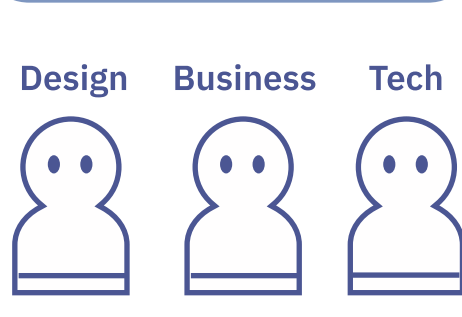
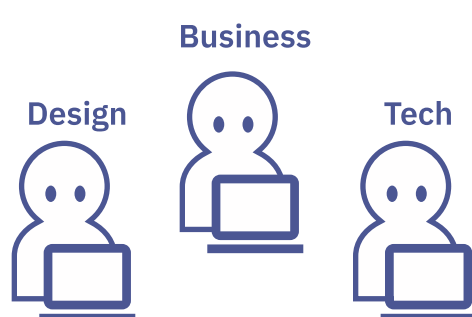




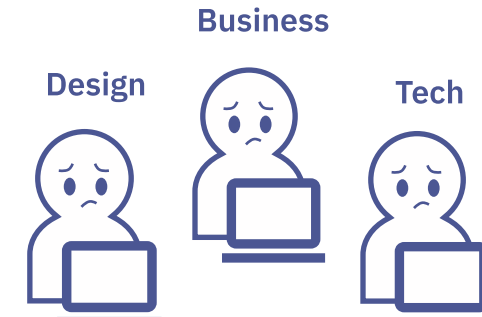
Study Procedure



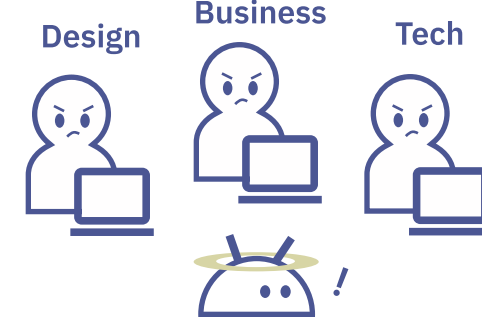
An interdisciplinary team is formed across Design, Business, and Technology.



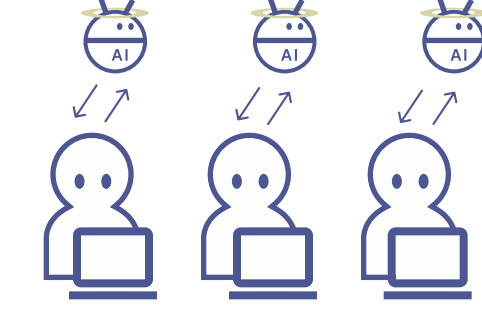
The team collaborates in a shared Discord channel to discuss resource allocation across tasks.



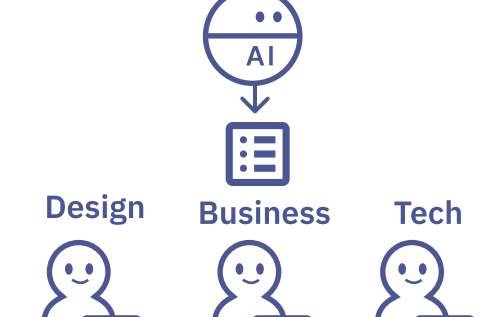
Conflicts gradually emerge.



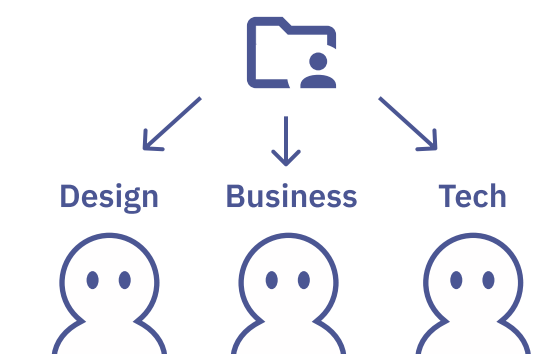
Spritz detects the emerging conflict and prompts the team to pause the discussion.



