HCIdea:

A UX Ideation and Research Hub for Students.

Intro to UX - Dec. 17, 2025.

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Project Overview

Our project's primary audience is Human-Centered Design (HCD) students, addressing some of the difficulty that comes with generating an idea and choosing topics for projects. The goal of this project was to **design a digital platform that reduces decision paralysis and aids students in choosing feasible and relevant research topics**.

Research was conducted with current and former HCD students to gain a better understanding of the experience and identify areas of improvement through design. After sending out a survey and conducting interviews to gain insights, we performed qualitative analysis on responses and built a solution. Once the prototype was built, we tested on users for feedback, implemented changes, and created this report.

Problem Statement

With HCD students being early in their design journey, many often struggle to identify research topics for assignments and group projects[7]. Throughout the course of the degree, it is often a class requirement to generate ideas for research and work in teams. Since students are just starting to learn the principles of design, it can be difficult to know where to start or how to build a strong foundation. Furthermore, many common problems already have existing solutions, making it harder to generate a truly novel idea. As a result, problem spaces have 'shrunk', becoming more nuanced and increasingly difficult to ideate for.

Students pursuing this degree typically aim to secure a role in the industry or continue into academic research. Building a strong portfolio, developing a versatile skill set, and forming professional connections are often key factors in achieving that success. The uncertainty around project direction can cause indecision and/or frustration, leading to inefficient time management early on[9]. With regard to group projects, these challenges are often bolstered when trying to attain consensus on a project's direction, demonstrating a need for an organized ideation system.

Proposed Solution

We proposed a digital platform, titled 'HCIdea' designed to help HCD students discover and refine research topics for academic and portfolio projects. The platform would serve as both an idea generator and research library, aggregating existing publications, case studies, and design examples based on the user's interests or team focus. By presenting related design solutions, the system would assist in highlighting gaps in under-researched opportunities, helping students identify areas with potential for meaningful exploration.

The tool would guide students toward projects that are both feasible, and aligned with real-world problems. In addition to providing guidance on what makes strong, portfolio-worthy projects that appeal to employers and academic reviewers, the platform would also feature networking opportunities to connect with other students, faculty, and industry sponsors. By offering structured inspiration, reliable sources, and guidance on design, the tool aims to reduce indecision and confusion early in the design process.

User Research

We conducted user research to better understand the needs of design students during the ideation and discovery phase of their projects. To build empathy and understand users better, we distributed a survey and conducted user interviews. The participant criteria included current and former students in HCD, Human-Computer Interaction (HCI), User Experience Design (UX) or related fields. In addition, individuals that have worked on an assignment where they needed to generate a project idea on their own or as a team. Participants were found through our design networks, classmates, and design groups in online communities.

Methodology

Survey

To establish a baseline understanding of HCD students, we distributed a mixed-methods survey of 11 questions. It was designed to capture any challenges with product ideation, gaps in UX knowledge, and identify potential issues when forming a team. It also gathered recommendations to improve the ideation and research process. This survey provided both qualitative and quantitative data for us to begin analyzing and using for the prototyping process.

User Interviews

We then conducted 20-minute unstructured user interviews to gain more insight. The questions therein focused on deepening our knowledge base and examining common themes. The interviews provided an opportunity to ask more situational questions, gaining an understanding of a student's thought process in the context of ideation. The user interviews were a source for understanding pain points, needs, wants, and motivations in more depth.

Survey Questions

1. Are you or have you ever been a student studying Human-Centered Design (HCD), or worked on any design project that requires research?
    - Yes

- No

2. How would you rate the difficulty in coming up with an idea for an HCD or design project?
    - Very difficult
    - Difficult
    - Neutral
    - Easy
    - Very easy

3. When coming up with an idea, how challenging is it to come up with something novel (original or new in some way)?
    - Very challenging
    - Challenging
    - Neutral
    - Easy
    - Very easy

4. How often do you have trouble with design principles or terminology when designing a new project?
    - Never
    - Sometimes
    - About half the time
    - Most of the time
    - Always

5. What are the most common problems you face when coming up with an idea for a design project? Select all that apply.
    - ☐ Novelty (not understanding what exists already)
    - ☐ Lack of understanding of UX design principles
    - ☐ Indecisiveness
    - ☐ Team size
    - ☐ Lack of understanding of project scale

- ☐ Time
- ☐ Consensus
- ☐ Not knowing how to search for research
- ☐ Other: _____

6. What kinds of conflicts arise when trying to come to consensus as a team? Select all that apply.
   - ☐ Opposing/different interests
   - ☐ Several good ideas
   - ☐ Lack of communication
   - ☐ Resistance to feedback
   - ☐ Difference in skill level among team members
   - ☐ Other: _____

7. How would you rate the difficulty in finding fellow researchers or designers to work with?
   - Very difficult
   - Somewhat difficult
   - Neutral
   - Somewhat easy
   - Very easy

8. How do you typically search for or find existing design projects? (1-2 sentences)
   _____

9. How often do you consider your portfolio while generating ideas for a new project?
   - Always
   - Most of the time
   - About half the time
   - Sometimes
   - Never

10. If you were able to use an application that would help you ideate and design your future projects, what sort of features would it have? (2-3 sentences)

    _____

11. If you would like to participate in an interview relevant to the questions above, please put your email below. Otherwise, you may skip this question.

    _____

Interview Questions

1. Tell me about a time when you needed to come up with a project idea for your class or your portfolio.

2. Who was involved? / How did you choose an idea? / What was the process like?

3. What are some of the key factors you think of when generating new ideas for a project?

4. Talk me through the steps you took and elaborate step-by-step.

5. When you're working on these projects, are you considering how it will relate to your profile and future job prospects. If so, in what way?

6. What are key issues you face while coming up with new ideas?

7. How often do you have trouble communicating with your team, if ever?

8. Do you use any online tools, like apps, websites or anything similar to aid you with the ideation process.

9. What's your favorite feature of this service?

10. Is there something you wish was offered by the website that currently isn't?

11. If you could imagine a perfect tool/service to aid you with this problem, what would be the key features you would like for it to include?

12. Is there anything "quality of life" related, you've seen in other apps or websites that you wish existed for this purpose?

13. Think about the apps and websites you use regularly, are there any small, convenient features you'd love to see in an ideation tool?

Analysis

For data analysis, our team conducted an affinity mapping exercise to synthesize insights from 5 user interviews, using transcribed recording to code recurring patterns and themes [Fig. 1, 2]. These qualitative findings were analyzed alongside data from 9 survey participants to develop an understanding of the problem space. This process helped surface user needs and pain points. Based on the insights from interviews and survey data, personas were created to better consolidate the data and empathize with users. [Fig. 3, 4] Ideas for product features were formed based on participant responses and feedback.

