

OVERVIEW

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Date: 23.11.2023

Design Thinking Phases: DEFINE // IDEATE // PROTOTYPE // TEST

THIS WEEK'S ACTIVITIES

- (DEFINE) Considering we have continuously received negative feedback regarding our POV, we created an affinity map to help us better organize our data. From this, we revised our POV.
- (IDEATE) With a stronger POV, we organized an interactive brainstorming session with friends over a video-call. This was particularly necessary as our activities last week involved too many test methods and not enough ideation methods.
- (PROTOTYPE) Based on the new data from this week's ideation – as well as users' comments from last week – we re-developed features of our mid-fidelity prototype along with different iterations of it. Importantly, we hoped to make the designs more manipulatable, meaning users could engage with/change different features while evaluating the designs.
- (TEST) After (re-)developing our prototypes, we had users test them outside the library. Wizard-of-oz testing was implemented for electronic features currently undeveloped. Additionally, we strongly encouraged our participants to be critical of the prototype by conducting semi-formal interviews with them.

KEY FOR GRAPHICS

Week 1: (Introduction)

Week 2: (Empathize) Research, Interview, Bodystorming, Capture, Cultural Probe

Week 3: (Empathize) Interview, Cultural Probe, Observation (Define) Personas, Space Saturate, POV (Ideate) Brainstorming session with friends via Miro

Week 4: (Empathize) Observation (Define) Personas, POV (Prototype) low-fidelity prototyping

Week 5: (Prototype) low-fidelity prototyping, mid-level prototyping (Test/Evaluate) think aloud protocol, feedback capture grid (Define) Empathy Map, POV

Week 6: (Presentations)

Week 7: (Empathize) Interview, Bodystorming (Define) Space Saturate, Persona, POV (Ideate) Brainstorming

Week 8: (Define) Affinity Diagramming, POV (Ideate) Brainstorming (Prototype) Mid-Level Prototyping (Test) Wizard-of-Oz Testing, Semi-Structured Interviews



METHODOLOGY

Method(s) used: (DEFINE) Affinity Diagramming, POV (IDEATE) Brainstorming (PROTOTYPE) Mid-Level Prototyping (TEST) Wizard-of-Oz Testing, Semi-Structured Interviews

DEFINE

- Affinity Diagramming:* An affinity diagram (that primarily utilizes information from our Space Saturate/Interviews) was drawn on Miro. Emphasis was placed on user quotes, and we designed the diagram so our data could be visualized hierarchically. Starting with major themes (RED sticky notes), the diagram branches into key categories (BLUE notes) and user insights (YELLOW sticky note) (see the results page for an image of this diagram). Some observations were also recorded under the YELLOW sticky notes, though the emphasis was placed on what users said to us.
- POV:* The starting point for our new POV was a POV Evolution chart we developed on our main Miro page. Comparing each of the POVs we have developed this semester (along with feedback), we focused on user qualities closely. Our new Affinity Diagram helped with this as we could see our data in a much more organized way.

IDEATE

- Brainstorming:* On Miro, we developed a short brainstorming exercise for 3-4 participants. It started with a short summary of the 1971 library split and a description of our users (i.e. the personas Anna and Pieter). Each participant was then required to brainstorm different designs based on the following four categories: CATEGORY 1: Focus on senses, CATEGORY 2: Focus on wearables, CATEGORY 3: Focus on games, and CATEGORY 4: No rules! Whatever you want!). For each category, the participants had 3-4 minutes to write down as many ideas as possible, and we did not tell them anything about our mid-level prototype before the exercise. Our hope was that this exercise would widen the way we (and our participants) thought about user/library interactions. Once the exercise was complete, the group turned to the mid-fidelity prototype already designed and ideated more together.

