Bricolage: Building Multi-disciplinary Teams at WPI and Other Local Schools

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Background & Introduction

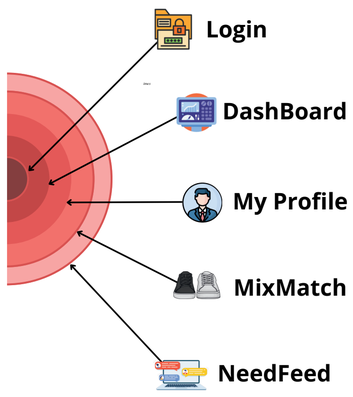
Problem Statement: *"How can students efficiently find collaborators and co-founders across departments to foster innovation?"*

Finding ideal teammates across disciplines is critical for driving student innovation at WPI. However, students often struggle to discover and connect with peers outside their academic programs, limiting collaboration opportunities. Existing solutions, such as networking events and Discord channels, are decentralized and inconsistent. This leads to missed opportunities for interdisciplinary projects.

Our research revealed a need for a centralized, structured, and flexible platform that could support both finding collaborators and accessing short-term project help. Bricolage was developed in response to this gap, with a focus on enhancing visibility, compatibility, and ease of connection across WPI's innovation ecosystem.

Setting the Stage: *Bricolage*

Bricolage provides a streamlined experience for student innovators, connecting discovery, collaboration, and short-term project support through one platform.



To address gaps in collaboration and support across disciplines, Bricolage centers around two key features:

- MixMatch: Students set search criteria based on project interests, complementary skills, work style preferences, and availability. The system then **recommends potential collaborators** based on compatibility, helping students find stronger matches for **long-term teamwork**.
- NeedFeed: A peer-to-peer help board where students can quickly **post & respond to short-term needs**, such as feedback requests, tool lending, or help with specific tasks. This provides flexible support without requiring formal team formation.

Design & Methodology

System Design Approach

- Three-tier architecture:
  - Presentation Layer *(desktop-first, mobile responsive)*
  - Application Layer *(Mendix Low-Code Platform)*
  - Data Layer *(PostgreSQL on Mendix Cloud)*
- Scalable hosting with cloud backups and role-based access control.

Requirements Gathering

- 2 focus groups (6 WPI students) to identify collaboration and support needs.
- Semi-structured interviews aligned with system features.

