



Microsoft Teams

ISE 215 - Usability Test Report

Team

Amanpreet Singh

Anushree Narkhede

Gayatri Vasudevan

Theo Aull

Vishakha Joshi

Table of Contents

Table of Contents	2
Executive Summary	5
What We Did	7
What We Measured	9
Performance Measures	9
Behavioral Measures	9
Subjective Measures	10
What We Found	11
Experienced Users	11
Novice Users	15
What We Recommend	18
Interface Based Findings and Recommendations	19
Principle Level Issues	22
Root Cause Analysis	24
Grades	30
Introduction	32
About Microsoft	33
Study Overview	34
About the Product	34
Product Walkthrough	35
Product Objectives	42
Study Design Overview	43
Users and Use Cases	44
Users	44
Use Cases	47
Test Approach	48
Our Philosophy	48
Triangulation of Methods	49

Study Background and Objectives	50
Study Background	50
Study Objectives	50
Methods	51
Participants	51
Recruiting	52
Screening	52
Inclusion Criteria	52
Consent	52
Compensation	53
Study Design	53
Session Introductions	53
Session Procedure	53
Script Design	56
Novice Users	56
Experienced Users	59
Metrics & Measures	60
Performance Measures	60
Behavioral Measures	62
Subjective Measures	63
Test Facility	64
Test Team & Roles	65
Role Responsibility	66
Study Observations and Findings	72
Novice Users Usability Study Findings	72
Experienced Users Usability Study Findings	85
User Interface Based Findings	105
Send a Chat Vs. Make a Post	106
Share Screen Access	108
To-Do List	110
Team Code	112
Members Permissions and Restrictions	114

Collaborative Note Taking and Live Editing	116
Interface Based Recommendations	118
Send a Chat Vs. Make a Post	118
Share Screen Access	119
To-Do List	120
Team Code	121
Members Permissions and Restrictions	122
Collaborative Note Taking and Live Editing	123
Root Cause Analysis	124
Discussion	129
Conclusion	132
Grades	133
Contact Details	135
 Appendices	 136
Appendix A: Recruitment Email	137
Appendix A: Recruitment Social Media Post	137
Appendix A: Participant Recruitment Advertisement	138
Appendix B: Screener Questions	139
Appendix C: Consent Form	141
Appendix D: Session Introduction	143
Appendix E: Checklist	145
Appendix F: Novice Script	147
Appendix G: Novice Scenario Sheets	168
Appendix H: Expert Script	175
Appendix I: Expert Scenario Sheet	198

Executive Summary

Our team was approached by Microsoft to conduct a usability study of the company's collaborative software "Microsoft Teams". There was an emphasis on evaluating the program based on its use as an educational tool. Our team identified and analyzed usability issues to improve the user experience of the software. Since Microsoft Teams is an all encompassing collaborative tool, we evaluated its core features as well as specific first party applications that are useful in the context of education.

Although our focus is on this program as an educational tool, this software is also designed for business use. Many of the features and applications we evaluated can be used for both contexts, and our insights and recommendations can ultimately be beneficial for both the educational and professional context.

The main objective of the study was to unearth usability issues that have a negative impact on the user experience. On a high level, we accomplished this by assessing user perception, identifying key pain points based on insights from usability testing, and providing recommendations to optimize user flows and interactions.

The specific features we evaluated are:

- Join/create a group
- Produce a Team Code
- Note taking application (OneNote)
 - Create sections and pages
 - View authors of different notes
- Make group posts
- Send private chats
- Start a video conference meeting

- Access screen sharing ability for members of the meeting
- Create a to do list with detailed particulars for members
- Manage permissions and restrictions
- Update personal settings

This report first provides an overview of the study, followed by a detailed description of the product, its objectives, and its users by creating informed personas and use cases. Proceeding the objectives is a breakdown of our study methodology which clarifies the rationale behind our chosen methods. Based on the background, objectives, and context that needed to be evaluated we created scripts to test the program. We chose two different types of participants- novice and experienced users. We also detail our recruitment process outlining our different recruiting methods for the study. There is a breakdown of the session activities and scenarios, and detailed explanation of our study metrics, testing environment and team roles.

After explaining the foundation of our study and the goals/scenarios we tested, there are sections that outline our findings based on goals/scenarios as well as particular findings based on the user interface of the application. The reason behind organizing our findings in this manner is to first get a sense of what's becoming a nuisance to the user flows and goals they aim to achieve. After getting a sense of what is blocking the user's path towards a smooth experience and causing confusion, we identify key interactable elements in the user interface of the program that are the root cause of these issues.

What We Did

Before conducting the usability study, our team thoroughly familiarized themselves with the Microsoft Teams interface and functions. We conducted an expert evaluation of the software to develop a deeper understanding of users main goals, and identified violations of key usability principles.

Based on our understanding of user goals, needs and usability issues of the software, we created distinct test scripts based on different user experience levels with Teams. We conducted the study with 6 participants and they were categorized based on their prior experience level with the program.

Here is a breakdown and classification of the two user groups:

Participant Type	Number of Participants	Classification
Experienced	2	Participants that have used Microsoft Teams for Education or Business versions more than two times and possess a good understanding of the platform
Novice	4	Participants that have used Microsoft Teams for Education or Business versions for less than two times and possess a set of novice skills
Total number of participants: 6		

The goal of the study was to:

- Identify user pain points and key usability issues
- Investigate performance, efficiency, learnability, and intuitiveness
- Provide recommendations to optimize the user experience

We placed participants of the study in two different groups based on their self claimed experience level in the screener. The scenarios they had to go through were picked by the moderator based on their experience level. These are the different scenarios each experience level group had to go through:

Experienced users:

1. Create a group
2. Produce a Team Code
3.
 - a. Make a team member admin
 - b. Manage access for admin and members
4.
 - a. Create a notebook and make sections/pages
 - b. View author of notes
5. Delegate task responsibilities
6. Update personal email notification settings

Novice users:

1. Login and join a group
2.
 - a. Send a personal message
 - b. Make a group post
3. Upload a file to shared team folder
4. Initiate a video conference meeting
5.
 - a. Share screen
 - b. Provide screen share access to other members
6.
 - a. Create a to-do list
 - b. Mark your task complete

Each experience level member contributed towards us uncovering usability issues in the software related to performance, efficiency, learnability, and intuitiveness through performing these task and goal based scenarios.

What We Measured

This study comprised of using three different types of measures including: performance, behavioral, and subjective measures

Performance Measures

Performance measures are quantitative and can be used to measure aspects of the study such as time to complete tasks or whether they were successful. Performance is measured for each participant for each scenarios they do, and these are the details we collected:

- Success rate of tasks (whether or not they were able to complete each scenario)
- Time on task (The amount of time it took users to complete each task)

Behavioral Measures

Everything that a participant experiences through these tasks and scenarios cannot be expressed verbally or through their interaction with the screen. It is important to consider their body language (they seemed confused, they moved in towards the screen, or they made a sound expression). This type of data provides a window into the participants' thoughts and feelings. If the participant uses facial expressions, or expresses themselves through body language, these measurements are a great way to extract what the participants' is thinking while they attempt to accomplish their goal with the product or program. These observations were conducted in real time and later through viewing the recorded sessions. Here's a list of behavioral measures that were considered in this study:

- Verbal comments made by the participant during and throughout the study
- Confidence in their ability to complete each task
- Whether or not they sought out help to complete each task
- Nonverbal indications such as facial expressions and body language showing hesitation, confusion, frustration, etc

Subjective Measures

We also asked participants questions about their experience completing each task to get their subjective perspective. The goal was to find the participants' intention behind certain actions and their thought process and feelings towards the software. These measures are important to get an understanding of how a user feels towards their experience with the software, whether they find the program intuitive and easy to use. These are the questions that were asked in order to gauge the participants thoughts behind each scenario:

- How did you feel about the process?
- Where would you rate this process, in terms of difficulty, on a scale of 1-5 (1 being easiest and 5 being most difficult)
- Is there anything, in the current process you just went through, that you would change?

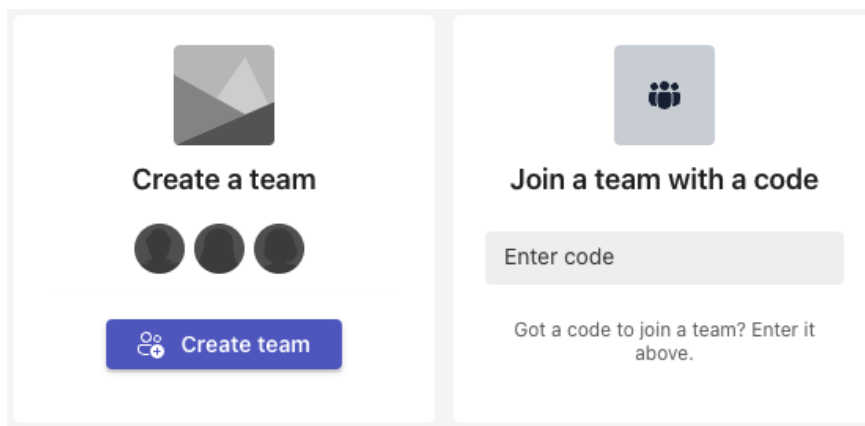
This section details can be found [here](#).

What We Found

This section outlines the results we obtained from performing the usability test on Microsoft Teams. We split this section into two subsections based on the two experience level groups

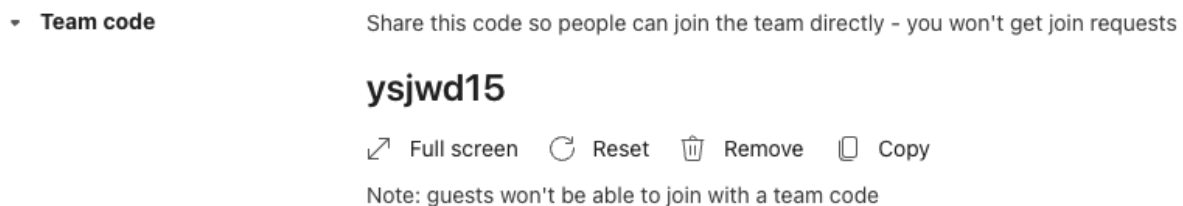
Experienced Users

There were a total of 6 scenarios that were tested with our 2 experienced users. The success rate varied between the two experienced users. Starting from the first scenario, both experienced users had no trouble accomplishing scenario 1 which involved creating a



group.

Scenario 2 which asked them to produce a team code was a challenging task for both experienced users. 1 of the 2 participants was eventually able to find a way to produce a team code but it took them extensive searching through the program. This outlines the unintuitiveness of this process.

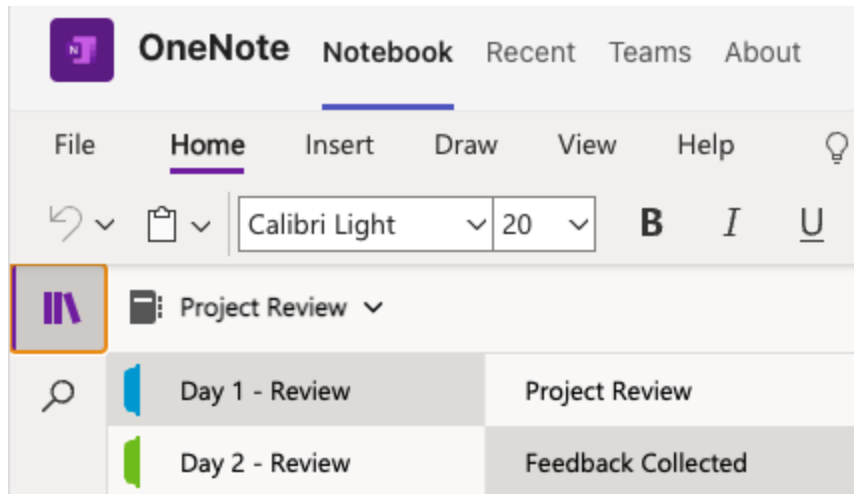


Scenario 3 was also challenging for both of the participants. Eventually one experienced participant found the correct settings to manage permissions and restrictions but even

after completing the task they were unsure if it was done correctly. This problem occurred due to the unclear language of the roles of members of the group, and the settings particular to managing their access. This issue is discussed in detail in our findings section.

▼ Member permissions	Enable channel creation, adding apps, and more
	Allow members to create and update channels ✓
	Allow members to create private channels ✓
	Allow members to delete and restore channels ✓
	Allow members to add and remove apps ✓
	Allow members to upload custom apps ✓
	Allow members to create, update, and remove tabs ✓
	Allow members to create, update, and remove connectors ✓
	Give members the option to delete their messages ✓
	Give members the option to edit their messages ✓

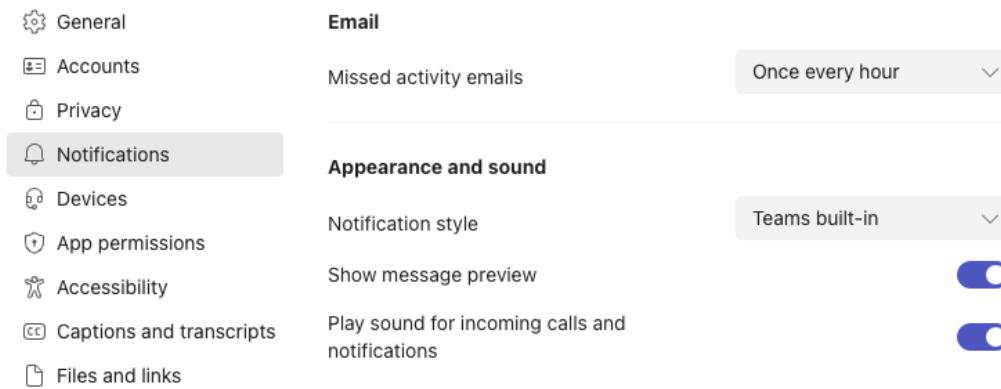
Scenario 4 also proved to be difficult for both the users. One of the experienced users was unable to complete this task due to difficulty locating the correct application that would allow them to create a notebook. The other experienced user, although located the correct application, still had a rough experience completing the particulars of this scenario. The icon that contains the key feature of this application is almost hidden in plain sight which does not work in favor of the application. Simply making the affordance of that icon more upfront and intuitive would make the application far more useful because as it was demonstrated by the participant, once the icon was discovered they were easily able to complete the first section of this scenario. The second part of the scenario involved a very simple goal of displaying the author of a note on a collaborative document but the process behind completing it was quite convoluted and difficult. The recommendations to make this process easier are discussed in the following section.



Scenario 5 involved delegating responsibilities to members of the group and requesting them to complete their given assigned tasks within a due date. Only one of the two experienced users was able to complete this task. The biggest hurdle with this scenario was once the proper application to accomplish this task was discovered, the participants were having trouble finding the options to input the correct parameters. This is due to a design fault of the application, it fails to communicate that double clicking a task instance brings up the desired options. The participant who found the correct application tried to look for the detailed parameter options under dropdown menus, and they single clicked the task instance but didn't realize single clicking only selects the task. This is not a fault of the participant but rather a miscommunication of the information architecture of the application.

<input type="radio"/> Example 3		General / PTD Test 1		4/7	...
<input type="radio"/> create a cover page		General / Tasks			...
<input type="radio"/> Finish!		General / Tasks		4/29	...
<input type="radio"/> ASDF		General / Tasks			...
<input type="radio"/> Example 1		General / PTD Test 1		4/13	...

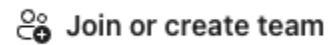
Scenario 6 was successfully completed by both of the experienced users. They were able to locate their personal settings and find the notifications tab where they could manipulate the desired settings. There was some confusion regarding opening settings for the group vs. opening personal settings, but it was not enough of a hurdle to lead to task failure.



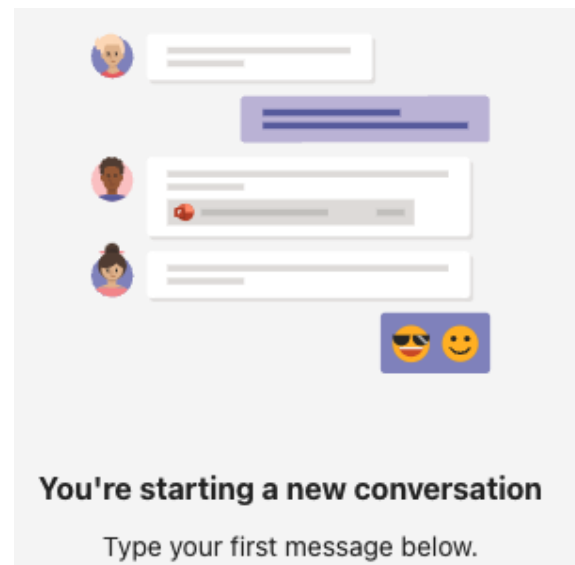
Novice Users

There were a total of 6 scenarios for the 4 novice users in this study. The success rate of tasks varied between the participants but there was a scenario that was a catastrophic failure for all novice users.

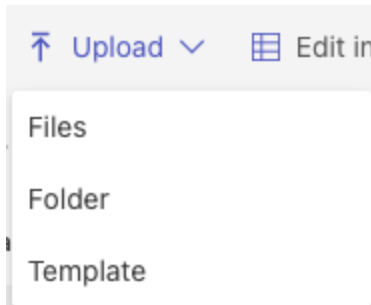
Scenario 1 was easy for all novice users. They were able to complete the goal of joining an existing group with ease and no hesitation.

A rectangular button with a light gray border and a white background. On the left, there is a small icon of two people with a plus sign. To the right of the icon, the text "Join or create team" is written in a bold, dark gray font.

Scenario 2 had two parts and all participants had a bit of confusion between the distinction of these two features in the program. This is again due to the information architecture of the program. Participants had confusion about whether they were making a group post or sending a private message. One of the participants even made a group post thinking they were sending a private message and only after completing the action, they realized that they had placed their message in the wrong area.



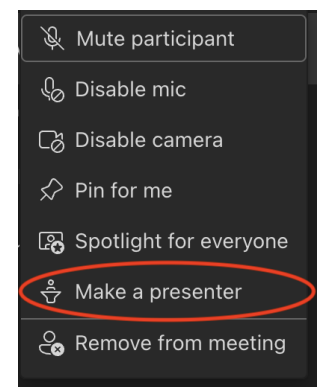
All novice participants were able to complete Scenario 3 which involved uploading a file to the group. There was a bit of hesitation from 3/4 participants and they would click a few wrong options before landing on the right one but ultimately they were able to complete this scenario.



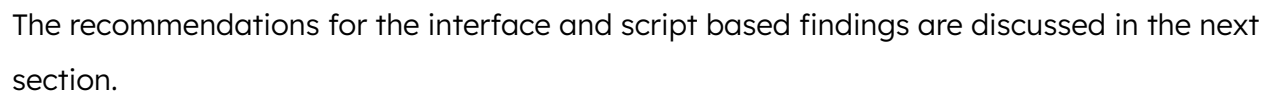
Scenario 4 involved initiating a video meeting and inviting the other members into the call. The meeting options are salient and the process was not difficult for the participants.



Scenario 5 was a catastrophic failure. No participants were able to complete this scenario. This scenario involved giving screen sharing access to other members in the meeting but no participants were able to locate the correct settings because the process to complete this in Microsoft Teams is so far removed from the standard procedure of this process in other video conferencing software. The process is far more confusing than it



Scenario 6 involved using the similar application from the experienced users to create a to-do list. Novice participant sessions also highlighted the same issue experienced by the experienced users. They found the ability to open expanded options by double clicking to lack salience as well. The participants expressed that they did not realize they could double click the task instance to pop up the correct space to input their parameters. They also went to the drop down menu which does not contain all the parameters they needed to assign in the to-do list.



What We Recommend

Based on the results and analysis of our usability tests, we discovered that Microsoft Teams has a plethora of applications and features but many of them are far from being as intuitive as they could be. Some of the applications and features do not require a complete overhaul before they become optimized, and some need some fundamental changes to the layout to get where they need to be.

Severity
Low
Medium
High

The table below lists all principle level issues organized by order of high severity to low severity. High severity issues are critical issues that severely impact users' experiences and them away from using Microsoft Teams. They are also issues that should be top priority, and need to be addressed as soon as possible. Medium severity issues are issues that can become critical if unattended. Low severity issues are the ones that are not going to cause fatal errors, but still become a nuisance to the user experience.

Interface Based Findings and Recommendations

Issue	Recommendation
Send a Chat vs. Make a Post There is a lack of clear indication between making a post and sending a chat message. Multiple novice users almost made a post in the teams tab thinking they are sending a chat message privately.	<p>There should be a clear indication of differences between creating a post and sending a message.</p> <p>The button in the teams tab to make a post should not say “New conversation”. It should say something more direct like “Create a Post” to clearly show the purpose of the button.</p> <p>The screen below shows the current setup of the button. There should be a “Go to Chat” button right next to the “New conversation” button to make the user realize that they are possibly not in the right area for their intended goal. This also will provide a shortcut for the user to jump to the chat tab.</p>

Issue	Recommendation
Screen Share Access The ability to provide screen share access to other members of the call is hidden behind multiple steps that do not resemble the standard process of providing this access from other video conferencing software.	<p>Microsoft Teams should follow other industry standard softwares when it comes to the layout of this feature.</p> <p>Instead of requiring the user to go to the “people” tab while in the call. Teams should allow clicking on a user and manage their screen share access from the dropdown menu rather than requiring the extra steps.</p> <p>Also instead of saying “Make a presenter”, it should more clearly say “Allow screen sharing” as a label.</p>

Issue	Recommendation
To Do List The application is not difficult to find but the expanded options are not salient or easy to find.	It should more clearly indicate that double clicking will expand the options. There should be “More options” in the drop down menu next to each task because that’s where every participant went to find more detailed options.

Issue	Recommendation
Team Code Producing a team code was difficult for both experienced users. This is because the option is behind multiple unnecessary steps.	When a group is right clicked and there is a drop down menu. The ability to produce a team code should be available right by where the user can “get link to team”. OR There could be an interactable in the dropdown menu that jumps the user straight to the Team Code option in settings.

Issue	Recommendation
Members Permissions and Restrictions Currently the member and guest permissions and restrictions do not match the roles for members of the group. Participants even after managing permissions and restrictions still had a difficult time understanding if they did them correctly. This kind of ambiguity shouldn’t occur because of program design.	The ability to change member permissions should be labeled accordingly.

Issue	Recommendation
<p>Collaborative Note Taking and Live Editing</p> <p>The icon that lets the user access the key feature of this app is not salient.</p> <p>The ability to view the author is also hidden behind far more steps than it should require.</p>	<p>The icon should be made bigger. It should be the key point of this application and the user should be guided towards this option more clearly.</p> <p>The ability to view the author of a note should be available right on the main page of the application. It could be placed right besides the “editing” button which will follow the standard layout of this option as other options.</p>

[Detailed interface based findings can be found here.](#)

Principle Level Issues

The table below lists all principle level issues organized by order of high severity to low severity. High severity issues are critical issues that severely impact users' experiences and them away from using Microsoft Teams. They are also issues that should be top priority, and need to be addressed as soon as possible. Medium severity issues are issues that can become critical if unattended. Low severity issues are the ones that are not going to cause fatal errors, but still become a nuisance to the user experience.

Severity
Low
Medium
High

Principle	Recommendation
Gestalt Principle of closure “Generate team code” was in close proximity to some of the similar content such as “edit team.” Typically, major platforms display generating code or a link in settings. The absence often leads users to search and wonder where to generate a team code. The team code would be easier to find in the edit team	According to the Gestalt principle of closure, “generate team code” would be appropriate to add above or below “get a link to the team.” The second most popular click was the edit team from the menu. Users often transfer expectations and knowledge from one platform to another.

Principle	Recommendation
-----------	----------------

<p>Terminology is very important to the users</p> <p>Users are more familiar with “admin” or “owner” in Microsoft Teams than “members and guests.”</p>	<p>Utilizing the term “admin” can be more consistent with the expectation of novice and experienced users. As they transfer knowledge from other collaboration tools.</p>
--	---

Principle	Recommendation
<p>Cognition rather than recall</p> <p>Users are more familiar with “admin” or “owner” in Microsoft Teams than “members and guests.”</p>	<p>Notifications of when a new document such as one note is created will help other team members to be in loop and avoid any confusion.</p> <p>To make it visible on who made the changes to other users, like google docs, have a cursor with their name on it for easy real time collaboration.</p>

Principle	Recommendation
<p>Gestalt principle of conformity</p> <p>Users seek out the same type of UX and UI because of their mental model when it comes to collaboration tools. Horizontal scroll and hiding the close button is not ideal and creates confusion.</p>	<p>When updating the tasks, a button or a hyperlink would be better than a plain text. A plain text in most collaboration tools means it’s not clickable as these are the user’s mental model of software application.</p>

Principle	Recommendation
<p>Principle of user control and freedom</p> <p>When it comes to settings, sometimes it’s great to have the user to be in control of their settings.</p> <p>Currently, Microsoft team does not have</p>	<p>Most collaboration tools such as slack, have two levels of notification settings. One at the group level, where users can change notification of each group that they are in. Or they can change the frequency of a general notification from the global settings for the entire Microsoft</p>

freedom to separate different notifications for each group.	Teams.
---	--------

[Detailed script based findings can be found here.](#)

Root Cause Analysis

To provide impactful design recommendations, it is important for us to understand the core causes of errors encountered in usability testing. This involves digging into each identified problem and breaking it into antecedent sub-problems that may illuminate a broader issue in the design. Implementing fixes for these core problems instead of attempting to fix issues at the surface level provides more robust design solutions that often solve multiple issues at once.

1. Problem: Users are confused about messaging with chats and Teams, and do not know how to efficiently communicate with a whole Team.

In usability testing, we discovered a high number of errors and when users attempted to message their Team, in addition to a high rate of confusion when working toward this goal. The most frequently identified (through observation and participant statements) issue was derived from the Teams “Post” feature and the global “Chat” feature competing for user attention. We can break down this issue as follows:

→ The labeling of Team messages as “Posts” is confusing to users with intent to contact their Team

- ◆ **Why?** The choice of “Post” is not consistent with user expectations for a message feature and reduces trust in the feature.
 - **Why?** Users are visually drawn to the always-visible “Chat” feature in the sidebar instead of the “Post” feature.
 - **Why?** Users are likely to have previous experience with apps using the common chat-bubble style UI for conversational communication. This is their first instinctual target when attempting to message any person or group.

- ◆ **Why is this a problem?** Users cannot seamlessly message an entire Team from the “Chat” module without manually entering every Team member, but they can easily message a whole Team using the “Post” feature. However, they cannot message individual Team members using this feature.
 - **Why is *this* a problem?** As app substructures, “Teams” consolidate functionality that is present elsewhere in the app, but implement it differently and without clear separation, causing inconsistency in use and perception. New users are often not aware that the “Chat” function is separate from their “Team” and not connected in any way.

2. Problem: Users cannot figure out how to give others screen sharing permission

All tested users failed to grant screen sharing permission to other call participants. Most remarked they were unable to find it, despite the fact that most did discover the screen on which the option was located. We can break down this issue as follows:

→ Users cannot find the option to change screen sharing permissions

- ◆ **Why?** Because it is not where they expect it to be.
 - **Why?** Because users expect it to be in the participants list.
 - **Why?** Proximity is a core tenet of good design. Options/actions should be next to the object they control because that is where attention will be when that object needs to be actioned.
- ◆ **Why?** Because it is labeled in a confusing way.
 - **Why?** The choice to title the button “Make Presenter” carries an implication for many that it is exclusive, meaning only one person has this privilege.
 - **Why?** The word presenter implies a sole speaker. Users passed over this option in most sessions in search of an option that implies non-exclusive permissions.

3. Problem: Users have trouble editing to-do list items.

Participants took exceptionally long to discover the ability to edit to-do list items. Breaking down this issue further:

→ Users cannot figure out how to edit to-do list tasks.

- ◆ **Why?** Users do not see an option to edit when hovering over a task
 - **Why?** The task does not change visually when hovered over, apart from a small icon that does not contain edit options.
 - **Why?** Users must hover specifically over the task title until it becomes underlined, then click on it to edit.
 - ◆ **Why is this a problem?** Users attempting to click elsewhere on the task suffer from false affordances. They cannot click displayed parameters and the one icon that presents itself most clearly as being clickable does not contain edit functionality.

4. Problem: Users are not able to find a share code

Users wanting to send a Team invite to desired members without having to approve them manually can do so using a specific Team code. Most were unable to find this code despite being informed of its availability.

→ Users cannot find their Team's share code

- ◆ **Why?** The correct option is difficult to discover.
 - **Why?** Clicking the Teams setting icon brings up separate options to “Add a Member” and to get a “Link to Team”. This is confusing to the user.
 - **Why?** Both present options to add a person to the Team, which is the core goal, but they do not serve the function of giving an external member pre-approved access.
 - ◆ **Why?** Pre-approved external invites can only be provided via the Team code, which is two-levels deeper in settings.
 - **Why is this a problem?** Having multiple ways to add members in separate locations adds to

user cognitive load, giving them unnecessary information to search for, work through, and remember. Users also do not expect shareable information to be located deep in settings.

5. Problem: Users were not able to change Team member permissions as intended.

Users intending to change functional privileges for members of their Team were not able to do so. The issue is broken down as follows:

→ Users cannot set permissions for members to the intended state

- ◆ **Why?** Users were not able to determine what permissions were being changed when they operated on individual member settings.
 - **Why?** Permission properties are not explicitly described when changing them for members. The only visible information is the member's Role title.
 - **Why?** Member and guest permissions are detailed in a different page of settings, in which those granular permissions can be edited. Owner permissions are not explicitly described anywhere.
 - ◆ **Why is this a problem?** People tend to do what is called “self-terminating search” when looking for something, meaning they will stop looking for a target when they have found one, even if there may be multiple targets (and possibly a better one). Users will find the page where they can change member roles, which implies a permission change, and think it is a very basic and opaque workflow. They are unlikely to dig further and should not have to, as separating closely aligned options again increases users' cognitive load. Even in this page, Members and Guests are not formally separated, causing more confusion regarding who has what permissions.

6. Problem: Users have trouble viewing collaborative change history in One Note

Participants in the shared note task were unable to determine how to gain visibility to changes made by other users in the file.

→ **Users cannot gain visibility to shared change history in a collaborative document.**

- ◆ **Why?** Users cannot find the option to make changes visible
 - **Why?** The option is not where users expect it to be.
 - **Why?** Participants noticed the pointers that appear when hovering over line items and guessed clicking on them would display more information.
 - ◆ **Why?** Users in a collaborative environment are primed to expect visibility to collaborative features as a priority—moving editor visibility outside of the main toolbar conflicts with this

7. Problem: Users are confused about how to change email notification settings for a specific Team

Users wanting to ensure they are notified when important information is shared in a Team were often unable to properly configure their email notifications to do so. We can break down this issue as follows:

→ **Users have trouble turning on email notifications for a Team**

- ◆ **Why?** They cannot find notification settings for a specific Team.
 - **Why?** Users are visually drawn to the ellipses next to the relatively large Team name/tile, which does not contain notification settings
 - **Why?** A Team-specific notification toggle is located within the *other* set of ellipses on the opposite side of the screen, which contains a notification bell as well as some options also present in the menu presented by the left-side ellipses. The bell here is a simple option to turn notifications On or Off.
 - ◆ **Why is this a problem?** Neither of these provide a resolution to the original goal of changing email settings. These settings reside in a third set of ellipses

in the top right corner of the app. This holds global account settings.

Why is *this* a problem? Presenting three identical icons to the user that have different functions increases their cognitive load by giving them more arbitrary information to remember. Users are unlikely to remember which icon contains the options they want. There is also the issue of false affordance. This is the phenomenon of an incorrect option presenting stronger implication of functionality than a correct option, causing a user to be subconsciously drawn to that option even despite previous experience of it being the wrong one.

