess vocabulary app marketplace for existing solutions and opportunities for both product and UX innovation
- **User Research:**
  interview users from target audience recruited for relevant experiences but diverse perspectives; interpret answers to understand needs/ goals of audience and distill behavioral trends
- **Persona Development:**
  distill research into a kind of archetype to represent primary user - a lens through which to take on the user's perspective and drive strategic decisions in the "design" phase.

- **Information Architecture:**
  use tools like task analysis and user flows to begin mapping out the screens and features needed to meet the goals of a user
- **Low-Fidelity Wireframes:**
  capture ideas and necessary functional elements in pragmatic pen&paper drawings of screens to quickly visualize how features might fit together
- **Rapid Prototyping:**
  create an interactive proof of concept using Marvel prototyping webapp to enable collaboration and expedite testing.

- **Usability Testing**
  interview users from target audience while having them attempt to complete a series of tasks using the prototype to gain an understanding of what's working and what's not; record sessions for note-taking and reference
- **Error Rating**
  analyse severity of reported issues to prioritize revisioning to achieve MVP efficiently and contextualize recommendations for project collaborators and stakeholders

research

competitive analysis

TOOLS

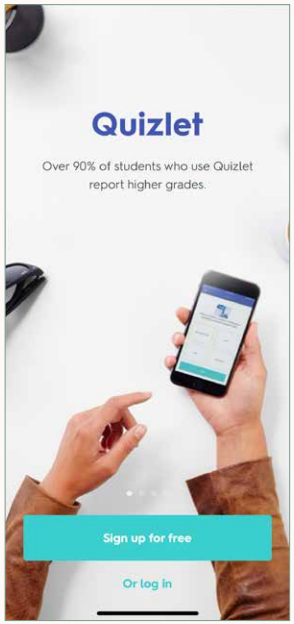
Screen Recording

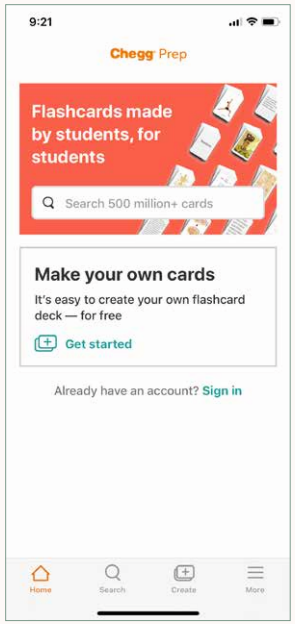
After surveying the market, I honed in on three competitor apps to analyse:

- two general flashcard-style vocabulary apps (Quizlet & CheggPrep), and
- one dedicated baby sign language app (ASL Lite: the only one I could find).

This step was critical to understand the problem I was tackling and consider some solutions proposed by existing apps. Examining competitors from both a product standpoint and an in-depth UX analysis, I evaluated each app in terms of what was really successful, what could be improved, and the feelings associated with use of the product.

Based on my competitive analysis, there was a big opportunity to build a beautifully-designed tool specifically for parents, prioritizing low mental load and including video.





Key UX/UI analysis takeaways:

- **video as an opportunity for differentiation**

  neither of the general flashcard apps were set up for video so were not as conducive to learning an action-based language like signing.

- **balance simplicity and control**

  a flat navigation structure made two of the apps compared super approachable yet limited in their customization (no adjustments for personal study style) and variety (whereas novelty can be a big motivator while studying).

- **prioritize progressive discovery**

  conversely, the third app compared skewed far more complex but due to limited onboarding or progressive coaching the app felt overwhelming and took quite a bit more time and attention to master than can be expected of the target audience (overwhelmed parents).

- **parents are people too**

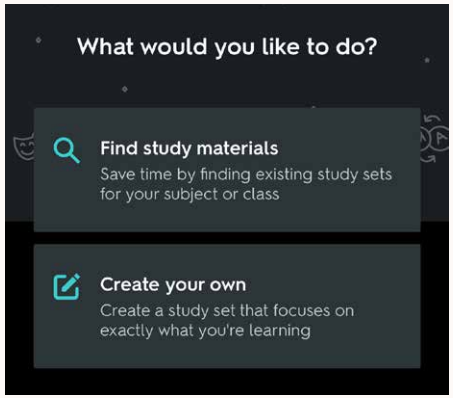
  while the UI of the two general vocabulary apps were minimal and modern, the baby sign language app was offensively infantile using childish illustrations, inconsistent graphic style and clashing colour schemes. Products should acknowledge that parents are also adults with discerning tastes and style.