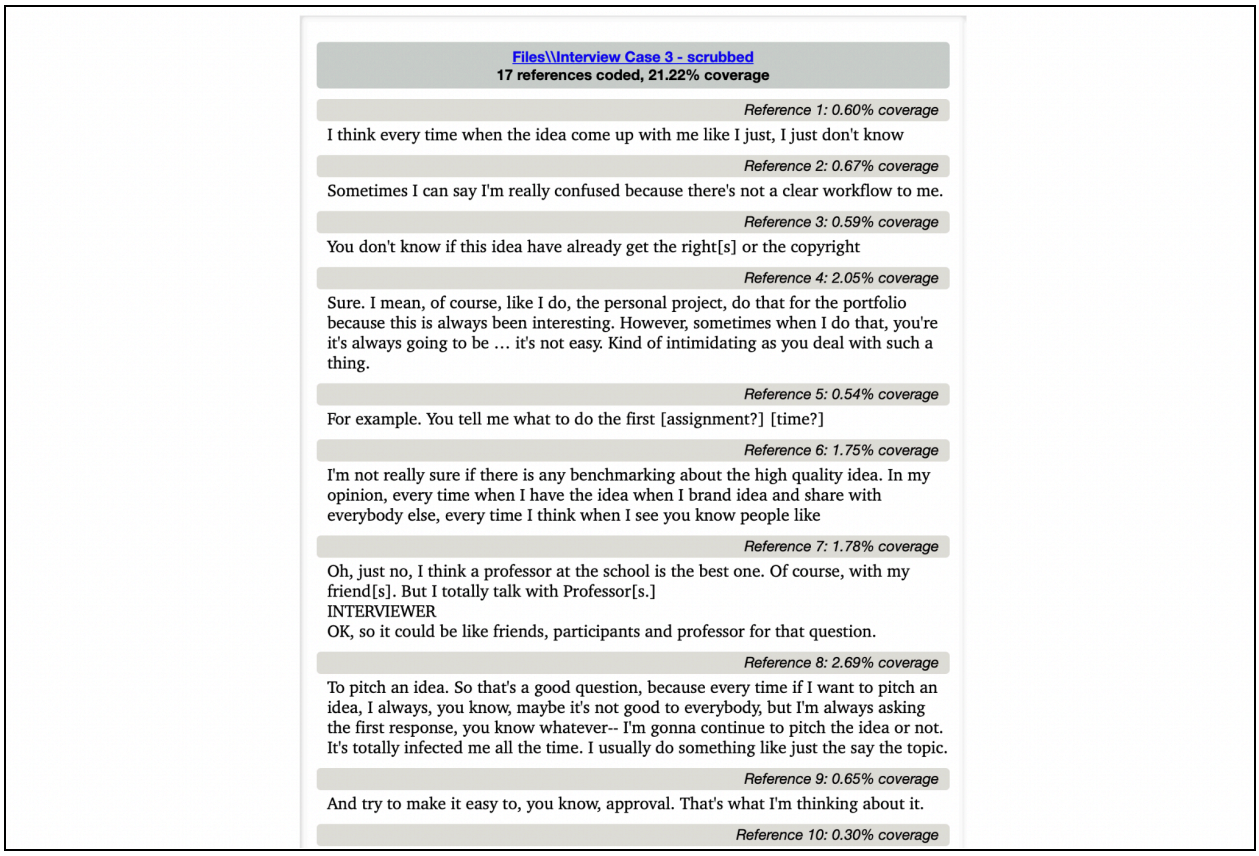


Figure 1. Coding user interview themes in Nvivo

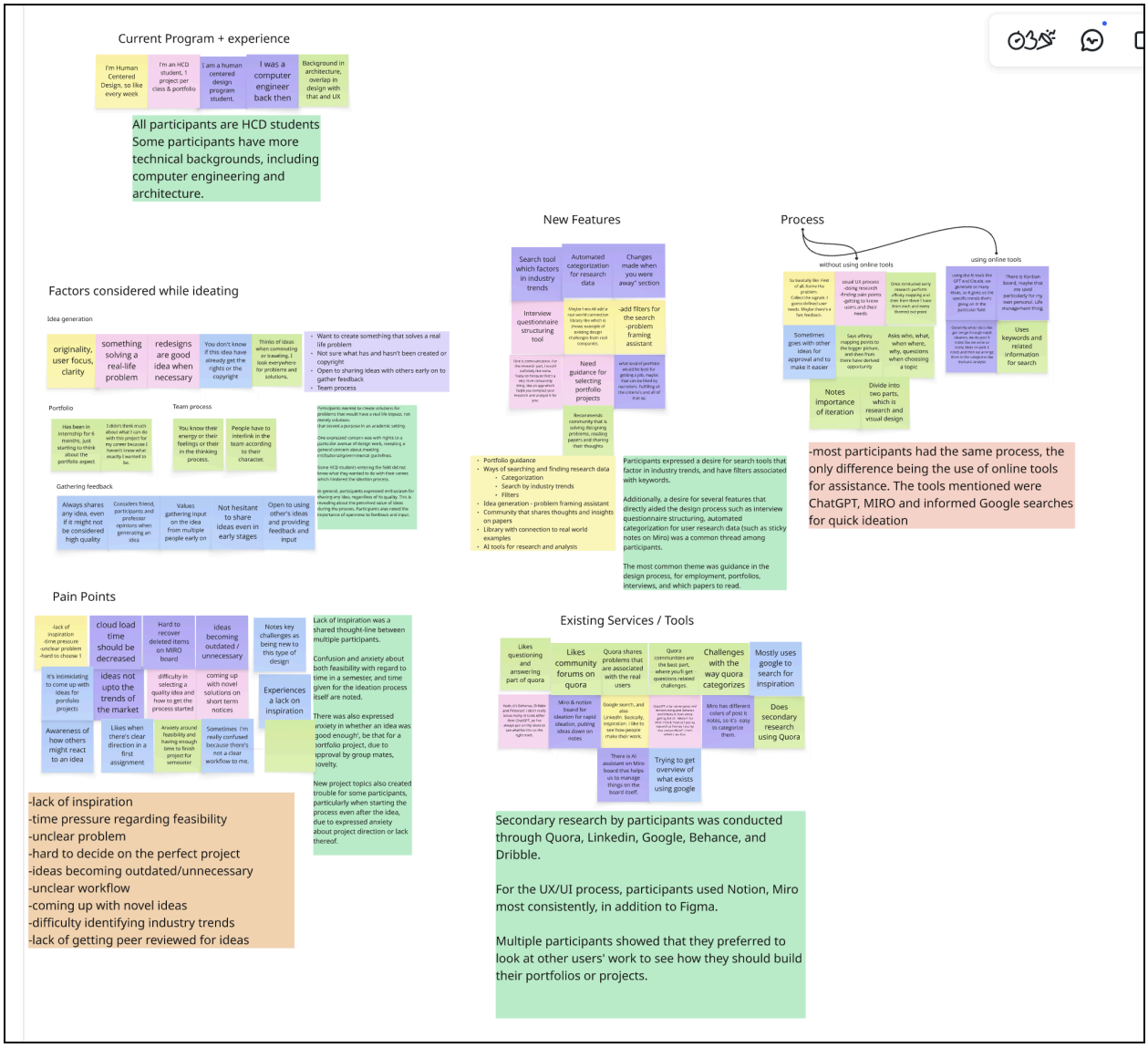


Figure 2. Affinity Mapping Exercise - [Link to Miro]

Insights

Idea Generation and Novelty

77.78% of participants were neutral or at most found it easy to come up with an idea for a project. However, generating ideas that are truly novel proved more difficult with 77.78% participants reporting that coming up with something new or original is ‘somewhat’ or ‘very’ challenging. This highlights a common struggle among HCD students to create ideas that feel distinctive in a saturated problem space.