Grades

<p>Does Microsoft Teams for education communicate its purpose, functions, and value?</p> <p>Microsoft Teams does a fine job conveying its purpose, functions, and value. It has all the features necessary to be a functioning collaboration app but all the functions and features are still lackluster and fail to exceed in quality compared to similar apps that offer those functions individually.</p>	<p>B-</p>
<p>Is it easy and intuitive to navigate through different functions and features offered by Microsoft Teams for education?</p> <p>The functions and apps are not the easiest to navigate. There is tons of confusion between many features. Overall the program needs rework to become clear with its distinct features. The current setup with first party applications of the software appearing similar to the App Store is less intuitive than the program intended to appear. The program could use a wizard that guides new users through all its core functionalities so the user can become aware of the plethora of features that this program offers.</p>	<p>C-</p>
<p>Does the screen design support efficient interaction?</p> <p>The screen design does not support efficient interaction. The user has to get very familiar with the program and use it multiple times before they start becoming</p>	

<p>comfortable with using the program which is not a good sign. The novice users were struggling with many of the functions and there was a lack of intuitive flow with many features and applications.</p>	<p>C-</p>
<p>Am I guided through the interface or left on my own?</p> <p>The program definitely needs a strong wizard to initially guide the user through its features. The interface leaves the user to have to figure out what the program is capable of executing. This is not good because without guidance the user cannot discover some key features and applications.</p>	<p>C</p>
<p>OVERALL</p> <p>Overall the program needs to take inspiration from other software that individually offer the features and applications that are nested in this program. With current design of the program, the users will most likely opt to use the individual softwares that pay closer attention to their interface and interactions because every common feature in this program lacks the detail that make it intuitive.</p>	<p>C-</p>

Introduction

This section of the report covers an overview of our study and test approach, describing Microsoft Teams for Education and Business and product objectives, as well as a breakdown of typical user personas and use cases of the software.

The primary goal of our usability study was to evaluate the user-friendliness of key features within the educational version of Microsoft Teams, which is developed by Microsoft. Our report delves into a detailed analysis of various features offered by Microsoft Teams, including creating and managing meetings, inviting participants, sending messages to individuals or groups, creating or joining groups, adjusting notification settings, and organizing tasks and to-do lists. Additionally, we assessed the specific capabilities of Microsoft Teams, such as real-time file and document sharing for collaborative purposes.

About Microsoft

Microsoft, a global technology company headquartered in Redmond, Washington, is renowned for its wide range of innovative software, hardware, and services. One of its standout offerings is Microsoft Teams, a collaborative platform that has gained significant popularity in both educational and business environments.



Microsoft Teams provides a comprehensive solution for communication, collaboration, and productivity. With features designed for seamless teamwork, it allows users to create virtual meeting spaces, conduct video conferences, share files and documents, and engage in real-time messaging. Teams also integrates with other Microsoft applications, such as Office 365, providing a unified ecosystem for enhanced productivity and efficient workflow.

As technology continues to shape the way we work and learn, Microsoft Teams stands at the forefront, empowering individuals and teams to connect, collaborate, and achieve their goals efficiently. With its user-friendly interface and robust feature set, Microsoft Teams has become an indispensable tool for modern communication and collaboration in various domains.

Study Overview

Microsoft approached our team to conduct a usability study of their video conferencing software, Microsoft Teams for Education. This report offers a description of the software and its users, objectives of the study, a breakdown of the methodology, our findings, and recommendations for improving the user experience.



The main objective of this study was to identify issues of usability that negatively impact users' experience. We conducted a usability study with two groups: novice users and experienced users. By having users complete a set of tasks derived from user goals within the software, we aimed to capture usability data in terms of learnability of basic features from novice users, and performance and efficiency from experienced users.

About the Product

Microsoft Teams is a powerful collaboration platform that revolutionizes communication and teamwork in both education and business settings. It offers a comprehensive suite of features designed to enhance productivity and facilitate seamless collaboration.

Teams provides a virtual meeting space where users can conduct video conferences, share screens, and communicate in real-time through messaging and audio calls. It enables participants to collaborate on files and documents simultaneously, fostering efficient teamwork and eliminating the need for multiple versions of the same document.

In this usability study, we will be evaluating Microsoft Teams that is used for education purposes.

Product Walkthrough

Sign-Up/Sign-In Screen: To access Teams for Education, users need to sign in using their designated email address provided by their educational organization (Figure 3A, 3B). This email address serves as the credentials to log in to the platform and gain access to the features and functionalities specific to the education version of Microsoft Teams.

By limiting access to users with verified educational email addresses, Microsoft ensures that Teams for Education remains dedicated to supporting the needs and requirements of educational institutions, fostering a secure and controlled environment for collaboration and learning.

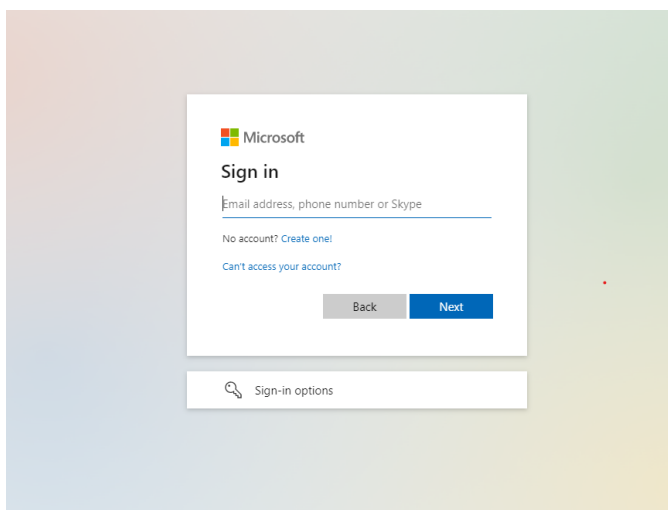


Figure 3A: Microsoft sign-up/login page

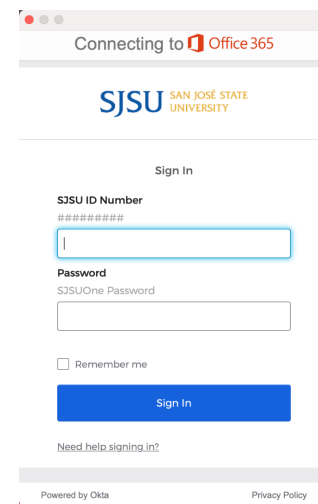


Figure 3B: Redirects to University login

Choosing Between Web and Desktop Versions: Upon signing-in/signing-up, the screen allows the user to open the application using the Microsoft Teams application designed

for Desktop or using the Microsoft Teams application designed for the web (Figure 4). This study will evaluate the web version.

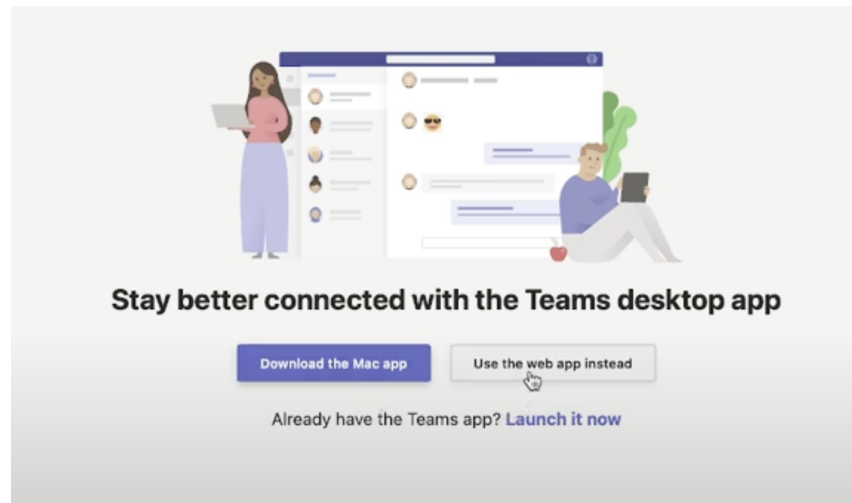


Figure 4: Users can choose to access Microsoft Teams on the Web or Desktop Application

Dashboard: Upon logging in, the user will be greeted by an intuitive dashboard. It provides a centralized hub for all educational activities and interactions. The top bar is called the “Navigation Bar” (Figure 5) also known as the app bar as it provides easy access to the various applications created by Microsoft. Users can also search for specific messages, files, people, or groups within Microsoft Teams, and customize their Teams settings including notifications, privacy, and appearance.

Panel 1, also referred to the left-hand navigation provides quick access to the different areas and functionalities of the application including, Activity, Chat, Teams, Assignments, and To-do lists (Figure 5). Based on the type of area that the user chooses, the application can open panel 2, or a sub-panel, or can provide the users with direct access to the central content section.



Figure 5: Dashboard screen that allows users to search for specific messages or documents, access their assignments, chats, groups they are a part of, and much more!

Chat and Messaging: The chat tab on panel 1 allows the users to communicate with the teachers, peers, friends, and groups. This tab can also be used to initiate communications through mediums such as video calls, audio calls, and chat messages (Figure 6). Users can share images, links and files through chat.

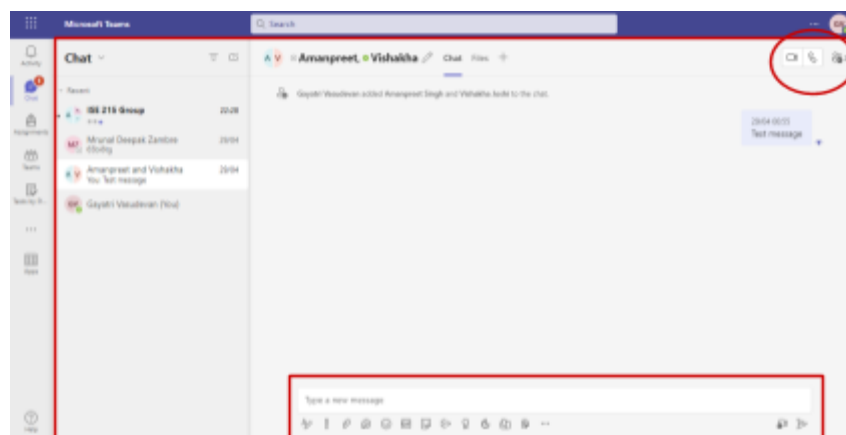


Figure 6: Through the Chat section, users can communicate through text message, video call, or audio call, and share documents, images, and collaborate real-time.

Assignments and grading: The Assignments section can be assessed on panel 1 that allows users to view both upcoming and completed assignments (Figure 7). Selecting a specific assignment provides a detailed view of what the assignment is, the feedback and the grades for each. For this usability testing, we will not be testing this feature due to accessibility constraints.

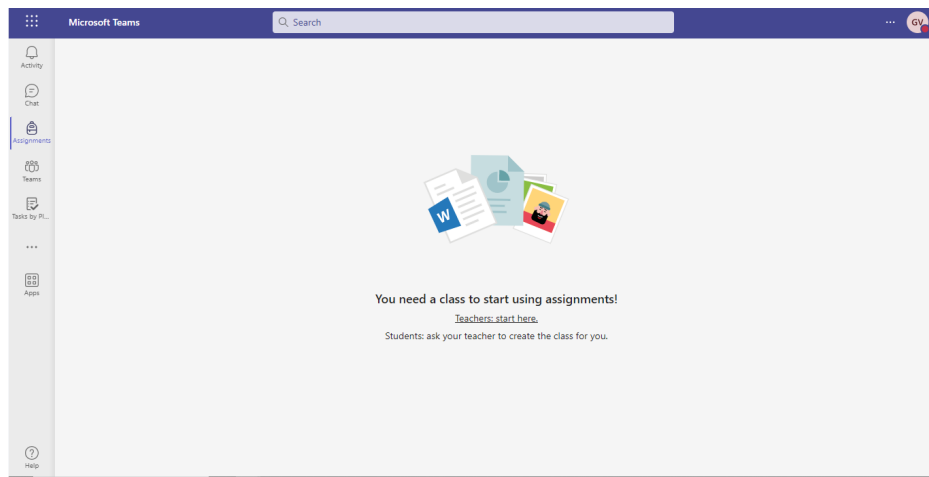


Figure 7: Students can view assignments created by their teachers

Teams and Channels: The “Teams” tab on panel 1 allows users to create one or multiple groups and join a group through an invite link or code (Figure 8A). The users can also view the groups that they are a part of (Figure 8B).

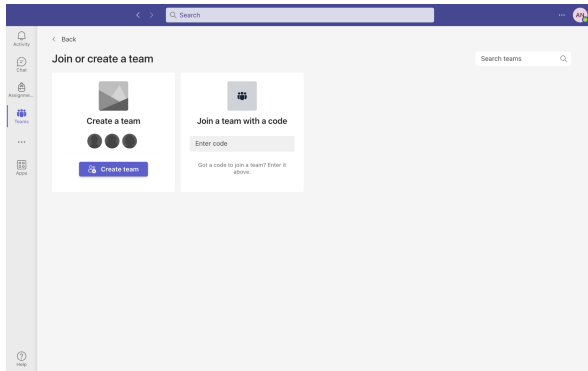


Figure 8A: Microsoft sign-up/login page

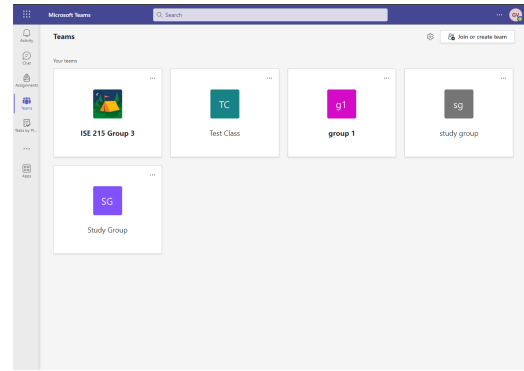


Figure 8B: View teams that one is a part of

In each team, or group, the users are able to view the members of the team, chat with the group members, view the major updates within the group (Figure 8C), share, store, and edit files (Figure 8D), and add and assign tasks using the ‘Planner and To-Do’ channel in the team. Users can also connect with the team members through video call or voice call (Figure 8E).

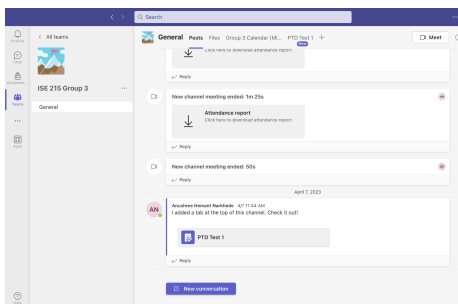


Figure 8C: Posts and activity with teams on teams on Microsoft Teams for Education

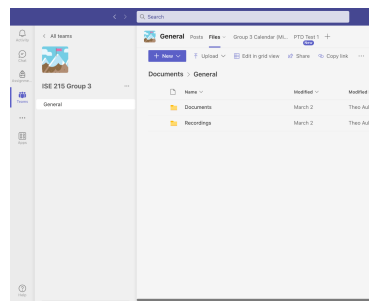


Figure 8D: Share, store and edit files in Teams/Groups on Microsoft Teams for Education

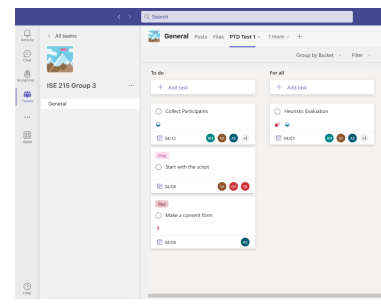


Figure 8E: Plan and assign tasks on Microsoft Teams for Education.

Meetings and Video Conferencing: Users can schedule and conduct instant virtual meetings with their teachers, students, peers, and colleagues using the integrated video conferencing feature (Figure 9A). Users can collaborate in real-time, share screens (Figure 9B) and engage in interactive discussions.

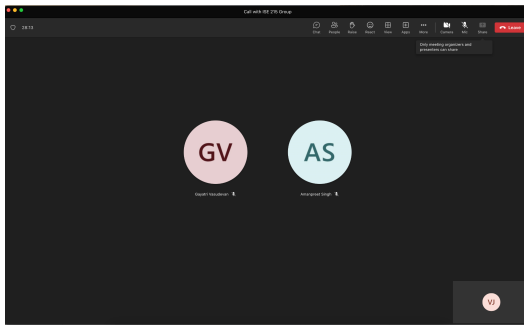


Figure 9A: Virtual meeting screen and features

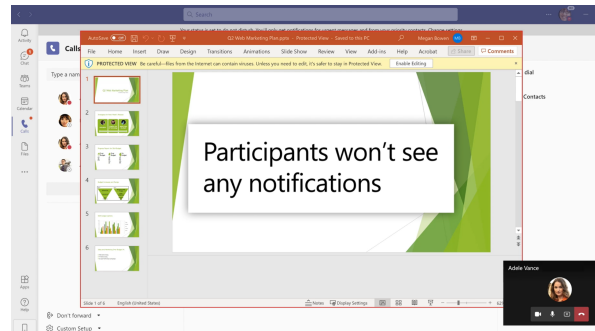


Figure 9B: Sharing screen during a meeting for real-time collaboration

File Sharing and Collaboration: Microsoft Teams provides users with the facility to share files, documents, and resources with other users of this application (Figure 10A). The product encourages real-time collaboration, as users work on assignments and projects with other team members. The users are able to edit documents simultaneously.

In addition, the OneNote Microsoft application that is accessible through Microsoft Teams allows users to share ideas, take freeform notes, and share and store notes in an organized manner (Figure 10B).

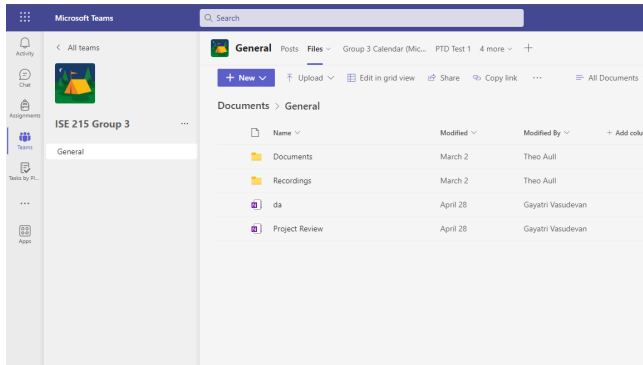


Figure 10A: Share documents and files that can be accessed by the team shared with

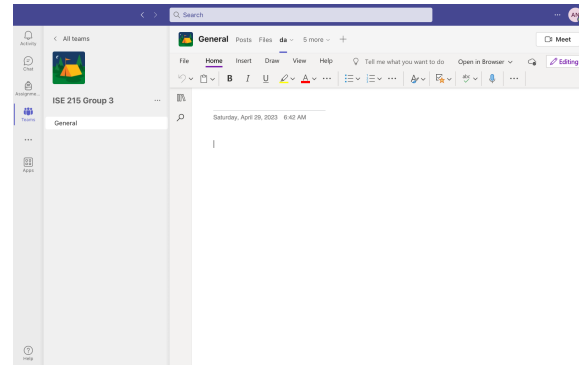


Figure 10B: Add and share notes with team member on Microsoft Teams for Education

Modifying Settings: The top navigation bar allows users to access the general and account settings on their Microsoft Teams account. Users can use the general settings to make modifications to the display theme (dark or light), notification settings, accessibility, privacy, permissions, captions, and many more by clicking on the ellipses next to the profile image on the top right corner of the screen (Figure 11).

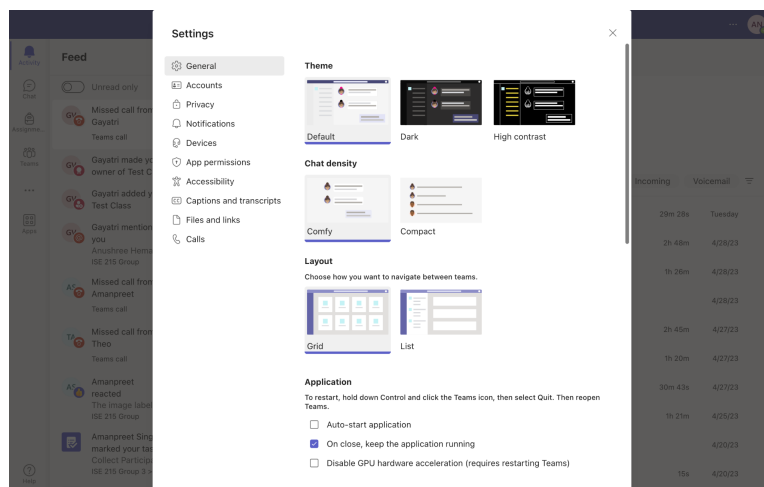


Figure 11: General settings for Microsoft Teams for Education

Product Objectives

The primary objective of Microsoft Teams is to provide a comprehensive collaboration platform for educational and business environments. As a versatile communication and productivity tool, Teams aims to empower users to connect, collaborate, and achieve their goals effectively.

Education Purposes: For educational institutions, the objectives of Microsoft Teams are to facilitate remote learning, foster student engagement, and enhance communication and collaboration among teachers and students. It provides virtual classrooms, assignments, and grading capabilities to support educators in delivering interactive and impactful education.

Business Purposes: In the business context, Microsoft Teams aims to streamline project management, promote teamwork, and improve communication within organizations. Its objectives include enabling seamless collaboration, real-time file sharing, and effective video conferencing for teams, departments, and cross-functional groups.

Microsoft is dedicated to supporting its customers by incorporating their input and requests to enhance the platform's functionality, usability, and security. The objective is to provide a user-centric experience that enables users to explore and push the boundaries of collaboration and productivity with Microsoft Teams.

Study Design Overview

Our objective for the Microsoft Teams for Education usability study is to assess the platform's usability and effectiveness in supporting remote learning. The overall objective of this study was to measure the Microsoft Teams for Education by these four main questions:

- Does Microsoft Teams for education communicate its purpose, function and value?
- Is it easy and intuitive to navigate through different functions and features offered by Microsoft Teams for education?
- Does the screen design support efficient interaction?
- Am I guided through the interface or left on my own?

In that aim and narrowing the scope to focus on the basic tasks of video conferencing, chat, and real-time collaboration features, we:

- Gained familiarity with Microsoft Teams
- Identified Use Cases and User Goals based on scope and experience level
 - Novice Users and Experienced Users
- Created comprehensive usability testing scripts and data logs for the above conditions by employing:
 - Pre-Study Questionnaire for subjective data, such as past experiences and difficulties with using Microsoft Teams, knowledge of the goals and function of Microsoft Teams, and perceptions of Microsoft Teams.
 - Goal and task based measures for behavioral data, such as body positioning, facial expressions, and gestures, and objective data, such as task completion time and success of task.
- Conducted a pilot study and iterated based on findings

- Recruited 6 participants
- Executed study
- Reported insights, findings, data collection, recommendations, and implications

Users and Use Cases

This section provides a description of common user profiles and use cases of Microsoft Teams, which we used to evaluate the product in terms of how easily its users can accomplish their daily goals and tasks.

For the purpose of this study, we defined two main groups of users who interact with Microsoft Teams for Education. These groups were defined as **Microsoft Teams “novice” users** and **Microsoft Teams “experienced” users**.

Users

I. Microsoft Teams Novice Users

These are users who have used the Microsoft Teams web application less than two times. They are unaware of the functionalities offered by the product and they are unaware of the parameters of limitations that exist within its capabilities. These users provide a solid understanding of how intuitively the fundamental or core functions of the product are present. If a novice user is unable to easily operate the program, it has failed to succeed. In this study, the novice users will be interacting with the key features, such as screen sharing, messaging, joining a group, creating a to-do list, initiating a call, and inviting participants to a call.



Sarah | Age: 30 | Device Type: iOS | Business Version

Sarah is a senior executive at a large corporation and is responsible for overseeing multiple teams across different departments. She intends to use Microsoft Teams to stay connected with her team, review presentations and reports, and make important decisions. She values clear communication, efficient collaboration, and the ability to work remotely when needed.



Maria | Age: 21 | Device Type: Microsoft Windows | Education Version

Maria is a college student majoring in computer science and uses Microsoft Teams to collaborate with her classmates on group projects, attend virtual lectures, and communicate with her professors. Maria appreciates the platform's instant messaging feature, which allows her to quickly ask questions and get help from her peers.

II. Microsoft Teams Experienced Users

These are users who have used Microsoft Teams for business or educational purposes more than two times. They could have experience using this program either for academic reasons or business reasons. In this study, the experienced users will mainly be interacting with some of the key features of the application, which include creating groups, managing permissions and restrictions, live editing and collaboration, updating personal information, and modifying user settings.



Elizabeth Rodriguez | Age: 34 | Device Type: iOS |
Education Version

Mrs. Rodriguez is a high school Spanish teacher, who uses Microsoft Teams to deliver remote learning and engage with her students. She uses Teams to create and share class materials, host virtual meetings, and provide feedback and support to her students. She values the platform's flexibility and ability to enhance the learning experience for her students.



Tom | Age: 27 | Device Type: Microsoft Windows | Business
Version

Tom is a freelance writer who works from home. He uses Microsoft Teams to collaborate with his clients, share files, and stay connected with his team. He appreciates the flexibility that Teams offers and values the ability to work from anywhere, whether he's at home or on the go.

Use Cases

The following use cases are used to represent common user goals and tasks within Microsoft Teams for Education version. These use cases directly relate to the goals that the participants were tested on in the usability study.

- Use Case 1** Collaboration on Group Projects - Students working on group projects can utilize Microsoft Teams to collaborate effectively. They can create dedicated channels for their projects, share files and resources, hold virtual meetings, and engage in real-time discussions.
- Use Case 2** Virtual Classrooms and Remote Learning - In the context of remote learning, Microsoft Teams serves as a virtual classroom. Students can join online classes, attend lectures, participate in discussions, and interact with teachers and classmates through video conferences and messaging. Teams' integration with other educational tools allows for seamless integration of assignments, quizzes, and shared resources, providing a comprehensive learning experience.
- Use Case 3** Online Study Groups and Peer Collaboration - Students can form study groups within Microsoft Teams to collaborate with their peers on assignments, projects, or exam preparation. They can create dedicated channels, share study materials, discuss concepts, and support each other through messaging and video calls. Teams' shared whiteboard feature can facilitate real-time brainstorming and visual collaboration.
- Use Case 4** Student-Teacher Communication and Support - Microsoft Teams facilitates direct communication between students and teachers. Students can reach out to their teachers for clarifications, feedback, or additional guidance through private messages or designated channels.
- Use Case 5** Virtual Office Hours and Academic Support - Students can leverage Microsoft Teams to schedule virtual office hours with their teachers or seek academic support. Through video conferences or designated chat channels, students can have individual or group discussions with teachers, ask questions, receive guidance, and receive additional resources or materials to support their learning.

Test Approach

This section describes the methodology we used in creating the usability test plan and script, including our philosophical approach and rationale for methods.

Our Philosophy

Our testing approach was to adopt the “no hidden camera” method, as we wanted the users to feel comfortable and understand that there are cameras on the screen that will be capturing movements for data purposes. Once aware, participants were quite comfortable being on camera, and their comfort level increased as they progressed through the tasks.



Figure 12: Room setup with two external cameras and one laptop camera that the participant was using to closely monitor facial expressions.

To provoke realistic and naturally-driven interactions, each participant in the novice and experienced users categories were provided with six scenarios that were driven goal-based. The design of the scenarios provided insights on the pain points for specific features and also an evaluation of how users normally complete goals without specific directions.

Furthermore, a pilot study was conducted to validate and improve our study scripts, including the working time necessary for the session and content in order to ensure useful finding from the tasks.

Triangulation of Methods

User data was collected using various methods in order to “fill the circle,” including real-time observations, verbal response, and interviews. As a part of the study, the researchers observed issues for each scenario, collected performance data (time spent on task, completion and error rates), behavioral data (emotions and expressions), and subjective measures (satisfaction and ease-of-use), in order to analyze usability issues from multiple perspectives that provide information on holistic user needs.

Study Background and Objectives

This section covers a background of our study and describes our usability test objectives in reference to the test scripts.

Study Background

Prior to conducting the usability study, our team became familiar with Microsoft Teams interface and functionality. We conducted an expert evaluation of the software to gain an understanding of users' main goals and tasks, and to identify violations of key usability principles. We identified global usability issues, such as complexity of the navigation and unintuitive interaction, as well as local usability issues within the software UI.

Once we gained comprehensive knowledge of the software, we designed the test plan for the usability study. Based on our understanding of user goals, needs, and usability issues of the software, we created distinct test scripts based on users' experience with Microsoft Teams. Participant experience level was assessed in the pre-study screening survey ([Appendix B](#)) based on frequency and duration of use, as well as participants' task-based skills.

Study Objectives

Our high-level goals were to assess user comprehension, identify user pain points based on insights from usability testing, and provide recommendations to optimize the user experience for Microsoft Teams users.

We divided Microsoft Teams users into two groups—novice users and experienced users. The test scripts designed for both the category of users aimed to identify issues affecting learnability and intuitiveness.

Methods

This section contains information about the participants and the process followed to recruit and screen them for the study. This section also discusses procedures for the study and the overview of the script. The section also details the metrics and measurements that were followed to gain a comprehensive understanding of usability. In addition, the details on the testing facility, roles and responsibilities of the researchers, the test team are also provided.

Participants

This section covers the recruitment, screening and compensation of the participants in our Microsoft Teams usability study. There were a total of 6 participants (4 novice users and 2 experienced users). To better investigate Microsoft Teams, we intended to recruit current Microsoft Teams users and first time users.

Participant Type	Number of Participants	Classification
Experienced	2	Participants that have used Microsoft Teams for Education or Business versions more than two times and possess a good understanding of the platform
Novice	4	Participants that have used Microsoft Teams for Education or Business versions for less than two times and possess a set of novice skills
Total number of participants: 6		

Recruiting

The recruitment procedure was designed to target participants of varying user profiles (personas) and use cases. We shared a recruitment advertisement ([Appendix A](#)) on San Jose State University's Sammy App. The intent was to target students who might have used Microsoft Teams infrequently for virtual classes or projects or in a personal context. A social media post ([Appendix A](#)) was also posted on various online public forums like LinkedIn, Facebook, and Instagram. The intent was to target frequent users who might use Microsoft Teams for Education or Business purposes in a professional context. A recruitment email was also sent to the students of San Jose State University ([Appendix A](#)). The recruitment advertisement, social media post, and email all contained a general description of the Microsoft Teams product, study activities, compensation-related information, and contact information.

Screening

Once the potential participants contacted us inquiring about the study, they answered our pre-study screening questionnaire ([Appendix B](#)) through Google Form or by phone to find out if they were eligible for the study. A series of questions were asked regarding their Microsoft Teams experience, availability, and demographic information (such as age, employment, and education background) to ensure a diverse participant group.

Inclusion Criteria

To qualify for the study, participants needed to meet a list of requirements. They must have access to Microsoft Teams Education version, have basic technical computer skills, be fluent in English, and be able to attend the study in-person.

Consent

For participants who met the inclusion criteria, we scheduled a date and time for the in-person study session. A consent form was provided to the participants before the start

of the study, explaining their voluntary participation. The consent form provided an overview of the study and session, the compensation, agreement, and contact information. In addition, participants were also informed that they can withdraw from the study at any time. A reminder message was sent to all the participants a day before their study session.

Compensation

Upon completion of the study, each participant who participated in the study was paid \$100 per session. The total cost of participant compensation for this study was \$600.

Study Design

This section describes the design of our study, including the breakdown of the session components.