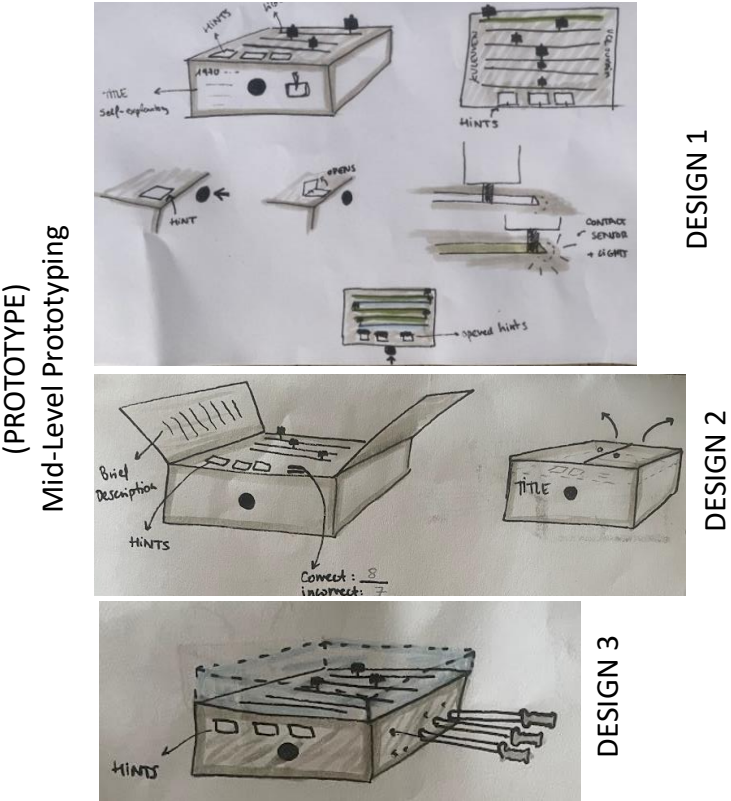
PROTOTYPE

- Mid-Level Prototyping:* Following our ideation session, we sketched out three different prototypes. From these designs, we (physically) re-developed our prototype in low-to-mid-fidelity ways. As we (re-)developed the prototypes, we deviated from our sketches as needed. Available materials (cardboard, tape, books/sticks, etc.) played a dominate role in such deviations.

TEST

- Wizard-of-Oz Testing:* Without having developed the electronic features of our prototypes, we used, sticky notes, print outs, and noises (for features such as the button) as temporary fill-ins. The aim was for users to get an accurate sense of how electronic features are meant to work without engaging with the final product yet.
- Semi-Structured Interviews:* A number of questions for users were discussed between us before each evaluation, and these questions would change based on the feedback from each test. However, we also hoped that users would dictate the direction of the interviews and, therefore, actively left “open spaces” where users could provide constructive criticism.

(DEFINE) POV									
POV EVOLUTION									
1.) Anna NEEDS a more informal way to engage with the library BECAUSE she prefers studying at home but values the library's historical significance.									
2.) Anna NEEDS to informally learn about the library BECAUSE she believes it is important to know more about the library's history and is actively aware of language divides in Belgium but tired from the demands of her university program									
3.) Anna NEEDS to be distracted by the story of the library splitting BECAUSE she admires the historical status of the library, is actively aware of language divides in BE but is stressed by the demands of her program.									
4.) Anna NEEDS a creative, enthusiastic way to distract herself from her studies BECAUSE her degree is too theoretical and she feels her brain is drained and can't take any more information									
5.) NEW POV ???									



RESULTS

DEFINE

- Affinity Diagramming:* Organizing our data with this diagram revealed some new insights that we had previously overlooked. While we knew students came outside the library to take a break, the diagram helped us re-examine what these breaks actually do for our users. For instance, the groupings of quotes showed us that students often report going outside in order to feel refreshed when they come back in. For some, feeling refreshed involved eating snacks or walking around (two practices that are not easy to do inside the library). For others, it involved simply being able to drink a coffee. ... One of the most common ways users refresh their minds is through some sort of digital entertainment (something our observation data also confirmed), whether it be music, scrolling on their phone, or watching a show/reel. Interestingly, this also serves as a risk for our users as it can de-motivate them from studying or distract them from their assignments for too long.
- New POV:* Anna NEEDS a creative but casual way to refresh her mind during her study breaks BECAUSE she has been inside the library for multiple hours, is losing focus, and worried that she will get sucked into scrolling on her phone without another form of easy (yet limited) distraction.