Uncertainty Around Feasibility and Direction

Time constraints and project feasibility were identified as some of the most common problems when generating ideas, according to survey responses and user interviews. Research found that students often struggle to estimate the scope of projects within a semester, making it difficult to manage their time effectively. Early in the ideation phase indecision can slow progress.

Gaps in UX Knowledge and Process Understanding

With many students being early in their design career, understanding design principles and terminology is a common challenge with 88.89% reporting difficulty in this area. Lack of understanding in UX principles was often cited as an obstacle for making decisions. 77.78% participants noted the importance of considering their portfolio when selecting an idea for a project. This suggests that students understand the value of creating a strong portfolio project, but may not understand the principles or process needed to achieve it

Desire for Tools to Support Research and Ideation

Participants expressed a strong interest in tools that leverage AI to automate the research and ideation process. Students currently use a variety of platforms for different purposes throughout the design process. Common tools like Google[5] are used for general research, Quora[11] for real-world perspectives, ChatGPT[10] for brainstorming, Behance[1] for visual inspiration, Miro[8] for collaboration, and Figma[3] for prototyping. This highlights an opportunity to streamline these functions into a single platform that supports ideation, research, and project execution.

Teamwork and Collaboration Challenges

66.67% participants reported difficulty in finding fellow researchers or designers to work with. Indecision around choosing an idea, lack of communication, and differences in personal interest were ranked highest among the most common sources of friction between teammates. These factors in group projects can magnify challenges in teams where there is unclear direction and alignment.

Personas

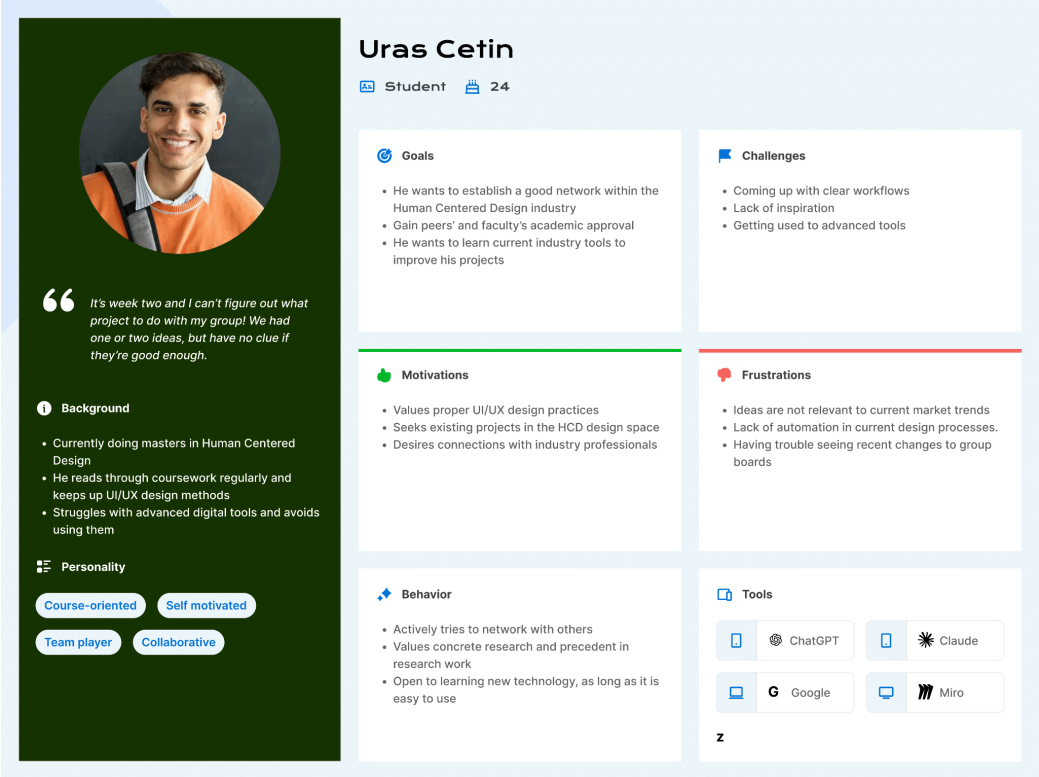


Figure 3: Persona 1

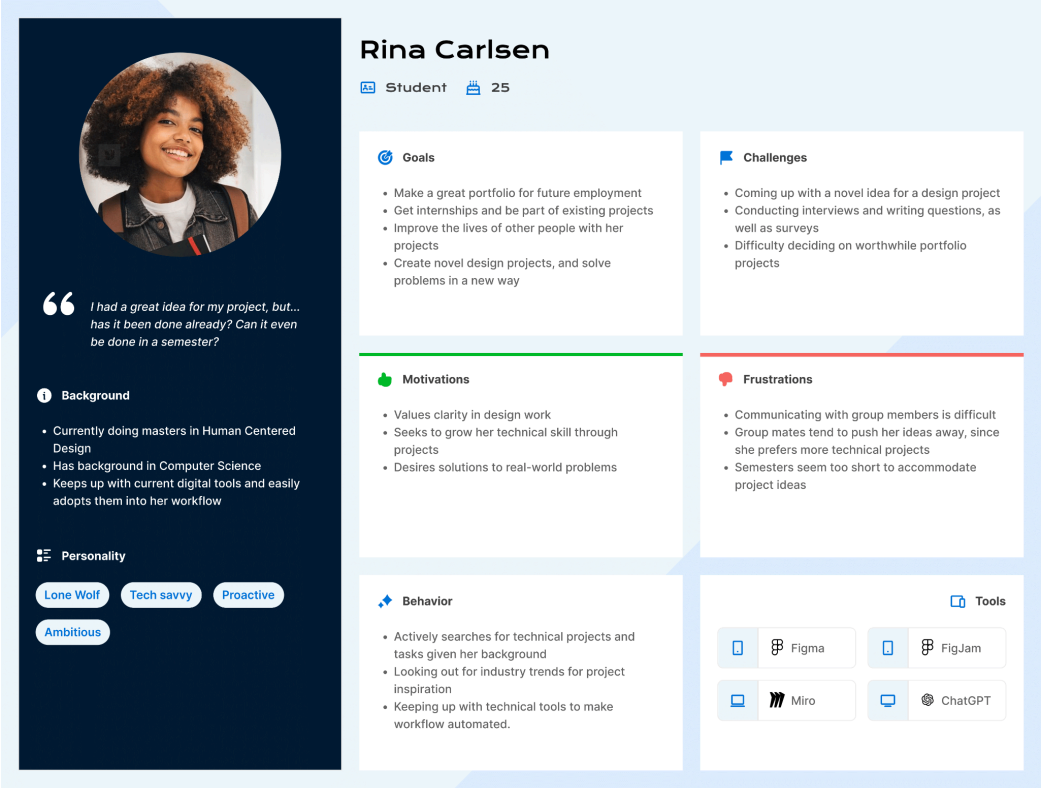


Figure 4: Persona 2

Design Direction

Once the research had been analyzed, and persons were created we identified potential features and prioritized what to implement for MVP.

