

**Presented by Group 3**

# *Final Presentation*

Improving Online Students' Experience  
with Group Collaboration

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# *Problem Statement*



I am an **online HCI grad student** at DePaul **trying to work effectively with my group**, but it is difficult to build trust and rapport with my teammates because human connection is more difficult online, which makes me feel like I am not psychologically safe enough to be creative and dissent.

# *Understanding the Problem*

## RESEARCH QUESTIONS

- How do online students **build trust and rapport** for group projects?
- What are the **primary obstacles** to building trust and rapport within online graduate student groups?
- How can **AI** be used to improve student group collaboration?

## APPROACH

- Literature review
- n6 **Semi-structured interviews** & n1 **Observation Study**
  - Depaul online graduate students in HCI
  - Experience in online group projects within the past 3 months where they worked with other students they had not met before



# *What We Learned From Participants*



# Developing collaboration skills is essential for real-world success

- **Collaboration is a critical tool** that helps develop professional success.
  - Students learn to manage conflicts with diverse individuals to achieve a shared goal.
- **Importance of human involvement** in collaboration that impacts the role of AI.

*"Objectively speaking, one of the things you're actually expected to learn and gain from group work is the ability to collaborate and partner with people regardless of the quality of the other person. I think it's a pretty important skill."*

*"I don't think AI should solve for collaboration as it's the point of group work and a necessary skill."*

# Human judgment is crucial for managing complex group dynamics

- Participants prefer **human oversight** in managing interpersonal relationships and conflicts, as they **value human empathy and understanding**.
- Participants also expressed **doubts about AI's accuracy** in assessing interpersonal skills and emphasize the need for a **more human-centered approach** to resolving these issues.

*"I don't think AI is ready or capable of judging interpersonal skills, I think a more human approach is necessary rather than using technology to solve things like this."*

# Misalignment is at the root of group work challenges

- **Participants discussed challenges in group work:** communication problems, scheduling conflicts, and task delegation issues.
- They expressed **frustration with minimal proactive communication and coordination difficulties** with team members.
- These challenges **underscore the necessity for tools** that enhance communication, schedule coordination, and ensure productivity and alignment among all members.

*"If everyone could just be proactive so that we can work asynchronously and never need to Zoom.".*

# Rapport building is important for group work, but approaches & preferences vary.

- Most participants **preferred natural rapport-building over time**, finding it more genuine despite its time-consuming nature.
- One participant noted their current team's lack of rapport-building compared to a previous positive experience, which involved **cultural discussions and shared interests**.

*"I had a very different experience with my previous quarter's team. We're still good friends. We all came from different cultural backgrounds, and talking about food, art, and other cultural things helped build rapport. It was personal but not intrusive."*

*"Our team developed rapport by joking around, adding each other on LinkedIn, and chatting casually towards the end of the project."*

# *Design Takeaways*

How can we support online student collaboration?

- **Empower** the students to learn how to collaborate better by sharing retrospective feedback
- **Help** students manage group dynamics by providing real-time, adaptive feedback
- **Enhance** alignment and coordination by centralizing messages, tasks, and schedules
- **Support** rapport-building by providing flexible options for team members to connect

What are the key considerations?

- Allow individuals the **privacy and control** to decide whether to incorporate the feedback
- Provide users with **transparency** on how the data is used



# *Ideating & testing the initial designs*

Based on our design takeaways, we created design solutions and created mock-ups.

We invited 5 of the same students we interviewed earlier and tested our ideas.



# *Lo-Fi Prototypes*

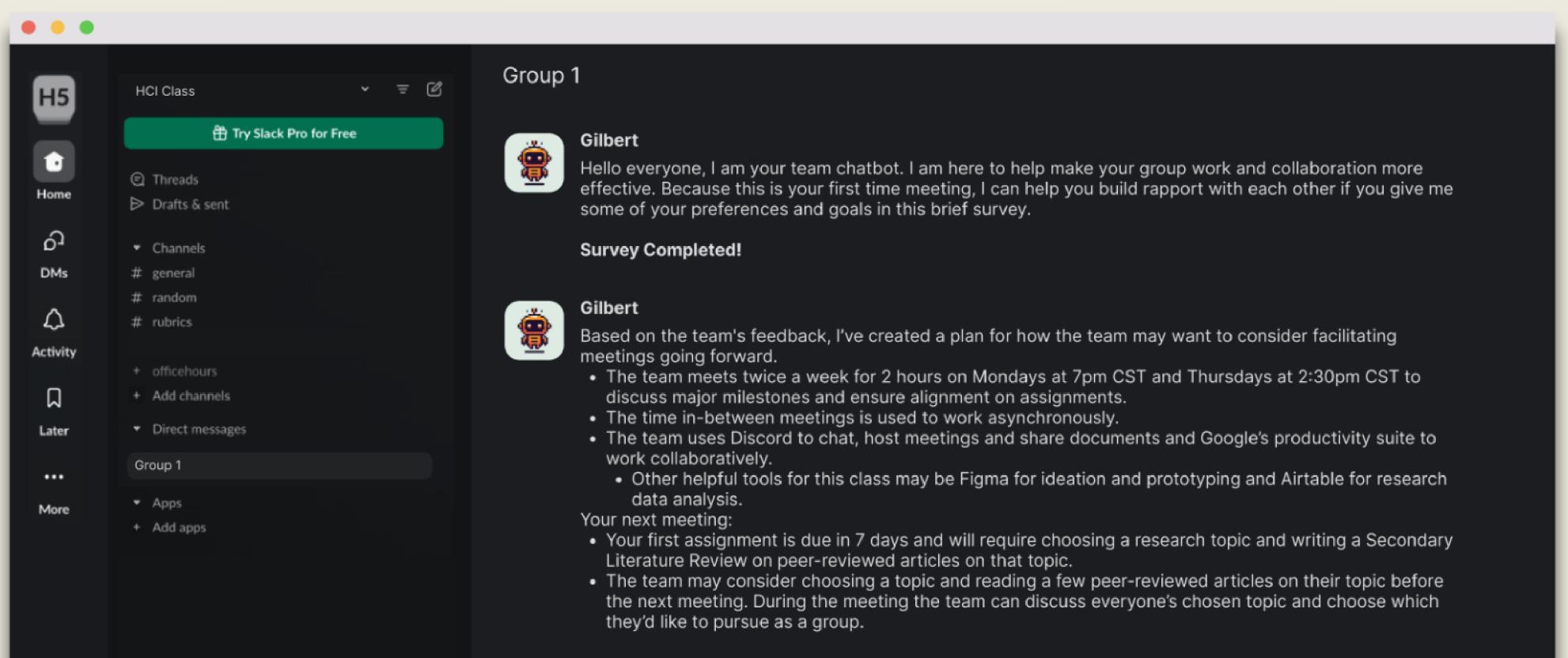
Scenario based prototypes of screen grabs placed  
in front of past participants to assess feasibility and likeability



# Scenario 1

Your professor assigned groups, and you're about to have your first meeting via a video conference and chat platform with an AI bot.