Static illustrations are not always clear for learning correct signing action (at right: are the hands supposed to move up and down, or in and out?)

Source: Chegg

A streamlined dashboard reduces user's mental load by providing two clear action pathways

Source: Quizlet



These apps are for adults, not children, so an infantile graphic scheme is not appropriate.

Source: ASL Lite

user research

As part of my exploratory research, I conducted **user interviews** with four people from my target demographic: new parents. My interviewees had expectedly diverse perspectives as learners because there is no current product that serves this baby sign language niche. Two of my interviewees were new parents that had tried learning baby sign using books and workshops, and two had used an app to learn a new language (one was a parent of two and the other about to become a first time parent).

By asking brief, open-ended questions I aimed to learn about these potential **users' motivations** for learning sign language (or a new language more generally), what they enjoyed or found most helpful when learning vocabulary, and what **fears and challenges** they experienced that got in the way of continuing. It was also a good chance to get to know a bit more about the structure of their days to **understand the context** my app would be fitting into.

"Duolingo doesn't treat me like an adult. You have to constantly repeat yourself. There's no way to indicate, 'yep, I've got it, let's move on.'" *~ S.*

"There was so much to learn, so when your baby doesn't show much interest [in signing] at first, you feel like, 'what's the point?'" *~ L.*

"I just wish [my baby] could tell me what he wants. Now that would be amazing." *~ E.*

"It's challenging to stay motivated and find time to fit it in. Plus, I already forget the word I studied this morning." *~ K.*

Key takeways from user interviews:

- **new parents are overwhelmed and insecure**

  First time parents felt overwhelmed by the amount to learn and contradictory advice heightens their insecurity around doing “the right thing” for their child. They were also operating on very little sleep…

- **parents are walking contradictions**

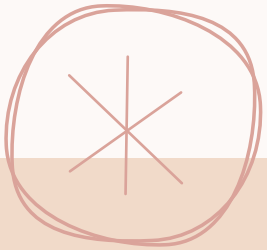
  At once stating a preference for evidence-based methods, interviewees often gravitated to “shortcut parenting” hacks and learning apps because they were short on time.

- **parents want to nurture and connect**

  The parents I spoke to felt highly motivated to engage in any activity that benefits their child’s development, and wanted to be able to communicate with their pre-verbal child to strengthen their connection and reduce their mutual frustration.

- **challenge, encouragement and simplicity are key**

  Lack of accomplishment or lost progress, and lack of time were the main reasons interviewees gave for abandoning their learning. Also, for parents teaching sign language to their babies there was also a big drop off as their child reached 1 year of age and their focus shifted to verbal language.



Based on these findings, it would be important to provide an incremental and relevant curriculum, studded with encouragement and reassurance to keep parents from quitting.

And although customization features would need to be considered, defaults should prioritize speed and simplicity to be accommodating to most parents limitations in terms of time and attention.

persona development

I developed a proto persona named Catherine, to combine the **qualitative data** I had collected in my interviews and help me **understand my users' goals, needs, and behaviours**. Because of my very specific niche there were many common themes in the responses of the parents I interviewed, so it was fairly straightforward to distill them into a single representative user.

Catherine

34 years old

First-time mom with 4-month-old baby

Married

Lives in Vancouver

Marketing consultant

Currently on mat-leave.

Catherine's behaviours...

- Likes to follow the latest trends in parenting and baby gear;
- Would have attended various Mom & Baby classes if it weren't for COVID;
- Gets interrupted a lot midtask while caring for her son;
- Is sleep deprived a lot lately.

Catherine's Quotes

"Learning to sign seems like a great way to connect with my baby and give him tools to communicate... but I don't know how to fit it in given everything else I'm trying to learn right now."

Catherine's needs/wants...