Idea Generation Hub

The platform is an inspiration hub where users can browse, existing design examples, industry-sponsored projects and personalized content recommendations. Additionally, the tool provides a build-in prompts with related research to generate ideas during brainstorming sessions.

Search and Categorization

With search as a primary method of ideation, users can navigate information using smart search tools that filter by industry trends, tags, and personal interests. The platform will simplify the research process by surfacing different types of data in an intuitive format.

Research Analysis and Aggregation

This tool will utilize AI to synthesize complex information and create connection points between related research. All bookmarked content, notes, and moodboards are funneled into a centralized idea map. The idea map will provide features for the information to be explored and analyzed, aiding in the discovery phase of the design process.

UX Project Guidance

The platform will include an AI assistant that helps aid in the feasibility and novelty of a research idea, as well as identifying technical constraints. It offers guidance in brainstorming, project refinement, and differentiation.

Community Connection

The platform will feature student profiles that highlight research interests to foster peer-to-peer networking. By aligning students with similar goals, the feature simplifies the process of finding compatible project partners. It also provides an easy way to share idea maps and research within the platform. Looking ahead, this system can be scaled to a broader professional network, bridging the gap between students, educators, and industry sponsors.

Key User Tasks

1. Discover Research and Generate Ideas:
    - Browse, search, and filter content

    - Bookmark content and add custom notes to the journal
    - Generate ideas through [idea] prompts
2. Analyze and Synthesize Data:
    - Build interactive “Idea Maps” by bookmarking content
    - Analyze connection points between data and research findings
    - Share idea maps with other student for project alignment
3. Brainstorm and Validate Ideas Using AI:
    - Use AI Assistant to generate information tailored to interests
    - Determine realistic timelines and project scope
    - Ensure novel idea and distinction within industry
4. Make Connections and Share Insights:
    - Set up a profile with personal information and interests
    - Connect with peers to find partners for projects
    - View current list of idea maps that student is a part of

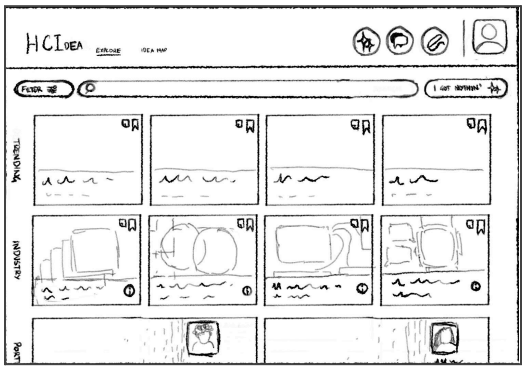
Prototype

After analyzing the interview and survey data, we conducted an affinity mapping exercise to identify key themes. The team then collaborated and brainstormed features based on what we had learned. We mapped out the user journey and prioritized features for the MVP. The primary pages were narrowed down to: Explore feed, Details Page, Idea Map, Profile and Sidebar Tool extensions.

Low-Fidelity

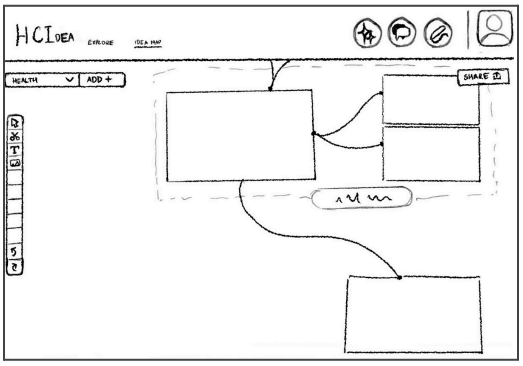
We first created a low-fidelity, clickable wireframe in POP to better visualize and test the user flows. In the table below you can see the page sketches along with the description for all the elements included in each of them.

The complete POP prototype can be viewed here: https://marvelapp.com/prototype/11e08bc1

Screen	Description
	Explore Page The explore page is where you arrive when you open the website. ▪ Provides a place to browse, search, and filter research and design inspiration ▪ Projects, portfolios, articles, research papers, and tutorials are surfaced to support the ideation process ▪ Category groupings such as trending, industry examples, and recommendations based on your interests ▪ Ability to bookmark, create notes, and add content to an idea map ▪ “I got nothin” feature generates a random idea and provides prompts when a user is stuck ▪ Header :: Left Navigation ➔ Explore ➔ Idea Map

- Header :: Right Icons
  - ➔ AI Chat Help
  - ➔ Messages
  - ➔ Journal
  - ➔ Profile

Important Note: Due to technical limitations with our prototyping tool POP, categories at the bottom have been cut off. However, they are listed above.

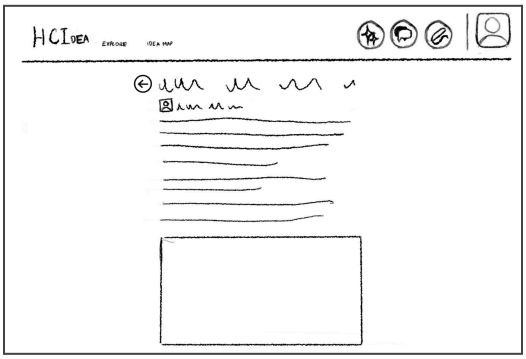


Idea Map Page

The Idea Map allows you to see your bookmarked items and text items from your journal laid out and related to one another.

The Idea Map assists with ideation by:

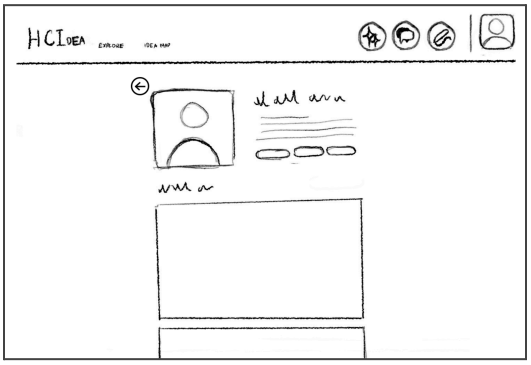
- Providing a fluid, visual map of saved items
- Automatically categorizing bookmarks and ideas
- Aggregating research and 'mood board' items in one place, while still keeping them organized



Detail Page

The detail pages are provided for each type of content including projects, portfolios, articles, research papers, and tutorials.