Session Introductions

Participants were read a session introduction based on their user group (novice and experienced users) as classified by the pre-study questionnaire. The introduction was read to each participant by the moderator at the beginning of the study session ([Appendix D](#)).

Session Procedure

There were 3 study sessions (each with a single participant) scheduled in one day. Each participant session was approximately 60 minutes. A tentative breakdown of all the tasks included in the scripts as follows. The ideal usability testing length was approximately an hour. In order to maintain the timeline, we used the tasks/questions flexibly. See the detailed scripts for more information ([Appendix E](#)). During the usability study, the

moderators used the session checklist ([Appendix E](#)) to keep the study moving fluidly and efficiently throughout the different days.

- Greet participant
- Session introduction
- Ask participant to complete informed consent ([Appendix C](#))
- Complete goal and task-based scenarios as requested by moderator
- Allotted time for free play/exploration
- Post-tasks final questionnaire
- Session review with moderator
- Compensation

Session Breakdown - Novice Users

Steps	Description	Duration
Introduction	The moderator briefly introduced the purpose and the procedure of the study. The moderator also informed participants that the session would be video recorded (Appendix)	5 minutes
Scenario 1	Joining an existing Teams group	5mintes
Scenario 2	Using the chat feature to send a group and a private message	5 minutes
Scenario 3	Creating a folder, uploading and sharing a file with the group members to collaborate real-time	7 minutes
Scenario 4	Starting a meeting with your group	5 minutes
Scenario 5	Creating a to-do list	13 minutes

Scenario 6	Modifying notification settings	5 minutes
Freeplay	Participants were allowed to explore and interact with the software as they please	5 minutes
Post-task Interview	The moderator conducted a post-task interview with the participants after each task to gain their feedback. Towards the end of the session, the moderator asked for the participants' overall feedback of the software.	15 minutes

Session Breakdown - Experienced Users

Steps	Description	Duration
Introduction	The moderator briefly introduced the purpose and the procedure of the study. The moderator also informed participants that the session would be video recorded (Appendix C)	5 minutes
Scenario 1	Creating a group to collaborate with your classmates	5 minutes
Scenario 2	Generating a code to allow your team members to join the group	5 minutes
Scenario 3	Granting admin privileges and restrict access to certain features for team members	7 minutes
Scenario 4	Creating and collaborating using a digital document/note-taking application	5 minutes
Scenario 5	Accessing the share screen feature and modifying permission setting in a call	13 minutes
Scenario 6	Creating a to-do list	5 minutes

Freeplay	Participants were allowed to explore and interact with the software as they please	5 minutes
Post-task Interview	The moderator conducted a post-task interview with the participants after each task to gain their feedback. Towards the end of the session, the moderator asked for the participants' overall feedback of the software.	15 minutes

Script Design

This section describes the design of our scripts, including a breakdown of the scenarios and tasks for each user script.

Through a combination of both task-based and goal-based scenarios, we were able to comprehensively understand how users interact with Microsoft Teams and address potential usability issues. Furthermore, we included follow-up questions and failure debrief after each task to let participants elaborate and provide details such as the reason for any difficulties and features they felt were missing in the software.

Novice Users

Since novice users are not familiar with the Microsoft Teams software environment, these novice sessions focus on “introductory” tasks such as account setup and on scenarios involving tasks of lower relative complexity. These were tasks more likely to be actioned by a new user, and included creating group chats, adding files, initiating meetings, sharing screens, granting screen-sharing permissions to other call participants, collaborating on documents, and creating and assigning group tasks. Additionally, participants' perspectives on the advantages of using Microsoft Teams for collaboration and reasons for not using it for educational purposes were inquired about. The feedback was solicited on experience using Teams and how it compares to other solutions used.

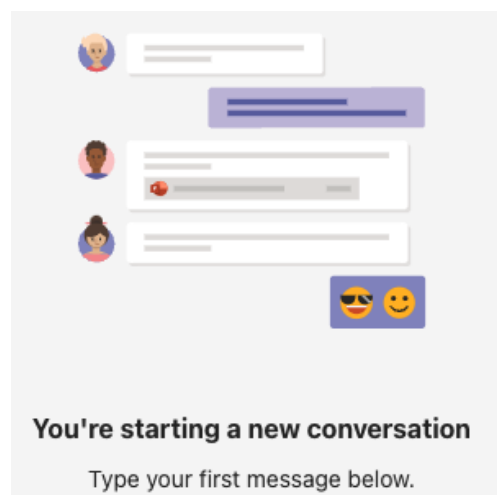
Scenario 1: Joining an Existing Teams

Joining an existing team in Microsoft Teams is an important scenario to test because it simulates the real-life situation where users need to seamlessly integrate into an established collaborative environment. This scenario allows us to evaluate the user experience of accessing and navigating existing teams, understanding the process of joining, and ensuring that users can quickly and effortlessly become part of the team ecosystem. By testing this scenario, we can identify any usability issues related to joining teams, locating relevant channels, accessing shared files and resources, and effectively participating in team discussions and activities.

A rectangular button with a light gray border. On the left is a circular icon containing three stylized human figures. To the right of the icon, the text "Join or create team" is displayed in a bold, dark gray font.

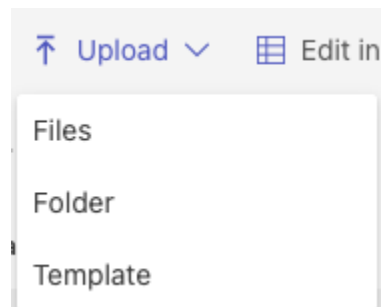
Scenario 2: Using the Chat Feature

Testing the chat feature for sending both group and private messages in Microsoft Teams is crucial to assess the platform's communication capabilities. It helps evaluate the usability and effectiveness of initiating and managing group conversations, as well as maintaining private one-on-one communication. This testing ensures seamless and efficient communication within the Teams environment.



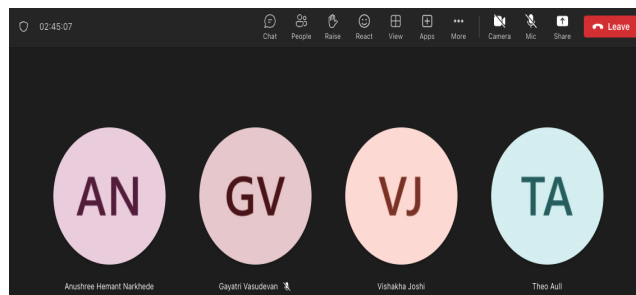
Scenario 3: Creating a Folder, Uploading, and Sharing a File

Testing the process of creating a folder, uploading files, and sharing them with group members for real-time collaboration is important in Microsoft Teams to ensure seamless and efficient file management and collaboration. This scenario helps evaluate the user experience of organizing files, uploading them, setting permissions, and enabling collaborative editing, highlighting any usability issues and optimizing the collaboration features of the platform.



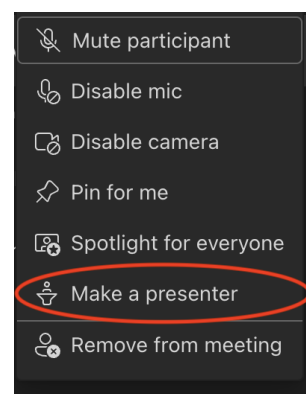
Scenario 4: Starting a Meeting With Your Group

Testing the process of starting a meeting with a group in Microsoft Teams is crucial to ensure a seamless and efficient collaboration experience. By evaluating this scenario, we can identify any usability issues related to scheduling and initiating meetings, inviting participants, managing audio and video settings, and accessing meeting controls, ensuring a smooth meeting experience for users.



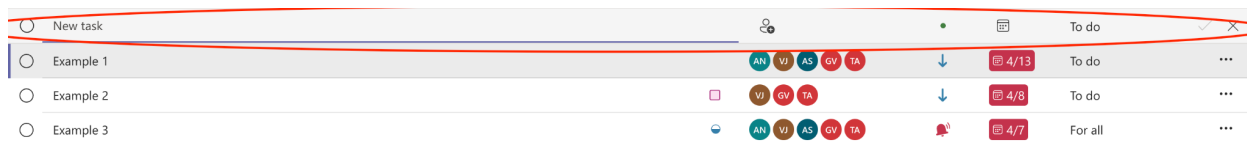
Scenario 5: Accessing the Share Screen Feature

Testing the share screen feature and modifying permission settings in a call is crucial in Microsoft Teams to ensure smooth collaboration. It allows us to assess the usability and effectiveness of these key functionalities, ensuring users can seamlessly share their screens and control permissions during calls, facilitating efficient communication and collaboration.



Scenario 6: Creating a To-Do List

Testing the creation of a to-do list in Microsoft Teams is important to evaluate the platform's ability to support task management and organization within a collaborative environment. It allows us to assess the ease of creating, editing, and assigning tasks, tracking progress, and collaborating on shared to-do lists, ensuring a seamless and efficient workflow for users.

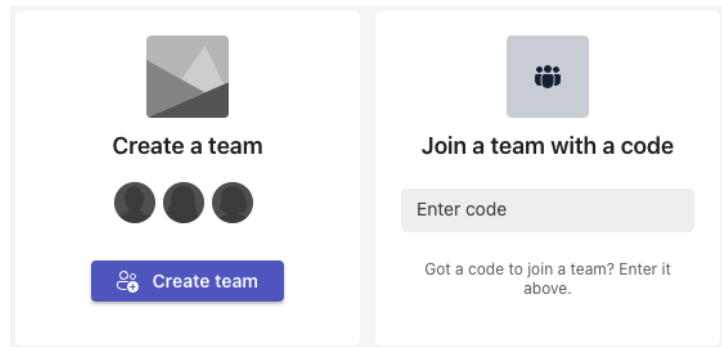


Experienced Users

Sessions for participants with more advanced knowledge of and experience with Teams were more flexible and discussion-heavy, with exploration into participants' prior experience using the software, their custom setups (if applicable), and opinions informed by their multiple years of use. Task scenarios maintained similar goals to the novice session, but were more complex and open-ended. This included creating and setting up a Team, file collaboration, and access/permission management. We aimed to gather additional data that may not have been captured through our task-based evaluation. However, it is worth noting that the majority of the experts likely used Microsoft Teams for business purposes. Because of this, we ran a brief intro to Teams for Education and its relative limitations before beginning the session scenarios.

Scenario 1: Creating a Group To Collaborate

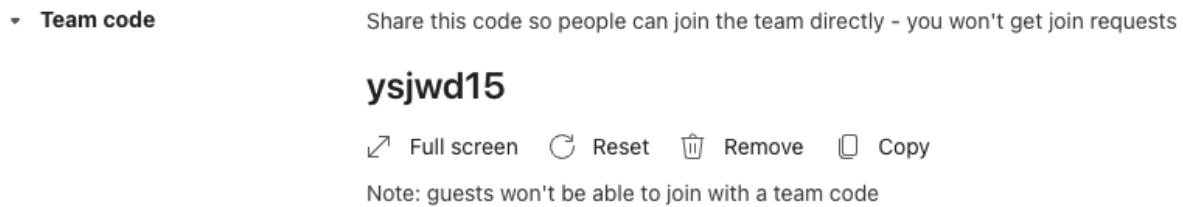
Testing the ability to create a group in Microsoft Teams is crucial as it ensures users can establish collaborative spaces effectively. This scenario helps evaluate the user experience of setting up new teams or channels, inviting members, and configuring permissions. It ensures a smooth start to collaboration and highlights any usability issues in the creation process.



Scenario 2: Generating a Code To Allow Users Join Group

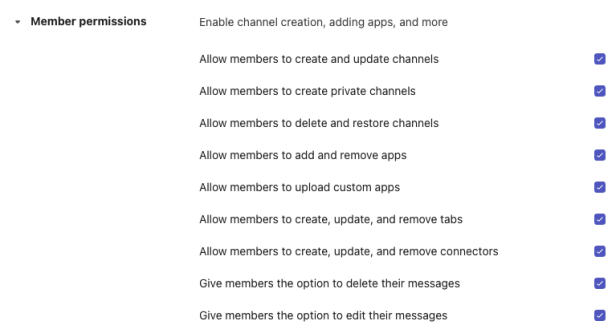
Testing the process of generating a code to allow users to join a group in Microsoft Teams is crucial to ensure a seamless onboarding experience. By testing this functionality, we can evaluate the usability and effectiveness of the code generation process, ensuring that

users can easily obtain and enter the code to join groups without any barriers or confusion.



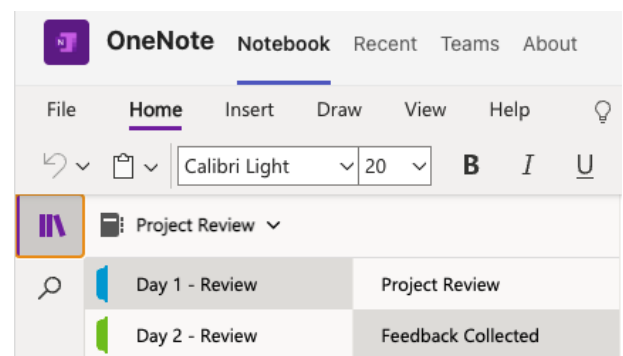
Scenario 3: Granting Admin Privileges

Testing the process of granting admin privileges in a group within Microsoft Teams is crucial to ensure smooth team management. It allows us to evaluate the user experience of assigning administrative roles, permissions, and access levels. By testing this scenario, we can identify any usability issues, security concerns, and ensure efficient administration within the platform.



Scenario 4: Creating and Collaborating Using a Note-Taking Application

Testing the creation and collaboration using a digital document/note-taking application in Microsoft Teams is crucial to ensure a seamless and efficient experience for users. By evaluating this scenario, we can identify any usability issues related to document creation, real-time collaboration, version control, and overall user experience within the application.



Scenario 5: Creating a To-Do List

Testing the creation of a to-do list in Microsoft Teams is important to evaluate the platform’s ability to support task management and organization within a collaborative environment. It allows us to assess the ease of creating, editing, and assigning tasks, tracking progress, and collaborating on shared to-do lists, ensuring a seamless and efficient workflow for users.

<input type="radio"/> Example 3		General / PTD Test 1			...
<input type="radio"/> create a cover page		General / Tasks			...
<input type="radio"/> Finish!		General / Tasks			...
<input type="radio"/> ASDF		General / Tasks			...
<input type="radio"/> Example 1		General / PTD Test 1			...

Scenario 6: Modifying Notification Settings

Testing the modification of notification settings in Microsoft Teams is crucial to ensure users have control over their notifications and can customize their experience. This scenario helps evaluate the ease of accessing and adjusting notification preferences, ensuring users can manage their notifications effectively and avoid unnecessary interruptions or missed messages.

General

Accounts

Privacy

Notifications

Devices

App permissions

Accessibility

Captions and transcripts

Files and links

Email

Missed activity emails

Once every hour

▼

Appearance and sound

Notification style

Teams built-in

▼

Show message preview

Play sound for incoming calls and notifications

Metrics & Measures

This section covers the metrics used for the usability study. In order to get a comprehensive understanding of usability, three types of measures were examined. These include:

- Performance
- Behavioral
- Subjective

Performance Measures

Performance metrics are used to quantify how efficiently users completed given tasks and what the success rate for each task was. These are the performance metrics that we focused on to evaluate the tasks:

- Task Success: Whether the user successfully completed the task
- Time on Task: Time elapsed between start and end of task

To measure success and time of task, we outlined the navigation route for each task. For time, we noted down the average time it takes to complete the task through the optimal route and compared the participants' time with the optimal time. To measure the success rate of tasks, we simply considered whether the participant was able to complete the task or not.

Behavioral Measures

Nuances of their satisfaction level, perceived level of difficulty, expressions, gestures, posture, and body language are considered in the behavioral metrics. This includes an indication of frustration or confidence, observed while the participant completes tasks. These metrics provide a window into understanding the participants experience while completing tasks. Any occurrence that indicates a negative or positive experience with a task, gets recorded by the team. The team records the exact instance that indicates visibly negative behavioral expression by the participant, including showing confusion,

apprehension, anxiety, or frustration. Same applies for positive behavioral expressions such as looking pleased, confident, and relaxed with any task.

Subjective Measures

These measures evaluate how participants feel about something. These are generally reported by the participants themselves. The team will also ask questions when it's necessary to extract information from participants such as whether they felt they were successful at completing the given task, whether they encountered anything they found difficult or confusing, and if they would change something to make the experience smoother and more palatable. These questions help us dive deeper into the participants' personal experience with the program. We also ask participants whether they felt any issues were not addressed by the study that they would like to express. This measure aims to capture their overall subjective opinion of their experience with Microsoft Teams.

Test Facility

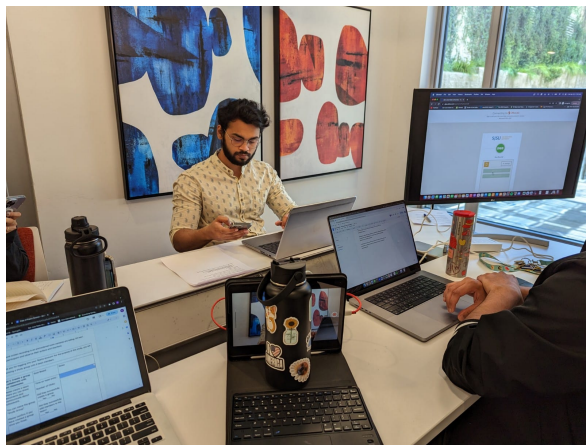
The usability test for Microsoft Teams was conducted in a conference room that was designed for testing purposes. Participants were provided with the address to the location and were asked to report 10 minutes before their session time. At the test facility, all the five researchers were present.

The researchers took up the roles of receptionist, moderator, and data loggers.

Participants were briefed on where they would be sitting during the usability study and the moderator and data loggers placed themselves corresponding to the location of the participant to be able to capture their expressions and body language during the study.



to
to



Participants were also informed about the cameras present in the room. There were three cameras that were recording the participants' expressions and body language during the study. In addition, screen recording was also enabled to monitor the screen movements and hotspots.

At the end of each session, all the researchers conducted a debrief session to talk about findings and cross check data logging, review recording as needed.



Test Team & Roles

Our usability testing team was composed of one moderator, three data loggers, one receptionist, and an A/V personnel. All of the members of the team worked together on recruitment and scheduling.



Researchers who worked on the Microsoft Teams usability study

Researcher	Role
Amanpreet Singh	NT - Behavioral
Anushree Narkhede	Moderator
Gayatri Vasudevan	Audio/Video
Theo Aull	NT - Subjective / Receptionist
Vishakha Joshi	NT - Performance

Receptionist

The receptionist primarily manages administrative and logistical tasks associated with the study. Some of the common responsibilities of a receptionist in the usability study include:

1. **Greeting participants:** The receptionist welcomes participants as they arrive at the usability study location. They provide a friendly and welcoming environment, ensuring participants feel comfortable and at ease.
2. **Check-in and registration:** The receptionist verifies the participants' identities and confirms their scheduled appointment for the study. In addition, the receptionist would request the participants to sign consent forms.
3. **Scheduling and coordinating:** The receptionist ensures that the participants arrive at their designated time slots, coordinating any schedule changes or adjustments that may occur during the study. They may communicate with participating participants to confirm appointments or provide reminders.
4. **Participant Logistics:** The receptionist assists participants with any logistical needs, such as directing them to the study area, explaining the study process, or answering basic questions about the study.
5. **Managing Documentation:** The receptionist may be responsible for managing study-related documents, such as participant pre-study survey sheets and consent forms, and ensure that all documentation is accurately completed and stored securely.

Moderator

The moderator guides the user and oversees the usability testing session, interacting with the participants and managing the overall process. Some of the key tasks performed by the moderator include:

1. **Conducting the session:** During the study, the moderator explains the purpose and process of the study to the participant, establishing a comfortable and welcoming environment. They provide instructions for the tasks to be performed and ensure that participants understand them.
2. **Asking probing questions:** The moderator asks follow-up questions or probe participants to gather deeper insights into their thoughts, experiences, and challenges during the testing process. This helps uncover specific usability issues and gather qualitative feedback.
3. **Addressing participant questions and concerns:** The moderator addresses any questions or concerns raised by the participants during the session, clarifying instructions or providing assistance as needed. The moderator strives to create a supportive and non-judgmental environment.
4. **Maintaining Objectivity:** It is essential that the moderator remains neutral and unbiased throughout the study, avoiding any influence on participants' behavior or feedback. This helps ensure the validity and integrity of the study results.
5. **Debriefing and follow-up:** After the testing session, the moderator may conduct a debriefing session.

Note Taker: Subjective

The NT Subjective captures the subjective opinions, thoughts, and feelings of the participants while the product is benign tested. NT subjective data is qualitative in nature and focuses on the participants' perceptions, preferences, satisfaction levels, and overall user experience. Some key aspects of the role of NT subjective include:

1. **Gathering user feedback:** NT subjective data helps in gathering detailed feedback from participants about their experiences during the usability test. This includes their likes, dislikes, frustrations, ease of use, dislikes, frustrations, ease of use, perceived usefulness, and general satisfaction of the product.
2. **Exploring user expectations:** NT subjective data allows participants to express their expectations and compare their experiences with their initial assumptions or prior experiences. This helps identify any gaps between user expectations and actual usability of Microsoft Teams.
3. **Identifying user needs and preferences:** The NT subjective data can provide insights into the specific needs, preferences, and desires concerning the design, functionality, and features of Microsoft Teams. This information can help in identifying what users consider important and can help guide future design decisions.
4. **Uncovering usability issues:** The subjective feedback from the participants can reveal usability issues that may not be immediately evident from quantitative metrics or objective measures. It helps users identify pain points, confusing aspects, or areas where the product falls short in meeting user expectations.

Note Taker: Behavioral

The NT behavioral observes any behavior that is not directly related to the task being tested but may impact the overall usability of the product or system being tested. Some of the key aspects of the role of NT behavioral testing include:

1. **Behavior Observations:** NT behavioral data involves observing participants' actions, gestures, facial expressions, and body language during the study session. It helps the researchers understand how users navigate through the interface, interact with different elements, and perform specific tasks.
2. **Navigation patterns:** By observing participants' navigation patterns, such as menu choices, clicks, scrolling, or searching behavior, researchers gain insight into how users explore and find information within the product. This information informs the design of intuitive and user-friendly navigation structures.
3. **Error identification:** Observing participants' behaviors allow researchers to identify and analyze any errors or mistakes made during the usability test. This includes observing error messages triggered, incorrect selections, or instances where participants get stuck or confused.
4. **User frustration or satisfaction:** NT behavioral data provides clues about participants' emotional responses during the usability test. Researchers can observe signs of frustration, hesitation, satisfaction, or confusion, which can highlight areas that require attention or refinement in the product's design.

Note Taker: Performance

The NT performance measures and evaluates participants' task performance and efficiency during the testing session. NT performance data provides objective metrics and quantitative measurements that assess the usability and effectiveness of the product.

Some key aspects of the role of the NT performance data include:

1. **Task completion time:** NT performance data captures the time taken by the participants to complete specific tasks within the study. By analyzing the completion time, researchers can assess the efficiency and speed at which users can accomplish their goals using the product.
2. **Error rates:** NT performance data includes the number of errors and types of errors made by the participants during the usability testing. Errors can range from incorrect selection, failed interactions, or unintentional errors that hinder the successful completion of a task.
3. **Success rates:** NT performance data provides insights into the percentage of participants who successfully complete specific tasks. Success rates indicate the effectiveness of the product's design and usability in enabling users to achieve their intended goals. Low success rates highlight areas where the product may require modifications or better user guidance.
4. **Efficiency metrics:** The efficiency metrics evaluate the number of steps, actions, or interactions required by participants to accomplish tasks. These metrics help assess the level of effort users need to exert, the complexity of the task flows, and the overall efficiency of the product's design.
5. **Effectiveness metrics:** The effectiveness metrics evaluate the degree to which participants achieve their goals and complete tasks accurately.

Audio/Video (A/V)

The audio/video personnel in a study responsible for smooth operation of audio and video recording equipment during the testing sessions. A/V plays a crucial role in capturing and documenting participants' interactions, behaviors, and feedback, providing valuable data for analysis and evaluation.

Study Observations and Findings

Novice Users Usability Study Findings

Task Scenario 1: Join an existing teams group

1. Go on Microsoft teams and then log in using your student ID. Complete the two-step authentication on Duo
2. Accept the invitation sent on Microsoft Teams

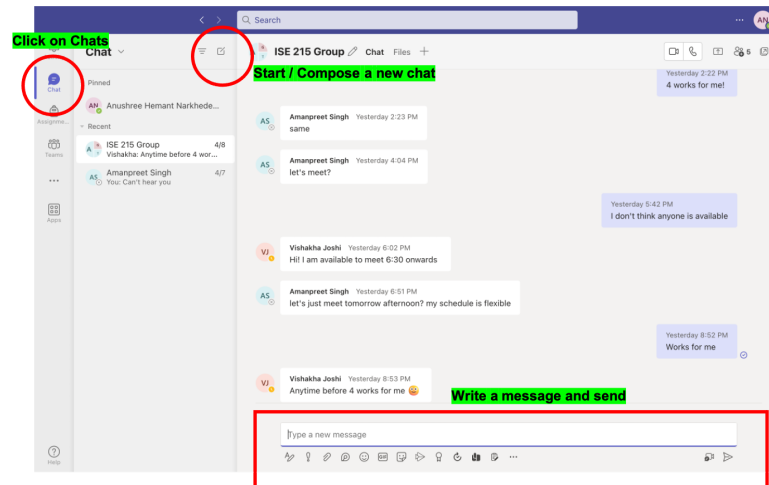
Observations:

P#	Time to Complete	Success in completion	Behavioral/ Performance Analysis	Participant Comments
P1	08:48	Yes (Observed no difficulty) Rate: 2	<u>Behavioral:</u> P1 was confident, but due to some technical issues she was a bit confused and tense <u>Performance:</u> P1 took a long time to find the invite email since it went into her spam mails and that added to the completion time	“It would have been better to receive the group invite in Teams and not through email”
P2	09:00	Yes (Observed no difficulty) Rate: 1	<u>Behavioral:</u> P2 was a little under confident, but completed the task. She was confused and wasn't sure if she is in any group on Teams <u>Performance:</u> P2 had a few technical issues in logging into SJSU email. Logging in Teams part was done smoothly	“The logging in part was straightforward, but I don't know if I have joined a group”
P3	07:50	Yes (Observed no difficulty) Rate: 2	<u>Behavioral:</u> P3 was confident in the process <u>Performance:</u> P3 accidentally opened the app version but we were testing the web version	“The task was okay, basic”
P4	06:45	Yes	<u>Behavioral:</u> P4 was calm, relaxed	“This was basic”

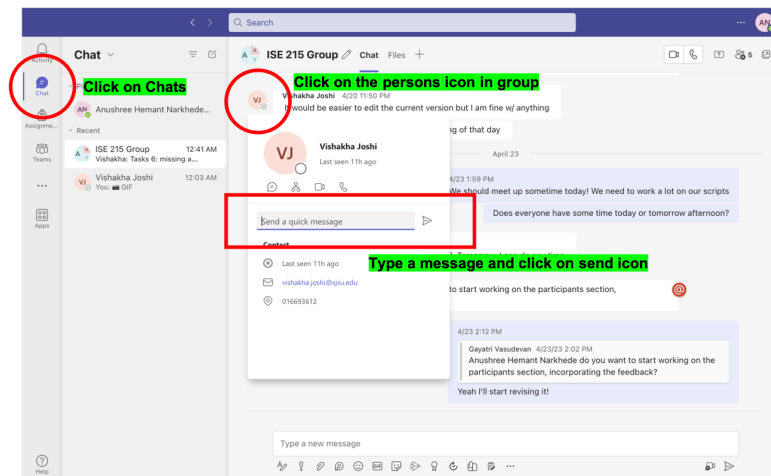
		(Observed no difficulty) Rate: 1	and confident. Had a good smile on face and was curious <u>Performance:</u> P4 completed the task	
--	--	---	--	--

Task Scenario 2: A) Message the Professor on Microsoft Teams

1. Click on the chat icon > search for the professor's name > open chat with him/ her > write a message in the chat box > send the message



2. Another way: Find the person in group chat > click on their name icon > select option of send a quick message > type the message > send



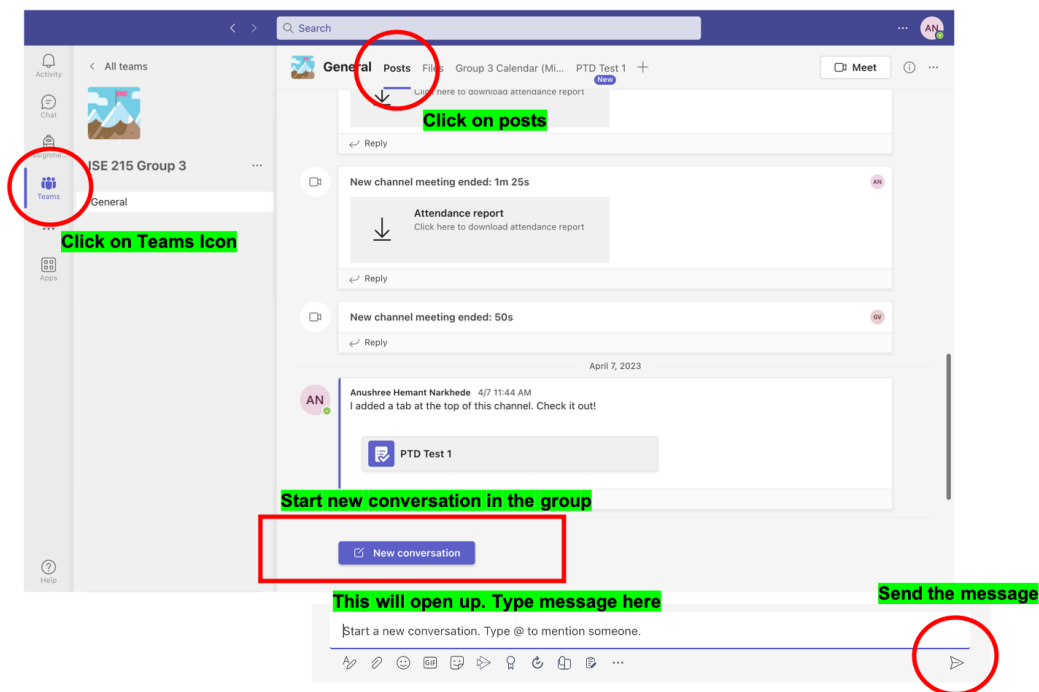
Observations:

P#	Time to Complete	Success in completion	Behavioral/ Performance Analysis	Participant Comments
P1	07:49	No (Observed difficulty) Rate: 3	<u>Behavioral:</u> P1 was confused and wasn't sure if the task was completed. They were clueless where to chat with the professor within Teams / Group <u>Performance:</u> P1 could not complete the task successfully. They posted a message to the entire group/class instead of just messaging to the professor	"I am not sure if I did it right! The messaging and sending part was easy but hard to find where to send a message" "I am not sure if the task is complete"
P2	00:42	No (Observed difficulty) Rate: 3	<u>Behavioral:</u> P2 was confused and looked worried. Was clueless if what they did was right or wrong <u>Performance:</u> P2 could not complete the task successfully. They posted a message to the entire group/class instead of just messaging to the professor	"It might be straightforward but it might be me. I am not good in using tech" "I have sent a message but I don't know if it's sent"
P3	03:04	No (Observed difficulty)	<u>Behavioral:</u> P3 was confused in this task in finding where to send the message. Was confident in writing and sending the message. They thought they completed the task at first but then wasn't sure later <u>Performance:</u> P3 posted a message to the entire group/class.	"I am confused between post and chat. I don't know if it's Microsoft teams use different terms for chat"
P4	02:45	Yes (Observed some)	<u>Behavioral:</u> P4 was confused and was unsure if the task was done or not	"Confirmation would have been good"

		difficulty) Rate: 4	<u>Performance:</u> P4 could eventually complete the task	
--	--	------------------------	---	--