The bot will survey your background, communication, scheduling preferences, and personal interests after forming the group.



# Data Required

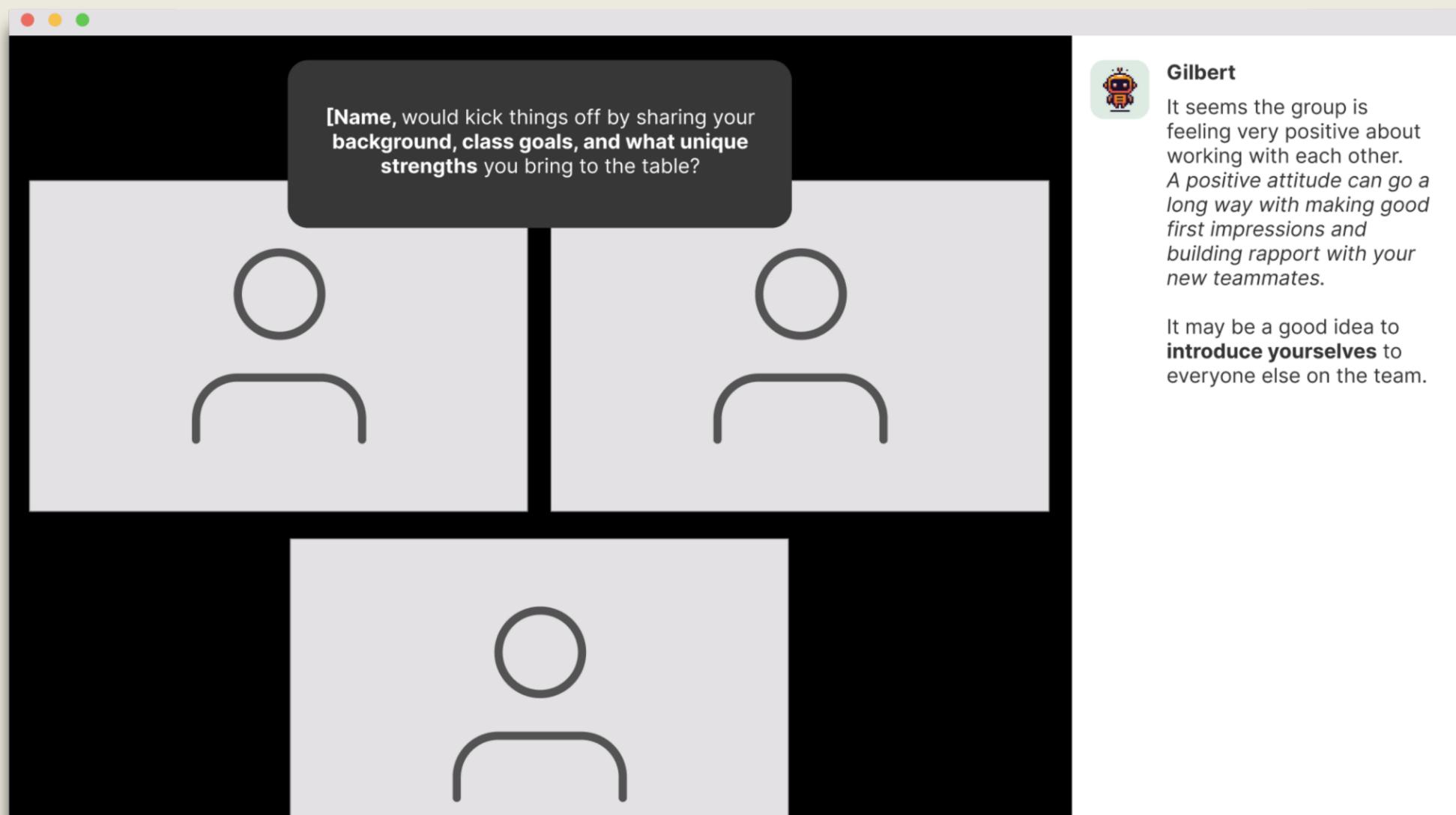
- *Self reported*
  - *Individual schedules*
  - *Preferred communication platforms*
  - *Background information*
- *Class syllabus*

# Takeaways

- *Visuals enhance readability and content digestibility.*
- *Minimize user typing unless necessary.*
- *Let users control the type of feedback they receive.*

# Scenario 2

Based on your survey preferences, your first meeting starts with an icebreaker.