- To be able communicate with her baby;
- To connect with her baby emotionally;
- To engage her baby's developing brain;
- To be able to practice at her own pace and learn words relevant to that moment in time;
- To have multiple modes and methods to review words and use them in context so she can remember;
- To have reminders at quiet times of day when she will be most likely to be able to stop and study;
- To learn new vocabulary relevant to her baby's latest interests and developmental milestones;

Through the lens of this proto persona, I then crafted **user stories** to help me envision functional solutions to my persona's goals; **job stories** to help me put my persona's actions into context; and **problem statements** bring my persona's problems into focus to guide experimentation and feature development.

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user stories

As a new parent, I want **assurances** that signing is valuable investment of my time and effort, and a benefit to my child's development.

As a distracted caregiver, I need **customizeable reminders** so I can fit in studying around my baby's sleep schedule without one more thing to remember.

As a sleep deprived mom, I want a tool so simple that it **requires no brain power to operate** and quickly gives me exactly the word I need when I need it.

job stories

When I am studying in one of the few quiet moments during the day, I want **instant access** to a bite-size lesson, so I can make progress even if I have only a couple minutes to spare.

When my child gets frustrated during our daily routine, I want to easily be able to **look up a contextual sign**, so I can help my baby learn to communicate its needs before they are able to speak.