Task Scenario 2: B) Post a message to the class or group

1. Click on teams > Go on posts > Click on start new conversation > Type a message to the class > press enter or click on the send icon



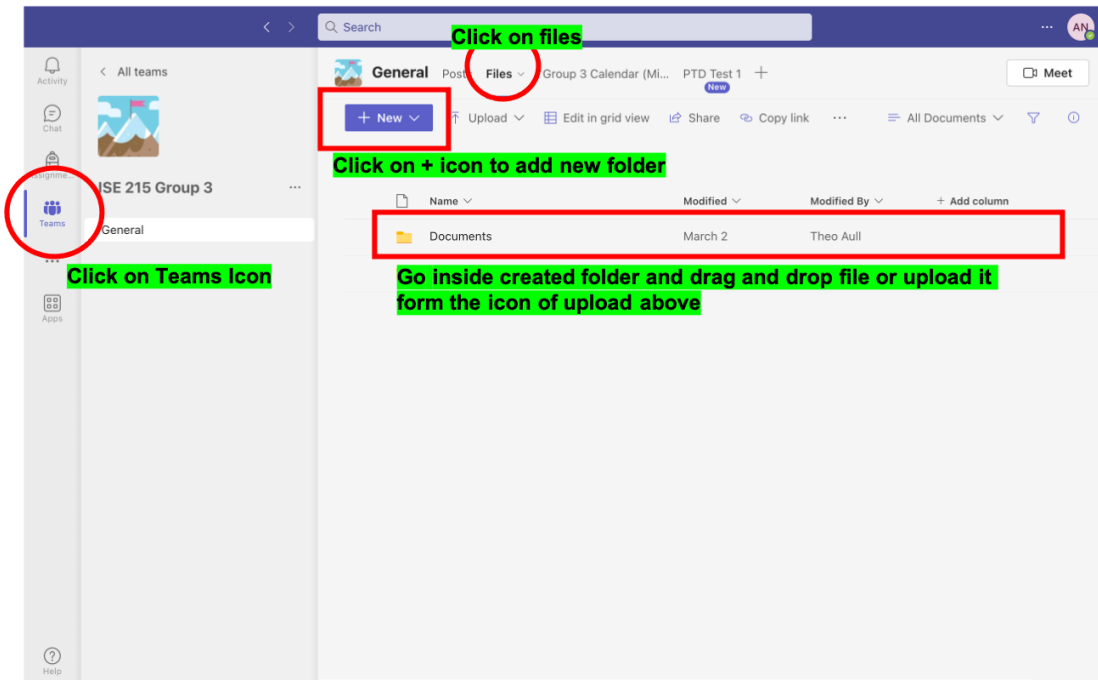
Observations:

P#	Time to Complete	Success in completion	Behavioral/ Performance Analysis	Participant Comments
P1	00:48	Yes (Observed no difficulty) Rate: 2	<u>Behavioral:</u> P1 was confident in performing this task. They could see that the message was sent to the entire group and were satisfied in completion of the task. <u>Performance:</u> P1 completed the	"This was straightforward"

			task with no difficulty. They followed the exact path of navigation and completed the task accurately	
P2	00:28	Yes (Observed no difficulty) Rate: 1	<u>Behavioral:</u> P2 was under confident due to the A part of the task. They were confused in this task as they carried out these navigation steps in the earlier task. <u>Performance:</u> P2 was able to complete the task accurately, following the proper navigation path.	“It was straightforward I guess, but I was confused because I did this in the last task. So now I’m confused which one was right”
P3	00:45	Yes (Observed no difficulty) Rate: 2	<u>Behavioral:</u> P3 was confident in the whole process of this task <u>Performance:</u> P3 completed the task accurately.	
P4	01:45	Yes (Observed some difficulty) Rate: 2	<u>Behavioral:</u> P4 was confident and calm <u>Performance:</u> P4 accurately completed the task	

Task Scenario 3: Create a folder and upload and share a file with others within the group to collaborate

1. Click on teams > Go on files > click on the “+ new” icon > select option to create a folder > name the folder > create a folder > go inside the created folder > drag and drop file/ upload the file from desktop



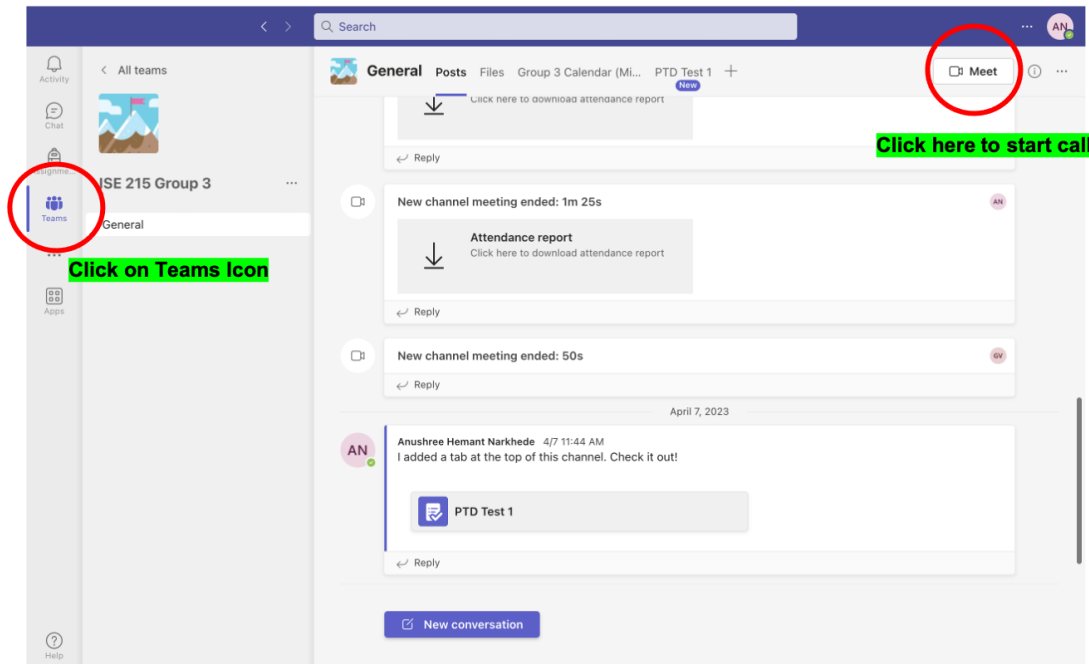
Observations:

P#	Time to Complete	Success in completion	Behavioral/ Performance Analysis	Participant Comments
P1	05:34	Yes (Observed difficulty) Rate: 4	<p><u>Behavioral:</u> P1 was tense, confused and struggling to find files on the screen. Was confused if the task was complete as well. The participant was a lot confused and getting a bit frustrated. Asked for help during task to the moderator</p> <p><u>Performance:</u> P1 completed the task but took a long time. P1 found the file within the team and uploaded the file first and then created a document. They added the uploaded file later into the document. The task was completed accurately, but took a longer path.</p>	"This was the hardest task. I was not sure if the file was uploaded in the file or uploaded separately. I found it very hard"

P2	02:58	Yes (Observed no difficulty) Rate: 1	<p><u>Behavioral:</u> P2 was confused at the start to find the files. They were confident while doing the task and were satisfied by the end of it.</p> <p><u>Performance:</u> P2 was able to complete the task accurately, but went to the main navigation tab and tried to find the files section.</p>	<p>“I was expecting it to be in the main navigation tabs and not within teams but makes sense to keep it inside”</p> <p>“I am not sure if all members can see it or edit it”</p>
P3	03:48	Yes (Observed some difficulty) Rate: 3	<p><u>Behavioral:</u> P3 was confident at the start of the task but was confused in the middle while uploading the file and checking if it was uploaded in the group or not. Found it long and tiring. P3 was confused to know if everyone could see it.</p> <p><u>Performance:</u> P3 found the files within teams. Clicked on “+ New” but ignored creating a folder and directly clicked on uploading the file. The participant uploaded the file and then figured out that they can also create a folder. They created a folder and then dragged the uploaded file in the folder. P3 was not sure everyone can see the file or received any update, so they added a post on the team as well.</p>	<p>“I am not sure if everyone can see it or not. I feel chat would be a good place to share the files and then view the added material above in the files. Making folder was a bit harder”</p>
P4	02:15	Yes (Observed no difficulty) Rate: 2	<p><u>Behavioral:</u> P4 was confident at the start and looked curious</p> <p><u>Performance:</u> P4 completed the task. It was not very accurate but it was done</p>	

Task Scenario 4: Start a meeting with your group

1. Click on Teams > select the desired team/ group > click on the meet icon (Video call icon)



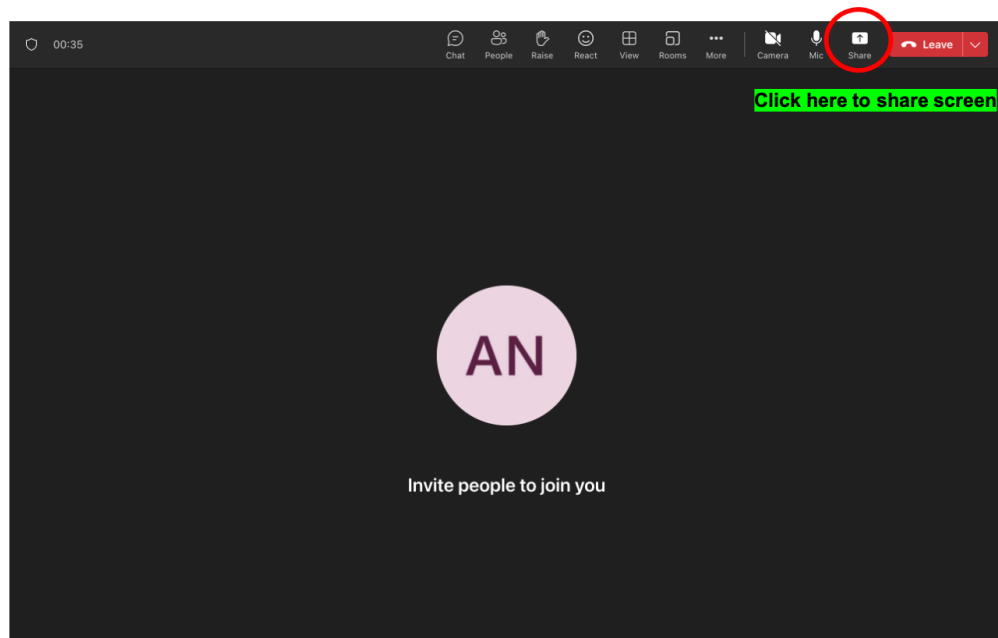
Observations:

P#	Time to Complete	Success in completion	Behavioral/ Performance Analysis	Participant Comments
P1	00:48	Yes (Observed no difficulty) Rate: 1	<u>Behavioral:</u> P1 was confident during this task <u>Performance:</u> P1 went in teams and then clicked on the meet button. It was completed accurately	"It was pretty easy"
P2	00:23	Yes (Observed some difficulty) Rate: 1	<u>Behavioral:</u> P2 was a little confused and lost at the start of the task. Was confident in the end and satisfied after completion. <u>Performance:</u> P2 went on creating	"I think it was straightforward, but I am not so good at using technology. I think I am not

			a new team while figuring out how to call the existing group.	able to do it, but it should be easy”
P3	00:23	Yes (Observed no difficulty) Rate: 1	<u>Behavioral:</u> P3 was confident in the process and was calm and relaxed <u>Performance:</u> P3 was able to complete the task	“The task was very easy and clear”
P4	00:28	Yes (Observed no difficulty) Rate: 1	<u>Behavioral:</u> P4 was calm and relaxed and looked confident <u>Performance:</u> P4 completed the task very easily	“This was fine”

Task Scenario 5: A) Access the share screen feature during a meeting

1. Click on the share screen icon in the meeting > select tab you want to share

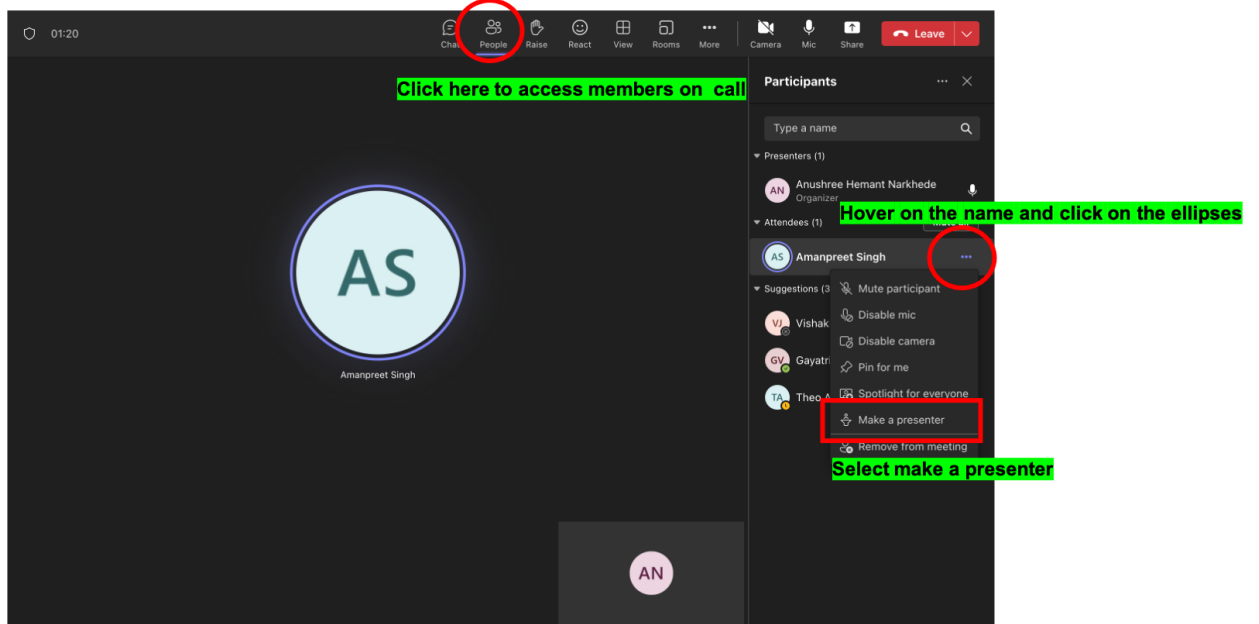


Observations:

P#	Time to Complete	Success in completion	Behavioral/ Performance Analysis	Participant Comments
P1	00:48	Yes (Observed no difficulty) Rate: 1	<u>Behavioral:</u> P1 was confident at the start and shared the screen but was not sure if she did. P1 was confused as to which tab was being shared. <u>Performance:</u> P1 completed the task successfully and shared the screen that was supposed to be shared	"It was pretty standard. It would have been better to get confirmation"
P2	00:34	Yes (Observed no difficulty) Rate: 1	<u>Behavioral:</u> P2 was confident and comfortable with the task <u>Performance:</u> P2 clicked on the share screen icon and selected the tab that was supposed to be shared accurately.	"It was not hard"
P3	00:42	Yes (Observed no difficulty) Rate: 2	<u>Behavioral:</u> P3 was confident and relaxed at the start and knew what was supposed to be done. They were a little confused in the end, as to which tab is being shared. <u>Performance:</u> P3 could complete the task accurately	"The task was okay, basic"
P4	00:53	Yes (Observed no difficulty)	<u>Behavioral:</u> P4 was confident <u>Performance:</u> P4 completed the task accurately	"This was not that hard"

Task Scenario 5: B) Provide access to group members to share screen

1. Click on people (in the meeting) > click on the individual(s) you want to make presenter > click on the ellipses (on the individual person) > click on make presenter



Observations:

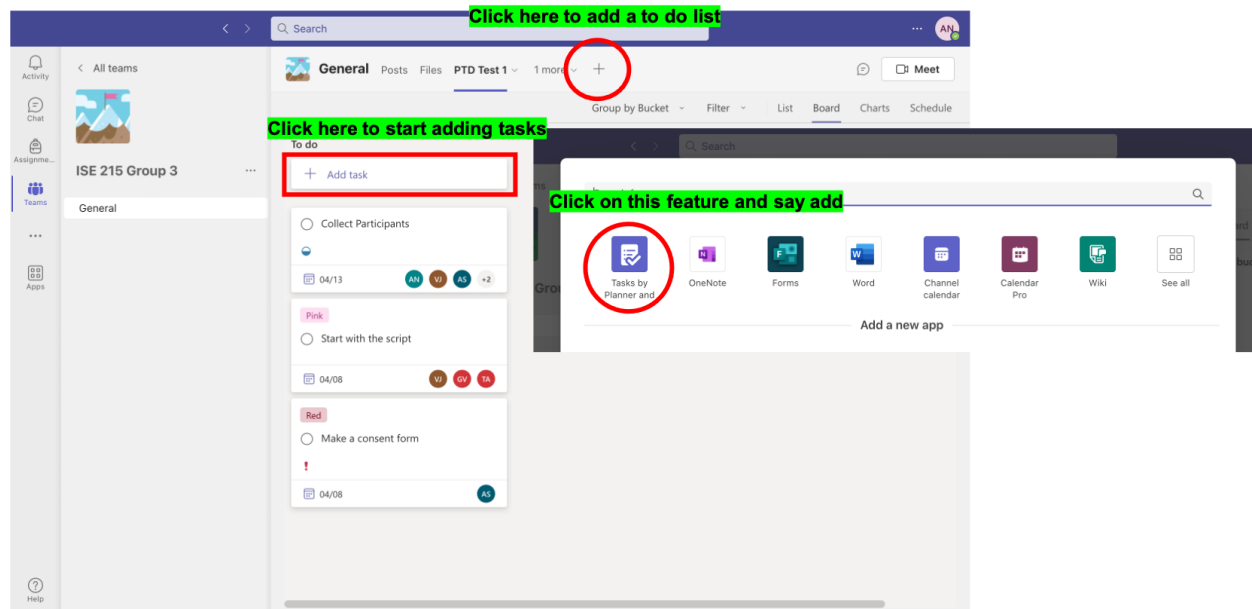
P#	Time to Complete	Success in completion	Behavioral/ Performance Analysis	Participant Comments
P1	07:34	No (Observed difficulty) Rate: 5	<p><u>Behavioral:</u> P1 was very frustrated in this task. P1 was enthusiastic at the start of the task but ended up feeling bad, frustrated, irritated and dumb.</p> <p><u>Performance:</u> P1 was not able to complete the task. P1 was looking for an option near the share screen option and the ellipses around. The expected feature was to allow everyone to present</p>	"It was so hard. I was expecting something like Zoom where you can allow others to share form the share screen feature"
P2	08:32	No (Observed difficulty)	<u>Behavioral:</u> P2 was tried for a long time to figure out how to allow sharing. They started out being	"It was the hardest task. I am pretty sure it

		Rate: 5	positive but the participant was frustrated <u>Performance:</u> P2 clicked on the share screen and hovered around it a lot to search for an option to allow others to search. P2 also tried changing general settings-trying to find manage settings for presenting screen	is a straightforward task but I think I am not being able to access it"
P3	09:38	No (Observed difficulty) Rate: 5	<u>Behavioral:</u> P3 was frustrated and irritated and wanted to give up the task. <u>Performance:</u> P3 also hovered around screen sharing and the ellipses next to it.	"I think this was the hardest task, but the task seems straightforward otherwise"
P4	08:38	No (Observed difficulty) Rate: 5	<u>Behavioral:</u> P4 was frustrated and irritated with the task and wanted to give up <u>Performance:</u> P4 was also hovering around the screen share feature and gave up	"This was really frustrating"

Task Scenario 6: A) Create a to do list

B) Mark to do list complete

1. Click on "+" icon on the main navigation tab > Click on tasks by planner > Create a plan > Add Task > Assign a task > Set priority
2. Click on ellipses > open to do list > open task assigned to you > mark complete



Observations:

P#	Time to Complete	Success in completion	Behavioral/ Performance Analysis	Participant Comments
P1	02:45	Yes (Observed no difficulty) Rate: 2	<u>Behavioral:</u> P1 was confused in this task and looked lost <u>Performance:</u> P1 was clicking on all the other features offered by Microsoft Teams. P1 could mark the assigned task complete	"It was not that bad, but I was confused while finding it"
P2	01:48	Yes (Observed no difficulty) Rate: 1	<u>Behavioral:</u> P2 was confident in this task <u>Performance:</u> P2 could add the tab successfully and did it with really few errors. P2 could also mark the assigned task complete	"It was pretty straightforward"
P3	01:23	No (Observed difficulty)	<u>Behavioral:</u> P3 was frustrated and irritated and wanted to give up the task.	"I feel this was really frustrating. Also I don't know if we will

		Rate: 5	<u>Performance:</u> P3 also hovered around the more apps feature and could not figure out a way to add to- do list on the group. P3 could mark the assigned task complete.	need this feature”
P4	01:15	Yes (Observed no difficulty) Rate: 4	<u>Behavioral:</u> P4 was confused at the start but was confident later on <u>Performance:</u> P4 was also hovering around various other features offered by Microsoft but figured out later to add a to do list. P4 could mark the assigned task complete	“I was confused at the start and it is a bit complicated. But this feature is really cool. I would use it”

Severity Analysis of Novice Tasks

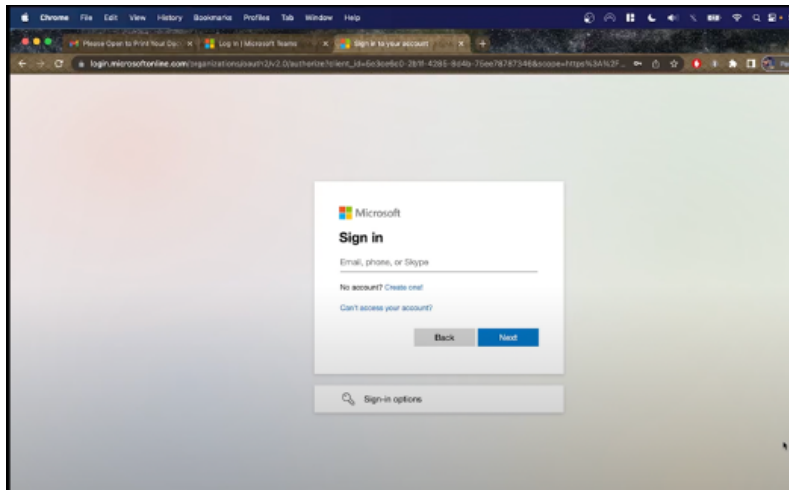
Experienced Users Usability Study Findings

Task Scenario 1: Sign up by using a web application. Create a team name “Study Group.”

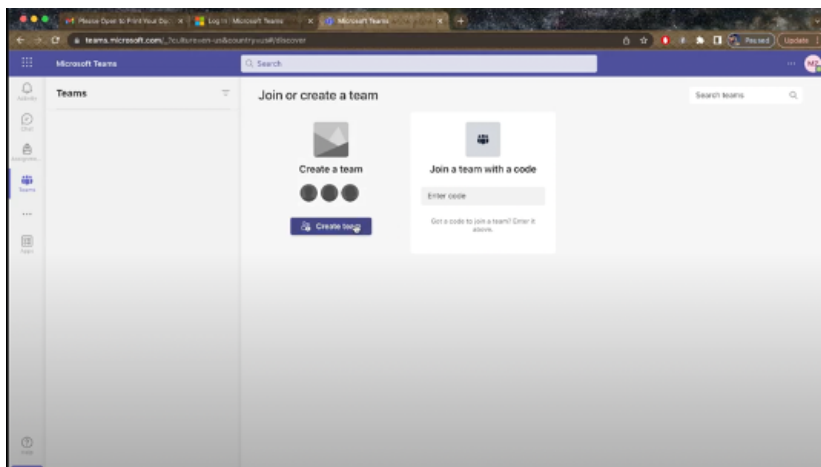
Participants were asked to log in and create a team named “Study Group.”

Performance Data by Task

Goal Tasks	Time Taken (Minutes, Seconds)	Success Rate
Sign up and using the web application	1	100%
Create a team for the group named “Study Group.”	0:18	100%



Step 1



Step 2

Observation

Overall, the participants who performed these tasks did not have any trouble completing the tasks and did not demonstrate any signs of difficulty while completing these tasks

P#	Time (Minutes)	Success	Behavior/ Comments
----	----------------	---------	--------------------

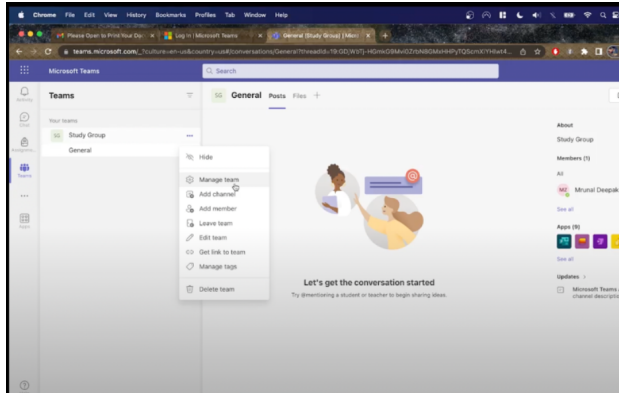
1	1	Yes (No observed difficulty)	Give these tasks a 1 for being easy.
2	1:30	Yes (No observed difficulty)	Give these tasks a 1 for being easy.

Tasks 2: Generate a code, message members and verify that they are in the chat

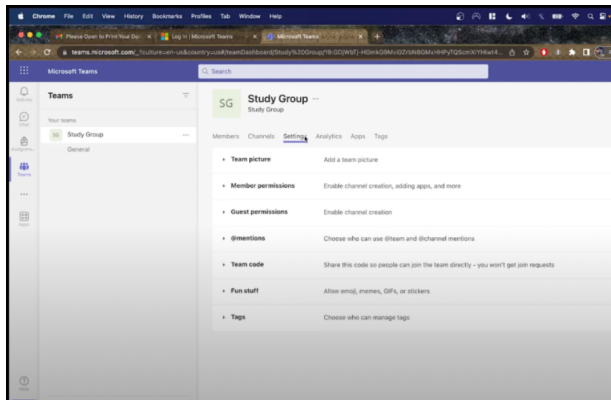
For these tasks, participants were asked to generate a code for their team members and verify that they were in the group. After each task, we asked them to rate the tasks from scale 1 to 5 (1 being the easiest and 5 being the hardest). We compared their verbal responses to the amount of time it took for them to find a feature. Determining if they were actually successful based on the actions they were taking versus what they rated the tasks.

Performance Data by Task

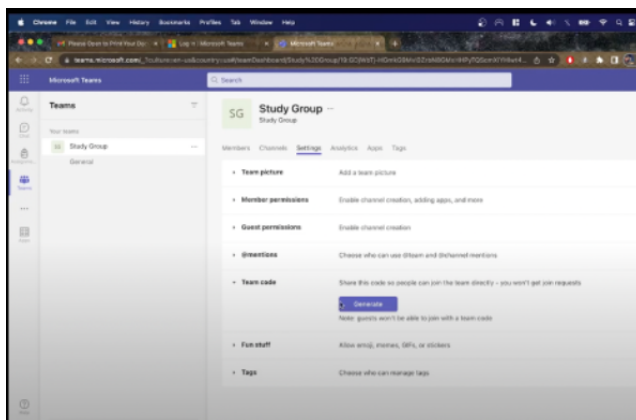
	Time Taken (Minutes, Seconds)	Success Rate
Generate a code	2:42	50%
Messaging the members and verifying that they are in the group	1:07	100%



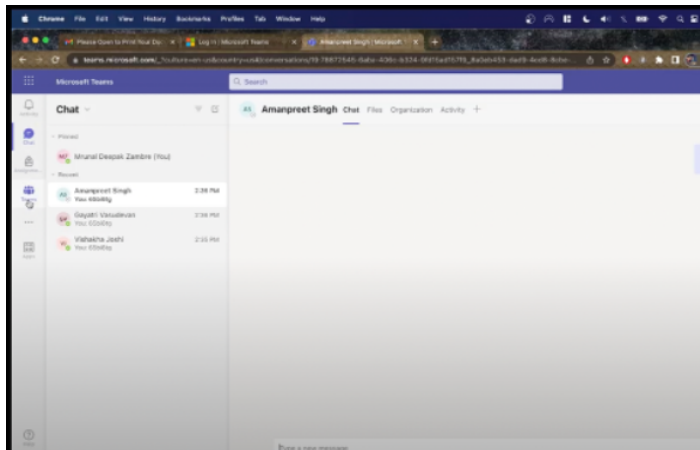
Step 1



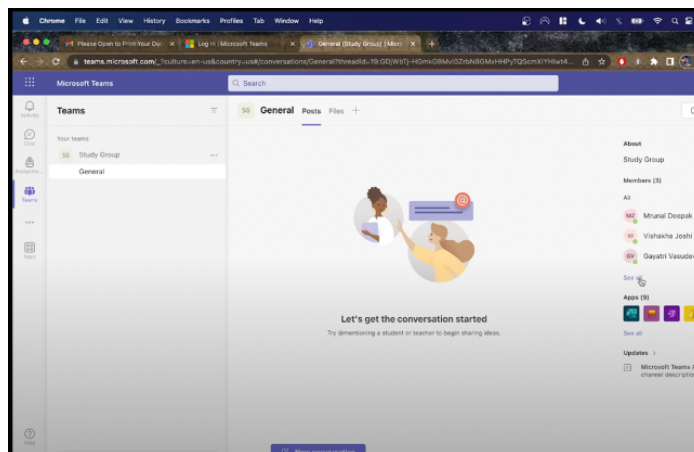
Step 2



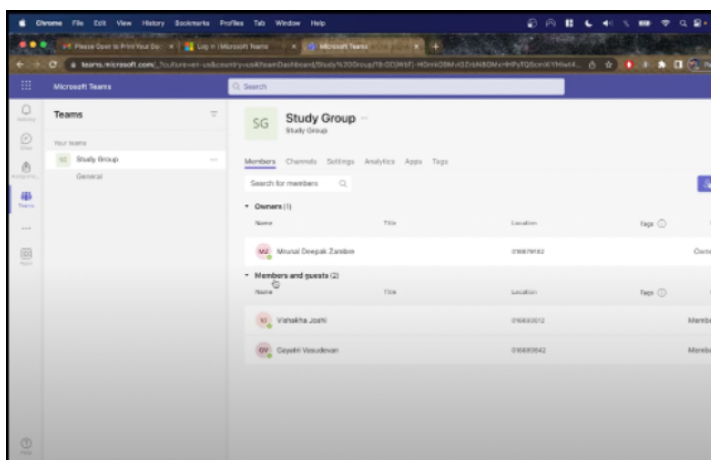
Step 3



Step 4



Step 5



Step 6

Observation:

Usability Testing

Amanpreet Singh, Anushree Narkhede, Gayatri Vasudevan, Theo Aull, Vishakha Joshi

Participants were trying to find the setting for the teams they made. The successful participant was at the web application's left-hand corner, clicking on edit teams, and commented, “not sure where to get the code.” Clicked on “Edit Teams” twice to figure out where the code would be. When the participant clicked on the “manage team,” they went to settings and found the code there.