## Data Required

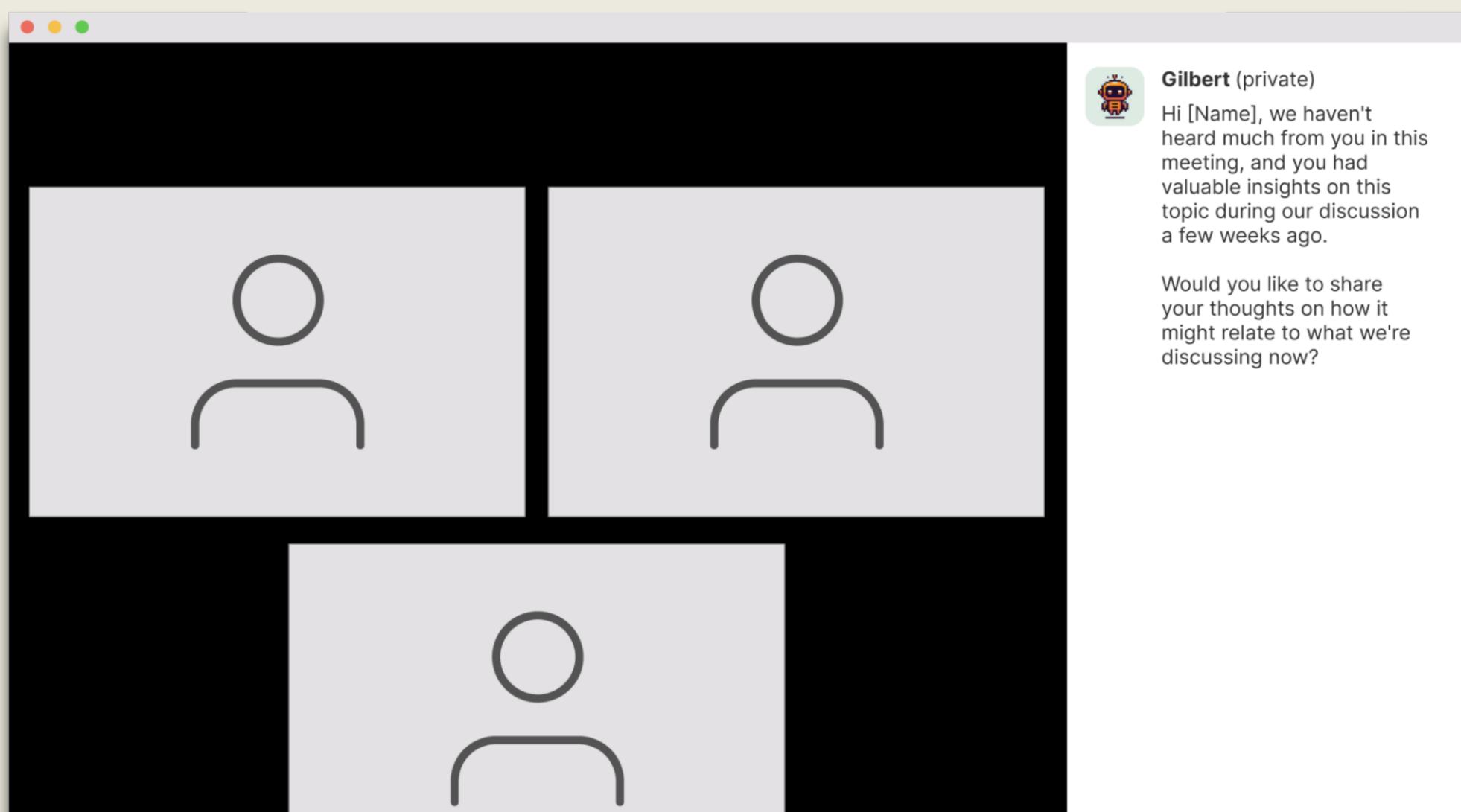
- Popular icebreakers
- User preferences
  - Previous conversations
  - Survey responses

## Takeaways

- Define emoji usage.
- Clarify AI guidance.
- Not everyone enjoys icebreakers.
- Require info unless it can be learned in group dialogue.

# Scenario 3

**During the 2-hour Zoom meeting, you were mostly silent. The AI system sends you a private chat message about this.**



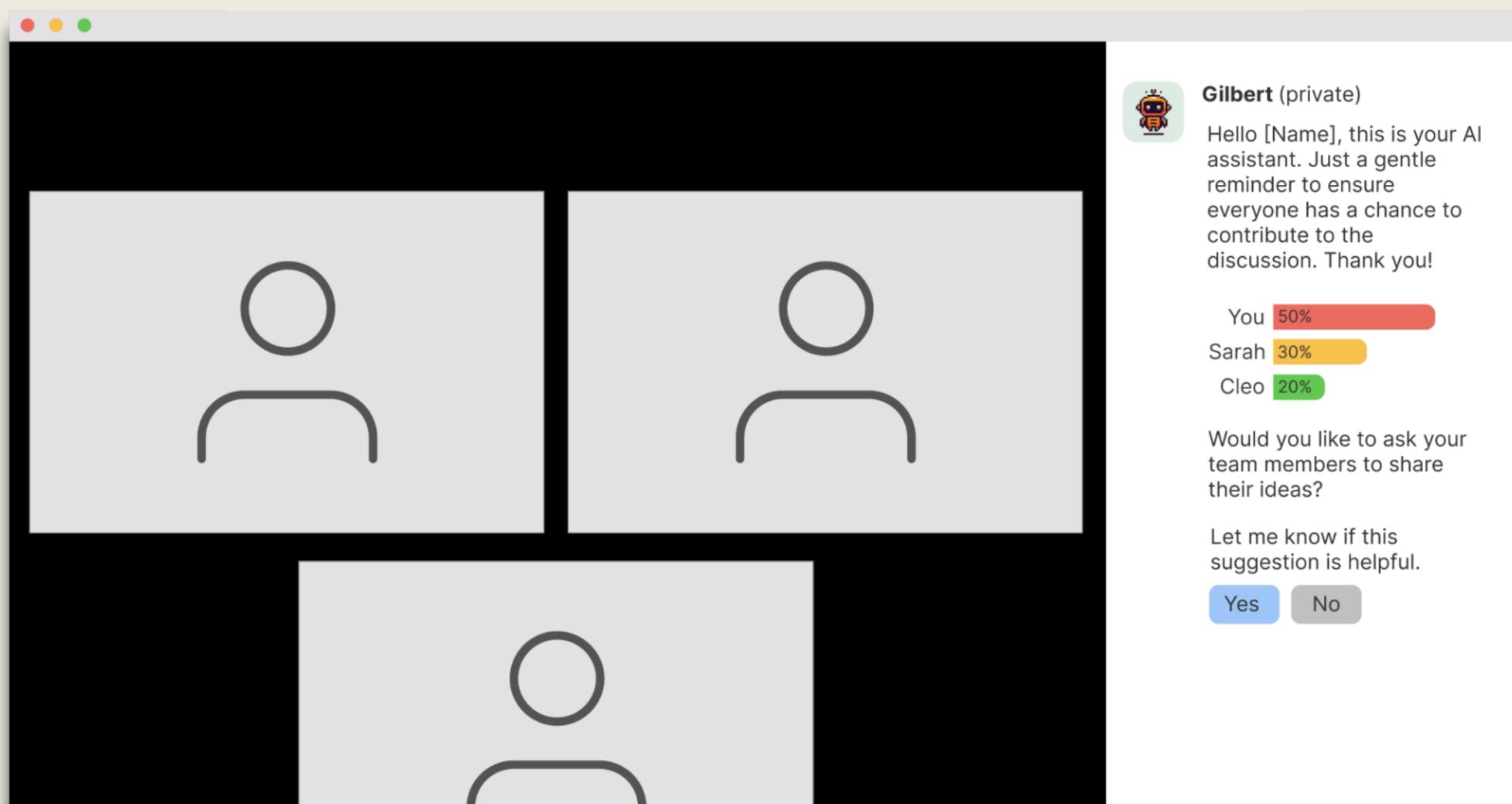
## Takeaways

- *Have user control opting in/out of features.*
- *Have AI understand context of participation through presentation and work.*
- *Set "Gilbert" as an AI activation word.*
- *Make AI responses as suggestions and not commands.*
- *Having AI the "bad guy" is preferred.*

# Scenario 4

You didn't realize you were talking for the majority of the 2 hour Zoom meeting.