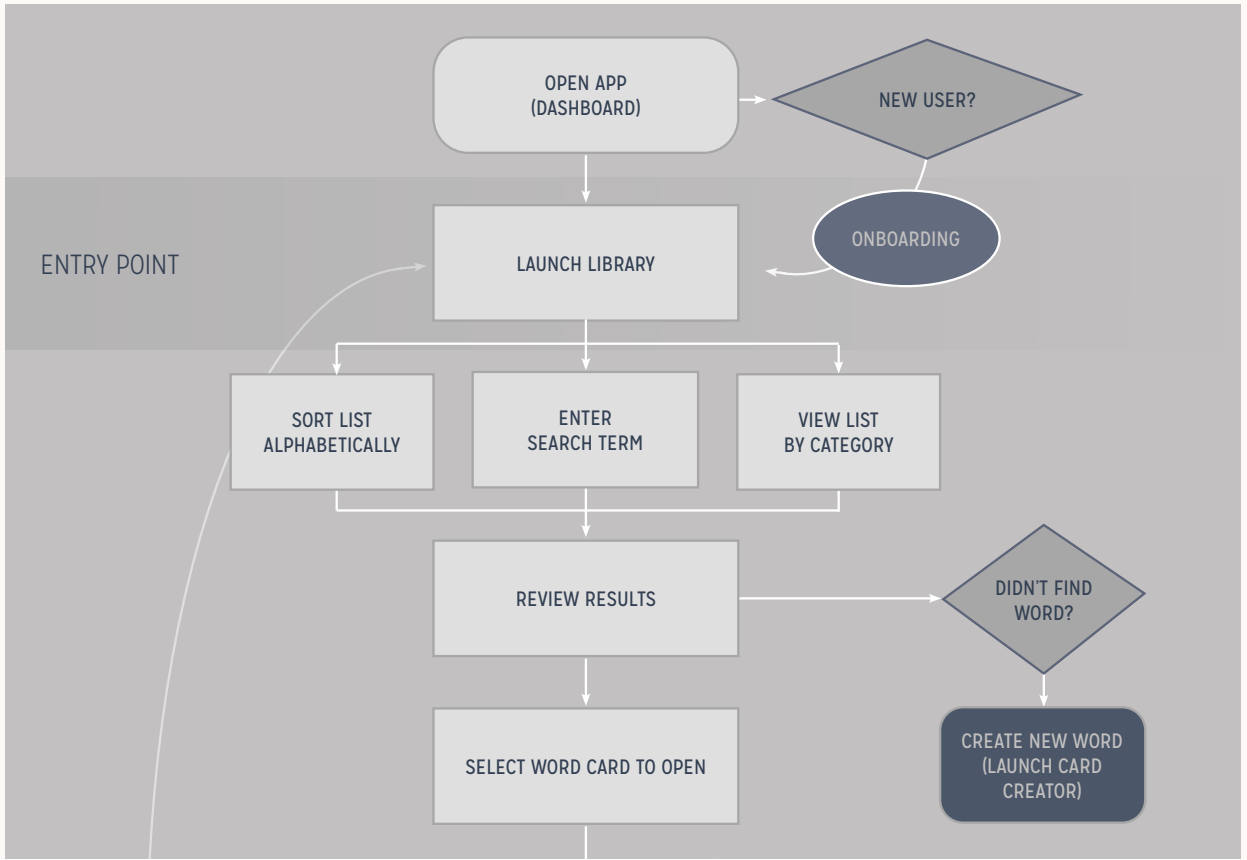

design

information architecture

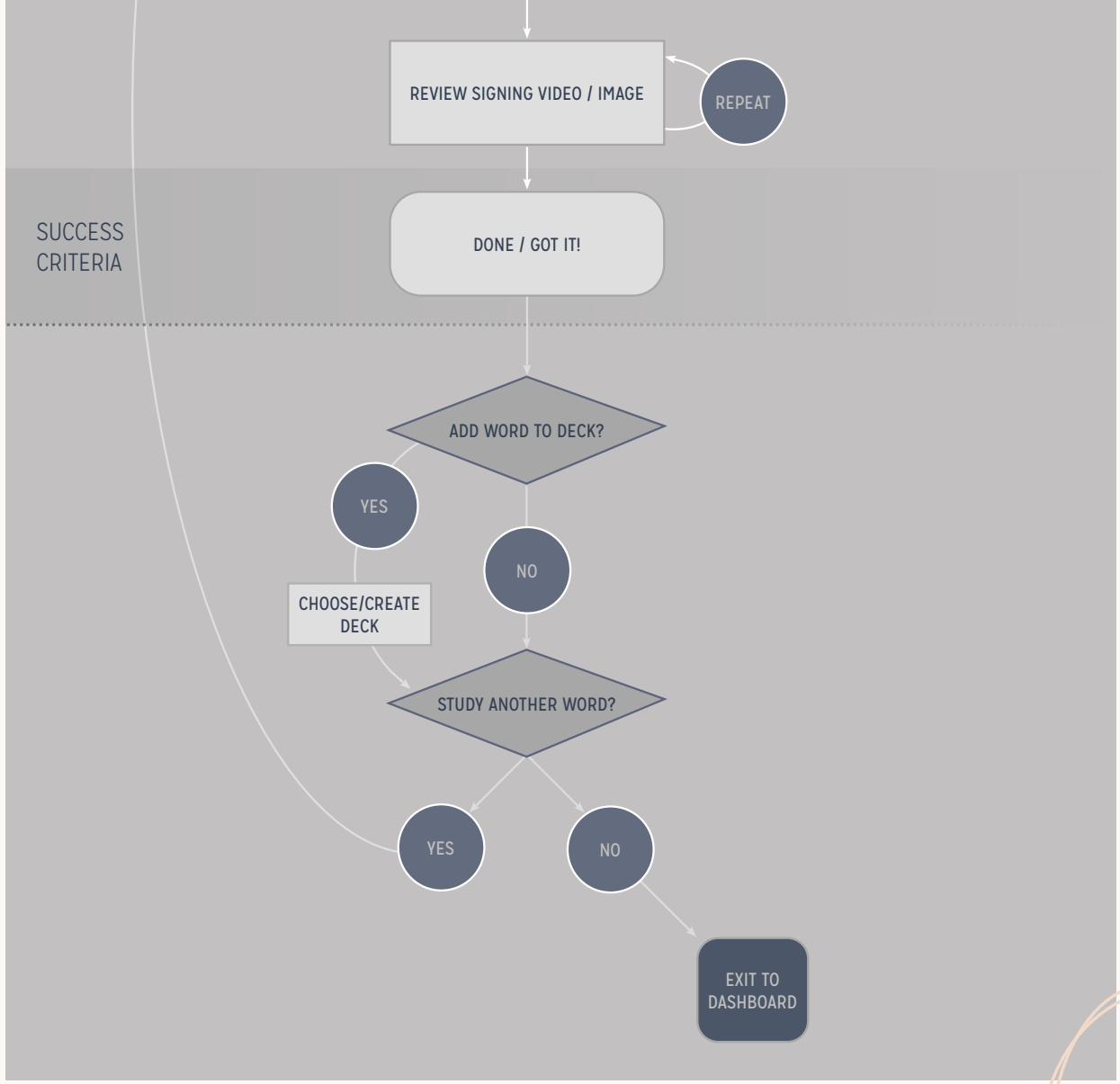
To start building my information architecture I used a variety of techniques.

