**Reflection on Using Visualization in a Design Challenge**

**Challenge**

In this project, I tackled the design challenge of improving user engagement on an educational mobile app. The app was underused by students, and the goal was to make it more intuitive and appealing. Key aspects of the challenge included:

* **Context:** A university-sponsored learning platform with modules, quizzes, and discussion forums. The target users were busy college students balancing multiple courses and activities.
* **Problem:** Analytics showed low usage rates, with students finding the interface confusing and features hidden. Complaints included “hard to navigate” and “too cluttered.”
* **Objective:** To redesign the app’s interface so that students could quickly find what they need (courses, grades, schedules) and feel motivated to check it daily.
* **Constraints:** Limited development resources meant we needed low-fidelity, quick ideas before any coding. No existing user research was available, so creative methods were required to generate solutions.

Overall, the challenge was to understand user needs and translate them into a better design without much initial data. I decided to apply visualization as the design thinking tool, thinking it could help the team and me make abstract ideas concrete.

**Selection of the Visualization Tool**

Visualization (Módulo 1) is a design thinking tool that uses images and drawings to develop and communicate ideas. As Liedtka and Ogilvie explain, “Visualization is about using images. It’s not about drawing; it’s about visual thinking”. In other words, it taps into non-verbal parts of our brain, pushing us beyond words alone. I chose visualization for this challenge because sketching and diagrams promised to reveal misunderstandings and align our mental models. As the research notes, when ideas are explained only with words, different people imagine different things, but a drawing “reduces the possibility of unmatched mental models”. In the context of the app design, this meant a simple sketch could ensure developers, designers, and users all envisioned the same interface concept.

Key reasons for selecting visualization included:

* **Clarification of Ideas:** Visualization helps turn abstract concepts (like “an easy-to-use menu”) into concrete images. This seemed crucial since the team had different assumptions about the app’s pain points.
* **Alignment and Communication:** By sketching the app screens, we could see where our visions differed. According to design thinking literature, presenting an idea with a picture “reduces the possibility of unmatched mental models”.
* **Creativity:** Visual tools engage different brain pathways. As noted in related work, visual thinking techniques (drawing ideas, using images) can change how people approach problems and boost creativity. I hoped that sketching would spark new insights into the app’s redesign.

These factors made visualization a strong fit. In lectures, I recalled that simple drawings or diagrams often helped teams reach agreement faster than lengthy textual discussions. Thus, visualization was my selected tool.

**Application of the Visualization Tool**

To apply visualization, I physically drew ideas on paper and whiteboards. I began by sketching the **current app layout** as I understood it. Using simple stick-figure screens, I outlined the homepage, course list, and navigation flow. Then I attempted a **new concept**: I drew an alternative menu design featuring icons for “Courses,” “Assignments,” and “Forums.” Each sketch was deliberately low-fidelity – rough shapes and labels – because, as Rojas advises, sketches should be “easy, fast, and cheap to create”. This allowed me to iterate rapidly without fear of mistakes.

The process steps included:

* **Initial Sketches:** I drew the existing interface with annotations of usability issues (e.g. a sidebar menu covering content). This helped the team see problems visually.
* **Brainstorming Sketches:** I sketched multiple layout ideas in parallel. For example, one board showed a tab menu, another showed a bottom nav bar. According to design thinking practice, exploring multiple alternatives via sketching is the “fastest and cheapest way to explore ideas”.
* **Storyboarding a User Flow:** I drew a quick storyboard of a student opening the app in the morning, logging in, and checking assignments. This series of images made the user’s experience concrete.
* **Team Sketch Sessions:** I invited classmates to add to the drawings. One student annotated a sketch with emoji-like feedback (e.g. happy face for clear layout, question mark for confusing bits). This collaborative drawing fostered discussion.

At each step, I used the visualization tool to make ideas visible. As Interaction Design Foundation notes, sketching “allows designers to propose, explore, refine and communicate ideas”. We frequently pointed at drawings during discussions, which felt more productive than only verbal descriptions. When disagreements arose (“I thought the menu was on the left”), I sketched a quick picture on the spot. We found that a few lines could resolve confusion instantly, confirming that pictures indeed enable understanding.

**Insights Gained**

Applying visualization yielded several insights. First, it **aligned our thinking**. For example, at one point I described a feature in words, and a teammate drew something that looked different from what I imagined. Seeing the discrepancy made me realize we had different mental models. Presenting my idea as a drawing immediately exposed that mismatch. This matches the literature: writing an idea down or drawing it “reduces the possibility of unmatched mental models”. By aligning our visions on paper, the team reached agreement more quickly than we would have by talking.

Second, the sketches **revealed hidden complexity**. Drawing the full user journey showed me steps I hadn’t considered (like a welcome screen and confirmation messages). These details were glossed over in discussion but became obvious when visualizing. We noticed the prototype had too many buttons on one screen, so we simplified it. In short, the act of visualization forced us to confront practical constraints.

Third, visualization **sparked creative ideas**. Once an image was on the board, it was easy to modify or repurpose it. For instance, one sketch of a calendar view prompted the idea to color-code courses, which was more intuitive than our original plan. As one source notes, visual thinking techniques help categorize and prioritize information, often quickly leading to clarity and creativity. We experienced this: by grouping interface elements visually, we quickly agreed which were most essential (e.g. homework progress bars).

Finally, the tool **improved communication** with others. Even our non-design classmates responded better when shown an image. A professor reviewing our concept gave more precise feedback when looking at a drawing than when listening to an explanation. This confirmed Rojas’s point that sketches sidestep verbal confusion and “help clearly communicate ideas, all but eliminating misunderstandings”.

Overall, the visualization practice deepened my understanding of the problem and shifted my thinking. Instead of staying abstract, I worked through real design decisions early. This experience underscored the value of visual thinking in design: it’s not just about pretty pictures but about making ideas tangible and challengeable.

**Future Approach**

If I had more time or did this again, I would build on what I learned. Specifically:

* **Sketch Multiple Directions:** I would sketch even more alternative layouts from the start. As recommended in design thinking, exploring multiple concepts via quick sketches prevents prematurely locking onto one solution. For example, I might draw separate storyboards for different user personas (the freshman vs. a senior) to compare approaches.
* **Involve Stakeholders Early:** Next time, I would bring real students or instructors into the sketching process. Inviting them to draw their ideal screen or to vote on sketches could surface needs we overlooked. This aligns with the idea of making the design process inclusive through visuals.
* **Combine with Other Tools:** I might pair visualization with complementary techniques. For instance, creating a quick mind map of app features before sketching could organize our thoughts. Or I could use storytelling (Module 2) to write a short narrative to guide the storyboard.
* **Use Digital Sketching Tools:** Since the target app is digital, trying a tablet sketch or simple wireframe software might speed up iterations and allow easy sharing. However, the key will remain to keep it simple and focus on concepts rather than polished graphics.

These changes aim to leverage visualization’s strengths: tapping different perspectives, iterating widely, and keeping ideas flexible. By sketching early and often, the team can better test assumptions next time and avoid surprises. Ultimately, this experience taught me that visualization is a powerful design thinking tool, and I look forward to applying it again — possibly alongside others — to continue improving both the project and my approach to design thinking.

**Sources:** Design thinking theory and visualization best practices were informed by Liedtka & Ogilvie’s work on design tools, articles on sketching and ideation, and literature on visual thinking in design processes.