You receive a popup private chat message from the AI system letting you know this.



## Data Required

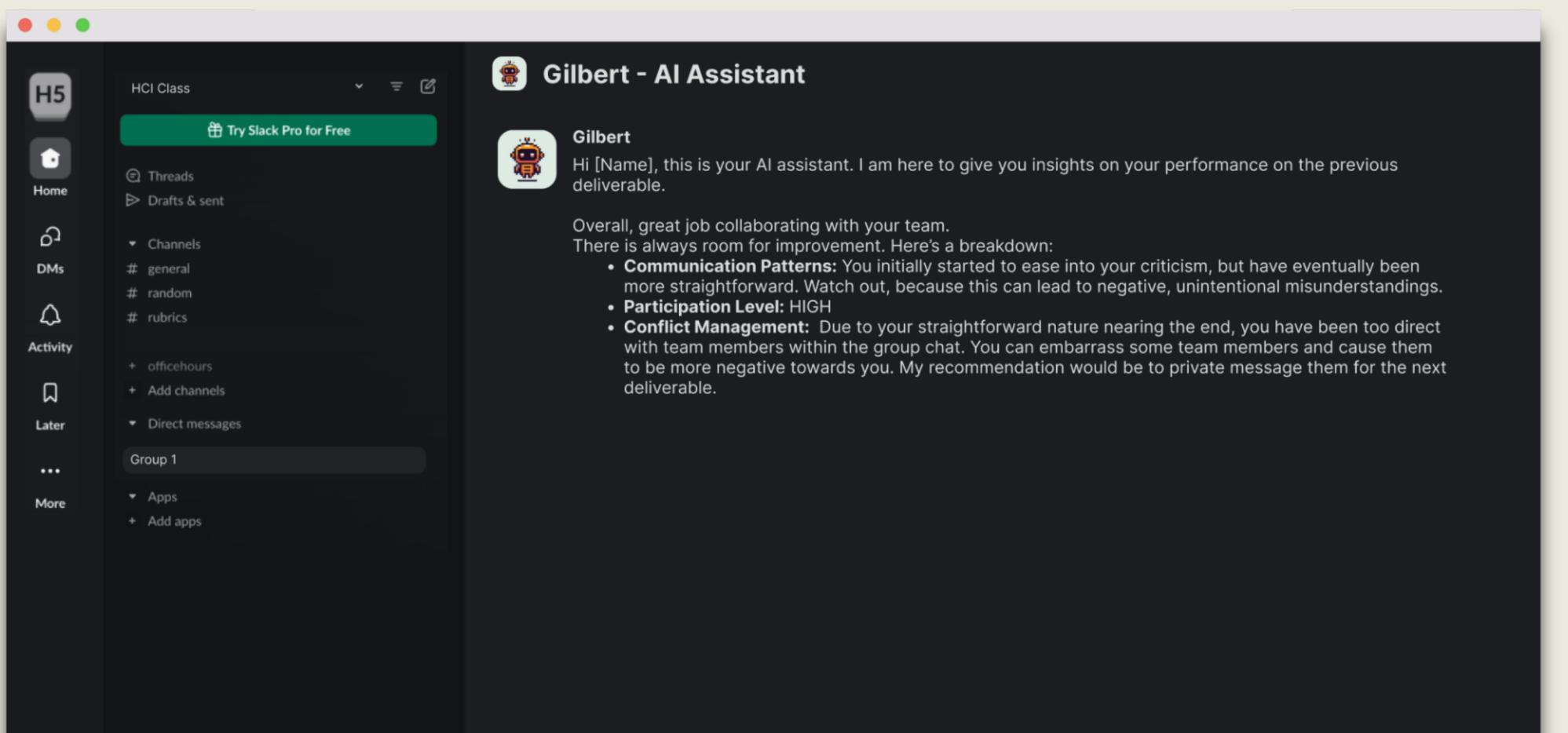
- Speaking time
- Spoken and written conversation
- Meeting agenda

## Takeaways

- Have AI "pulse check" team members.
- Allow users to toggle this feature by opting in/out of it.

# Scenario 5

After the meeting ends, the AI bot sends you private feedback on your participation.