Completing a **task analysis** I was able to match the actions a user would take to features I needed to create. I then crafted two key **user flows** to focus on in my rapid prototype: studying a word and adding a new word to a personal deck.

Sketching out decision pathways in this way pointed out other opportunities to create a richer experience for my users - like, verifying new entries against the existing library to avoid duplicate entries. Many of these ideas were outside the scope of my basic wireframing project but would be valuable to note at this stage if developing a fully fledged product to consider their impact on the structure and layout of screens.



user flow for "study a word"



TOOLS

InDesign

rapid prototyping

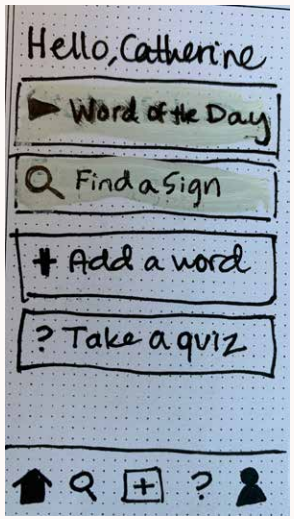
Here, user personas, user flows, and the brief all came together to help focus my creativity and avoid getting bogged down by infinite possibility thinking. (Good design loves constraint.)

I woked quickly and pragmatically to generate and iterate dozens of screens to import into Marvel, link with hotspots, and created a rough yet ready prototype.

