How to enhance the experience in video conferencing by increasing the engagement when people work from home

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Abstract

This dissertation explores the usability problems that working individuals are facing when using the existing video conferencing products to attend virtual social activities in companies. It aims to define the reasons that cause **low engagement of users** during video conferences in the aspects of **hesitation to speak**, **video conferencing fatigue**, and the **willingness to communicate**. The user studies comprised of **literature review**, **survey**, **interview**, and **user testing** to confirm the aforementioned problems. The study result is to **testify to the hypothesis if the new design approach can increase engagement and to provide recommendations to improve the user exeprience**.

Introduction & Background

Under the Covid-19 pandemic, people started to shift from working at the office to working at home. Virtual meeting platforms have then become successful tools in the workplace. However, according to a report from Slack (Elliott, 2020), the majority of knowledge workers are **not satisfied with their sense of belonging** when working from home. It brings **negative impacts to the company over time as talents will leave due to the lack of connections**. Experts also stated that an ongoing option to work from home can **bring unhealthy organisational social capital in the long term** (Even, 2020).

The restraint of the current video conferencing tools hinders informal social interaction, and it is more obvious in social virual activities. The project aims to address the core reasons behind the difficulties of users to be proactive in virtual social events due to the limitations of the current software design, and to discover the ways to **increase user interests and the willingness to communicate**.

Design

Problems Defined

Binary manner
rely on the faces on screen and audio to interact

As a whole
limit the development of a diverse communication target

Design Solution

Non-verbal indication
Mimic the situation in real life where you can turn to your desired direction/position to indicate your intention
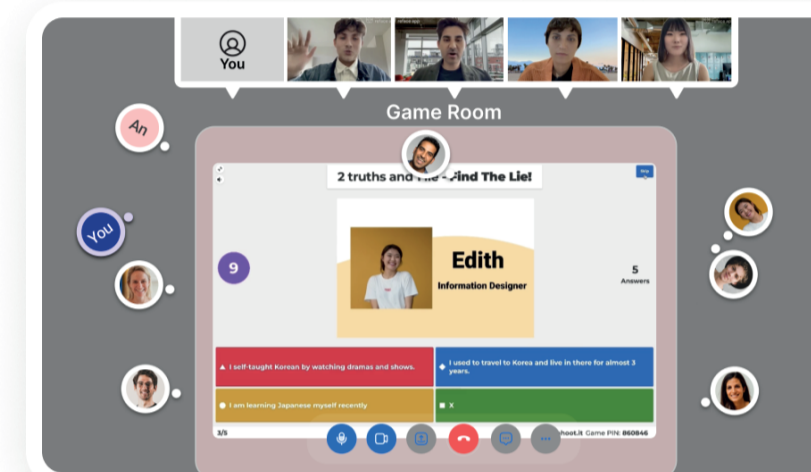
Screen-sharing time
Even when users are playing games together, they have the flexibility to open up private conversations.
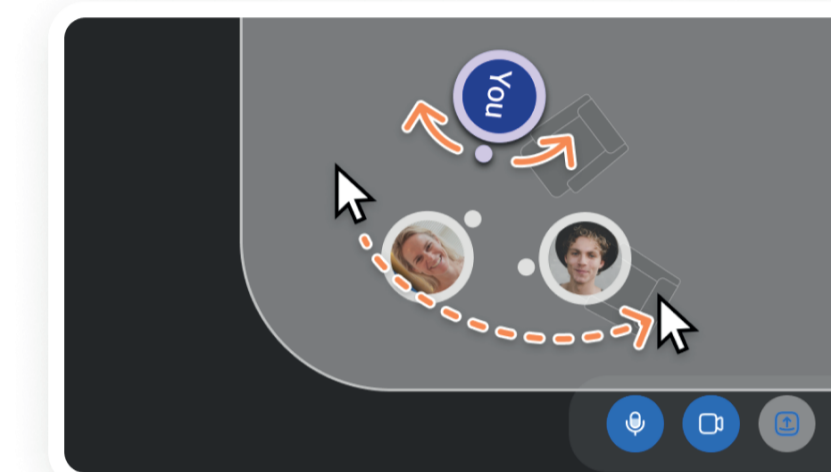
Diverse communication
Flexibility to choose a specific group of people to talk to, and the autonomy to leave/join any conversations

Study Methodology

After the literature review, this project uses quantitative and qualitative research methods that include an **online survey and in-depth interviews** to supplement the difficulties encountered by users in conducting video conferences with quantitative data, to record the negative emotions from the perspective of psychological status and feelings.