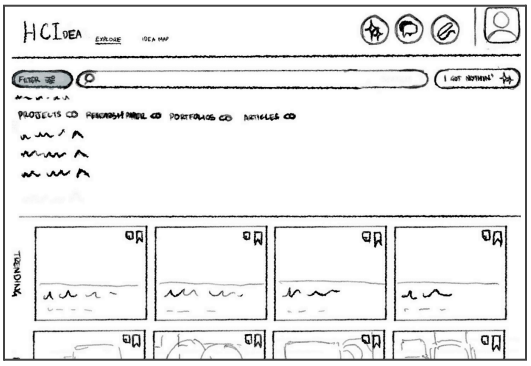
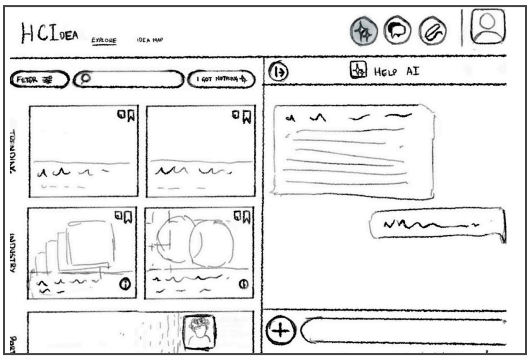
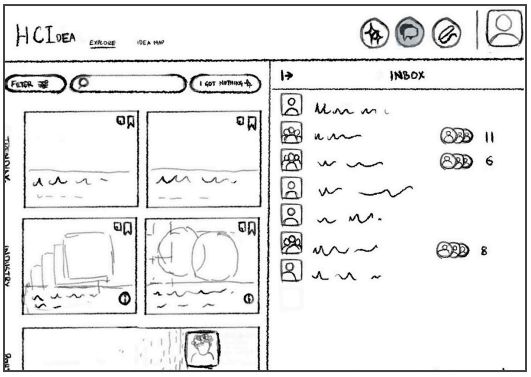
- A user can access the research paper, view existing design solutions, browse tutorials, and details about other types of content

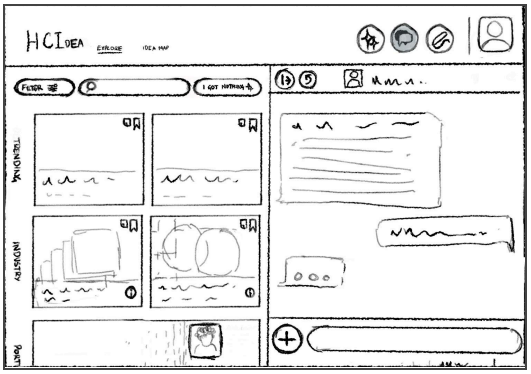


Profile Page

The profile page lets you specify your interests and student information, providing a space for other users to learn more about you.

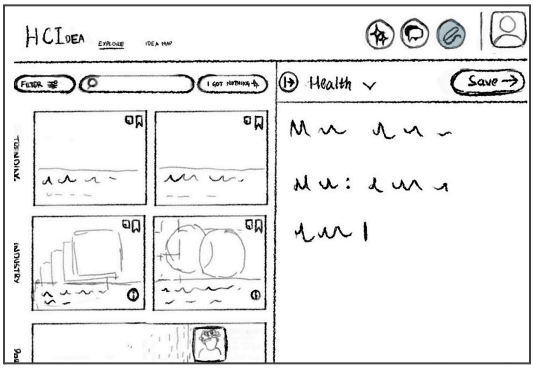
- Specifying interests allows you to curate your explore page feed
- Let's other users connect with you and send messages to you

	■ Let’s other users know what projects you are working on and see what items you’ve bookmarked
	Explore Page > Filter On the explore page, the filter button opens a top bar that lets you further curate the explore page. ■ Allows the user to see only one or two categories of item to simplify the view
	Any Page > AI Chat (sidebar) All pages contain 3 sidebar features, including an AI chat. ■ This AI chat is a resource to brainstorm ideas, ask design and research related questions, and get portfolio guidance ■ Feature can also be used for suggestions based on an idea map
	Any Page > Chats > Inbox (sidebar) The inbox is where all of the person-to-person messages live, AI messages are kept separate for easier access.



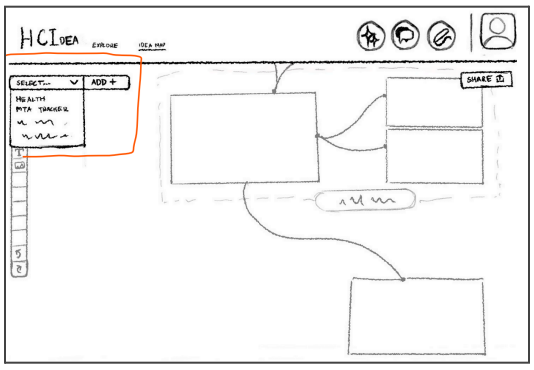
Any Page > Chats > Direct Message (sidebar)

Direct messages can be sent to other students or faculty. This includes both direct messages between users and group chats.



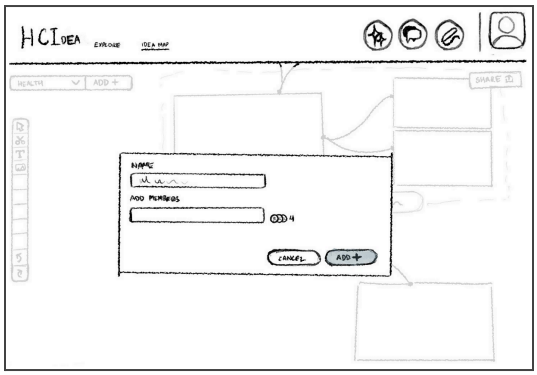
Any Page > Journal (Sidebar)

The journal allows users to write down ideas and see bookmarked items. Each journal is associated with an idea map. This provides a place to take notes and save ideas as the student browses through research.



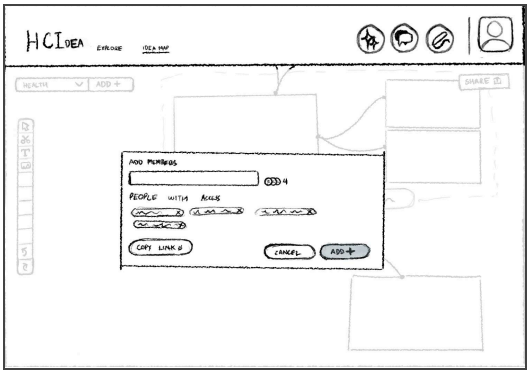
Idea Map > Switch Dropdown (Dropdown)

If a student is working on different projects, they can toggle between Idea Maps providing multiple workspaces



Idea Map > Add New Idea Map (Overlay)

This item is a9lso accessible from the Journal sidebar.