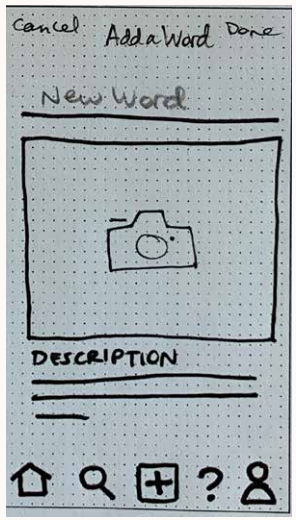
TOOLS

Pen & Paper

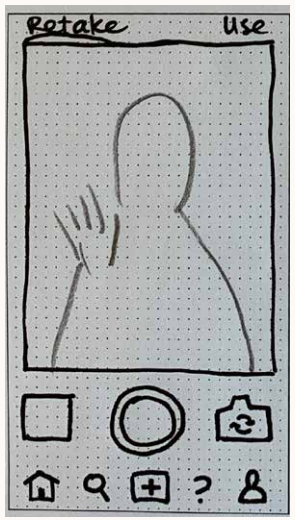
Marvel



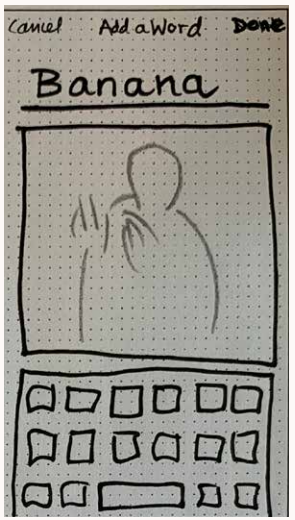
dashboard



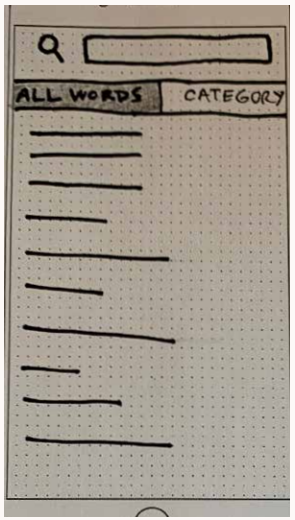
add a word - editor



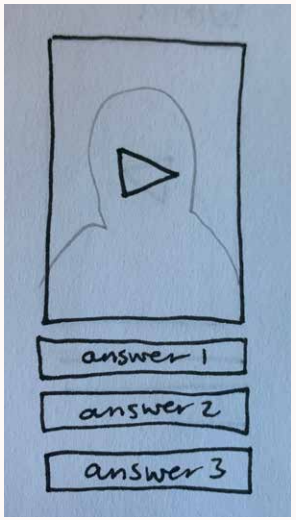
add a word - record video



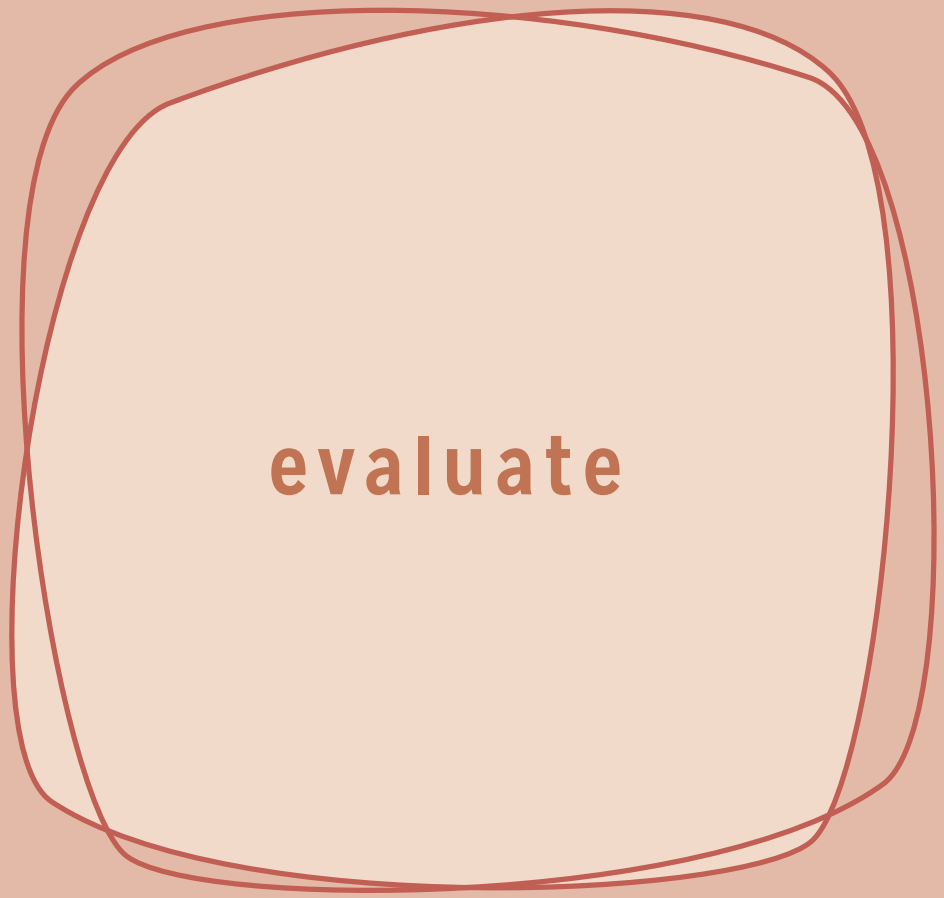
add a word - data entry



find a sign - word library



take a quiz


evaluate

usability testing

It was time to reconnect with potential users to evaluate the utility and usability of my design so far. I recruited three new parents to test my app, one session was held in person while the other two occurred remotely. Voice recordings were taken for future reference and I took notes on notable behaviours, facial expressions and actions as they interacted with the prototype.

The user responses were quite favourable and critiques fairly trivial, which is not unexpected at such an early phase in development. I was surprised by the genuine excitement about the concept expressed by testers, which was encouraging.

Using the **Jakob Neilsen Error Severity Rating Scale**, I honed in on three notable issues raised by testers:

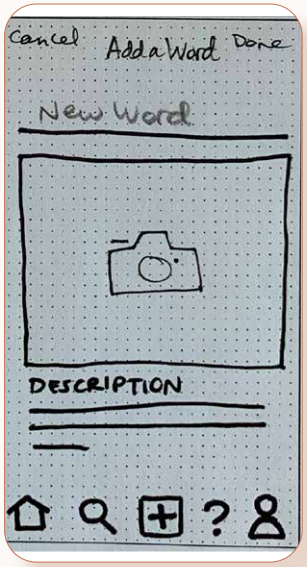
TOOLS

Voice Recorder

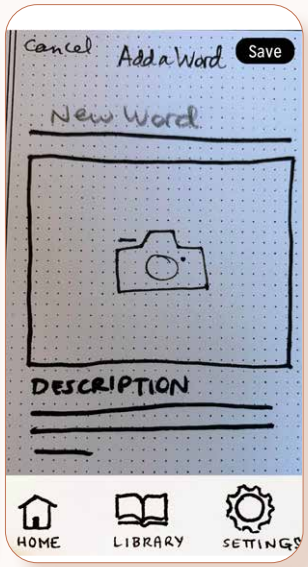
iPhones + iPad

Marvel

Jakob Nielsen
Error Severity
Rating Scale



before



after

1. Edit a Word: unclear how to start or finish

Issue: users found text links were not clear as interactive elements or not sufficiently obvious