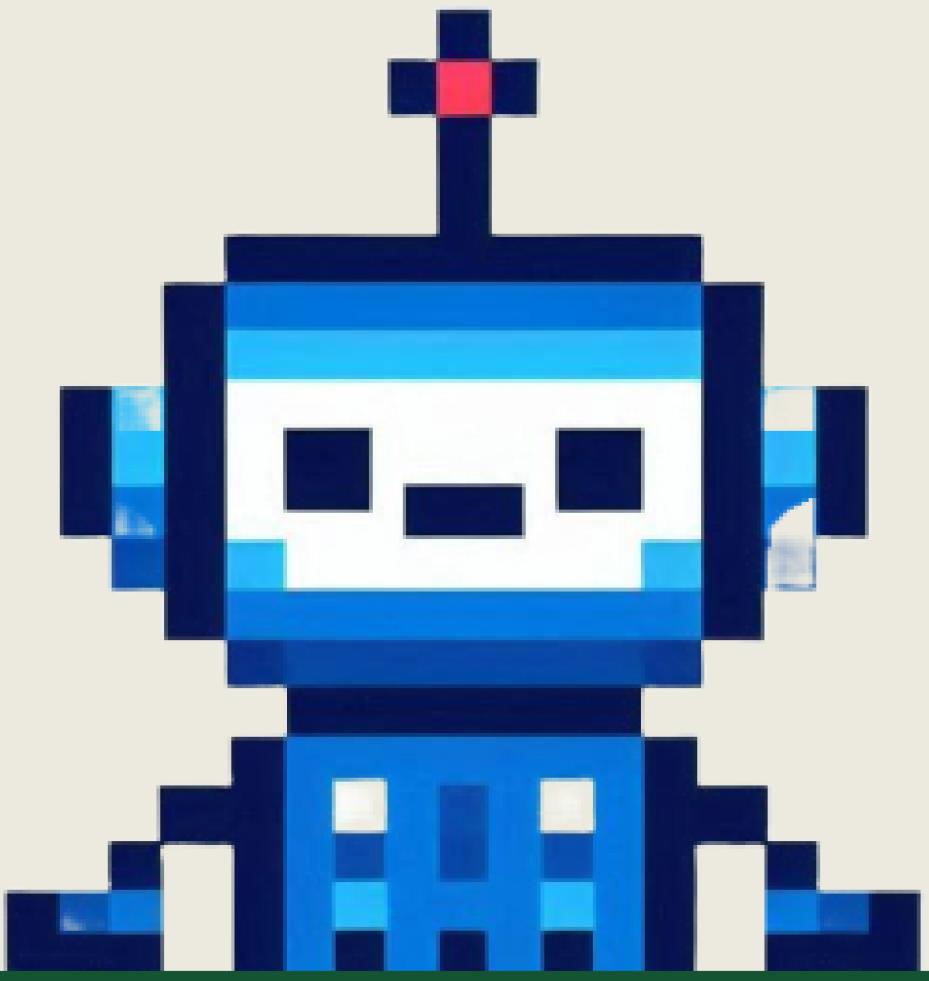


## Data Required

- *Spoken and written conversation*
- *Meeting agenda*
- *Class syllabus*

## Takeaways

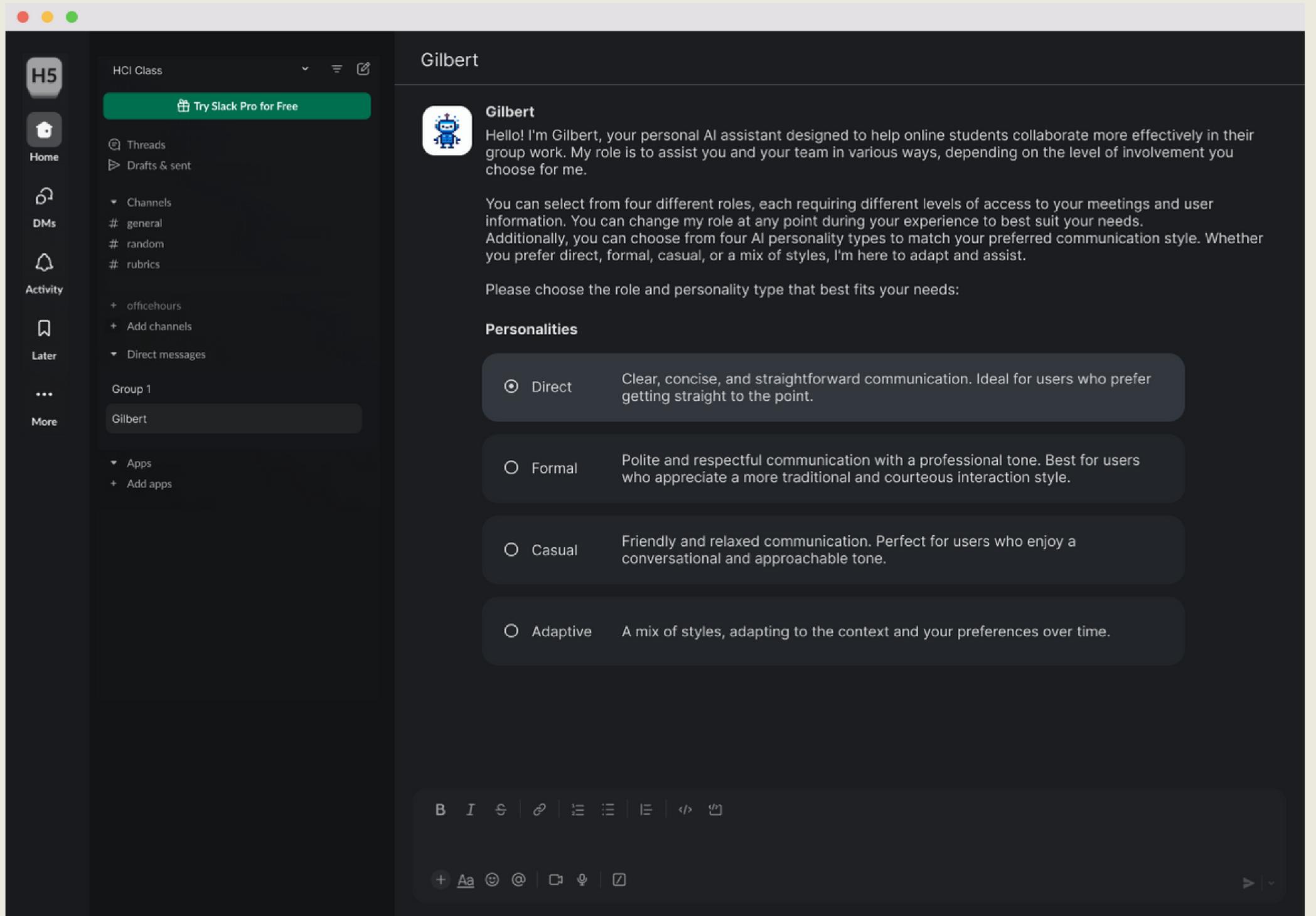
- *AI should summarize the meeting and give feedback after each meeting instead of assignment.*
- *Have users customize AI response to be more gentle or direct and opt-in/out of specific feedbacks.*