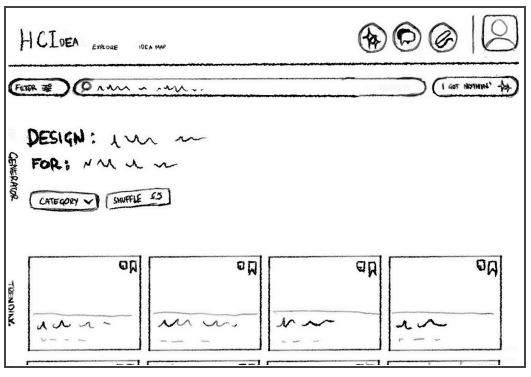


Idea Map > Add New Members and Share (Overlay)

Idea maps can be shared with different teammates through the platform or as a direct link. Different permissions can be provided based on role (edit vs. view only access).

Any Page > Journal (Save Button)

Automatically parses information and adds items from the journal to an idea map, including any written text or notes.



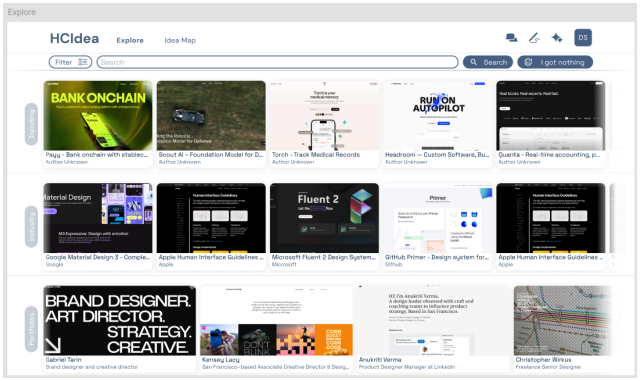
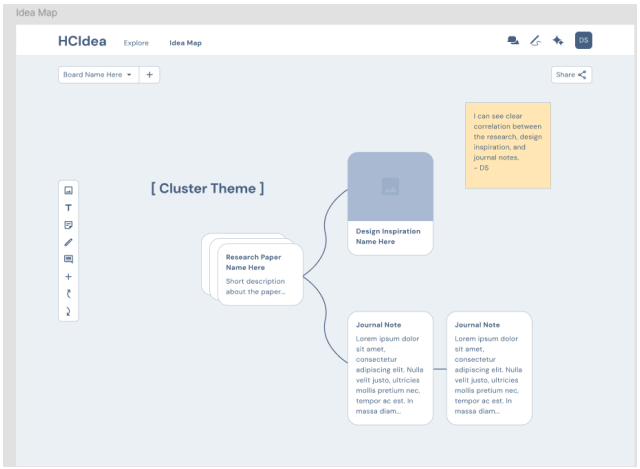
Explore Page > Roll the Bones (Random Idea Gen)

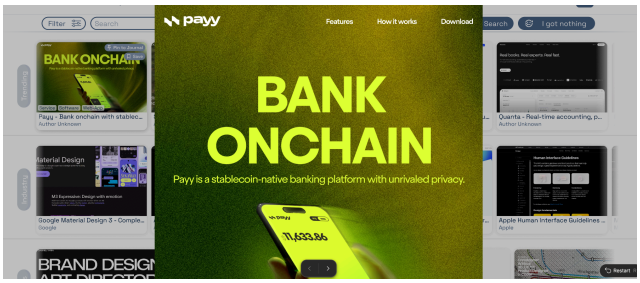
Generates a random idea based on your interests and current feed.

High-Fidelity

Since the primary rationales for pages were covered in the POP low-fidelity prototype, this section goes over the minor graphical changes and the rationale for those.

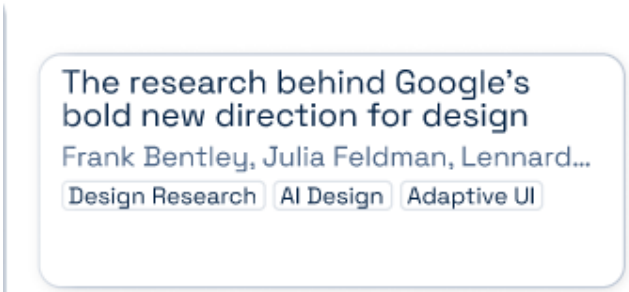
The complete Figma prototype can be viewed here: https://www.figma.com/design/AKLCuhU6sZ7dh0UgkHq0jM/HCIdea-Wireframe?node-id=3699-2362&t=jYGj0Cv8qa4MK63I-0

Screen	Description
	Explore Page ■ Papers are listed without images ■ Each item bears tags to describe it in terms of potential user interests.
	Idea Map Page ■ Soft blue colors were chosen here, to show that users can choose the color of their idea maps. ■ [Cluster Theme] designates text used to describe a cluster of information ■ Items are connected by relatedness ■ Sharing is possible not unlike Google Docs[4].



Detail Page

This was changed to be an overlay, rather than a full page



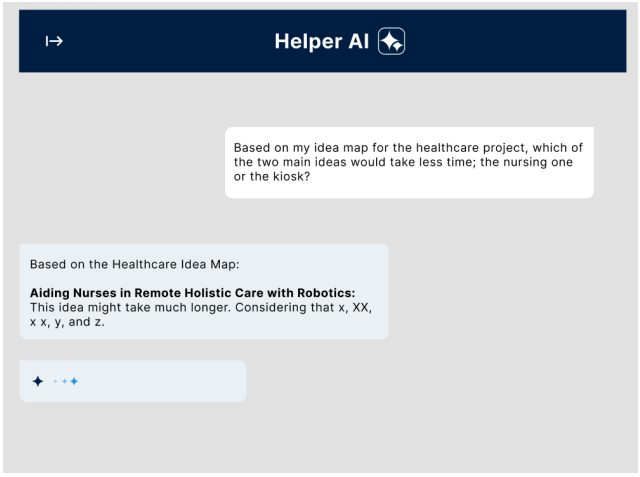
Component Detail (Research Papers)

Research papers show up this way on the explore page, detailing writers and topics involved.

These items can be pinned and saved

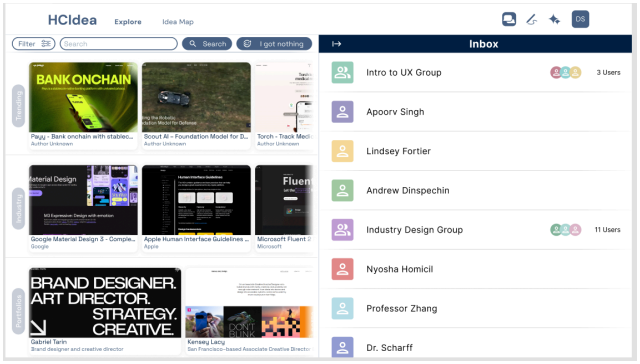
Explore Page > Filter

- No changes from the prototype as such, the sections have different designs based on functionality.