IDEATE

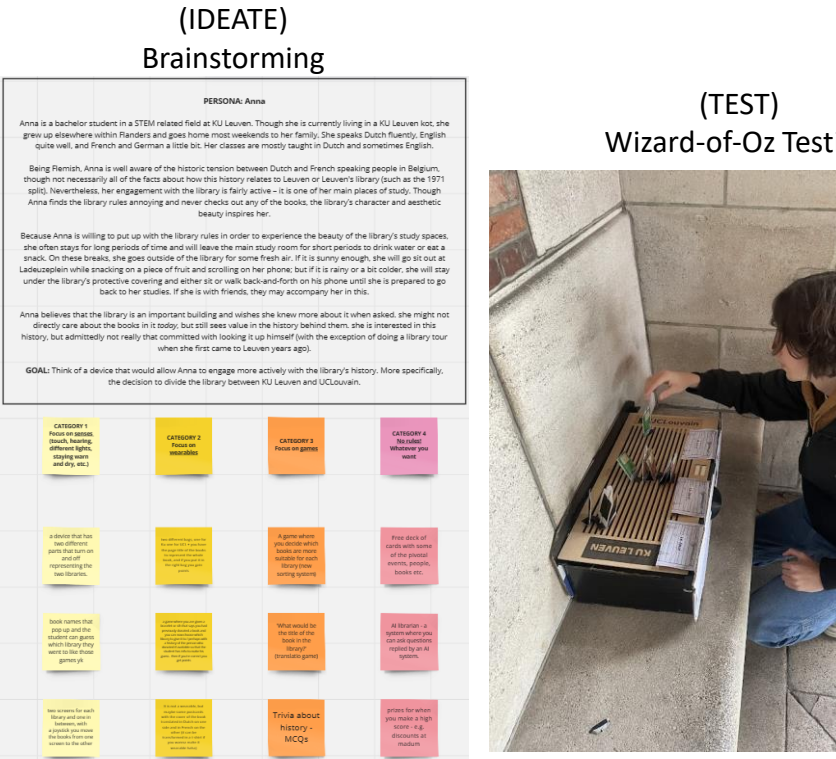
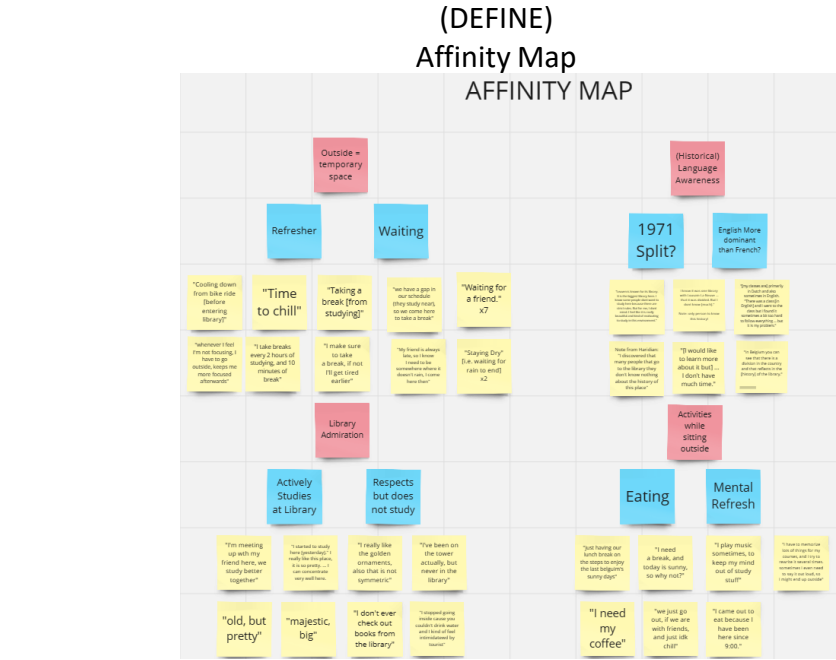
- Brainstorming:* The brainstorming activity with friends was productive and resulted in around 30 new ideas. This led to a productive conversation on our mid-fidelity prototype. One idea from this exercise session worth exploring more was an “ANSWER” button that would allow users to both play the game multiple times and get the final correct answers whenever they want (though this might also keep users from trying out the game in its full form). Additionally, one participant added that it “might be nice to have an example of ‘old paper’ or covers from very old books and being able to touch/smell it.” This could be something we aesthetically add to our design to draw users in.