# *Mid-Fi Prototypes*

incorporating low-fi testing feedback

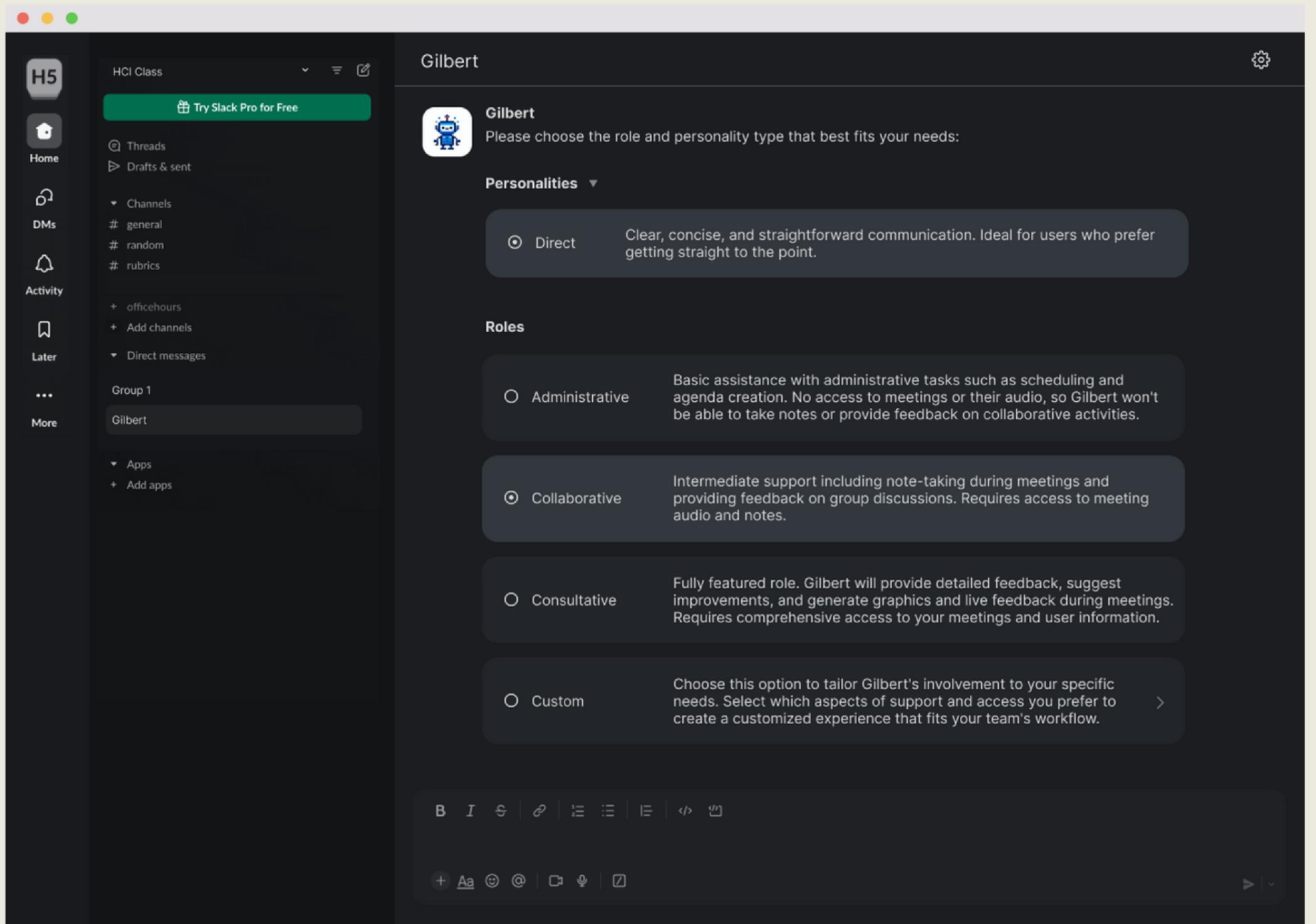
# Personality



## Features

- *Customize Gilbert's communication style*

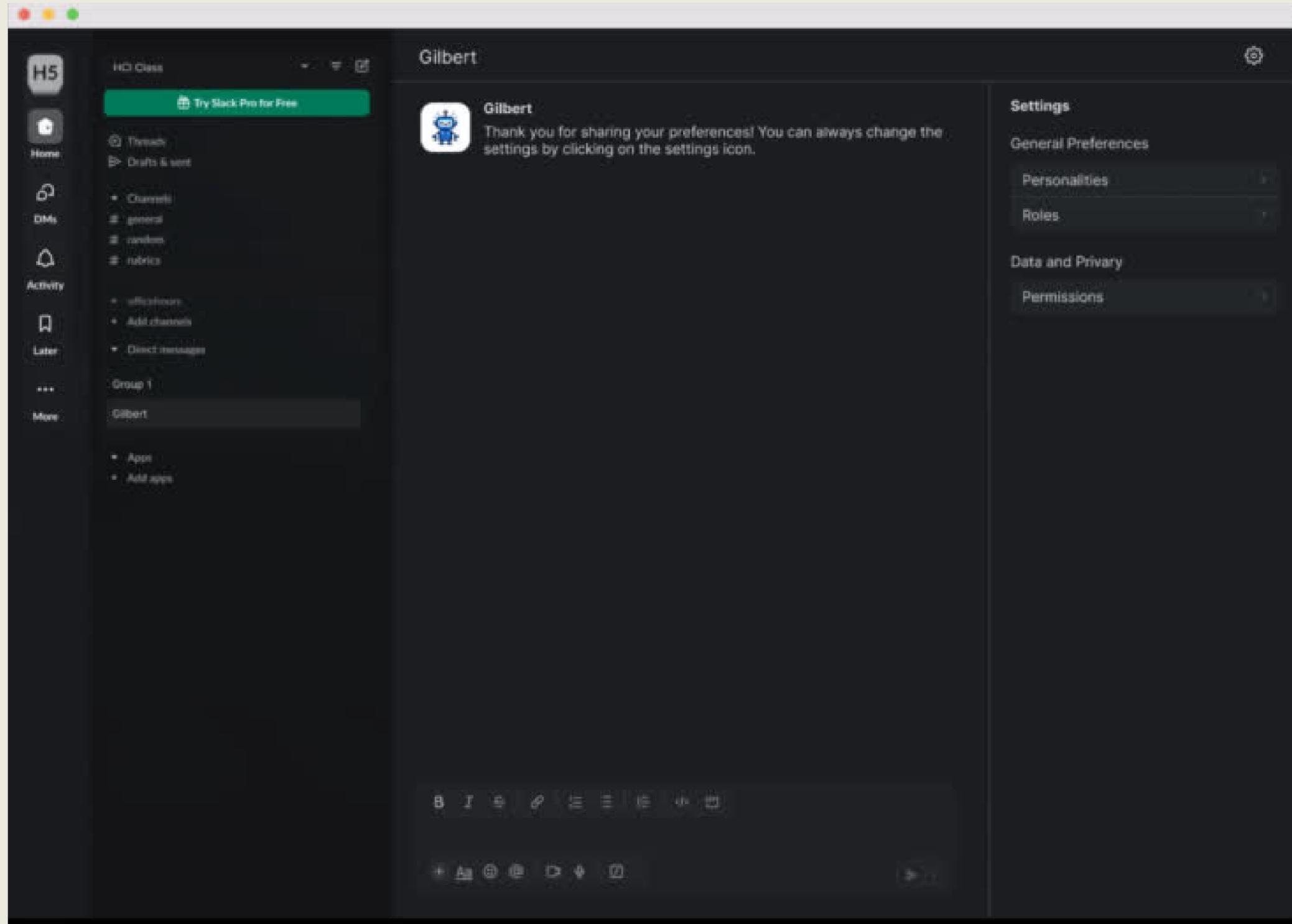
# Role



# Features

- *Customize Gilbert's group role/features*