Solution: restyle text links as buttons and make text more descriptive of the result of an action (ex. instead of “Done” use “Save” when adding a word)

Rationale: ease of use was a particular priority of users interviewed. At best this created unnecessary friction and at worst interfered with completion of basic tasks.

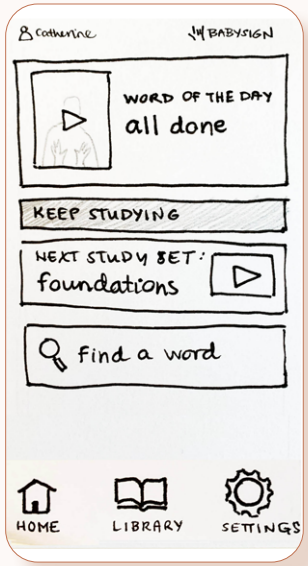
2. Edit a Reminder: unclear location

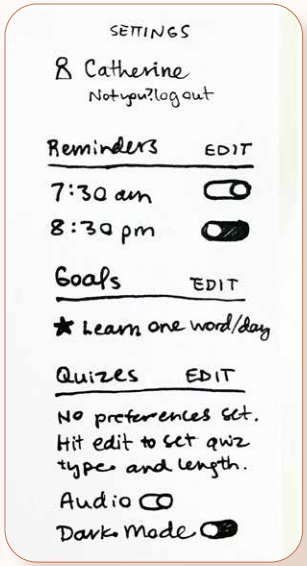
Issue: users verbalized uncertainty about where to find alarm features

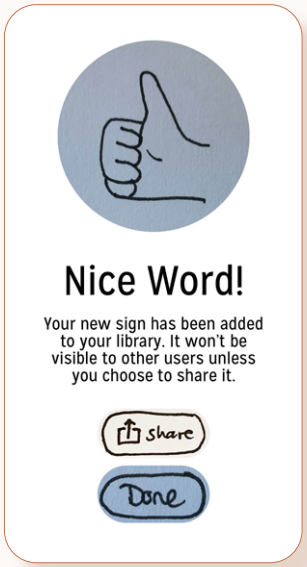
solution: as an interim step changed profile icon to a settings gear icon to clarify function and tried moving important settings up a level to save a click

Rationale: positive reinforcement was a key motivator identified by user interview so the ability to set personal reminders is a key feature users should be able to access without hesitation.

Note: on a longer more polished project this would be an item that I would **preference test** a couple options with users to figure out the most successful in resolving this ambiguity, and likely execute a **card sort or click test** to ensure the navigation structures matched the mental map of most users so that information is located and group in an expected manner.







3. Add a Word: unclear whether data is public or private

Issue: unclear whether new words would be kept private to the user account or made public in the global word library

Solution: add clarifying text to the confirmation screen

Rationale: transparency on how personal data is being used is key to building trust.

reflection

With edits made to the low-fi prototype the app successfully fulfilled the MVP requirements of the brief. But in a real world scenario this would only be the beginning...

NEXT STEPS COULD INCLUDE:

- developing a sitemap to document and support information architecture as the app grows
- creating user flows, wireframes and prototypes of additional features like creating personalized study decks or taking a quiz
- developing mood boards to begin shaping the personality of the product and visual design of the UI
- developing mid- and high-fidelity prototypes to test with users, iterate and test again before eventually polishing documentation and handing off to other designers and developers

Ultimately, this product addresses a gap in the market, especially in the COVID era where parents are struggling to find ways to engage and support their children at home. In order to best support the learning goals of parent users, a fully fleshed out product would benefit from consultation with American Sign Language teachers and experts to develop a curriculum, consultation with a wider pool of parent users to diversify inputs and root out bias, and engineer support to really bring this app to life.