An experimental research design has been created through the research findings. **The A/B testing** is to compare the current VC platform (Teams) with the new design approach. It follows with a short feedback session & online survey. The testing aims to test if the new design can:

- Increase users' willingness to communicate
- Decrease the negative feelings that arose from the previous platforms
- Be more enjoyable in a meeting

Testing & Evaluation

Process of the A/B testing

	Notification to join a meeting	Wait for people to join in	Briefing	Play games	Waiting for set up break-out room	Small group communication
A Test Prototype of the **New Design**						
B Test Prototype of the **New Design**	same	⭐Opportunity⭐ Talk with other participants to kill time	same	same	No Need	⭐Opportunity⭐ explore the venue and approach others for chit-chat
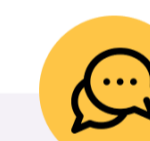
Results of A/B Testing

Group		Concentrated	Team	Connection	Respectful	Deadair	Bored	WTC	Enjoyable
A	Mean	5.60	6.90	4.40	6.50	6.30	5.60	5.70	6.70
	Std. Deviation	2.221	1.595	2.011	2.321	2.791	1.776	1.767	1.337
B	Mean	7.60	6.70	6.10	8.50	4.70	4.30	5.80	6.90
	Std. Deviation	1.506	1.767	2.025	1.269	2.497	1.567	1.989	1.370

Two sides of non-verbal indication

- A good act to use the cursor to represent the reaction
- People love this retouch to represent the point of attention
- It can possibly make people feel pressured as they have to be conscious to move the cursor all the time

The needs of diverse communication depends on different situations

- It could be boring to wait for the breakout-room set-up but people are getting used to it
- The autonomy allows more possibilities to become more interesting and concentrated
- People have various feelings towards 'free small-talk time'
  - Harder to approach others as they don't know how to begin
  - Prefer to be assigned as it has an excuse to do so

Findings on literature review, survey & interview

- 3 negative feelings: Bored(85%), Unconcentrated (85%), Disconnected(74%)
- 73% agree that the more people in a meeting, the less motivated to be active

Core Factors
lead to
General problems
lead to
Results

Lose non-verbal cues	Limits the opportunity for side/private conversations
Binary manner **Affects the role**	**Affects the purpose**
Turn on vs Turn off the camera & audio → In the spotlight role **vs** In the background **No middle ground** as a listener with occasional reaction	A clear agenda **OR** people do not feel to have an obligation to join
As a whole **Group of communicatione**	
• Discussion with the whole participants in the meeting • No options to have a side conversation with specific people	

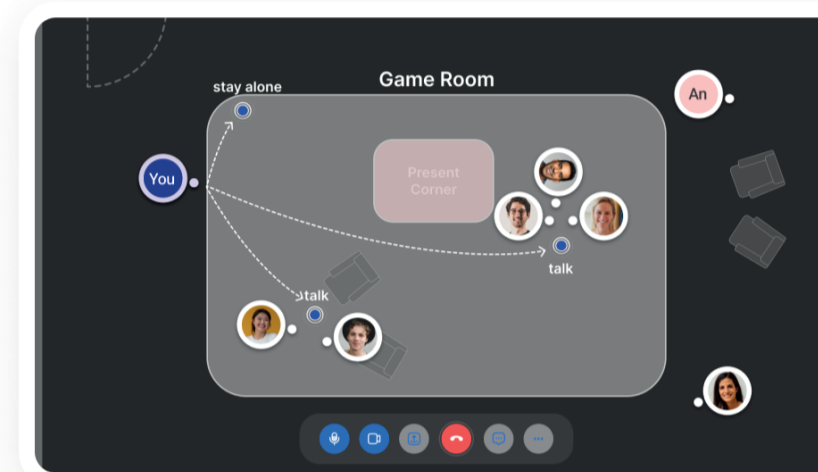| Increases The Sense Of Distance	Low Willingness to Communicate(WTC)	Hesitation to Speak

Conclusion & Future Work

Socialising at work involves various situations. The result in different situations with people with different traits varied so they can't be lumped together. The experiment proves that giving freedom/flexibility to users can increase their interest in meetings.

Autonomy creates different scenarios, so it is suggested to have the combined functionality that allows the host to assign people to a break-out room and people to group themselves freely. It is also suggested to create more non-verbal signals that do not require showing faces and audio. The experiment uses a floor plan and cursor to mimic a real-life situation, which it could be more possible solutions to balance the social interaction between virtual and face-to-face.