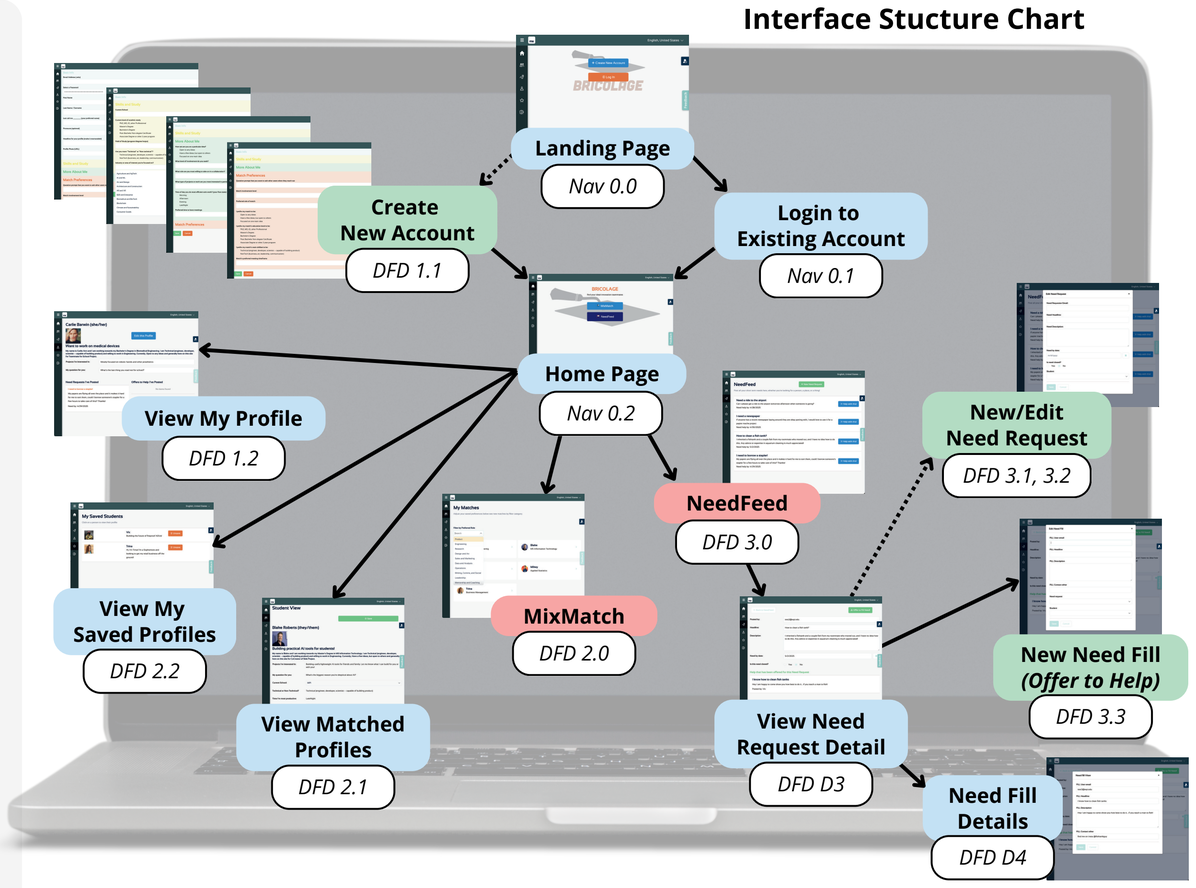
User Testing & Evaluation

- 5 WPI students completed prototype walkthroughs.
- Feedback collected on usability, match quality, and task flow clarity.

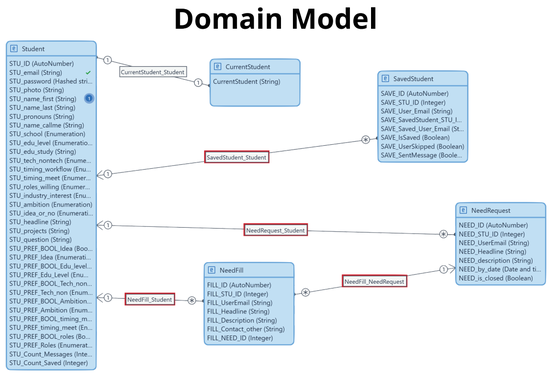
Data Analysis

- Qualitative coding of feedback to prioritize feature refinements.
- Iterative updates to profile creation, search filtering, and NeedFeed posting flows.

Interface Stucture Chart



Domain Model



The user interface model was structured around progressive disclosure, allowing users to navigate onboarding in manageable steps without cognitive overload.

The domain model reflects key system entities, ensuring a clear logic for storing, retrieving, and displaying relationship-driven data.

Together, these models support scalable collaboration flows across discovery and short-term support.

User Research to Actionable Design

Early-stage research revealed that successful collaboration depends on more than just technical skills.

Bricolage needed to surface work style compatibility, enable flexible project evolution, and build trust for short-term peer support.

These insights directly shaped the design of user profiles, search filters, and NeedFeed interactions.

User Insight	Impact on Bricolage
Work style matters as much as skills	Profiles capture work ethic, collaboration style, and availability.
Operational fit is critical	Match filters prioritize collaboration pace, not just technical skills.
Support needs evolve	Profiles and search criteria are designed for dynamic updates.
Peer trust is essential	NeedFeed posts use structured prompts to build credibility.
UX must signal professionalism	Clean, purpose-driven UX reinforces platform credibility.

Results & Discussion

Bricolage Prototype

Scan to see the prototype in action!
https://tinyurl.com/5ajhuefn

Key Usability Outcomes

- Students who clearly defined skills, interests, and project goals achieved faster and more effective matches. Prototype walkthroughs showed a 90% task success rate across core flows *(profile creation, match search, NeedFeed posting).*
- Users found the match filtering intuitive but requested clearer explanations of how collaboration styles impact results.
- Students appreciated the lightweight structure of NeedFeed for posting and responding to short-term project needs.

Challenges

- Early reluctance to complete full profiles slowed initial adoption.
- Students needed clearer guidance on how skills and interests impact match results.

Recommendations

- Enhance onboarding with brief tutorials or demo videos.
- Incentivize complete profiles through badges, visibility boosts, or early match notifications.
- Partner with WPI's entrepreneurship and project-based learning offices to drive adoption and engagement.

Conclusion & Next Steps

Bricolage addresses a critical gap in interdisciplinary collaboration by connecting students based on work styles, skills, interests, and evolving project needs.

As the platform scales, supporting dynamic profiles and maintaining trust in short-term interactions will be essential to fostering a thriving innovation ecosystem.

Conversion Strategy

PILOT CONVERSION
Small group (25-40 students from i3 Lab & business school events at Innovation Studio

Sept 1 – Oct 15, 2025

PHASED EXPANSION
Phase 1: Business School students
Phase 2: Engineering + Arts & Science students

Oct 16 – Nov 30, 2025, Spring 26

MODULAR RELEASE
Profile Creation & Matching
NeedFeed Postings
Messaging & Cross-University

Sept. 2025 | Oct. 2025 | Jan 2026

A phased rollout strategy minimizes risk, allows early feedback to drive improvements, and builds momentum for broader adoption across disciplines.

Scan for References