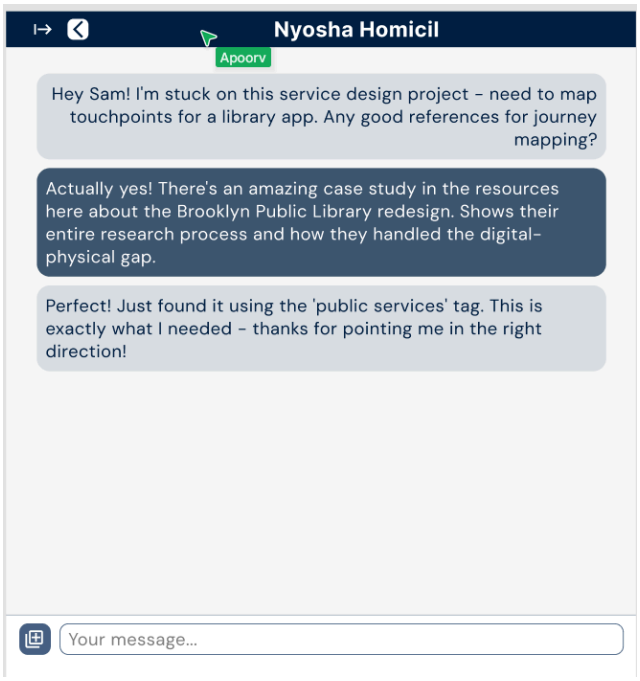


Any Page > AI Chat (sidebar)

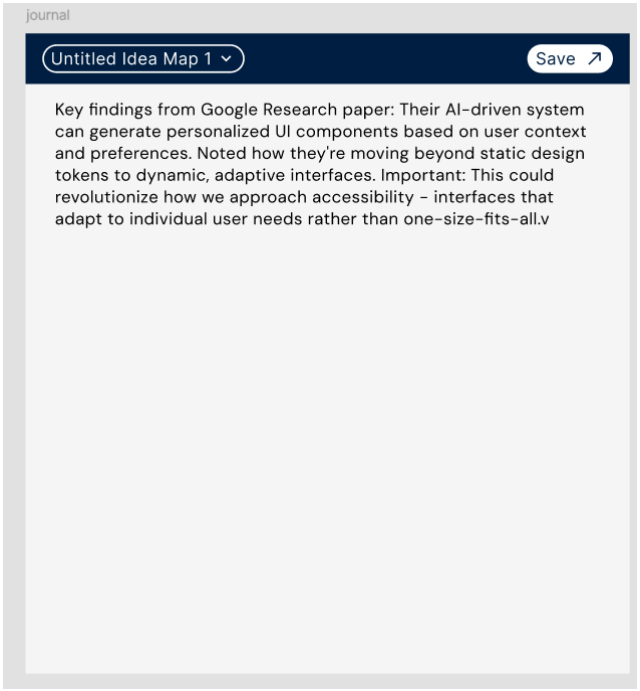
- Added the task flow to the AI Chat tool



Any Page > Chats > Inbox (sidebar)



Any Page > Chats > Direct Message (sidebar)



Any Page > Journal (Sidebar)

Notes that the user writes appear here, alongside a dropdown to associate the Journal with an idea map.

Ideas put here or notes end up on the idea map associated

Usability Testing

The primary objective was to assess the learnability, efficiency, and overall user satisfaction of the core platform features with our target users. The evaluation aimed to identify specific usability issues and gather qualitative feedback to inform the next iteration of the design, ensuring the final product effectively meets the needs of HCD students.

Evaluation Methodology

The evaluation employed a moderated, task-based usability testing method. We recruited six (6) current HCD students, representing a mix of academic years, all of whom were familiar with the challenge of topic selection. Sessions were conducted remotely via Zoom, where participants interacted directly with a high-fidelity interactive prototype. Each session was recorded for subsequent analysis.

Participants were asked to complete seven core tasks designed to test the platform's essential functionalities.

- ‘On the Explore page, navigate to any industry project and add it to the idea map.’
- ‘Use the “I got nothing” button to generate some ideas’
- ‘In the Journal, make a note and save' it to an idea map of your choice’
- ‘Send a message to another user’
- ‘Ask the AI for help determining your project feasibility’
- ‘Share an idea map of your choice with another user’
- ‘Visit your profile, then add “healthcare” and “analytics” to your interests.’

We collected both quantitative and qualitative data. Quantitative metrics included task success rates, time-on-task, error counts, and post-test System Usability Scale (SUS) scores[2]. Qualitative data was gathered from behavioral observations, participant think-aloud commentary, and responses from a semi-structured post-test interview. **The SUS questionnaire is shown below.**

1. I think that I would like to use this system frequently.
2. I found the system unnecessarily complex.
3. I thought the system was easy to use.

4. I think that I would need the support of a technical person to be able to use this system.
5. I found the various functions in this system were well integrated.
6. I thought there was too much inconsistency in this system.
7. I would imagine that most people would learn to use this system very quickly.
8. I found the system very cumbersome to use.
9. I felt very confident using the system.
10. I needed to learn a lot of things before I could get going with this system.

Quantitative Analysis

The performance of the six participants across the seven core tasks was measured by success rate, average time on task, and average number of critical errors. The results are summarized in the table below.

#	Task	Success Rate	Avg. Time (seconds)
1	Save an industry project to Idea Map	83.33%	48
2	Use "I got nothing" button to generate ideas	66.67%	64
3	Make a journal note and save to an Idea Map	100%	42
4	Send a message to another user	100%	24
5	Ask AI for project feasibility help	83.33%	24
6	Share an Idea Map with another user	83.33%	37
7	Add "healthcare" and "analytics" to profile interests	66.67%	37

Each of the 6 participants filled out an SUS evaluation once the user testing concluded. The application received a score of 86.25, see the link below for calculation details.

Intro to UX - SUS score - HCIdea

The SUS score of 86.25 strongly indicates that participants, on the whole, found the application to be highly usable, consistent, and something they would recommend to others. This excellent global assessment is supported by flawless (100%) success rates on straightforward, standard interactions like sending messages (Task 4) and creating journal notes (Task 3), both of which also had low average completion times.

However, the task success rates expose critical flaws in key, unique features of the platform. Task 2 ("I got nothing") and Task 7 (Edit Profile Interests) had the lowest success rates at 66.67%, meaning one-third of users failed to complete these core functions. Notably, Task 2 also had the longest average completion time (64 seconds), more than double that of the quickest tasks, indicating significant user struggle and hesitation. Tasks 1, 5, and 6, while better, still had failure rates of 16.67%. Despite relatively consistent average times for tasks, it is worth reiterating that users were instructed to think aloud during the testing session, and that this may have contributed to some of the slowdowns.