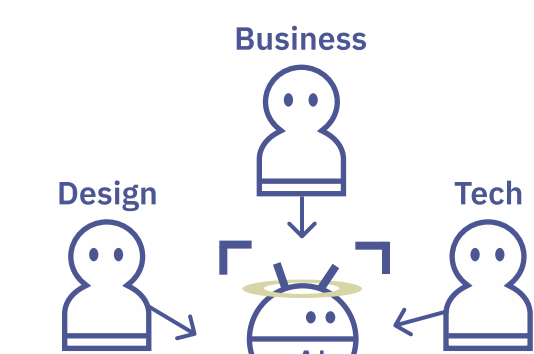
Spritz privately guides each team member to express their individual perspectives.



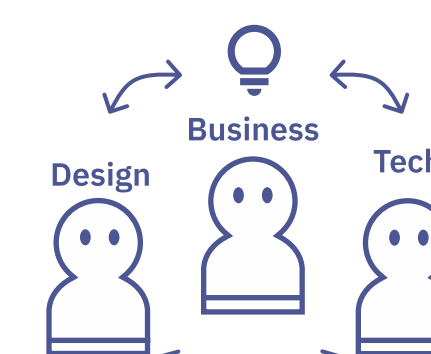
Spritz delivers a synthesized summary of all perspectives in the shared channel.



The team reflects on the discussion process.



Team members share their perspectives on the role AI played in the discussion.



The team creatively explores which AI interventions to retain, refine, or introduce.

Motivation

In higher education, **Project-based learning (PBL)** is one of the widely adopted approaches that equip students with hands-on problem-solving and team-collaboration skills (Strobel & Barneveld, 2009); many PBL projects involves **interdisciplinary collaboration**, where students with diverse academic backgrounds come together to work toward a common problem.

This kind of collaboration drives innovation (Carlile, 2004), yet differences in values, identities, and practices across fields create **boundaries** that hinder the team's actions and interactions (Akkerman & Bakker, 2011). To address this, AI shows the potential to foster shared understanding and alignment during synchronous meetings (Gunasekaran et al., 2026; Xu et al., 2026). On text-based communication platforms (e.g., Slack, Discord), however, members can each consult their own AI privately, which reinforces their existing views and makes consensus harder to reach (Claggett et al., 2025; Xu et al., 2026).

Building on the above, we focus on interdisciplinary project collaboration in text-based channels and ask:

RQ1. How do university students perceive the role of AI as a mediator across disciplinary boundaries?

RQ2. What design opportunities or challenges arise when AI serves as a mediator across disciplinary boundaries?

Study Design

We recruited 12 university students (7M + 5F; aged 18–25) and formed 4 interdisciplinary teams, each with **design**, **business**, and **technical** members. To elicit cross-boundary negotiation, we designed a **simulated product-pitch task** set in a business context.

Technology Probe: Spritz

Participants discussed the task on Discord alongside Spritz, a conversational agent that mediates disciplinary boundaries in text-based interdisciplinary collaboration. As a **technology probe** (Hutchinson et al., 2003), Spritz is intended to provoke reflection on participants' experiences with such an AI mediator.

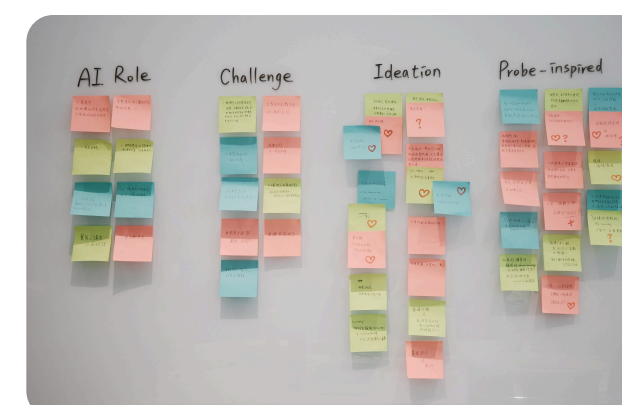
Tension Detection	Perspective Making	Perspective Taking
Semantic Boundary: Same terms, different meanings (Carlile, 2004)	Privately clarifies meanings	Anonymously summarizes interpretations
Pragmatic Boundary: Conflicting role interests (Carlile, 2004)	Privately elicits constraints	Summarizes viewpoints and possible compromises

Co-design Workshop

We then conducted co-design workshops to further elicit participants' reflections on **AI-mediated boundary crossing** based on their prior interaction with Spritz.