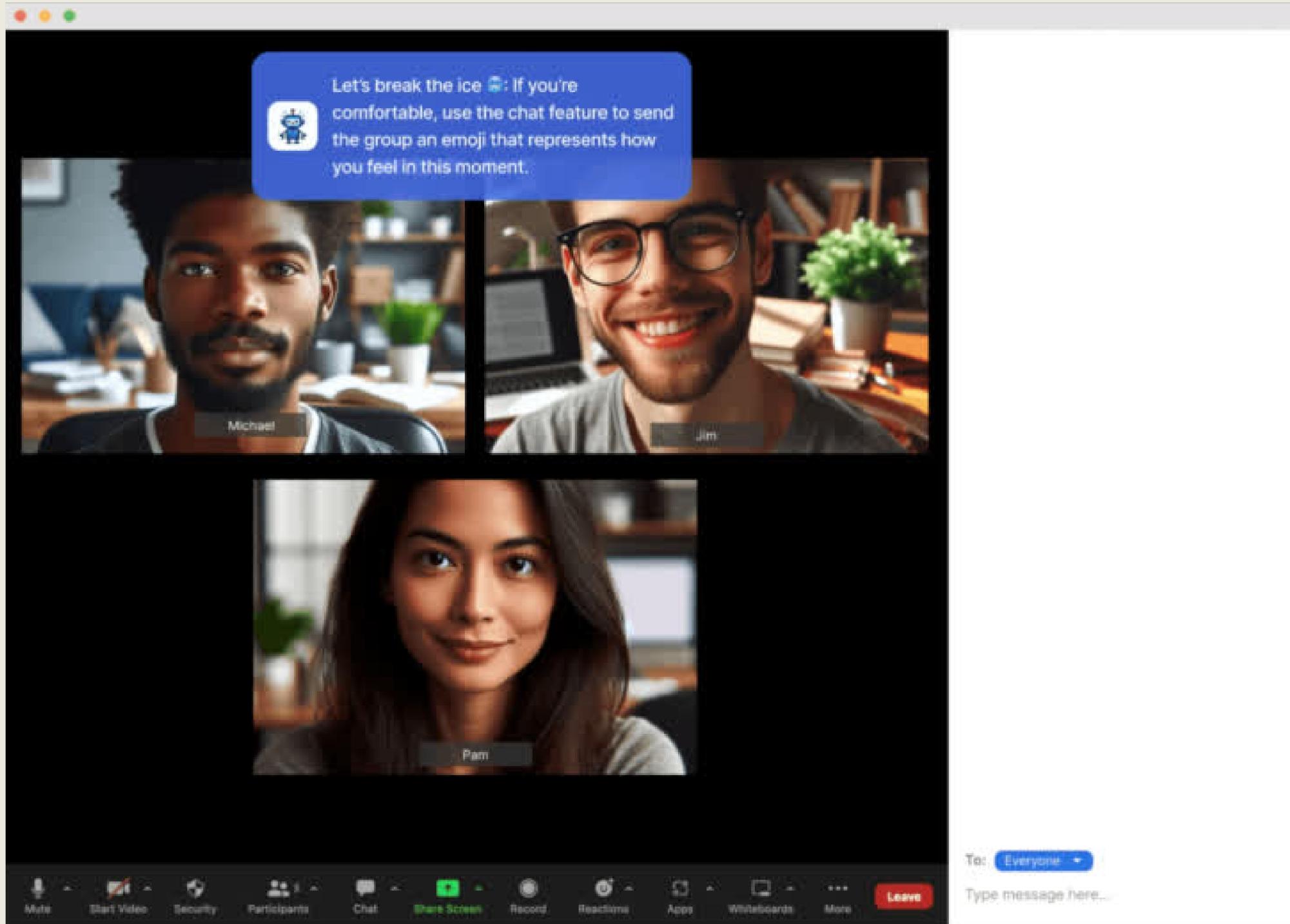
# Settings



# Features

- *Customize what data permissions you allow access to*

# *Ice Breaker*



## Features

- *Gilbert will generate ice breakers based on survey answers and previous conversation*
- *Gilbert will prompt users to speak during ice breaker exercises*