This contrast between the SUS score and the suboptimal task success rates for specific features is a critical insight. It suggests that while the application's overall design, navigation, and foundational interactions are strong and satisfying, its specialized, value-added features contain significant usability barriers. The high SUS score reflects the solid user experience foundation, but the task metrics precisely identify where that foundation cracks under the weight of complex or unclear functionality. This directs our attention to improving the ideation generator ("I got nothing"), profile editing, and the integration of the AI assistant to bridge the gap between high perception and flawless performance.

Qualitative Analysis

We summarized the feedback and observational data from our six participants to identify key themes and major points of discussion. The analysis reveals strong validation of the platform's core concept alongside specific, actionable areas for improvement in its usability and feature design.

Reaction to Core concept

Participants responded positively to the fundamental purpose of the platform. They saw clear value in a tool designed specifically for academic ideation that centralizes resources.

One participant stated, "I actually do like how everything is set up... the concept is great," and emphasized the benefit of "having a place to like, save all of it in one centralized location." Others appreciated how it combined AI with a structured space, liking "that the app uses AI to help generate ideas" and finding the idea map helpful for visualization.

Confusion regarding the “I got nothing” button

A significant and recurring usability issue emerged with the "I Got Nothing" button, a feature intended to kickstart the ideation process. Contrary to our expectation, the interaction confused multiple users. One participant explicitly compared it to a "Google, I feel lucky" experience, expecting it to "just throw something at you," and was puzzled when they found they had to "do a little bit more."

Another demonstrated a deeper misunderstanding, spending several minutes trying to type into the category fields, not realizing that "shuffle" was the generative action. This confusion indicates a misalignment between the feature's design and user expectations, turning a tool for reducing indecision into a source of it.

Issues with the Idea Map page

The core organizing principle of the "Idea Map" was not intuitively grasped by all users, which created friction in saving and sharing tasks. For instance, one participant admitted that they "[were] unsure of what an idea map is" and initially thought of it as a "mood board."

This incomplete mental model led to direct task failure for them and confusion for others when asked to share the idea map. Another participant similarly wanted a more integrated confirmation, suggesting it would "be cool if it embedded here, like a little pop up”, later comparing it to Google Docs’ share feature[6].

Context and Visibility issues with the AI assistant

Feedback on the AI feature revealed two key problems: discoverability and context. Some users did not immediately think to use the AI for feasibility checks; One participant said that they "wouldn't think to ask AI" and expected such metrics directly on project cards.

Participants who were able to find it expressed uncertainty about what the AI was analyzing. One participant expressed this clearly, stating, "I'm assuming I need a project already saved, so I'm just gonna hope that it selects the one that I already had," and wished the tool could explicitly "work with either stuff that you have saved." This indicates a need to better connect the AI's functionality to the user's existing content within the platform.

Navigation and Standard interactions

Amid the identified issues, the evaluation confirmed that the platform's foundational navigation and standard interactions were sound. Tasks involving universally recognized patterns, such as sending a message, were completed with ease and described as "pretty straightforward" and "fairly standard." Users consistently and quickly located major sections like the Journal, Profile, and Explore page, indicating a logical information architecture. This success in basic usability provides a solid base upon which to refine the more complex and unique features of the platform.

The usability evaluation yielded a clear picture; the platform's fundamental value proposition and basic structure are strong and resonate with our target users. However, this positive foundation is undermined by significant usability flaws in its more specialized features. The "I Got Nothing" generator confused users due to a mismatched mental model. The "Idea Map" concept, central to the platform's organization, was not intuitive. Furthermore, the AI assistant felt disconnected from user content and was difficult to find.

Following this, the immediate focus became centered on redesigning these key features to align with user expectations, strengthen the conceptual model, and integrate functionality more seamlessly. Addressing these issues, alongside implementing polish for UI clarity and

system feedback, will transform the prototype from a promising concept into an efficient and intuitive tool that truly reduces decision paralysis for HCD students.

Prototype Improvements

Following the usability evaluation, we implemented targeted refinements to address the identified usability barriers and enhance clarity, functionality, and user experience.

The key changes made to the HCIdea prototype include:

Increased Legibility:

Adjusted tool icon text weight and darkened search bar text to improve readability and visual accessibility.

Terminology Clarity:

Renamed "Idea Assistant" to "AI Assistant" to better communicate the feature's purpose and align with user mental models.

Visual Hierarchy:

Adjusted the opacity of section labels on the dashboard to create a clearer visual hierarchy and reduce interface noise.

Enhanced Idea Map Interface:

Added more icons to the Idea Map toolbelt, making it more dynamic and intuitive for organizing and interacting with content.

Improved Idea Generation Page:

Enhanced the idea generator page by ensuring recommended projects dynamically follow the theme of the generated prompt, providing more relevant and context-aware suggestions.

Clearer Content Attribution:

Added visible source attribution to the Idea Map page, helping users understand the origin of ideas and research items, thereby increasing transparency and trust.

These updates directly respond to user feedback regarding confusion around the AI feature, conceptual clarity of the Idea Map, and overall interface polish.

Conclusion

The usability evaluation confirms that the HCIdea platform's core concept strongly resonates with Human-Centered Design students. This is evidenced by the high SUS score of 86.25. Participants validated the need for a centralized tool to support academic ideation. They also found the basic navigation and standard interactions to be intuitive and efficient.

However, the study also revealed critical usability barriers within several of the platform's unique features. Despite the strong overall impression, task success rates showed that key functions such as the I got nothing idea generator and profile editing were not completed successfully by one third of users. Qualitative data indicated that these failures came from mismatched mental models, unclear conceptual labels, and disconnected workflows. This was especially true for the AI assistant and Idea Map features.

In summary, while HCIdea's foundation is solid and its value proposition is clear, targeted refinements were necessary to ensure its specialized tools are as usable as its core framework.

Future Work

Moving forward, the following steps are recommended to further develop HCIdea into a fully realized product.

Long Term Feature Expansion

Explore integration with academic databases such as IEEE Xplore and ACM Digital Library. This would provide direct access to research papers within the platform.

Advanced Collaboration Tools

Develop real time co editing features for Idea Maps and shared project spaces. This would support synchronous teamwork for distributed student groups.

Personalization and Learning Pathways

Implement adaptive learning features that guide students based on skill level, project type, and career interests. This would offer tailored resources and milestone tracking.

Extended Usability Testing

Conduct a follow up round of testing with the refined prototype. Focus on the improved AI assistant, Idea Map clarity, and new collaboration flows to validate design changes.

Institutional Partnerships

Pilot the platform within HCD programs to gather longitudinal data. This data would measure the platform's impact on student project outcomes, portfolio quality, and academic confidence.

These future directions aim to scale HCIdea from a classroom prototype into a robust, widely adopted tool. The goal is to continue reducing decision paralysis and empowering the next generation of human centered designers.

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