P#	Time (Minutes)	Success	Behavior/ Comments
1	2:42	Yes With great difficulty	P1 wasn't sure about generating code. She did not have to make the group public to get the team code. Mentioned it will be easier if team code was in a dropdown.
2	2:00	No (Did not generate the code)	P2 said it was easy but was not successful. Added members via email address which was not the task. They did confirm that they could see the members being added.

Recommendation:

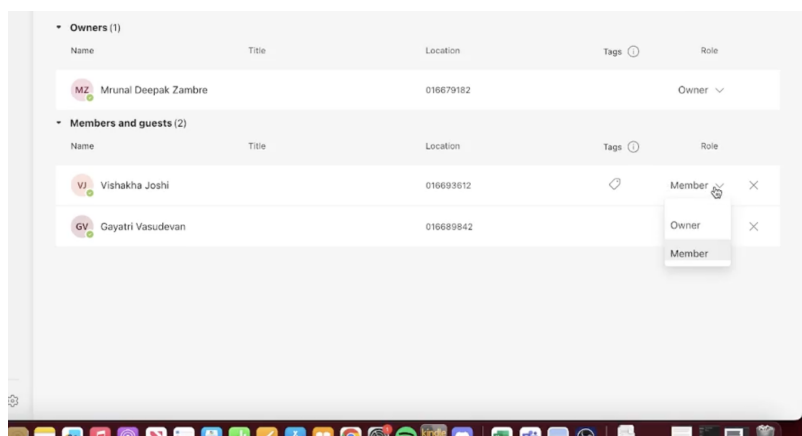
Findability refers to the consideration of design where the users are able to identify and access the features without difficulty. Participants could not locate and generate a team code for their members. According to the Gestalt principle of closure, “generate team

code” would be appropriate to add above or below “get a link to the team.” The second most popular click was the edit team from the menu. Users often transfer expectations and knowledge from one platform to another. Typically, major platforms display generating code or a link in settings. The absence often leads users to search and wonder where to generate a team code. Having it on “edit team” would reduce cognitive load and less frustration on the participants’ part.

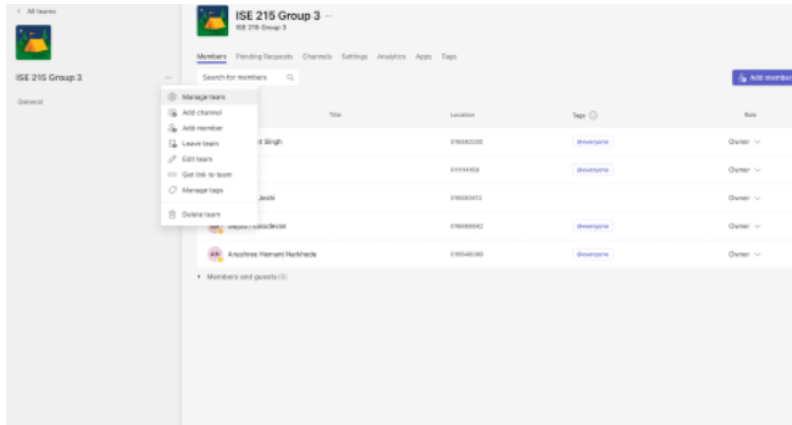
Tasks 3: Make a member an admin. Give a team member member/guest permission to the admin

Performance Task by Data

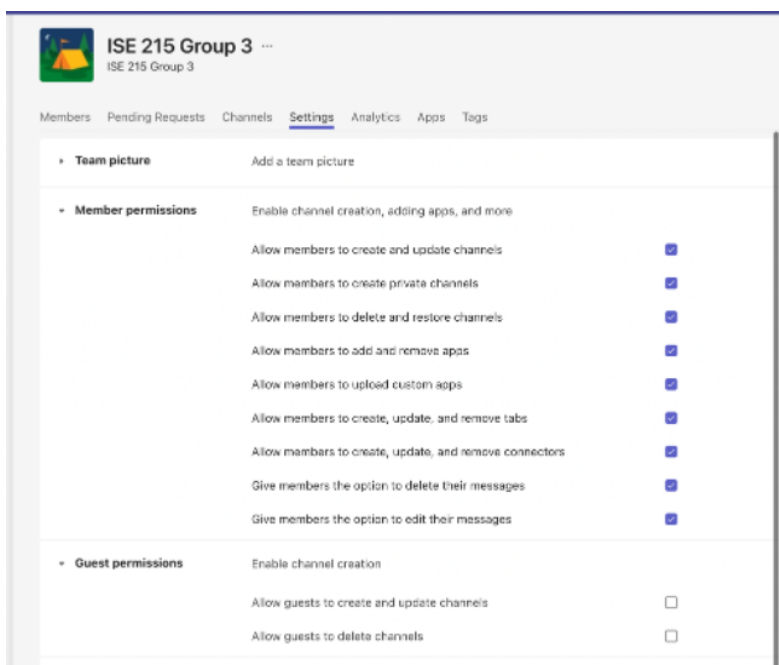
	Time Taken (Minutes, Seconds)	Success Rate
Make a member and admin and give member/guest permission to the admin	1:06	25%



Step 1



Step 2



Step 3

Observation:

One of the participants was unsuccessful in making one of the group members an admin. They stated that they were looking for the edit button near the member's name, like how Google Docs have it when trying to share the docs for editing with someone. The other participants successfully made a member an admin but did not give them full permission.

In order to give full admin access, one has to give members and group setting in. The participant only gave a member setting but not a group setting.

P#	Time (Minutes)	Success	Behavior/ Comments
1	1:06	Yes (with great difficulty)	The participants confirmed that she gave admin rights to a member. However, she gave partial admin rights as she forgot to check the group setting. She rated this as easy. Recommended to have a separate admin setting. It's confusing between group and members.
2	1:30	No	The participants did not complete the tasks. He was very tense and kept clicking around. Commented that it would be nice to have an edit option like Google doc near each member.

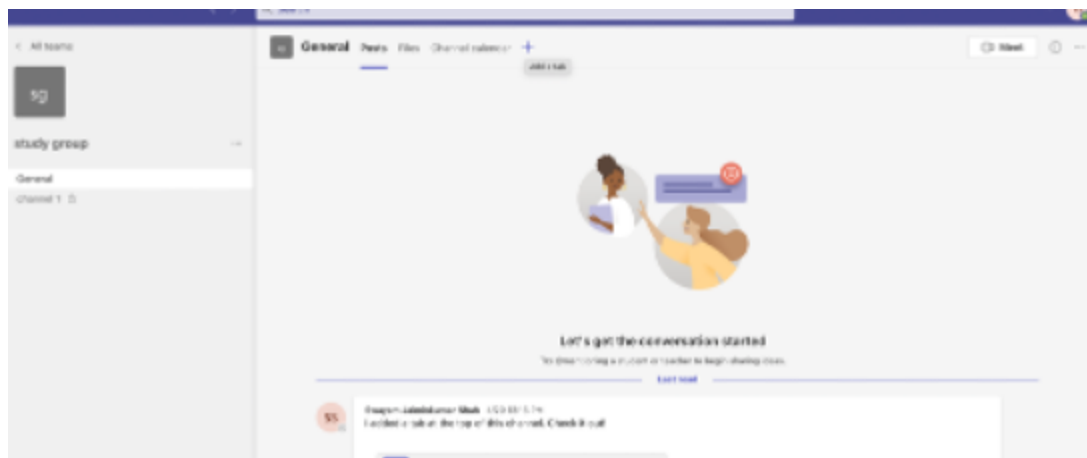
Recommendation

Terminology is very important to the users. Users are more familiar with “admin” or “owner” than “members and guest,” although the two of them can have different meanings on software application. Utilizing the term “admin” can be more consistent with the expectations of novice to experienced users.

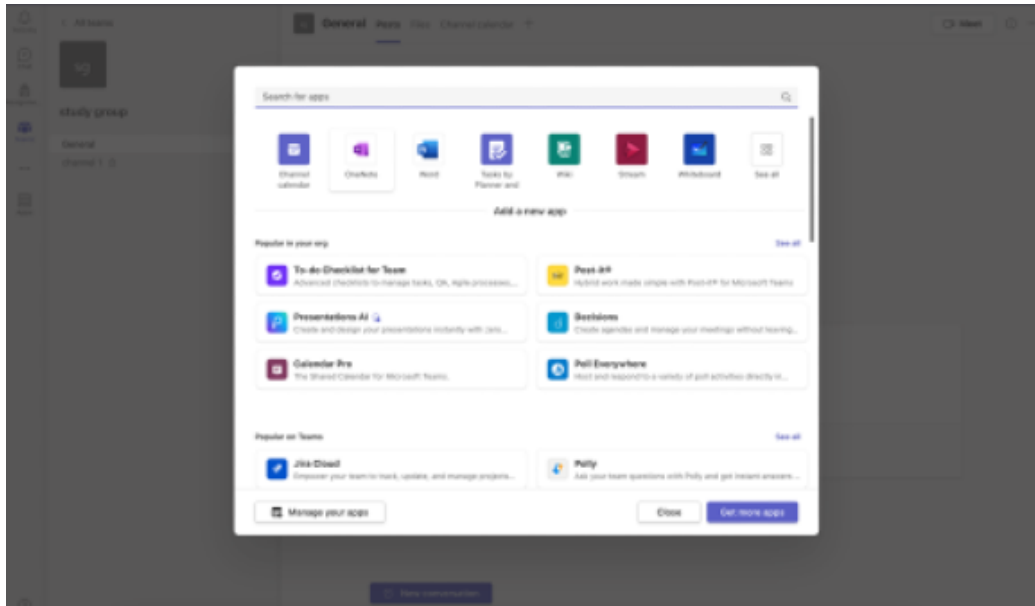
Tasks: Create a digital document using a note-taking application

Performance Data by Task

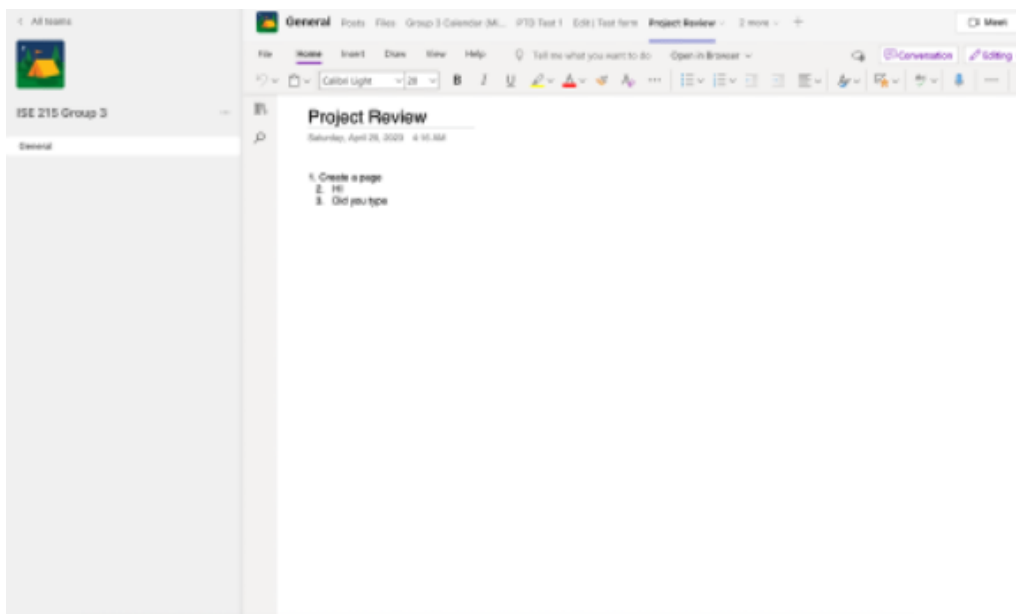
	Time Taken (Minutes, Seconds)	Success Rate
Create a digital document using a note-taking application	4:00	100%
See changes that other members have made to doc	5:23	50%



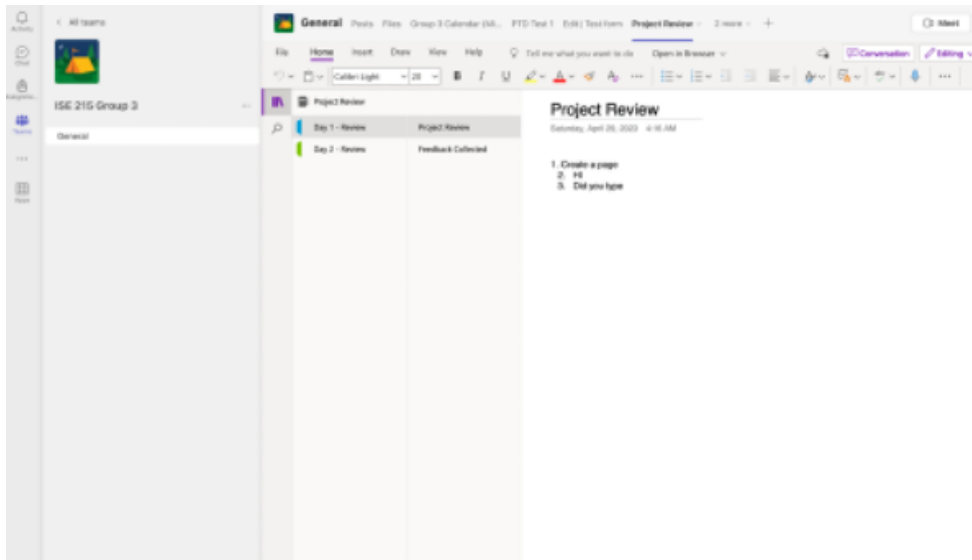
Step 1



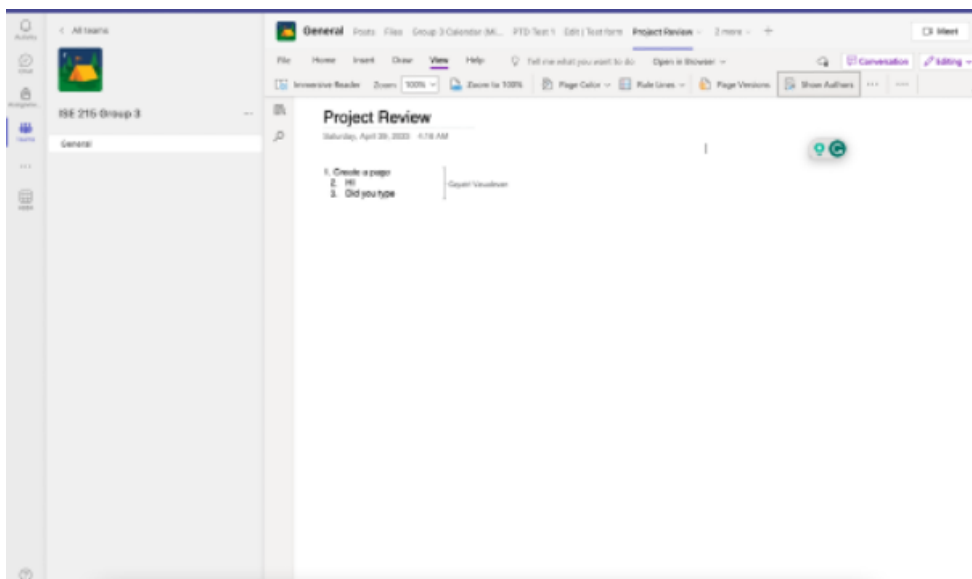
Step 2



Step 3



Step 4



Step 5

Observation:

One of the participants was unsuccessful in making one note for collaboration. They created the one note successfully but were doubting themselves and looking around to

see how other members would change the documents. The participants were getting frustrated as time went on and tapped out of the entire scenario. Both participants searched “One Note” in the search app. They followed the steps as it was prompted to name the one note. One participant successfully added pages and sections to the one-note for others to see. However, they struggled to see who made the changes in their documents. Their first instinct was to go to settings, but there was no setting in one note. They tried to hover and click on the over text multiple times as they were trying to see if a name would appear like in Google Docs. They searched for “history,” but that yielded no results. They searched “view,” and the tab view showed up. They easily found out about show authors that told them who made the changes.

P#	Time (Minutes)	Success	Behavior/ Comments
1	3:43	Yes (with great difficulty)	The participant was not afraid to click around and search directly using the keyword. They made a suggestion that when looking at who made the changes like google Docs it would be nice to know when hovering over the text. They mention that it would be nice if there were something on a higher level for who made the changes.
2	5:45	No (Did not complete the task)	The participants did not complete the tasks. They were very tensed and kept clicking around. They seem nervous about exploring and were concerned that the document was not shared with the team members. Suggested they would love to have a notification.

Recommendation

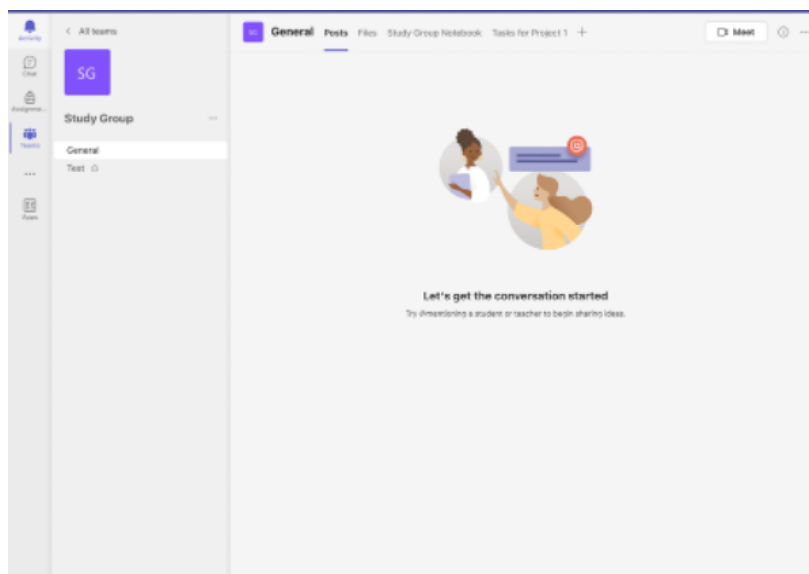
Cognition is recognized than recalled is an HCI principle, where reducing cognitive load on users will lead to higher user satisfaction. One note created in the teams channel is automatically shared with other members of the team. Notifications of when a new document such as one note is created will help other team members to be in loop and

avoid any confusion. We recommended to make it easier for users to see who made the changes. Like Google docs, making users visible to other team members ease up the collaboration process and know where the changes are being made in real time.

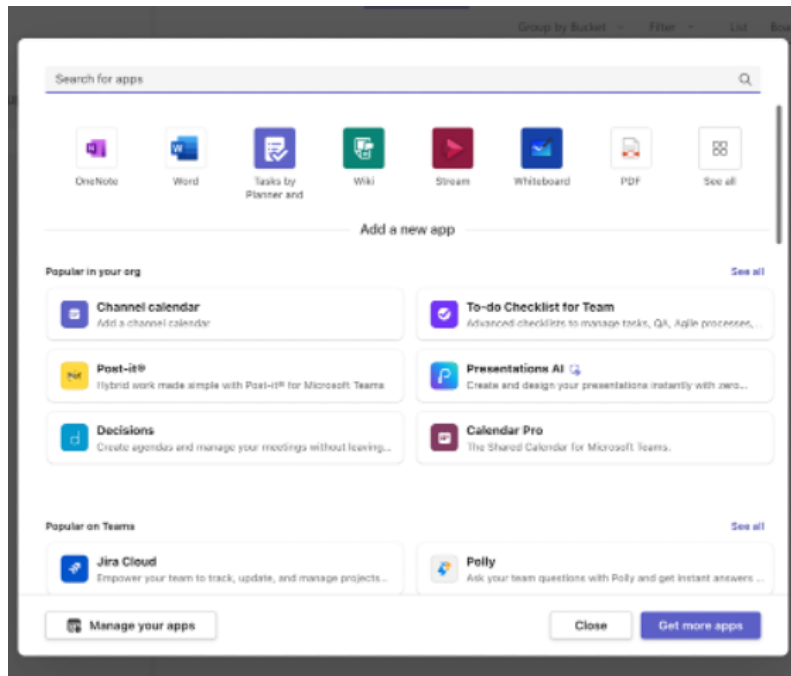
Tasks 5: Create to-do list tasks and assign them

Performance Data by Task

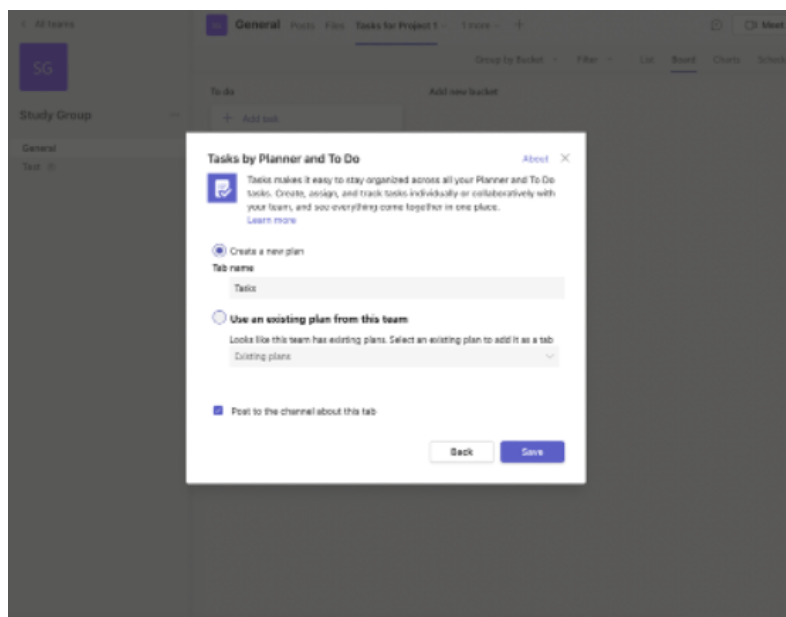
	Time Taken (Minutes, Seconds)	Success Rate
Create to- do list	4:03(1) 6:39 (2)	50%



Step 1



Step 2



Step 3

The screenshot shows a task management application. On the left is a 'To do' sidebar with a list of tasks: 'test', '05/25', 'Example 1' (dated 06/13), 'Pink', 'Example 2' (dated 04/08), and 'Completed tasks'. The main area displays a task form for 'Vishakha Joshi'. The form has the following sections:

- Task Info:** 'Add label', 'Bucket' (To do), 'Progress' (In progress), 'Priority' (Medium), 'Start date' (05/02/2023), 'Due date' (05/25/2023), and 'Repeat' (Does not repeat).
- Notes:** A text area with the placeholder 'Notes' and a 'Show on card' checkbox.
- Checklist:** A section with 'Add an item'.
- Attachments:** A section with 'Add attachment'.
- Comments:** A text area with the placeholder 'Please complete'.

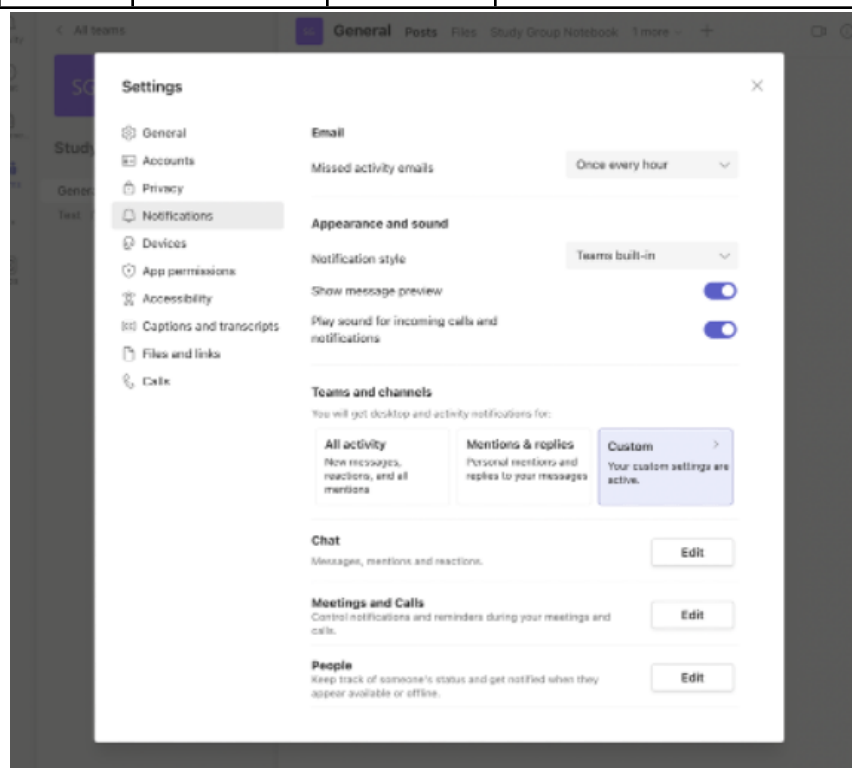
A 'Send' button is located at the bottom right of the form. A small green circular icon with a white 'G' is visible in the bottom right corner of the form area.

Step 4

Observation:

One of the participants was unsuccessful. They created a calendar instead of a to-do- list. Other expert participants completed the tasks successfully. They mistakenly created an additional task but could not figure out how to remove it. There are links right above the tasks that they hovered over, but none of the options were appropriate, according to them. When they accidentally scrolled horizontally, they saw the “x” button that lets them remove the tasks.

P#	Time (Minutes)	Success	Behavior/ Comments
1	4:03	Yes	The participants did complete the tasks by creating and assigning them to their team members. Participants accidentally created additional tasks but were having difficulty removing it. When they accidentally scrolled horizontally, they saw the X button. They suggested that clicking on the tasks was not intuitive and would like to have a button there instead to edit.
2	5:39	No (Did not complete the task)	The participants did not complete the tasks. Instead, they created a calendar task that they could share with the channel. They could not figure out how to assign dates on the calendar. They gave up on the tasks midway but confirmed with the moderator that they have completed the tasks.

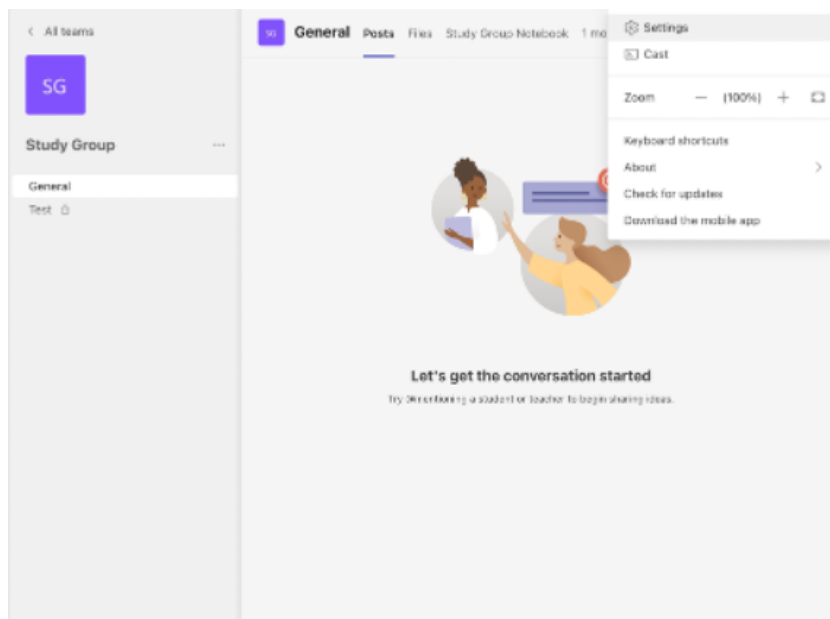


Recommendation

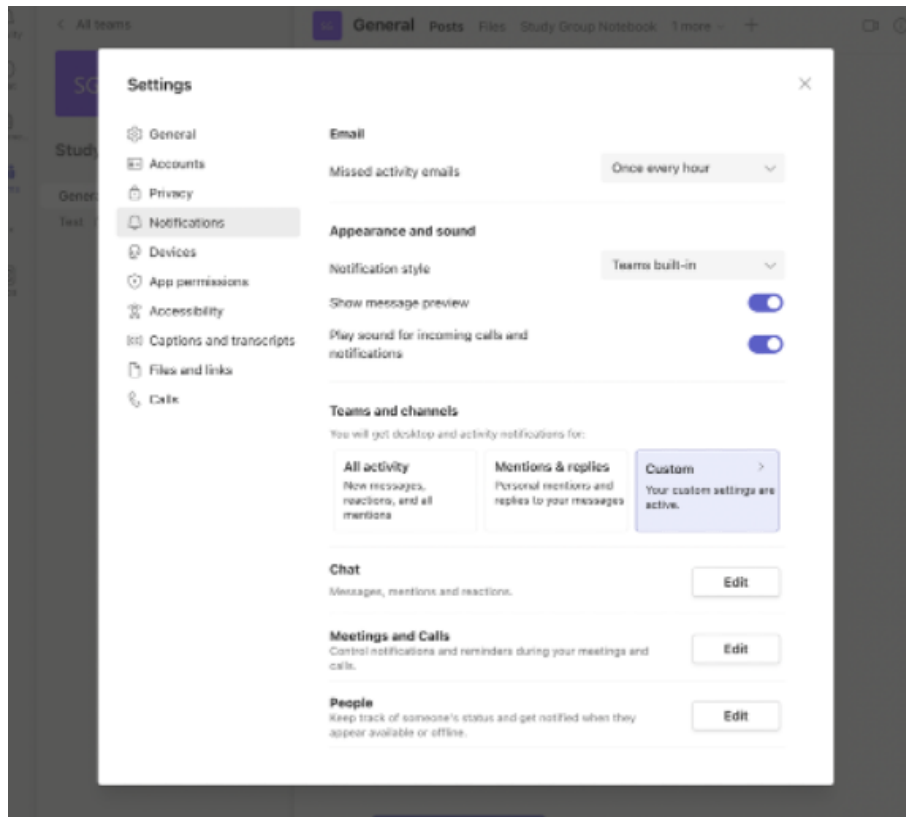
According to the Gestalt principle of conformity, users seek out the same type of UX and UI because of their mental model when it comes to collaboration tools. Horizontal scroll and hiding the close button is not ideal and creates confusion. Another suggestion we like to make is when updating a task a button or a hyperlink would be better than a plain text. A plain text in most collaboration tools means it's not clickable. These suggestions are based on the user's mental model of software application.

Tasks 6: Missed Activity Email notification

	Time Taken (Minutes, Seconds)	Success Rate
Missed Activity Email notification	2:15	100%



Step 1



Step 2

Observation:

Both participants were successful in their tasks for email notifications. One of the participants said that it would be great if Microsoft Teams would add group-level notifications. They would love to mute one group but have more notifications for another group.

P#	Time (Minutes)	Success	Behavior/ Comments
----	----------------	---------	--------------------

1	3:12	Yes With no difficulty	The participant first went to the group-level setting but did not find any setting. When prompted to think about other places they found the global setting. They suggested that they would like to have a notification setting at the group level. To be able to mute one group but still get email notification for others.
2	1:18	Yes With no difficulty	The participants did the tasks successfully just as we anticipated. They did not had anything to add.

Recommendation

Both participants were successful, we like to suggest a separate notification based point raised by one of the participants. Most collaboration tools such as slack, have two levels of notification settings. At a group level, users can change a group setting, choosing to not receive notification frequently but can change setting for another group with higher frequency.

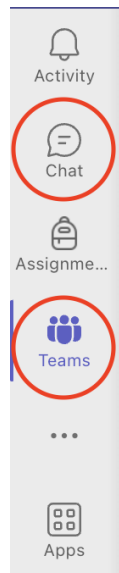
User Interface Based Findings

After evaluating the program based on goals that a user aims to accomplish, a thorough screen by screen analysis was conducted with the current software interface. This unearthed many usability issues through all the user flows that were evaluated. The goals and tasks allowed us to uncover both global and local usability issues. Goal based problems discovered through scenarios were a byproduct of unintuitive user flows, but interface based evaluation is more specific to interactable elements of the program within those user flows.