PROTOTYPE

- Mid-Level Prototyping:* For this phase, we focused on developing our prototypes in low-fidelity ways and did not laser cut any new pieces. The laser-cut board that has served as the focal point of our prototypes so far was used for each of our new prototypes. Sticky notes and printed off images were primarily used for the “hint” windows we would like to incorporate, and new cardboard pieces were developed for the flaps in design #2 that make the box almost look like a book itself.

TEST

- Wizard-Of-Oz Testing / Semi-Structured Interviews:* Users liked our wizard-of-Oz testing which made the evaluations fun, but the semi-structured interviews provided the most helpful feedback. After pushing our users to be critical of our prototypes, we received insightful comments. For instance, though we re-designed the books to include a slide tab at the top, three users reported not instinctively understanding them. In other words, users need more clear guidance. On a positive note, one of our users had such a fun time with the game, he called his friend (who would be joining him shortly) and told him to hurry over so he could play our game too. Then he waited for his friend to arrive and watched him play. This was a positive development in our design journey so far.



FUTURE ACTIONS

PROTOTYPING and TESTING

- We found the development of three separate prototypes rather strenuous and a practice that ultimately took time away from evaluating this week. Moreover, it was very difficult to develop each prototype in new mid-fidelity ways, so we primarily resorted to low-fidelity materials/methods. We believe it might be more constructive for us in the future to stick to one prototype, start building it up in more mid- (rather than low-) fidelity ways, and still account for potential changes based on our observations, evaluations, interviews, and more (i.e., still leaving room for it to be easily manipulated). Can you provide feedback on this possible approach or suggest why building three separate designs is more beneficial? Please note, we did feel particularly stressed with the amount of work this week, as we had to form an ideation session with friends based on last week's WDP feedback, (re-)develop three prototypes, evaluate these prototypes, write our WDP, and read the two articles. As a side comment, we are also finding the Wednesday deadline harder to hit with this workload. Working in the library on the weekend is really not easy for us because we live in different cities and also generally want a break from Leuven's university buildings. This only gives us Monday or Tuesday to prototype and evaluate together, as synthesizing our data into a WDP usually takes a full day of work. If submitting on Thursday means we cannot receive feedback by Friday, we would also be comfortable with receiving feedback at the start of the following week (Monday if possible?) if it means having an extra day (i.e., submitting by Thursday night) to work on our tasks.
- So far, our testing has been with individual users we see outside the library. In the future, we believe it would be beneficial to form a focus group in which critical assessments can be made in a group setting. Ideally, there would be a way for us to do this with users and maybe some experts. Are we allowed to talk to library staff about potentially engaging in one of these evaluation sessions?
- Users have reported in evaluations/interviews that they prefer to gather at the steps of the front of the library. Only problem, this is where other groups (tourists, residents, etc.) also tend to gather (see images to the right). In the future, we will need to set up our prototype by itself to see how students engage with it unprompted; however, one concern is that if we set the design at the central entrance of the library, these other groups might "take over" the design and prevent students from using it. How should we deal with this possibility in the next weeks as we continue to refine our prototype and the location it will be deployed in? If we find the center to be where most students gather outside, but also find other groups wanting to play it, should we consider moving the design to a spot where maybe less students gather but tourists and residents rarely gather?
- If you can please provide feedback directly on our POV, that would be very helpful. We have struggled to create a strong one so far, and though we believe this one adequately represents our user, we specifically want critical feedback on it from you. In the future, we would like to have a strong POV that no longer requires reworking.

(OBSERVATION)
Other groups gathering around the
central entrance