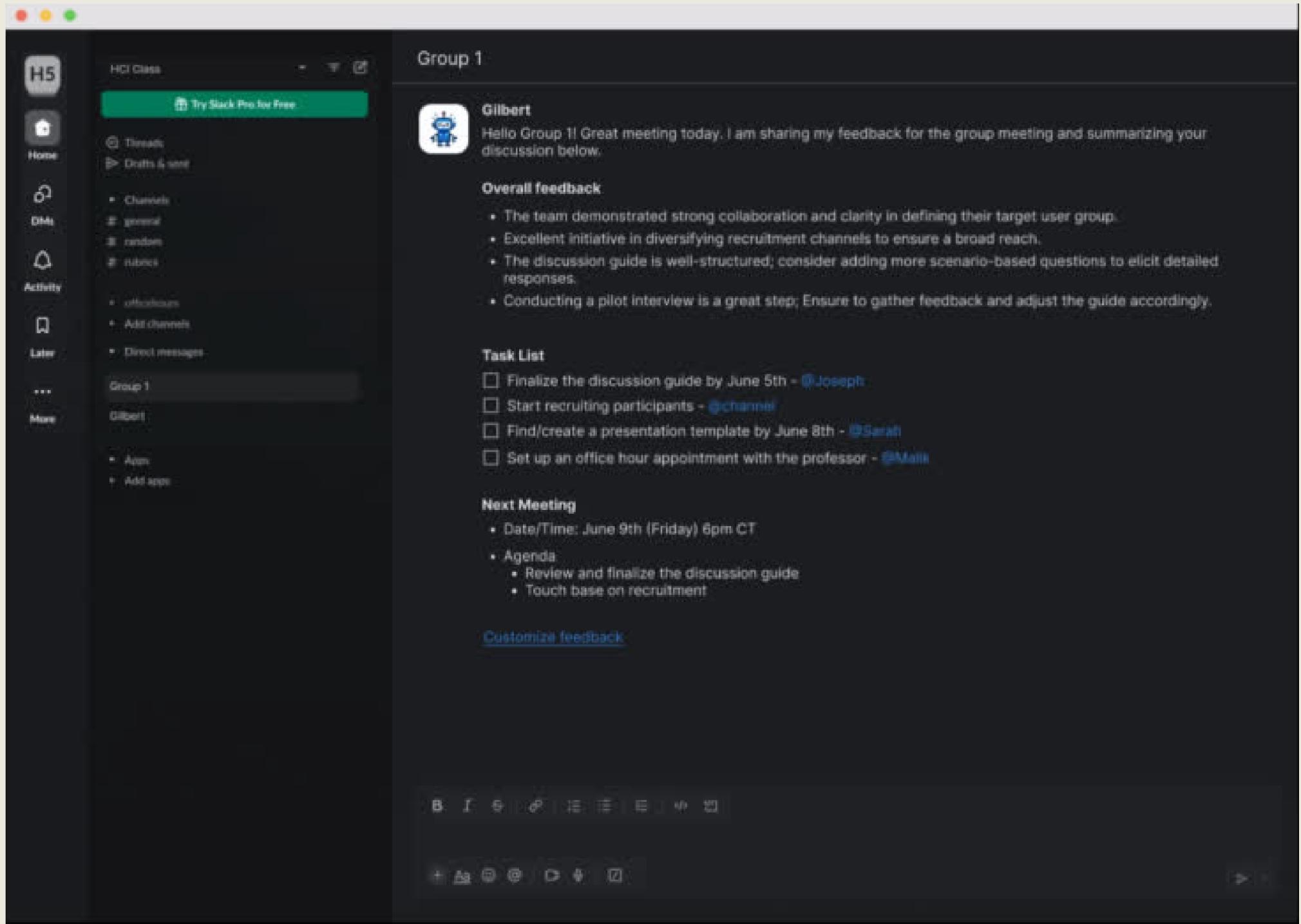
# *Live Feedback*



## Features

- 'Whiteboard' where users can pin infographics and widgets
- Personalization options
- View the meeting analytics and data that Gilbert is keeping track of

# Post-Meeting Feedback



## Features

- *Visuals enhance readability and content digestibility.*
- *Minimize user typing unless necessary.*
- *Let users control the type of feedback they receive.*

# *Considerations & Limitations*

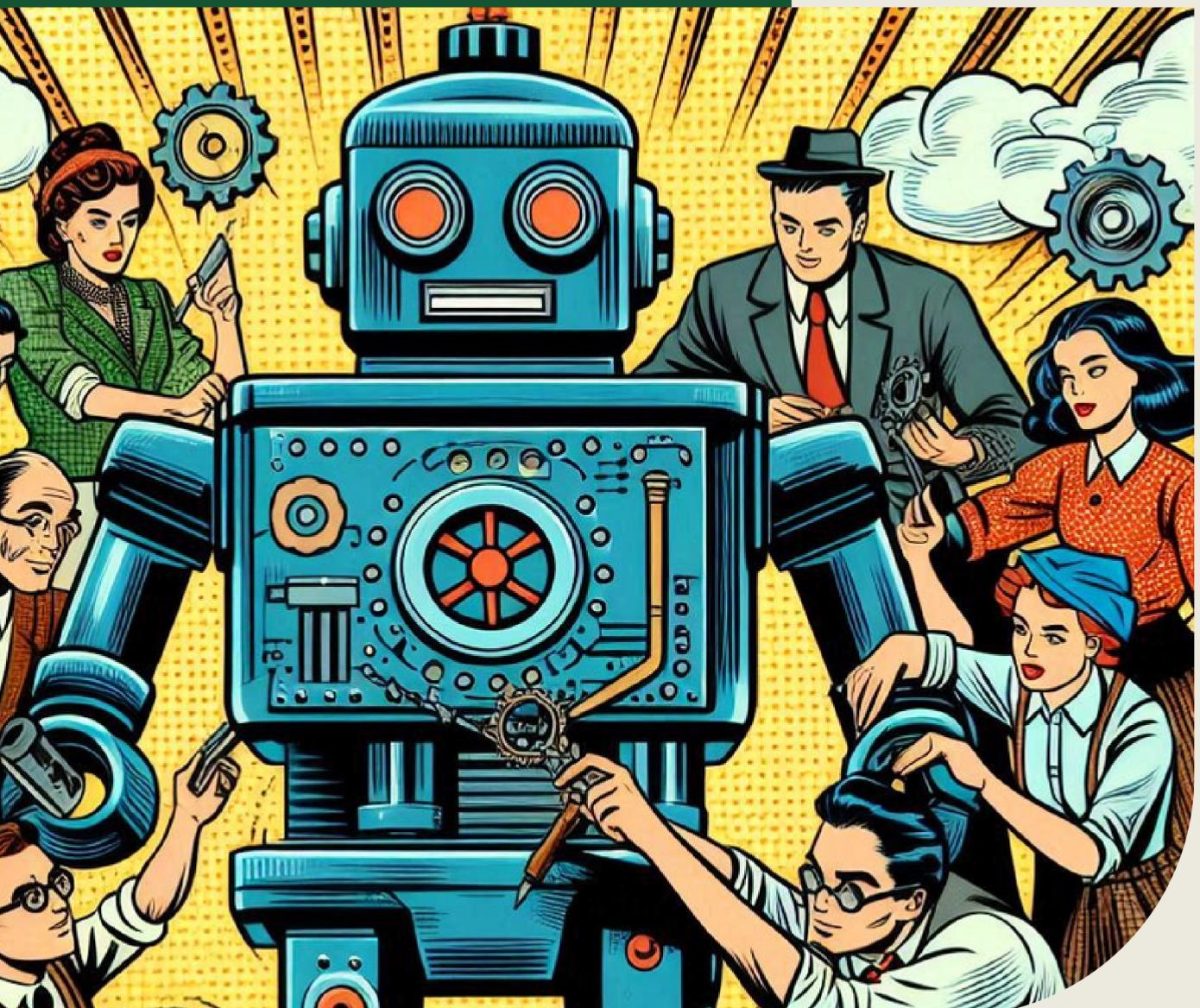
## TECHNICAL/RESOURCE CONSIDERATIONS

- Implementation challenges due to the system requiring **integration with multiple platforms** to perform tasks
- Potential difficulty in **collecting** a large amount of **data to train the model**
  - Students may not want to share their conversations in group meetings

## LIMITATIONS

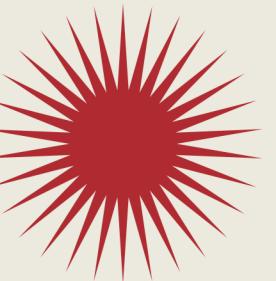
- Potential concerns with the **generalizability** of the research findings
  - Smaller **n-size** for each research phase
  - Only online HCI graduate students from personal connections
  - Lack of diversity in **psychographic**
- More time for desk research needed to inform our problem statement, discussion guide, and solution development.

# Retrospection



## IMPORTANCE OF ANALYSIS AND SYNTHESIS

- **Initial Analysis:** Our first attempt missed synthesis due to deadlines, resulting in surface-level findings where participants didn't trust AI for building trust and rapport.
- **Deeper Examination:** Trust and rapport were crucial but often missing or slow to develop; participants trusted AI for straightforward tasks but wanted control over nuanced tasks.
- **Refined Insights:** Synthesis turned out to be crucial: it validated our hypothesis that AI can facilitate trust and rapport by handling simpler tasks like icebreakers and led to much richer design insights.



# *Thank You*

Presented by Group 3