This section documents all those issues in detail through providing visual examples and explanations. It is followed by a discussion and analysis to interpret the root cause of these issues. The problems are also gauged on a scale of low, medium, high in terms of severity of impact on the quality of product.

Send a Chat Vs. Make a Post

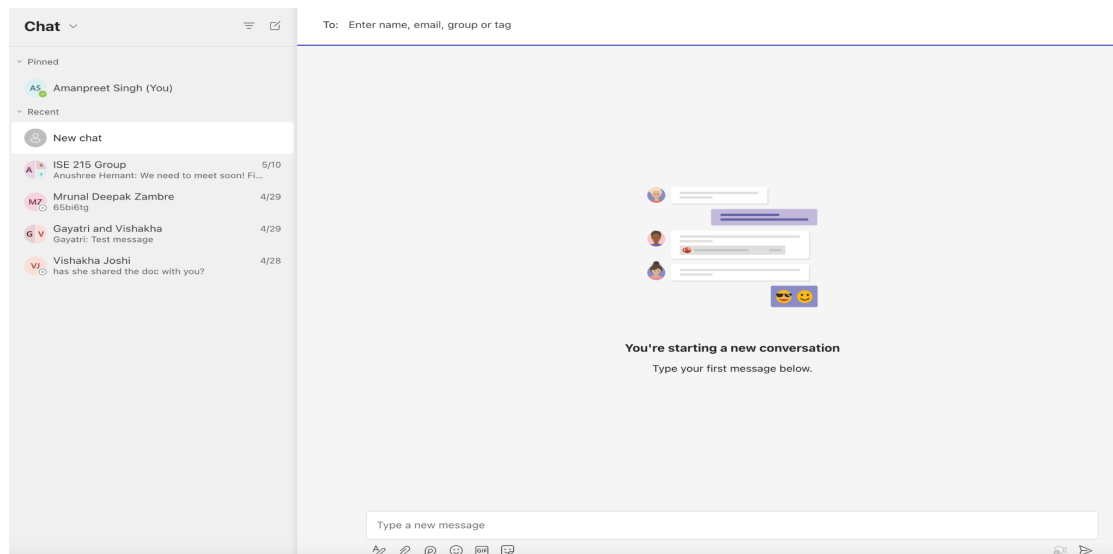
As discovered through goal based findings, there was confusion about sending a private message to a person vs. making a public post to the entire group.



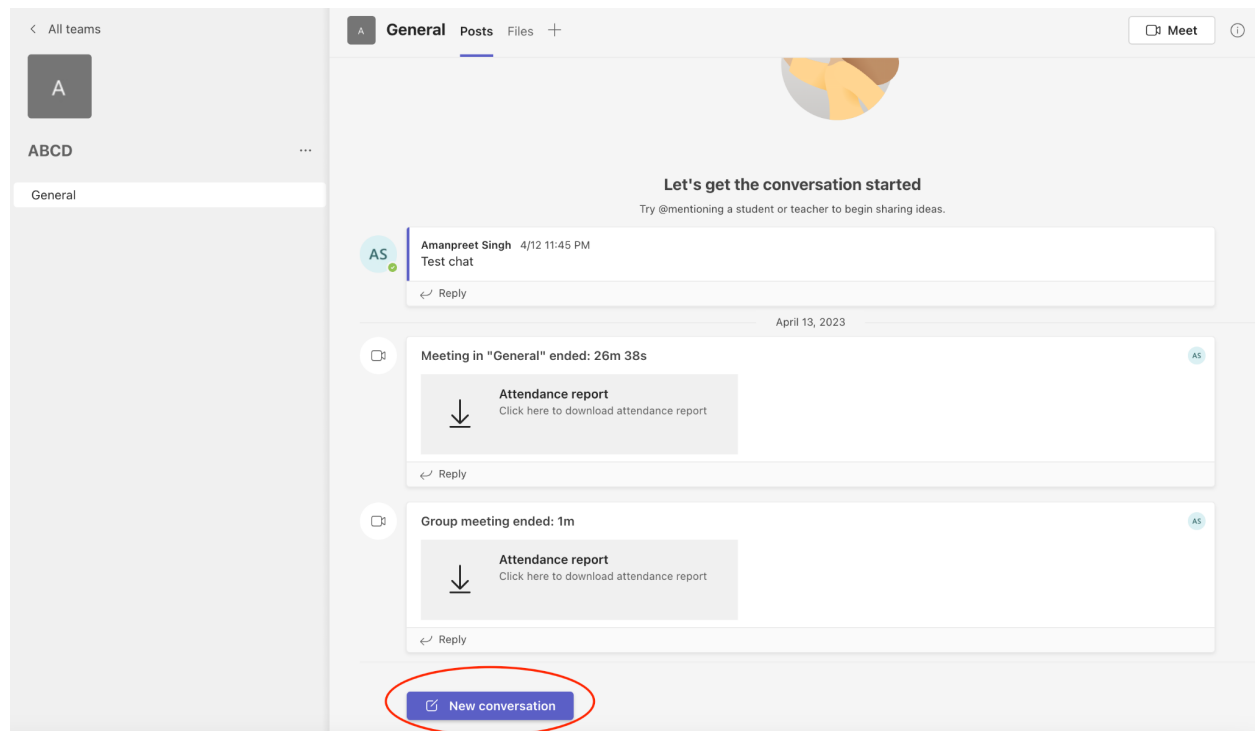
Global elements on the left side of the program allow users to either go to the chat tab to engage with one person or a group. On the other hand, the teams tab allows the user to make a public post to the entire group.

There was confusion about this with ___ participants in the study due to lack of clear indication as to the differences between the two.

This is how the chat tab looks.

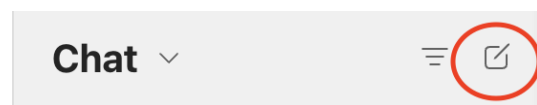
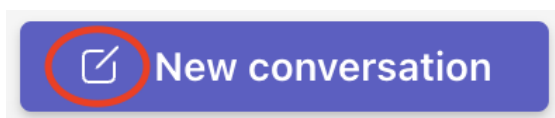


This is how the group post area looks.



A participant reported that the “New conversation” button implied this area was for chat and did not realize that they created a post that was sent to the entire group. They only realized this after they had completed the action. This is due to faulty design and not misaction by the participant because that is the implied Affordance of that button if someone has no prior experience with this program.

The icon on the “new conversation” button to make a group post under “teams” tabs is exactly the same as the icon under the “Chats” tab to initiate a private or group chat.

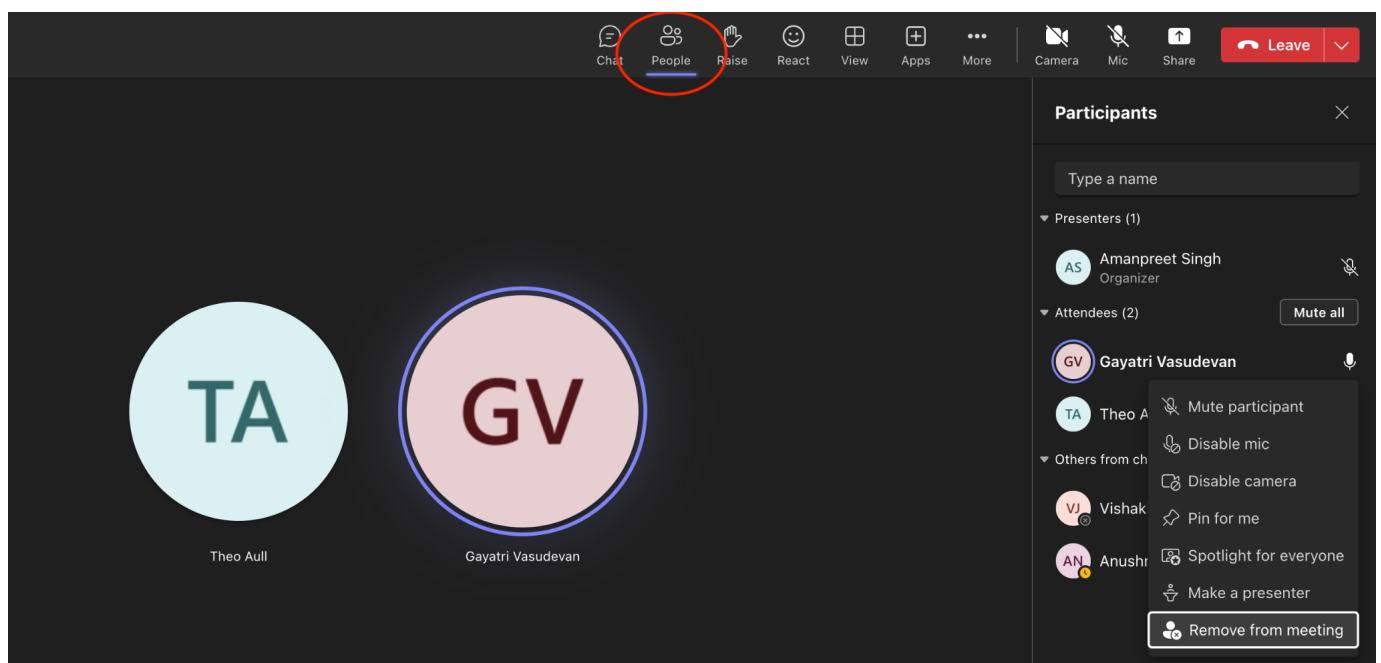


Share Screen Access

The ability to give members of a meeting to allow sharing their screen is a key feature of collaborative software such as Microsoft Teams. No participants in the study were able to provide screen sharing access to members of the call. Poor design of this feature in the interface was a big hindrance for the participants.

This problem is rooted in the design of the program. The steps necessary to provide screen share stray heavily from the conventional process adopted in other video conferencing software making the user abandon their preconceived mental model of the process.

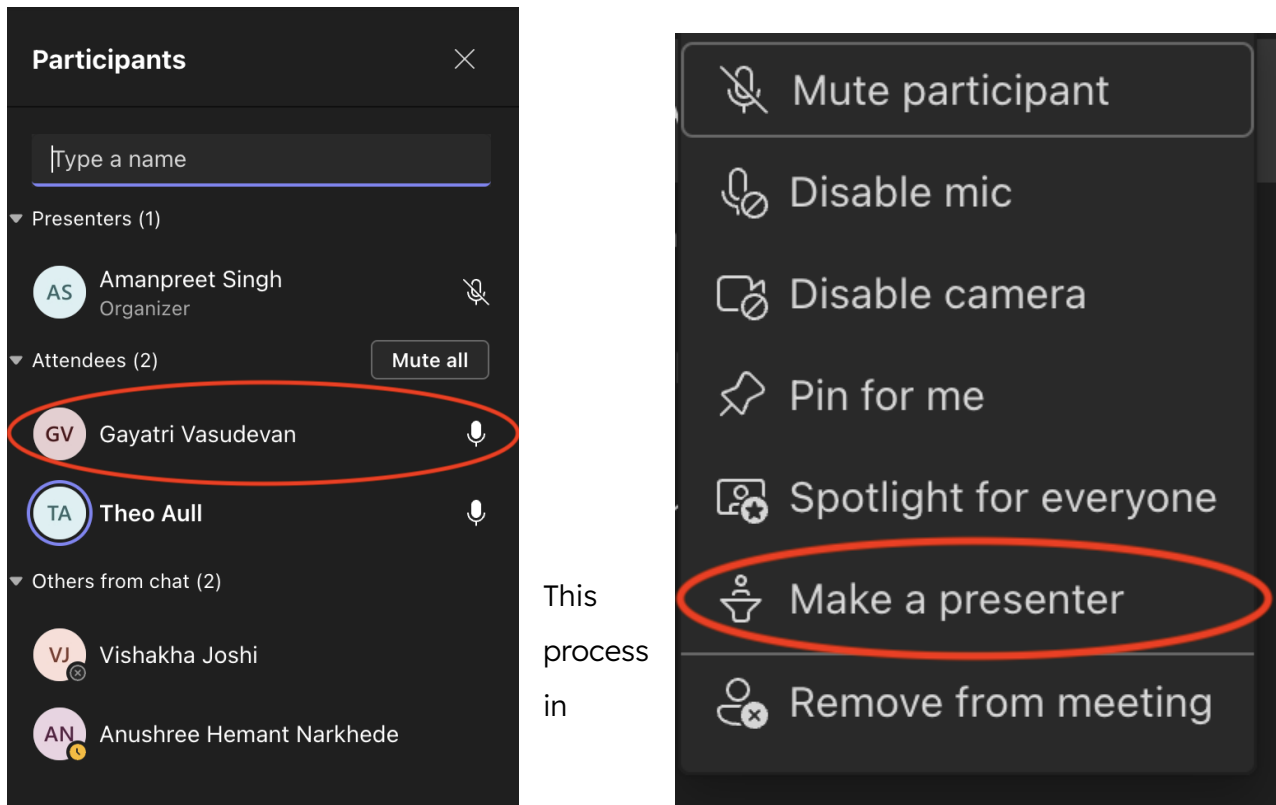
While in the call, the user has to click on the “people” option on top which brings up the participants list on the right.



The participant then clicks on ellipses next to a user’s name to open a dropdown menu that allows them to make that user a presenter.

This process involves entirely way too many steps to accomplish this goal. If the user had to figure this process out on the fly while in a call with others, they would likely suffer in

the process of figuring this out. These steps require the user to abandon their preconceived idea of what is necessary to complete this process, and it is far more convoluted than it should be.



Microsoft Teams can leverage what users already know from other video conferencing software and change the process to require fewer steps. Recommendation for an ideal fix for this issue is discussed in the following section.

To-Do List

While running through scenarios and goals with our participants, there was another key issue that surfaced with _ participants. This issue was related to the creation of a to-do list.

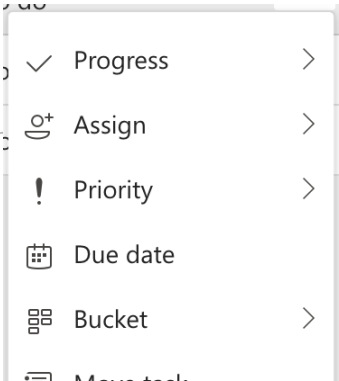
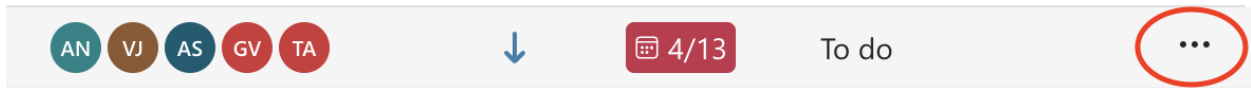
Some participants were hesitant to click Apps or ellipses on the global navigation on the left to check available expanded options of apps which included the “Tasks and Planner to do” application.



Tasks by Planner and To Do					
ISE 215 Group 3 > General > PTD Test 1					
PTD Test 1					
Task title	Assigned to	Priority	Due	Bucket	
+ Add a task					
Example 1	AN VJ AS GV TA	↓	4/13	To do	...
Example 2	VJ GV TA	↓	4/8	To do	...
Example 3	AN VJ AS GV TA	🔔	4/7	For all	...

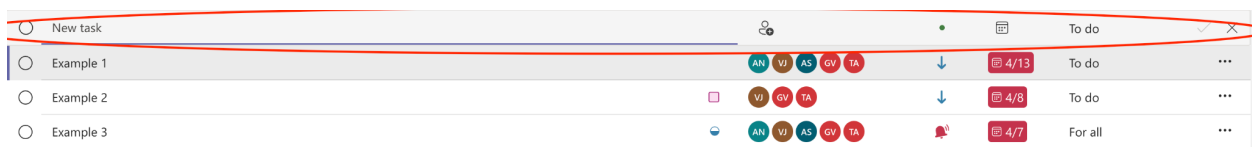
The participants who found the application to create to-do lists had another common issue. Let’s take a look at the to-do list application layout.

As discussed in the protocol, the participants were given the task to create a to-do list and they were provided with detailed particulars to populate the to-do list. This was done on purpose to test whether the participant finds the expanded options for a task.



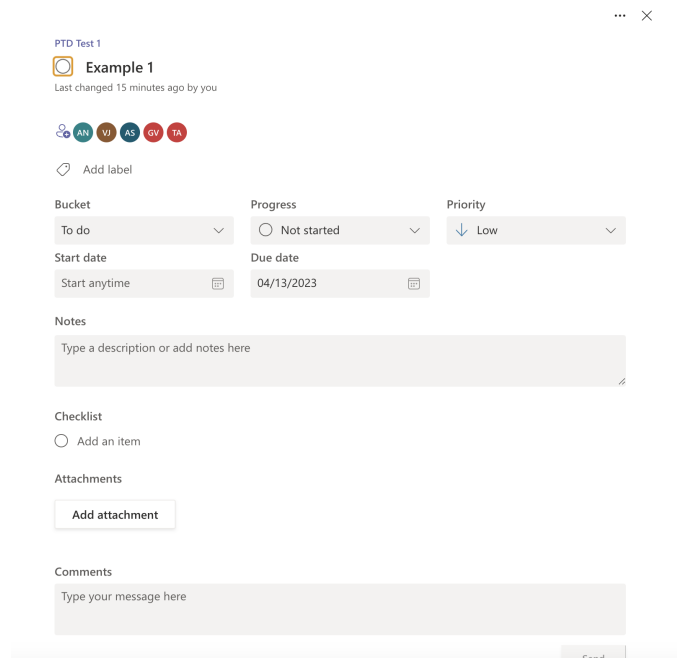
_Participants single-clicked on a particular task on the to-do list and clicked ellipses to find expanded options. But the drop down menu does not provide all the options that they were expected to fill.

This is due to faulty design because when “Add a task” is clicked, it opens the minimized version of parameters that can be changed when it should open the expanded options (shown on the next page.)



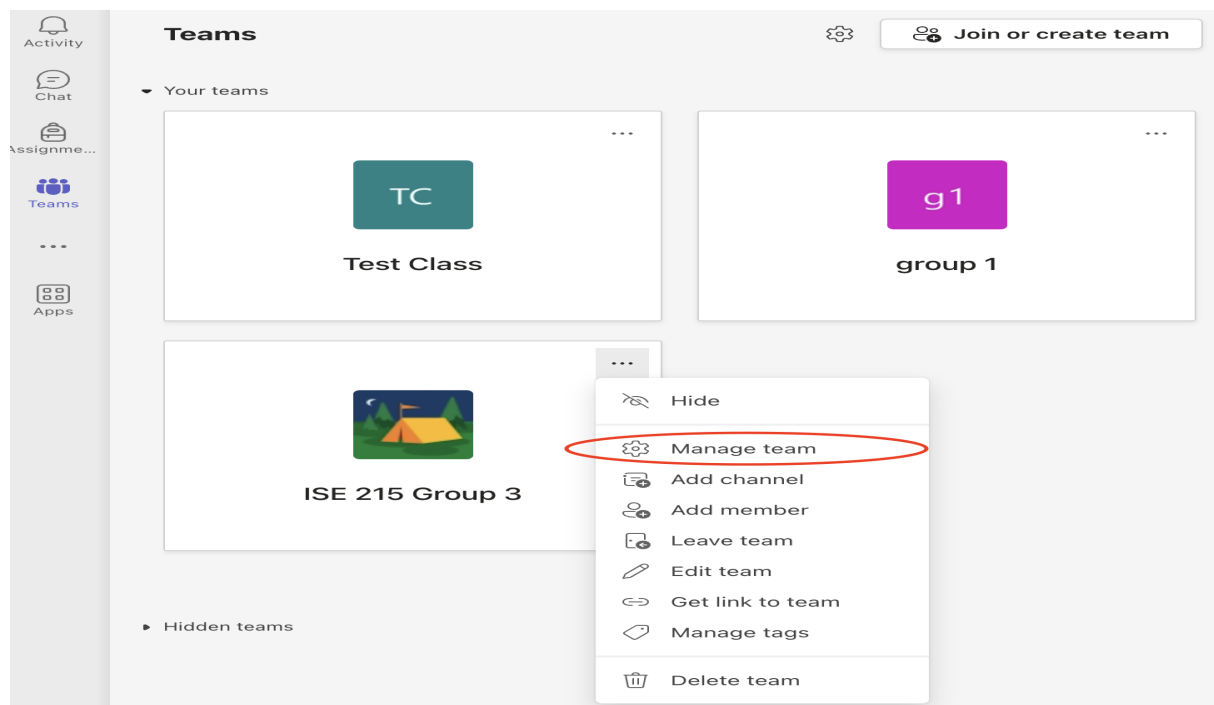
This expanded menu is only available when a to-do list instance is double clicked. When a task needs to be created and the user clicks “Add a task”, this is the menu that should open automatically rather than the minimized version.

Participants were getting confused about adding details to the instances because there was a lack of salient indicators that double clicking the task opens up expanded options. The recommendations for fixing this issue are addressed in the following sections of the report.



Team Code

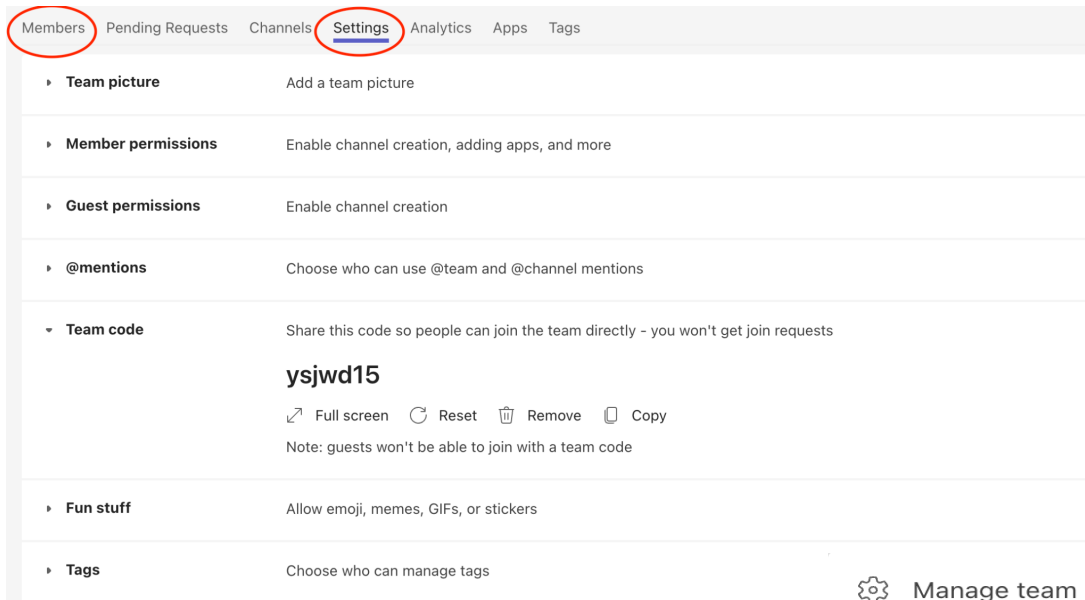
The purpose of using a team code over email invites or other methods was outlined earlier in the report. Expert participants of the study were asked to produce a team code to send to individuals to join their group. Only (1/2) of the expert participants were able to produce the code. The one participant that did produce the code was unable to produce the code with ease. It took them excessive searching through the program before they happened upon the area that produces the code. Here is the process for how the code is produced:



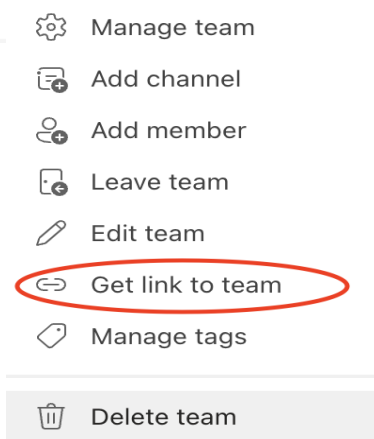
Under the “Teams” tab from global navigation, the user has to click ellipses to open the dropdown menu, and click “Manage team”.

Once the user clicks the “manage team” menu which lands them on the “Members” tab. They have to navigate to the settings tab and expand the “Team code” option to locate the code specific to the group.

This process could be expedited by the program, and all unnecessary steps required to access this option can be mitigated. These options are discussed in the recommendations section.



Expert participants also confused producing a team code with getting a team link which is available in the dropdown menu options for any group. The link is different from the code because it's a standard invite that still requires the request to be accepted from the owner(s) of the group.



Members Permissions and Restrictions

Similar to producing Team Code from the earlier interface, managing restrictions and permissions for members of the group can also be done in the same menu.

The screenshot shows the Slack 'Settings' menu. The 'Settings' tab is selected. Under 'Team picture', there is an option to 'Add a team picture'. Under 'Member permissions', there is a section to 'Enable channel creation, adding apps, and more' with a list of permissions, all of which are checked. Under 'Guest permissions', there is a section to 'Enable channel creation' with a list of permissions, none of which are checked.

Category	Permission	Status
Member permissions	Enable channel creation, adding apps, and more	
	Allow members to create and update channels	<input checked="" type="checkbox"/>
	Allow members to create private channels	<input checked="" type="checkbox"/>
	Allow members to delete and restore channels	<input checked="" type="checkbox"/>
	Allow members to add and remove apps	<input checked="" type="checkbox"/>
	Allow members to upload custom apps	<input checked="" type="checkbox"/>
	Allow members to create, update, and remove tabs	<input checked="" type="checkbox"/>
	Allow members to create, update, and remove connectors	<input checked="" type="checkbox"/>
	Give members the option to delete their messages	<input checked="" type="checkbox"/>
	Give members the option to edit their messages	<input checked="" type="checkbox"/>
Guest permissions	Enable channel creation	
	Allow guests to create and update channels	<input type="checkbox"/>
	Allow guests to delete channels	<input type="checkbox"/>

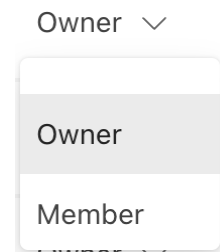
(½) of the expert users who were able to complete this task, looked for permissions and

The screenshot shows the Slack navigation bar. The 'Members' tab is highlighted with a red circle and a blue underline. The other tabs are 'Pending Requests', 'Channels', 'Settings', 'Analytics', 'Apps', and 'Tags'.

restrictions for members under the members tab.

Members Pending Requests Channels Settings Analytics Apps Tags					
Search for members					Add member
▼ Owners (4)					
Name	Title	Location	Tags	Role	
AS Amanpreet Singh		016692000	1 tag	Owner ▼	
TA Theo Aull		011114168	1 tag	Owner ▼	
VJ Vishakha Joshi		016693612		Owner ▼	
GV Gayatri Vasudevan		016689842	1 tag	Owner ▼	

They attempted to find the restrictions and permissions options under role which only allows the user to change the type of role (owner/member) of a user within a group, not manage their access. The expert participant who did eventually find the option to change control access for other members of the group found themselves confused with the available permissions restrictions options. Permissions section allows the user to manipulate member or guest permissions. But since the only roles available are owner or member the participant was confused after changing the permissions whether the permissions were changed for the right type of role.



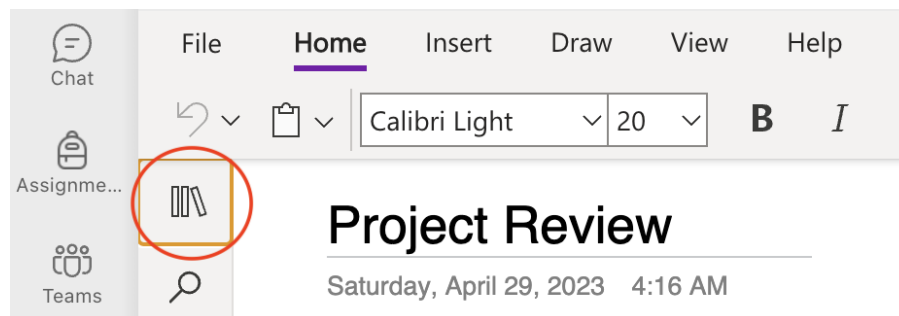
Collaborative Note Taking and Live Editing

Since our evaluation was based on using Microsoft Teams for education. One of our expert scenarios was constructed around the scenario of collaborative note taking. In practical application this would involve a collaborative document that allows free form note taking from multiple authors for multiple classes and topics.

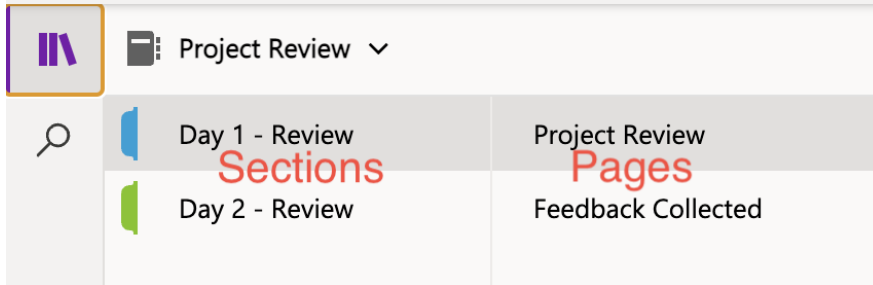
The OneNote app, which is a first party Microsoft Teams app, allows this type of collaboration. But ultimately, we discovered layout and interaction issues that were a hindrance for the participants of our study.

A key difference between using Onenote for note taking as compared using Word is it allows separating sections and pages. For our context, this makes sense because sections can act as separate note taking spaces for different classes, and pages within those sections become spaces for different topics within a class for students.

Only one of the two expert participants was able to locate the Onenote app successfully. The participant that did locate it was still having difficulty locating the key distinctive feature of this app which is using sections and pages.



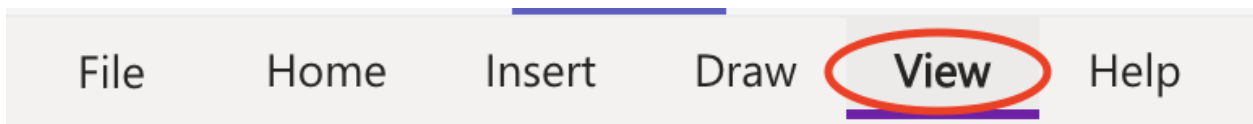
The highlighted icon expands the options to create sections and pages. Once that icon is clicked it opens the options shown below.



The lack of affordance of this feature makes it difficult to discover and it's a key feature of this app. The recommended solution for this issue is discussed in the following sections.

Show Author of Note

Since this application is collaborative and many people in the group can make changes to it, it should be able to track who is writing what in the document. The feature to show who has authored the note is incredibly unintuitive in this app. Here are the current steps required to initiate this feature:



First from the top menu the user has to click on "View". This opens these suboptions:



The user then has to click "Show authors" which shows the author of note like this:

This is a test

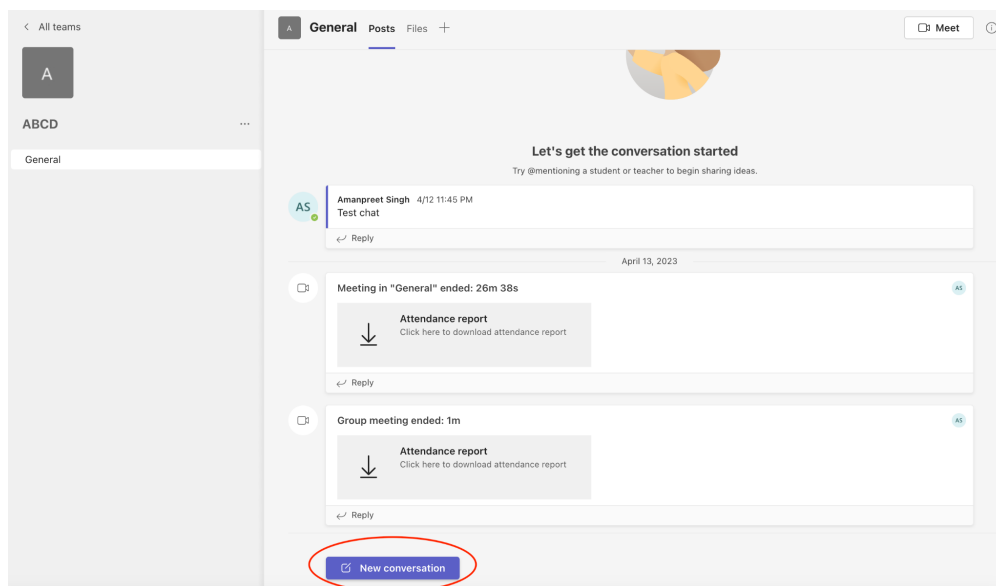
} Amanpreet Singh

The recommended solution to expedite this process without major changes to the layout of the app is discussed in the following sections.