Workshop Design Principles

- Beyond consensus
- Surface differences first
- Individual-to-group reflection
- Focus on AI roles and boundaries



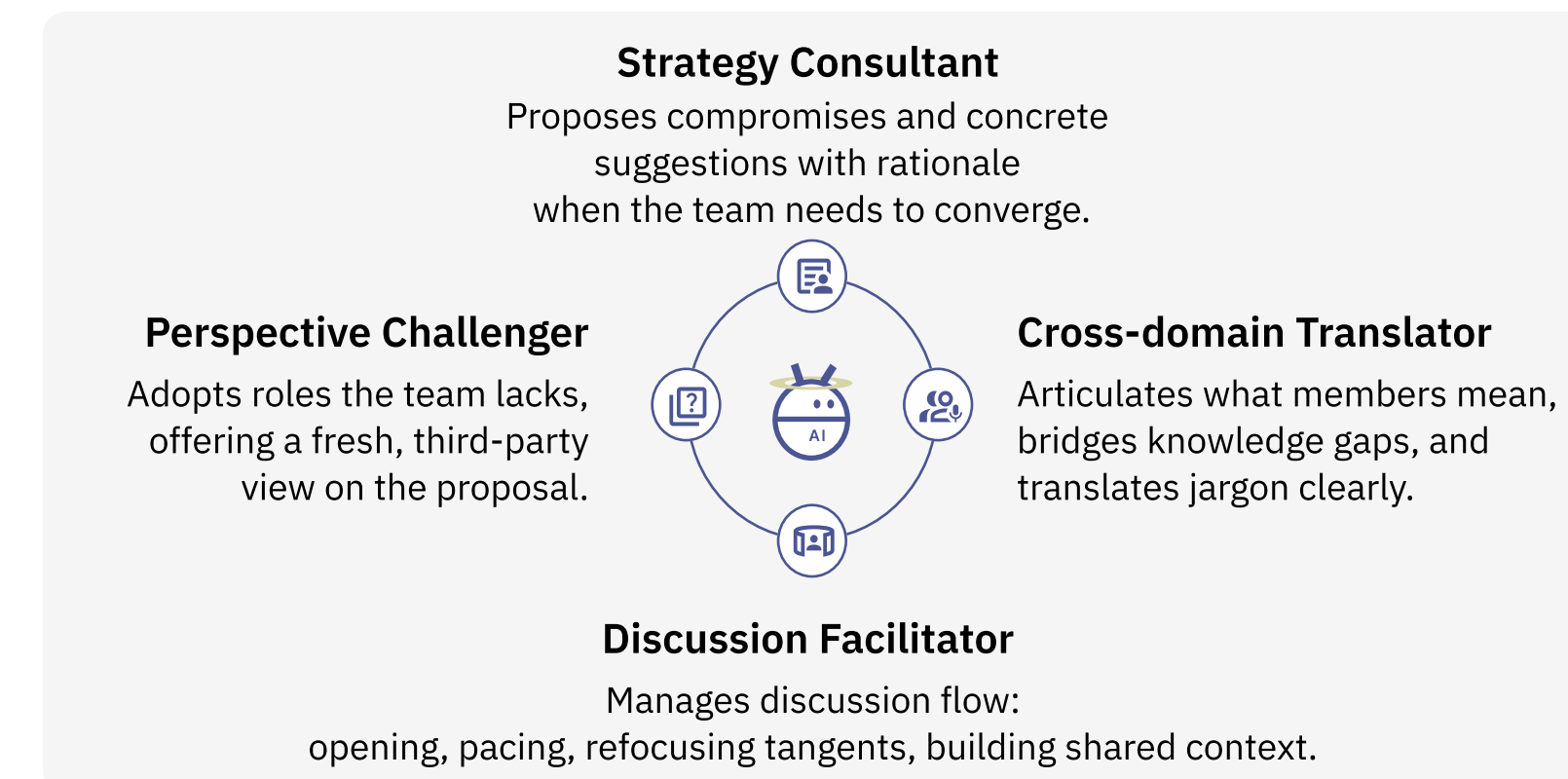
Key Findings

How Students Perceive AI Mediation

Tension Easer and Relational Supporter

Neutral Sense-Maker and Perspective Integrator

Design Opportunities



Future Directions

- Long-term field deployment study** in authentic student projects.
- Boundaries beyond design–business–technology.**
- Broader context** encompassing **both meetings** and **text communication**.