Interface Based Recommendations

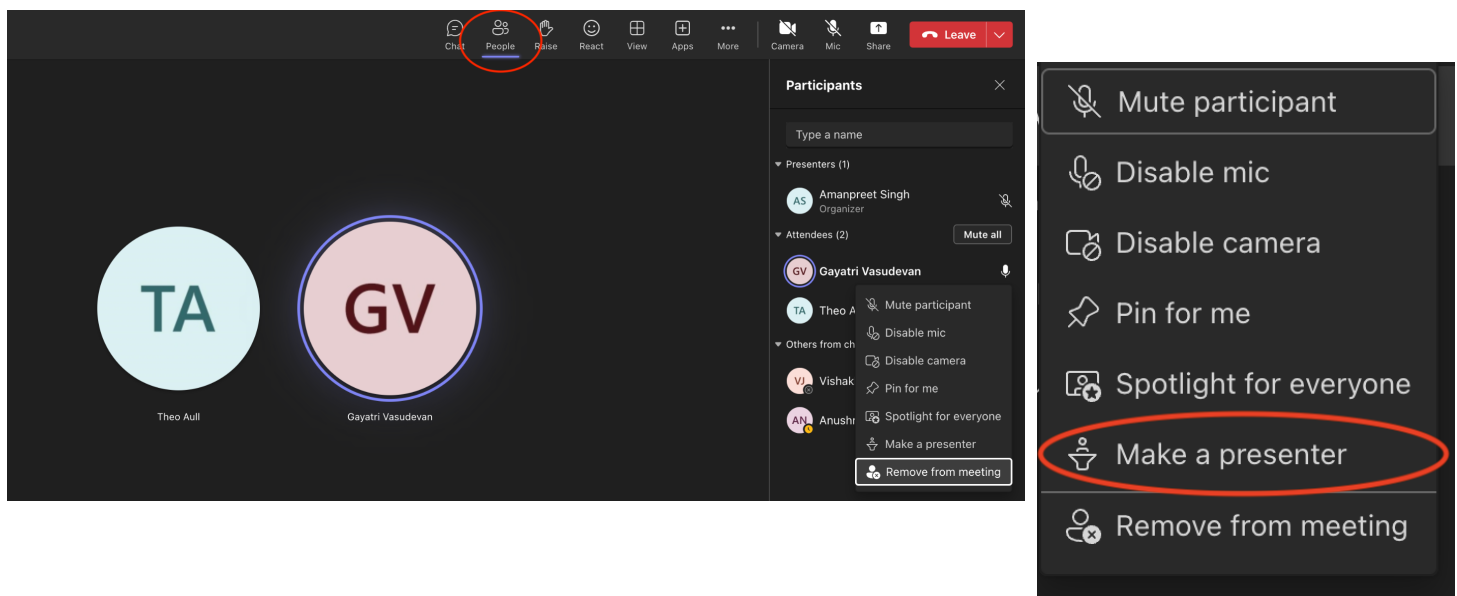
Send a Chat Vs. Make a Post

Issue	Recommendation
There is a lack of clear indication between making a post and sending a chat message. Multiple novice users almost made a post in the teams tab thinking they are sending a chat message privately.	<p>There should be a clear indication of differences between creating a post and sending a message.</p> <p>The button in the teams tab to make a post should not say “New conversation”. It should say something more direct like “Create a Post” to clearly show the purpose of the button.</p> <p>The screen below shows the current setup of the button. There should be a “Go to Chat” button right next to the “New conversation” button to make the user realize that they are possibly not in the right area for their intended goal. This also will provide a shortcut for the user to jump to the chat tab.</p>



Share Screen Access

Issue	Recommendation
The ability to provide screen share access to other members of the call is hidden behind multiple steps that do not resemble the standard process of providing this access from other video conferencing software.	<p>Microsoft Teams should follow other industry standard softwares when it comes to the layout of this feature.</p> <p>Instead of requiring the user to go to the “people” tab while in the call. Teams should allow clicking on a user and manage their screen share access from the dropdown menu rather than requiring the extra steps.</p> <p>Also instead of saying “Make a presenter”, it should more clearly say “Allow screen sharing” as a label.</p>



To-Do List

Issue	Recommendation
The application is not difficult to find but the expanded options are not salient or easy to find.	<p>It should more clearly indicate that double clicking will expand the options.</p> <p>There should be “More options” in the drop down menu next to each task because that’s where every participant went to find more detailed options.</p>

Tasks by Planner and To Do

ISE 215 Group 3 > General > PTD Test 1

Progress Assign Priority Due date Bucket Label ... 1 selected All Active Filter Lis

PTD Test 1

Task title	Assigned to	Priority	Due	Bucket ↓	
+ Add a task					
<input type="radio"/> Example 1	AN VI AS GV TA	↓	4/13	To do	...
<input type="radio"/> Example 2	VI GV TA	↓	4/8	To do	...
<input type="radio"/> Example 3	AN VI AS GV TA	🔔	4/7	For all	...

- ✓ Progress >
- Assign >
- ! Priority >
- Due date >
- Bucket >
- Move task
- Copy link to task
- Delete

PTD Test 1

Example 1

Last changed 15 minutes ago by you

AN VI AS GV TA

Add label

Bucket: To do Progress: Not started Priority: Low

Start date: Start anytime Due date: 04/13/2023

Notes

Type a description or add notes here

Checklist

☐ Add an item

Attachments

Add attachment

Comments

Type your message here

Send

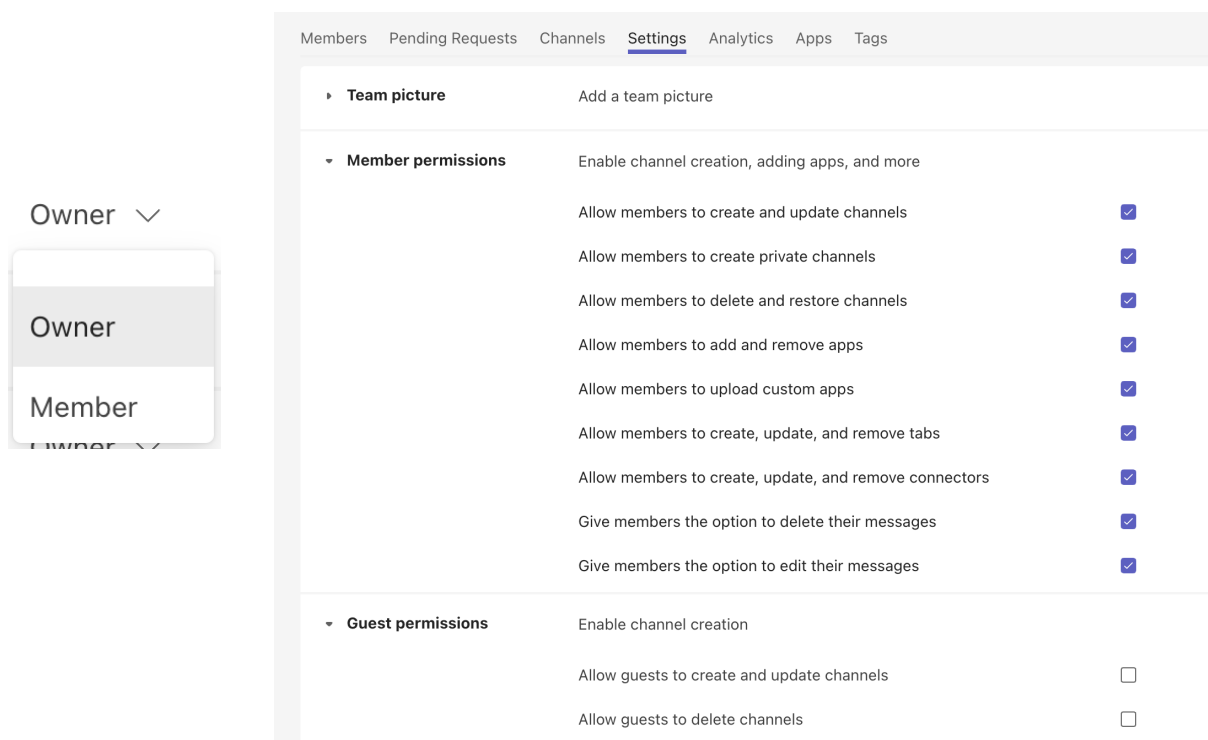
Team Code

Issue	Recommendation
Producing a team code was difficult for both experienced users. This is because the option is behind multiple unnecessary steps.	<p>When a group is right clicked and there is a drop down menu. The ability to produce a team code should be available right by where the user can “get link to team”.</p> <p>OR</p> <p>There could be an interactable in the dropdown menu that jumps the user straight to the Team Code option in settings.</p>

The image shows a user interface for managing a team. On the left is a sidebar with several options: 'Manage team', 'Add channel', 'Add member', 'Leave team', 'Edit team', 'Get link to team' (circled in red), 'Manage tags', and 'Delete team'. On the right is the main content area, which is the 'Settings' page (also circled in red). The 'Settings' page has a top navigation bar with 'Members', 'Pending Requests', 'Channels', 'Settings', 'Analytics', 'Apps', and 'Tags'. Below this, there are several settings sections: 'Team picture', 'Member permissions', 'Guest permissions', '@mentions', 'Team code', 'Fun stuff', and 'Tags'. The 'Team code' section is highlighted with a red box. It shows a team code 'ysjwd15' and options to 'Full screen', 'Reset', 'Remove', and 'Copy'. A note below states: 'Note: guests won't be able to join with a team code'.

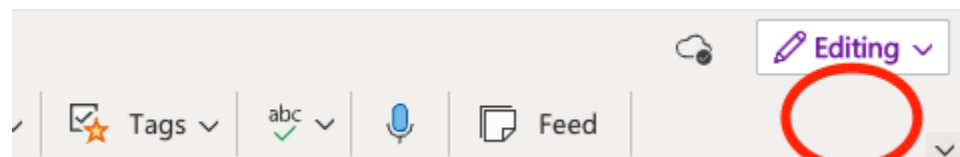
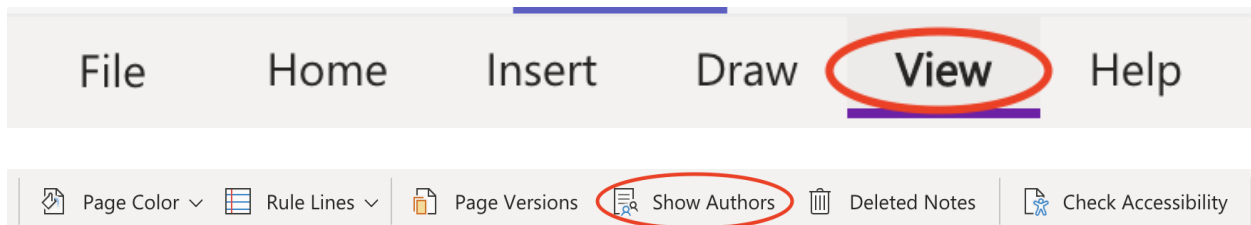
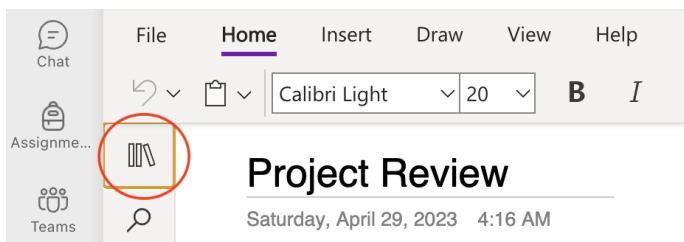
Members Permissions and Restrictions

Issue	Recommendation
Currently the member and guest permissions and restrictions do not match the roles for members of the group. Participants even after managing permissions and restrictions still had a difficult time understanding if they did them correctly. This kind of ambiguity shouldn't occur because of program design.	The ability to change member permissions should be labeled accordingly.



Collaborative Note Taking and Live Editing

Issue	Recommendation
<p>The icon that lets the user access the key feature of this app is not salient.</p> <p>The ability to view the author is also hidden behind far more steps than it should require.</p>	<p>The icon should be made bigger. It should be the key point of this application and the user should be guided towards this option more clearly.</p> <p>The ability to view the author of a note should be available right on the main page of the application. It could be placed right besides the “editing” button which will follow the standard layout of this option as other options.</p>



Root Cause Analysis

To provide impactful design recommendations, it is important for us to understand the core causes of errors encountered in usability testing. This involves digging into each identified problem and breaking it into antecedent sub-problems that may illuminate a broader issue in the design. Implementing fixes for these core problems instead of attempting to fix issues at the surface level provides more robust design solutions that often solve multiple issues at once.

1. Problem: Users are confused about messaging with chats and Teams, and do not know how to efficiently communicate with a whole Team.

In usability testing, we discovered a high number of errors and when users attempted to message their Team, in addition to a high rate of confusion when working toward this goal. The most frequently identified (through observation and participant statements) issue was derived from the Teams “Post” feature and the global “Chat” feature competing for user attention. We can break down this issue as follows:

→ The labeling of Team messages as “Posts” is confusing to users with intent to contact their Team

- ◆ **Why?** The choice of “Post” is not consistent with user expectations for a message feature and reduces trust in the feature.
 - **Why?** Users are visually drawn to the always-visible “Chat” feature in the sidebar instead of the “Post” feature.
 - **Why?** Users are likely to have previous experience with apps using the common chat-bubble style UI for conversational communication. This is their first instinctual target when attempting to message any person or group.
 - ◆ **Why is this a problem?** Users cannot seamlessly message an entire Team from the “Chat” module without manually entering every Team member, but they can easily message a whole Team using the “Post” feature. However, they cannot message individual Team members using this feature.
 - **Why is *this* a problem?** As app substructures, “Teams” consolidate functionality that is present elsewhere in the app, but implement it

differently and without clear separation, causing inconsistency in use and perception. New users are often not aware that the “Chat” function is separate from their “Team” and not connected in any way.

2. Problem: Users cannot figure out how to give others screen sharing permission

All tested users failed to grant screen sharing permission to other call participants. Most remarked they were unable to find it, despite the fact that most did discover the screen on which the option was located. We can break down this issue as follows:

→ Users cannot find the option to change screen sharing permissions

- ◆ **Why?** Because it is not where they expect it to be.
 - **Why?** Because users expect it to be in the participants list.
 - **Why?** Proximity is a core tenet of good design. Options/actions should be next to the object they control because that is where attention will be when that object needs to be actioned.
- ◆ **Why?** Because it is labeled in a confusing way.
 - **Why?** The choice to title the button “Make Presenter” carries an implication for many that it is exclusive, meaning only one person has this privilege.
 - **Why?** The word presenter implies a sole speaker. Users passed over this option in most sessions in search of an option that implies non-exclusive permissions.

3. Problem: Users have trouble editing to-do list items.

Participants took exceptionally long to discover the ability to edit to-do list items. Breaking down this issue further:

→ Users cannot figure out how to edit to-do list tasks.

- ◆ **Why?** Users do not see an option to edit when hovering over a task
 - **Why?** The task does not change visually when hovered over, apart from a small icon that does not contain edit options.
 - **Why?** Users must hover specifically over the task title until it becomes underlined, then click on it to edit.

- ◆ **Why is this a problem?** Users attempting to click elsewhere on the task suffer from false affordances. They cannot click displayed parameters and the one icon that presents itself most clearly as being clickable does not contain edit functionality.

4. Problem: Users are not able to find a share code

Users wanting to send a Team invite to desired members without having to approve them manually can do so using a specific Team code. Most were unable to find this code despite being informed of its availability.

→ Users cannot find their Team's share code

- ◆ **Why?** The correct option is difficult to discover.
 - **Why?** Clicking the Teams setting icon brings up separate options to “Add a Member” and to get a “Link to Team”. This is confusing to the user.
 - **Why?** Both present options to add a person to the Team, which is the core goal, but they do not serve the function of giving an external member pre-approved access.
 - ◆ **Why?** Pre-approved external invites can only be provided via the Team code, which is two-levels deeper in settings.
 - **Why is this a problem?** Having multiple ways to add members in separate locations adds to user cognitive load, giving them unnecessary information to search for, work through, and remember. Users also do not expect shareable information to be located deep in settings.

5. Problem: Users were not able to change Team member permissions as intended. Users intending to change functional privileges for members of their Team were not able to do so. The issue is broken down as follows:

→ Users cannot set permissions for members to the intended state

- ◆ **Why?** Users were not able to determine what permissions were being changed when they operated on individual member settings.

- **Why?** Permission properties are not explicitly described when changing them for members. The only visible information is the member's Role title.
 - **Why?** Member and guest permissions are detailed in a different page of settings, in which those granular permissions can be edited. Owner permissions are not explicitly described anywhere.
 - ◆ **Why is this a problem?** People tend to do what is called “self-terminating search” when looking for something, meaning they will stop looking for a target when they have found one, even if there may be multiple targets (and possibly a better one). Users will find the page where they can change member roles, which implies a permission change, and think it is a very basic and opaque workflow. They are unlikely to dig further and should not have to, as separating closely aligned options again increases users' cognitive load. Even in this page, Members and Guests are not formally separated, causing more confusion regarding who has what permissions.

6. Problem: Users have trouble viewing collaborative change history in One Note

Participants in the shared note task were unable to determine how to gain visibility to changes made by other users in the file.

→ Users cannot gain visibility to shared change history in a collaborative document.

- ◆ **Why?** Users cannot find the option to make changes visible
 - **Why?** The option is not where users expect it to be.
 - **Why?** Participants noticed the pointers that appear when hovering over line items and guessed clicking on them would display more information.
 - ◆ **Why?** Users in a collaborative environment are primed to expect visibility to collaborative features as a priority—moving editor visibility outside of the main toolbar conflicts with this

7. Problem: Users are confused about how to change email notification settings for a specific Team

Users wanting to ensure they are notified when important information is shared in a Team were often unable to properly configure their email notifications to do so. We can break down this issue as follows:

→ Users have trouble turning on email notifications for a Team

- ◆ **Why?** They cannot find notification settings for a specific Team.
 - **Why?** Users are visually drawn to the ellipses next to the relatively large Team name/tile, which does not contain notification settings
 - **Why?** A Team-specific notification toggle is located within the *other* set of ellipses on the opposite side of the screen, which contains a notification bell as well as some options also present in the menu presented by the left-side ellipses. The bell here is a simple option to turn notifications On or Off.
 - ◆ **Why is this a problem?** Neither of these provide a resolution to the original goal of changing email settings. These settings reside in a third set of ellipses in the top right corner of the app. This holds global account settings.
 - **Why is *this* a problem?** Presenting three identical icons to the user that have different functions increases their cognitive load by giving them more arbitrary information to remember. Users are unlikely to remember which icon contains the options they want. There is also the issue of false affordance. This is the phenomenon of an incorrect option presenting stronger implication of functionality than a correct option, causing a user to be subconsciously drawn to that option even despite previous experience of it being the wrong one.

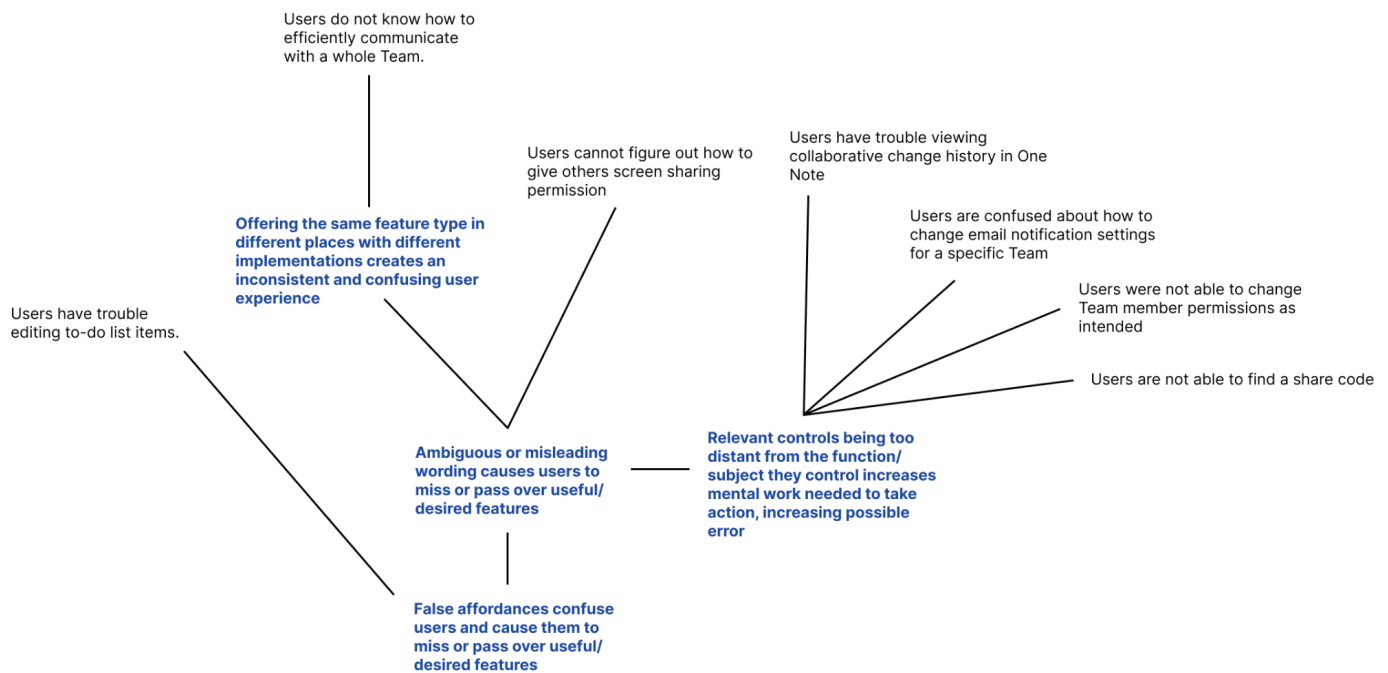
Discussion

From the root cause analysis we can pull the following list of core issues discovered during our usability testing sessions:

- “Teams” consolidate functionality that is present elsewhere in the app, but implement it differently and without clear separation, causing inconsistency in use and perception.
- Lack of adequate control proximity adds to the amount of work and cognitive challenge users have to undergo to discover desired options.
- Ambiguous or misleading wording causes users to miss or pass over useful/desired features
- False affordances confuse users and cause them to miss or pass over useful/desired features

It is important to remember that in an application as complicated and featured as Microsoft Teams, it is easy for multiple design and development teams to create parallel solutions, features, and naming conventions that may overlap and coalesce into a confusing experience for the end user.

There are many instances (member adding, notifications) in which the program offers multiple seemingly similar options to the user that lack logical organization and have high potential for smoother presentation. Having more than two access points for Settings that affect the same subject or environment is excessive, and if there must be that many, they should all be functionally aligned. Having multiple options for messaging also creates potential for confusion, necessitating a clear functional difference be presented to the user.



Many controls such as screen sharing in meetings, and permissions for Team members, would benefit from greater proximity to related settings and the subjects those settings affect. Consolidating the granular permissions breakdown with role selection for members would greatly reduce search time for users who are likely to want to change both in tandem.

On the subject of clarity, having very direct, explicit, and research-validated word choice in settings and action options is important to a smooth user experience. The “Make Presenter” button issue was shown to be a universal problem for participants, and can be solved simply with a text change to something less exclusive like “Allow Screen Sharing” and/or changing the option to a checkbox or toggle.

Study participants demonstrated great difficulty with issues stemming from lack of good control proximity, often becoming confused in situations where the desired option was not immediately available. Due to the high complexity of the application, initiating a search of any kind for a specific option was likely to introduce friction, especially among novice users, and even more so among novice users who self-identified as having lower technical proficiency.

Also common and higher in severity were issues stemming from false affordances, including false affordances involving unexpected naming conventions. The user frustration was high in these situations due to their feeling that a resolution to their goal was present but somehow inaccessible to them. Due to the nature of these errors, users were aware some option existed somewhere that they were looking for despite being unable to find it. This frustration was often palpable in post-task discussion in cases where participants requested the “solution” and expressed exasperation in the solution being so accessible but undiscoverable to them. Examples of this include the search for screen sharing permissions, in which all users viewed and passed over the correct action button, and the change tracking task for shared documents, in which users verbalized many false positives in their search for the desired feature.

Key general recommendations can be summarized as follows:

- **Reduce menu/option variation and potential for user confusion by consolidating all into two environments:**
 - ◆ User Settings
 - ◆ Team Settings
- **Revalidate (via more focused user research) Settings/Menu structure and naming conventions to align with user expectations**
 - ◆ Permissions should all be in the same place
 - ◆ All member add methods should all be in the same place
 - ◆ Team-level notification settings should be present in a Team’s “main” settings
 - ◆ Contextual menus should carry all relevant controls visible next to their respective subjects
- **Consolidate features with overlapping functionality if their separation cannot be rigorously validated.**
 - ◆ Posts and Messages
 - ◆ Member add methods
- **Increase control proximity where possible to reduce search time and browsing inefficiency**

Conclusion

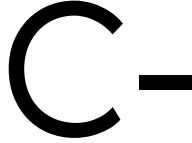

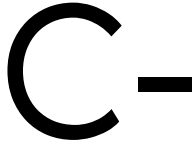
Through testing it has become apparent that the best way to explain the current infrastructure of Microsoft Teams is “Jack of all trades, master of none.” This collaborative program accomplishes itself as a tool that provides everything one might need from an all encompassing software but many of its features are still lackluster and fail to be as intuitive and operationally complete as they could be.

The participants made it apparent that there are many unclear, clashing features of this software that could be significantly improved with minimal attention to the current information architecture, while some of the other features need some deeper consideration. This software could greatly benefit from getting inspired from software that specializes individually in the features.




As an enterprise-scale collaboration solution, it is likely that Microsoft Teams’ development process is equally complex. More consistent application of references design principles mentioned in this report, as well as implementation of recommendations, will provide a needed boost in usability and an improvement in the overall experience. Following this report, we also recommend further user research to validate and explore options for Teams’ information architecture and cohesive structure.




Grades


<p>Does Microsoft Teams communicate its purpose, functions, and value?</p> <p>Microsoft Teams does a fine job conveying its purpose, functions, and value. It has all the features necessary to be a functioning collaboration app but all the functions and features are still lackluster and fail to exceed in quality compared to similar apps that offer those functions individually.</p>	<p>B-</p>
<p>Is it easy to navigate between functions?</p> <p>The functions and apps are not the easiest to navigate. There is tons of confusion between many features. Overall the program needs rework to become clear with its distinct features. The current setup with first party applications of the software appearing similar to the App Store is less intuitive than the program intended to appear. The program could use a wizard that guides new users through all its core functionalities so the user can become aware of the plethora of features that this program offers.</p>	<p>C-</p>
<p>Does the screen design support efficient interaction?</p> <p>The screen design does not support efficient interaction. The user has to get</p>	




<p>very familiar with the program and use it multiple times before they start becoming comfortable with using the program which is not a good sign. The novice users were struggling with many of the functions and there was a lack of intuitive flow with many features and applications.</p>	
<p>Am I guided through the interface or left on my own?</p> <p>The program definitely needs a strong wizard to initially guide the user through its features. The interface leaves the user to have to figure out what the program is capable of executing. This is not good because without the guidance the user cannot discover some key features and applications.</p>	
<p>OVERALL</p> <p>Overall the program needs to take inspiration from other software that individually offer the features and applications that are nested in this program. With current design of the program, the users will most likely opt to use the individual softwares that pay closer attention to their interface and interactions because every common feature in this program lacks the detail that make it intuitive.</p>	

Contact Details

 Amapreet Singh
 amanpreet.singh@sjsu.edu
 (510) 688-1255

 Anushree Narkhede
 anushreehemant.narkhede@sjsu.edu
 (614) 209-4330

 Gayatri Vasudevan
 gayatri.vasudevan@sjsu.edu
 (650) 770-3662

 Theo Aull
 thelonious.aull@sjsu.edu
 (530) 591-3931

 Vishakha Joshi
 vishakha.joshi@sjsu.edu
 (425) 577-0313

Appendices

Appendix A: Recruitment Email

Participants Wanted for Microsoft Teams Research! _ ↗ ✕

Recipients

Participants Wanted for Microsoft Teams Research!

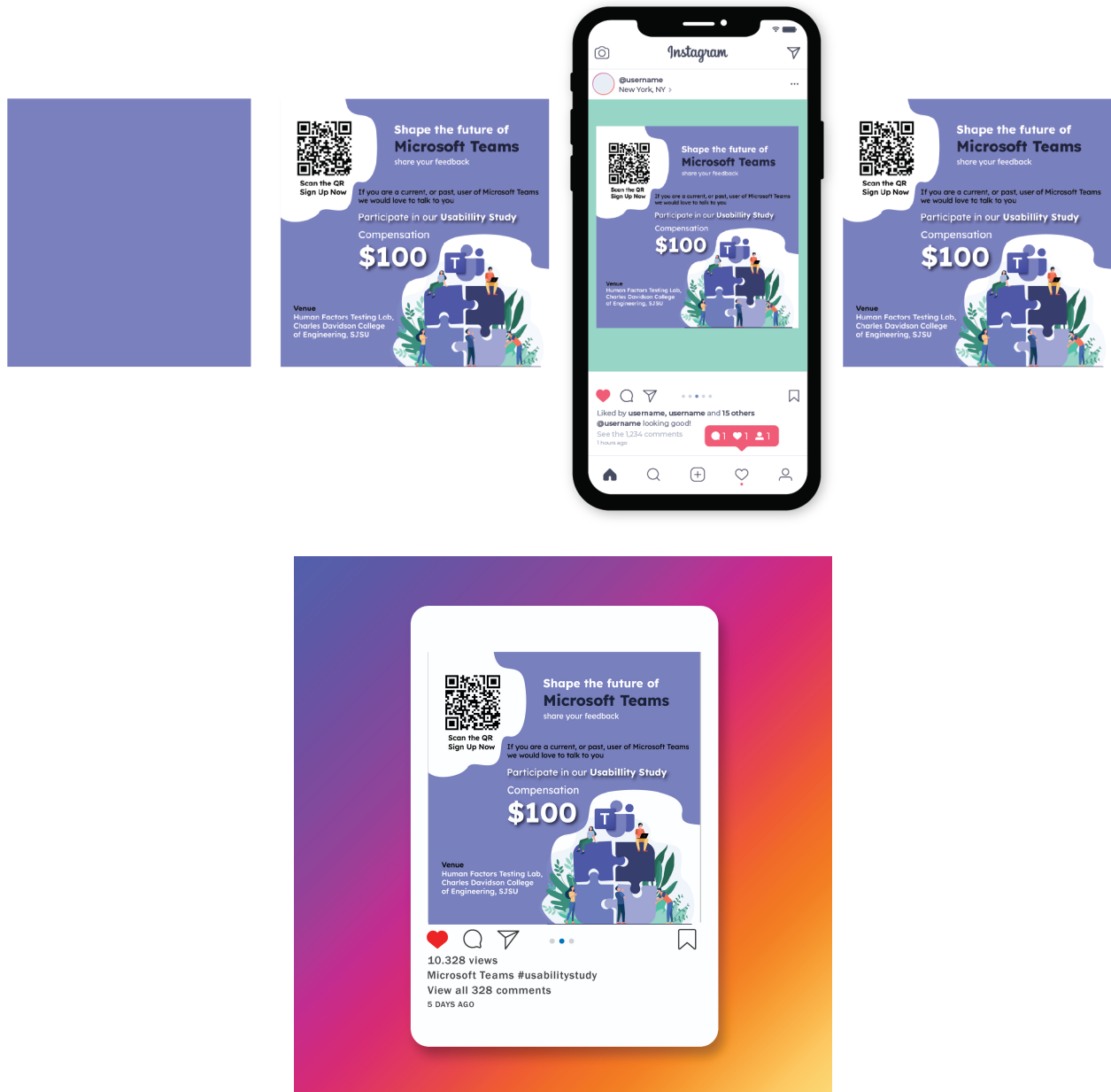
Hello,
We are looking for participants to join our Microsoft Teams study!!

The study will take place in San Jose, CA. If you are selected you will receive compensation \$\$\$ for your time and participation!
This is an excellent opportunity to help improve Microsoft Teams and have your voice and opinions be heard. If you are a current, or past, user of Microsoft Teams for academic purposes, we would like to talk to you! Reach out to us:
Phone Number: (510) 688-1255
Email: amanpreet.singh@sjsu.edu

Send ▾

A 📎 🔗 😊 🏠 🖼️ 🔒 ⋮ 🗑️

Appendix A: Recruitment Social Media Post




Appendix A: Participant Recruitment Advertisement


Shape the future of Microsoft Teams
share your feedback

If you are a current, or past, user of Microsoft Teams
we would love to talk to you
Participate in our **Usability Study**

Compensation : **\$100**



Scan the QR to Sign Up



Venue
Human Factors Testing Lab,
Charles Davidson College of Engineering, SJSU

Appendix B: Screener Questions

Questions	Expectations/Criteria
Name	First and Last
How did you hear about this study	Flyer, Email, Social Media Post
Gender	
Age	Exclude anyone 18 or under
Date of Birth	Confirm age
Can you provide ID (Government or School)	Exclude if not
Occupation	Include Students current or past
Highest level of education	No Exclusion criteria
Do you use collaboration software?	Google workspace, Slack, Zoom, etc
How much experience do you have with collaboration software?	1 month, 1 year, 5 years, Never, etc

Have you previously used Microsoft Teams?	Yes, No, Current user, etc
Are there any Physical Disabilities that make it difficult for you to interact with computers?	
If yes, how severely does it impact your ability to interact with software?	
Native Language?	
Years of speaking and reading English?	
Have you ever participated in a usability or user experience study in the past? Please elaborate if yes.	Exclude if very experienced with usability studies
Testing site is in San Jose, CA. Where will you travel from to participate in the study? How will you be getting to the testing site?	Exclude if travel from unreasonably far and consider means of transport

Survey Link :

<https://forms.gle/DACxptYotekEQs6j6>

Appendix C: Consent Form

P#_____

Consent Form

This form is to confirm your interest in participating in this usability study.

Purpose

The purpose of this study is to gather user feedback, reactions, and ideas in order to evaluate Microsoft Teams and its current usability. Participation in this study will help us improve the design and usability of the program.

Procedures

You will participate in one 60-minute study session. During the session, you will interact with the program and perform general tasks within the parameter of program capability. Following your interaction, we will ask a series of questions and inquire about your experience.

Compensation

As consideration for the time you are taking to participate in our study and for your agreement not to disclose Confidential Information you are exposed to, we shall pay you with gift cards with a value of _____ for one 60-minute session.

Potential Risks

This is software interaction study and there are no anticipated risks to your participation.

Use of Images and Audio Recordings

By signing this Consent Form, you grant (company) in this research effort permission to photograph and record the entire session and use any audio, video recording or photograph of your participation in this study for data analysis and internal reporting purposes. (Company) agrees to keep your personal information strictly confidential. None of the images or video will be posted, presented, or published in a public manner. The purpose of data collection is for analysis only.

Participant Rights

Your participation in this study is completely voluntary. In any case, or at any time if you wish to withdraw from participating in the study, please inform the moderator.

Signature

Your signature indicates that you voluntarily agree to be a part of the study, that the details of the study have been explained to you, that you have been given time to read this document, and that your questions have been answered.

Signature: _____ **Date:**

Appendix D: Session Introduction

Background

Microsoft team is a messaging platform that allows users to connect and collaborate within schools and universities. Additionally, Microsoft Teams have mobile and desktop versions available. Apart from the built in application , Microsoft has partnership with other applications that require payment to use.

Study

Hi! It's so nice to meet you [name of the participants]. My name is [moderator's name]. We're super excited to be able to connect with you here! The purpose of this study is to understand how users interact with the Microsoft team and what opportunities for improvement there are within the platform.

As a participant, you will be given a list of tasks to complete such as creating a group chat, conducting a video call, inviting someone to join a call, share your screen and collaborate on one-note. After completion of the tasks, you will be asked for your feedback about your tasks. I like to emphasize that there is no right or wrong answer, the objective of this session is to evaluate the intuitiveness of the platform's layout.

NOTE: You will be interacting with the current up to date desktop version of the software on Mac or Windows that is available to students. It might have some limitations in functions compared to the business version of the software, but it should be able to support all your goals as a student. If you feel any necessary functionality for students is missing, feel free to express it.

May we record this session? The recording will be used internally to help us improve the platform and I don't have to take as many notes [Record starts when the participants have agreed].

If you ever need a break please don't hesitate to ask. Thank you so much for participating in our study today. If you have any questions, we can answer them now. I might not be able to answer your question during tasks but I can try to answer them after you complete the tasks.

Before we dive into the tasks, we would love to get to know you a bit. Can you share what you like to do for fun and where you are located?

Please note that during the session, I may pause you so I can catch up on my notes. This doesn't have anything to do with you but I want to make sure I am able to accurately take notes on what is happening.

I have noted here that you have signed the informed consent form and NDA and I wanted to make sure to reiterate to you that your participation in this study is voluntary and that you have the right to discontinue at any point, for any reason. We can also take a break in the middle of the session, if necessary, so please let me know. I also want to mention that we will be video and audio recording this session, but again, your identity will remain anonymous.

Finally, I would like to state that we are interested in the Microsoft Teams product and how users like yourself may use it, but we are not evaluating you, your individual skills or your abilities.

Appendix E: Checklist

Pre-Study

- Meet with the usability team and ensure everyone's role.
- Check in with participants through email/ call to confirm their timings.
- Reserve parking spots, have snacks and water ready for users.
- Check all equipment.
- Open Microsoft Teams and run some tasks.
- Open Microsoft Teams desktop app, Chrome browser and mobile app.
- Clear cache and cookies from the browser.
- Ensure everyone is well versed in their role.
- Run a mock test with all the teams involved.

Before Study

- Prepare a task sheet for the participants.
- Have consent forms and e-signs ready to be sent when participants join the call for remote testing.
- Have consent forms and pens on the desk where participants will be seated.
- Have all the relevant documents such as tasks sheet and other materials sent to the participants for remote testing.
- Have all the relevant documents such as a task sheet and other materials on the desks for participants in the physical facility.

Welcoming Participants

- Welcome participants as they arrive (remote and physical testing).
- Compare ID

- Hand out consent form and study introduction.
- Review documents for completion.
- Give participants to settle down.
- Run a final check on the equipment

During Study

- Introduce yourself and the study to the participants.
- Explain the tasks and remind participants they can ask questions and take breaks anytime.
- Remind and ask participants that they are being recorded and observed.
- Log all the data according to the metrics.
- Observe non-verbal cues and write down informal notes.

Appendix F: Novice Script

Session Introduction and Device Overview

Overview
<p>Moderator provides participant overview of the session</p> <p>Supplies:</p> <ul style="list-style-type: none">• Laptop and Charger<ul style="list-style-type: none">○ Wifi enabled○ Brightness○ Microsoft Teams Application - opened to homepage• Task sheets

Novice Session

Introduction

Greet the participant, make small talk about their day, and lead them to the session location.

Well [participant], thank you for volunteering your time today to participate in our study. We really appreciate the chance to get your thoughts and feedback on this product. Before we start, there are a few things we'd like to go over.

This session will take about an hour, in which we will have some scenarios for you to run through in the application. We will then give you some tasks to complete, after which we will ask some questions about your experience walking through them, and about any feedback you may have regarding the application. You are free to take a break or leave at any time during the study.

We would like to emphasize that we are not testing you—you are helping us test the product. Our focus is on understanding the experience provided by Microsoft Teams and finding possible areas for improvement. The goal is to evaluate Microsoft's design and provide them feedback on their product.

Consent form should be out now.

This session will take about an hour, and we will ask you a few questions and run through a few questions about your experience using Teams. You are free to take a break or leave at any time. We will be recording audio and video of this session, both the screen and the room. All personal information provided and/or recorded will be anonymized.

Our goal is to evaluate the usability of Teams and test its efficiency as a productivity tool. If this is all acceptable to you, please sign this consent form. The form grants us permission to record video and audio and use this anonymized session data for our report.

Answer any questions from the participant and collect their signed form.

Moderator: Let's get started. Please log in to your email client and confirm you have received an email invite from [MODERATOR] to join Microsoft Teams.

Participant verifies they have received the email. Non-SJSU participants will be provided with test credentials for an account that has been cleared of association with all test group data.

Once you make it to Teams, you can use your SJSU email and it will take you to the university login with ID number and Password. Feel free to use any method of DUO identification to verify. I would like to remind you that none of your information will be saved. The information will only be used for the duration of the test and cleared immediately after.


Goal-Based Tasks

Here is a set of scenarios. Please read the prompt sheet and complete objectives to the best of your ability. Just a reminder, this is not a test for you-what we want to understand is whether or not Microsoft has created a seamless experience.

Make sure screen recording is on and external room cameras are rolling. Sit next to the participant and observe their actions and reactions.


Goal 1: Join an existing Teams group	Goal Based	Notes
<p>You have just joined a new class. As part of the onboarding process, you are being added to a group in Microsoft Teams. Your professor said they would send you an invite, and to let them know when you are set up.</p> <p>Please log in to your email client and follow the invite to set up your account.</p> <p>Your professor is [MODERATOR], their information is on the provided sheet.</p> <p>Please confirm you have joined the correct group by viewing members of the group.</p>	<p>Time on tasks (min) :</p> <p>Number of Clicks:</p> <p>Did they successfully join the team? ___ Yes ___ No</p> <p>Did they successfully view members of the team. ___ Yes ___ No</p> <p>Were they able to successfully show that they added members? ___ Yes ___ No</p>	
[If they ask for help with	Verbal Response:	


joining a new team] Probe: Where would you expect to go if you need to join a new team? [If they are not able to view information about other members] Probe: What button looks like it might give you information about the group you have just joined?		
<i>(If participant does not say that they have finished joining a team)</i> Q: Were you able to join a team?	___Yes or ___No Verbal response:	
<u>Post-Task Q1:</u> How did you feel about the process?	Verbal response:	
<u>Post-Task Q2:</u> Was that difficult? If yes, what did you find difficult about the process?	___Yes or ___No Verbal response	
<u>Post Taks Q3:</u> Is there something in the current process you just went through that you would change?	Verbal response :	
Post Task Q4: Is there anything else you would like to share?	Verbal response:	

<p>Steps to Task 1:</p> <p><u>Join a group</u></p> <p>Access Invite > Log In > Teams > View Group</p> <p><u>View members of group</u></p> <p>Teams < click information logo  <</p> <p>Group members listed under “members” section</p>	<p>Performance Observations</p> <ul style="list-style-type: none"> _ Successfully Logged In _ Clicked create a Team _ Named the team _ Added team members <p>Check if Team Members Added</p> <ul style="list-style-type: none"> _ Clicked teams _ Clicked Information Logo <p>Behavioral Observations</p> <ul style="list-style-type: none"> _ Observed confusion or Difficulty _ Asked for help _ Observed inactivity _ Staring at screen _ Flipping through multiple menus
--	---

Moderator: Since you were able to join a team and view the members in it, now I want you to send a message to your professor.

Goal 2A: Message the professor	Goal Based	Notes
Moderator: Please let your professor know you were able to join your class group	<p>Time on tasks:</p> <p>Number of Clicks:</p> <p>Were they successfully completed? ____Yes ____No</p>	
<p><i>(If participant does not state that they sent a message to the professor)</i></p> <p>Probe: Were you able to send a message to your professor to confirm?</p>	Verbal response :	

<p>Steps Task 2a</p> <p>Click chat < Click icon </p> <p>Enter name < Press enter <</p> <p>Type message < Press enter</p>	<p>Performance Observations</p> <p>_ Clicked Chat</p> <p>_ Found the correct Chat Icon</p> <p>_ Entered a Name</p> <p>_ Sent message to one person</p> <p>Behavioral Observations</p> <p>_ Observed Confusion/searching</p> <p>_ Frustrated</p> <p>_ Positive Body Language</p> <p>_ Negative Body Language</p>	
Goal 2B: Post a message to your class		
<p>Moderator: Now that you have sent a message to your professor. Now please post a message to your group.</p> <p>Message can say “Hello”</p>	<p>Time on tasks:</p> <p>Number of Clicks:</p> <p>Were they successfully completed?</p> <p>___ Yes ___ No</p>	
<p><i>(If participant does not state that they posted a message to the group)</i></p> <p>Probe: Were you able to post a message to the entire group?</p>	<p>___ Yes or ___ No</p> <p>Verbal response :</p>	
<u>Post-Task Q1:</u> How did you feel about the process?	Verbal response:	
<u>Post-Task Q2:</u> Was it difficult or confusing?	___ Yes or ___ No	

If yes, what made it so?	Verbal response	
<u>Post Taks Q3:</u> Is there anything you would recommend to be changed in this process?	<p>___Yes or ___No</p> <p>Verbal response :</p>	
Post Task Q4: Is there anything else you would like to share?	Verbal response:	
<p>Steps Task 2b</p> <p>Click teams < “New conversation” button <</p> <p>Type post message < Press enter or click  icon</p>	<p>Performance Observations</p> <p>_Clicked Teams</p> <p>_Clicked New Conversation</p> <p>_Wrote a post</p> <p>_Pressed enter or clicked icon</p> <p>_Wrote a chat instead</p> <p>_Attempted to write post in chat instead of team</p> <p>Behavioral Observations</p> <p>_Confusion</p> <p>_Confident</p> <p>_Calm</p> <p>_Frustrated</p> <p>_Positive Body Language</p> <p>_Negative Body Language</p>	

Now it is time to upload a file to your group.

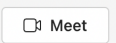
Goal 3: Create a folder and Upload and share a file with others within the group to collaborate	Goal Based	Notes
<p>Moderator: There is a file on the desktop named “Testing File 1”. Please create a folder named “Documents” for your team “ABCD”.</p> <p>Upload “Testing File 1” in the “Documents” folder</p> <p>Let me know when you have completed this task.</p> <p>----- -----</p> <p>Great! Now please share this same file with your team</p>	<p>Time on tasks:</p> <p>Number of Clicks:</p> <p>Were they successfully completed? ___Yes ___No</p>	
<p>(If participant is having trouble creating folder and uploading file)</p> <p>Probe: How would you generally create a desktop folder and add a file into it?</p> <p>Probe: Are there any buttons that seem like they might help you with this current task?</p>	<p>Verbal response:</p> <p>___Yes or ___No</p> <p>Verbal response:</p>	
Post-Task Q1: How did you feel about the process? Did you find it to be intuitive?	Verbal response:	
Post-Task Q2: Was that difficult? Please rate it from	___Yes or ___No	

1 to 5. 1 being easiest and 5 being most difficult If yes, what was particularly difficult?	Verbal response: 1 - 5:	
Post Taks Q3: What would you change?	Verbal response:	
Post Task Q4: Is there anything else you would like to share?	Verbal response:	
<p>Task 3 Steps</p> <p><u>Method A</u></p> <p>Teams < Files tab < “New button” < Folder < Name Folder “Documents” < Drag “Testing File 1” into “Documents”</p> <p>OR</p> <p><u>Method B</u></p> <p>Click Teams < Files Tab < “New” button < Folder < Name Folder “Documents” < Upload button < Files < Select File < Open</p>	<p>Performance Observations</p> <p>_ Successfully created and named folder</p> <p>Successfully Uploaded File with:</p> <p>_ Method A</p> <p>_ Method B</p> <p>Behavioral Observations</p> <p>_ Observed confusion or Difficulty</p> <p>_ Asked for help</p> <p>_ Observed inactivity</p> <p>_ Staring at screen</p> <p>_ Flipping through multiple menus</p> <p>_ Verbal Confusion or Frustration</p> <p>_ Negative Body Language</p> <p>_ Positive Body Language</p>	

Moderator: We are going to continue with our collaboration and communication tasks. So for the next task we will have you create a meeting with your group.

Goal 4: Start a meeting with your group	Goal Based	Notes
<p>Moderator: Since you have communicated with your group through posts and shared files. Now is the time to discuss your progress with the team in a meeting. Find a way to initiate a meeting with 3 of your group members.</p> <p>[Point to list of 3 names again for participant to add to meeting]</p> <p>Again these are the names that you should add to your meeting.</p>	<p>Time on tasks:</p> <p>Were they successfully completed? ___ Yes ___ No</p> <p>Did they start a video call from chat instead of a group meeting? ___ Yes ___ No</p>	
<p><i>(If participant does not say they are done)</i></p> <p>Q: Did you find a way to start a meeting with your team?</p>	<p>___ Yes ___ No</p> <p>Verbal response:</p>	
<p>[If participant is having trouble with this task]</p> <p><u>Probe:</u> Do you see any icons that indicate they could potentially be for meetings?</p>	<p>Verbal response:</p>	
<p>Post-Task Q1: How do you feel that went?</p>	<p>Verbal response:</p>	
<p>Post-Task Q2: Was that difficult? Please rate it from 1 to 5. 1 being easiest and 5 being most difficult</p> <p>If yes, what was</p>	<p>___ Yes or ___ No</p> <p>Yes, verbal response</p> <p>1 - 5:</p>	



Goal 4: Start a meeting with your group	Goal Based	Notes
<p>Moderator: Since you have communicated with your group through posts and shared files. Now is the time to discuss your progress with the team in a meeting. Find a way to initiate a meeting with 3 of your group members.</p> <p>[Point to list of 3 names again for participant to add to meeting]</p> <p>Again these are the names that you should add to your meeting.</p>	<p>Time on tasks:</p> <p>Were they successfully completed? ___ Yes ___ No</p> <p>Did they start a video call from chat instead of a group meeting? ___ Yes ___ No</p>	
<p><i>(If participant does not say they are done)</i></p> <p>Q: Did you find a way to start a meeting with your team?</p>	<p>___ Yes ___ No</p> <p>Verbal response:</p>	
<p>[If participant is having trouble with this task]</p> <p><u>Probe:</u> Do you see any icons that indicate they could potentially be for meetings?</p>	<p>Verbal response:</p>	
<p>particularly difficult?</p>		
<p>Post Task Q3: What would you change</p>	<p>Verbal response:</p>	
<p>Post Task Q4: Is there anything else you would like to share?</p>	<p>Verbal response:</p>	

<p>Task 4 steps</p> <p>Teams < Join meeting button  check for audio and camera < Click “Join now” button < Click “Add Participants”</p>	<p>Performance Observations</p> <ul style="list-style-type: none"> _ Clicked on meeting button _ Checked for audio and camera _ Clicked on join now button _ Initiated call or video from chat instead of grouping meeting from teams tab <p>Behavioral Observations</p> <ul style="list-style-type: none"> _ Observed confusion or difficulty _ Positive Body Language _ Negative Body Language
---	---

Moderator: Now that you are in the meeting an important point has come up that cannot be explained verbally. This means you have to share your screen to discuss your idea further with your group.






Goal 5a: Access the share screen feature during a meeting	Task Based	Notes
Moderator: While you are still in the meeting we need you to share your screen. Find a way to share your screen with the rest of your group.	<p>Time on tasks:</p> <p>Number of Clicks:</p> <p>Were they successfully completed? ____ Yes ____ No</p>	
Task 5b: Provide access to group members to share screen		
Moderator: Provide access to people in the call to share their screen. You need to give everyone in		

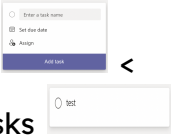
the call permission to share their screen.		
(If participant is having trouble with giving screen sharing permissions) <u>Probe:</u> Do you remember how you give the ability to share screen in other collaboration apps? Are there any icons or symbols that could guide you?	Verbal response: Actions:	
<i>(If participant does not indicate completing the task)</i> Q: Were you able to give access to other members of the meeting to share their screen?		
Post-Task Q1: How did you feel about the process?	Verbal response:	
Post-Task Q2: Was that difficult? Please rate it from 1 to 5. 1 being easiest and 5 being most difficult If yes, what was particularly difficult?	___Yes or ___No Verbal response 1 - 5:	
Post Taks Q3: Is there anything you would change about the current process?	Verbal response:	
Post Task Q4: Is there anything else you would like to share?	Verbal response:	

<p>Task 5a Steps</p> <p>Video call < click on the share button</p>  <p>Task 5b Steps Providing access to the people in the call to share their screen</p> <p>Method 1 Video call < click on the people tab at the top  < click on each individual name ellipse (three dot) < Make them the presenter</p> <p>Method 2 Command F or Control F < Roles < assign “mark as attendee” or “mark as presenter”</p>	<p>Performance Observation</p> <ul style="list-style-type: none"> _Successfully completed sharing their screen _Successfully gave permission to the entire group through _Method 1 _Method 2 <p>Behavioral Observation</p> <ul style="list-style-type: none"> _Observed confusion or Difficulty _Asked for help _Observed inactivity _Staring at screen _Clicking on every button. _Verbal Confusion or Frustration _Negative Body Language _Positive Body Language 	
--	---	--

Moderator: Now that you have had a meeting with members of your group. You need to divide responsibilities for an upcoming assignment. This involves creating a To-do list. Remember you have to accomplish this using internal, first party tools available to you in Microsoft Teams.

Goal 6a: Create a to-do list	Task Based	Notes
<p>Moderator: Within your group, divide tasks for an upcoming assignment. Use the internal feature to create a to-do list for the rest of your group.</p> <p>Let me know once you have found the appropriate spot to accomplish this task.</p> <p>Now that you have found the correct spot to create a to-do list. Fill out the form with the following information:</p> <p>[Hand note with this information]</p> <ul style="list-style-type: none"> • Create cover page • Set due date: 05/06 • Set label: blue • Assign: to all • Priority: Urgent <p>Assign the to-do list item to all members of your team.</p>	<p>Time on tasks:</p> <p>Number of Clicks:</p> <p>Able to accomplish using internal tools? ___ Yes ___ No</p> <p>Were they successfully able to complete the task? ___ Yes ___ No</p>	
<p>[If participant having trouble with task]</p> <p>Q: Where have you found most of your tasks starting</p>	Verbal Response:	

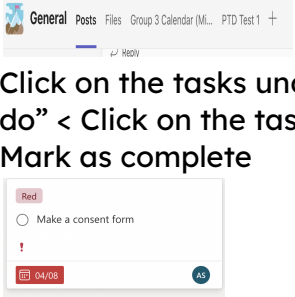
from? Can you find an expandable tab that could potentially be helpful for you?		
(If participant does not indicate that they have completed the task) Q: Were you able to create a to-do list with the stated criteria?		
Post-Task Q1: How did you feel about the process?	Verbal response:	
Post-Task Q2: Was that difficult? Please rate it from 1 to 5. 1 being easiest and 5 being most difficult If yes, what was particularly difficult?	___Yes or ___No Verbal response 1 - 5:	
Post Taks Q3: What would you change?	Verbal response	
Post Task Q4: Is there anything else you would like to share?	Verbal response	
<p>Tasks 6 Steps</p> <p>Teams < Plus  < Click on “Tasks by Planner and”</p> <p> button < “Create a new plan,” < check “post to the channel about this tab” < Save   < Click on “Add Tasks”  <</p>	<p>Performance Observation:</p> <p>_ Clicked on the plus button</p> <p>_ Clicked on the “Tasks by Planner and Button”</p> <p>_ Clicked on “new plan”</p> <p>_ Checked “post to the channel about this tab”</p> <p>_ Clicked on save</p> <p>_ Clicked on “add</p>	

<p>Name the tasks and add it to the channel</p>  <p>Click on the tasks < Edit the information</p>	<p>tasks”</p> <p>_Clicked on the tasks</p> <p>Behavioral Observation:</p> <p>_Observed confusion or difficulty</p> <p>_Asked for help</p> <p>_Observed inactivity</p> <p>_Staring at screen</p> <p>_Clicking on every button.</p> <p>_Verbal Confusion or Frustration</p> <p>_Negative Body Language</p> <p>_Positive Body Language</p>	
---	---	--

Moderator: After creating the to-do list, you have assigned a task to your team. You completed your part of the to-do list and you need to mark it complete.

Goal 6B: Access to-do list	Task Based	Notes
<p>Moderator: Thank you for creating the to - do list. You completed your end of the tasks required from our last task. So now it's time to mark it complete!</p> <p><u>Moderator Note: Assign the participant with a to-do list task for them to mark complete:</u></p>	<p>Time on tasks:</p> <p>Number of Clicks:</p> <p>Were they successfully completed? ___ Yes ___ No</p>	

<p>Please access the task that is assigned to you and mark them complete.</p> <p>Once you have done so, confirm the completion of the task with me.</p>		
<p>(When the participant is done with task)</p> <p>Q: How can you be sure that the completion of your task has been notified to the rest of your team?</p>	<p>Verbal Response:</p> <p>Does the participant go to the Activity page to review the task completion notification sent to the team?</p>	
<p>Post-Task Q1: How did you feel about the process?</p>	<p>Verbal response:</p>	
<p>Post-Task Q2: Was that difficult? Please rate it from 1 to 5. 1 being easiest and 5 being most difficult</p> <p>If yes, what was particularly difficult?</p>	<p>___Yes or ___No</p> <p>Verbal response</p> <p>1 - 5:</p>	
<p>Post Taks Q3: Is there anything about this process that you feel would be better if changed?</p>	<p>Verbal response:</p>	
<p>Post Task Q4: Is there anything else you would like to share?</p>	<p>Verbal response:</p>	

<p>Tasks 7 Steps</p> <p>Teams < Click on task tab name at the top</p>  <p>Click on the tasks under “to do” < Click on the tasks < Mark as complete</p>	<p>Performance Observation</p> <ul style="list-style-type: none"> _Cicked on task tab name _Clicked on tasks _Clicked on the radio button for completing the tasks <p>Behavioral Observation</p> <ul style="list-style-type: none"> _Observed confusion or difficulty _Asked for help _Observed inactivity _Staring at screen _Clicking on every button. _Verbal Confusion or Frustration _Negative Body Language _Positive Body Language 	
---	--	--

Freeplay Prompt

Thank you, that marks the end of the guided portion of this usability test. I'd like you to take the next 10 minutes or so to explore the application at your leisure. Feel free to poke around, revisit tasks, and click on and/or enter anything that catches your attention. This is a test environment, so there are no consequences for your curiosity.

Free Play Comments/Notes:

Moderator: That concludes all the tasks of this usability study. Thank you for cooperating and helping us learn more about this program. Before we let you go, there are a few final questions we would like to ask you. Feel free to respond as you feel. There are no right or wrong answers.

Final Questions and Redesign Feedback	
What statement most closely describes the experience you just had with this program with similar software you might have used in the past?	<p>_ This exceeds in quality and availability of services as compared to other similar software</p> <p>_ This feels the same as the other collaborative software I've used in the past with similar extent of features</p> <p>_ This falls short compared to other similar programs I've used in the past, or currently use. The functionality is limited and quality is lacking</p>
Q: Do you have any additional comments regarding Microsoft Teams	Verbal Response:
Q: Were there any issues you have experienced using Microsoft Teams that were not addressed during the study? If so, please explain:	Verbal Response:
Q: Is there anything you would change about Microsoft Teams?	Verbal Response:
How intuitive did you feel it was to execute these tasks? [Moderator provides printout of Likert Scale]	<p>(1= not intuitive at all, 5= very intuitive)</p> <p>Verbal Response:</p>

Appendix G: Novice Scenario Sheets

Scenario 1

You have just joined a new class. As part of the onboarding process, you are being added to a group in Microsoft Teams. Your professor said they would send you an invite. Please log in to your email client and follow the invite to set up your account

Your professor's information is on the provided note:

Scenario 2

Your professor asked you to let them know through Teams when your account has been successfully set up, and make a post to the class. Please show us how to do the following:

- A. Let your professor know via Teams message that your account has been set up
- B. Make a post to your class. This can be something as simple as “Hello”

Scenario 3

You have been assigned a group project in the class and need to upload documents you have prepared in a shared folder for your teammates. These documents are in a folder on your desktop, and you want to move them to the Teams group. Please show us how to:

- A. Add documents to a shared Teams folder so that others in the group can see and edit.

Scenario 4

It is time to meet with your group, and everyone is currently available for a call. Please show us how you would:

A. Start a meeting with your group members (listed below)

- Gayatri Vasudevan - gayatri.vasudevan@sjsu.edu
- Aman Singh - amanpreet.singh@sjsu.edu
- Vishakha Joshi - vishakha.joshi@sjsu.edu

Scenario 5

While meeting with your group, you pull up a document that you want to walk your teammates through. Please show us how you would:

- A. Share your screen to show your group “Testing File 1”

Your teammate also has something they would also like to present to the group, but does not have permission to do so. Show us how to:

- B. Give the following group members permission to share their screen.

Scenario 6

You have been informally chosen as the group leader. It has fallen on you to assign everyone tasks to split up project work. Please show us how you would:

- A. Create a to-do list for your group using built-in Teams functions. You may use the following task:
- Create cover page
 - Due on 05/06
 - Label: Blue
 - Assigned to all group members
 - Priority: Urgent

The group's tasks have been completed, and it's time to mark them done! Please:

- B. View any task(s) assigned to you and mark them complete

Appendix H: Expert Script

Introduction

Greet the participant, make small talk about their day, and lead them to the session location.

Thank you for volunteering your time today to participate in our study. We really appreciate the chance to get your thoughts and feedback on this product. Before we start, there are a few things we'd like to go over.

This session will take about an hour, in which we will have some scenarios for you to run through in the application. We will then give you some tasks to complete, after which we will ask some questions about your experience walking through them, and about any feedback you may have regarding the application. You are free to take a break or leave at any time during the study.

We would like to emphasize that we are not testing you—you are helping us test the product. Our focus is on understanding the experience provided by Microsoft Teams and finding possible areas for improvement.

Consent form should be out now.

We will be recording audio and video of this session, both the screen and the room. All personal information provided and/or recorded will be anonymous.

Our goal is to evaluate the usability of Teams and test its efficiency as a productivity tool. If this is all acceptable to you, please sign this consent form. The form grants us

permission to record video and audio and use this anonymized session data for our report.

Answer any questions from the participant and collect their signed form.

Let's get started. Please log in to your Microsoft Teams account *(if applicable ask them to log in using SJSU email)* and let us know when you have successfully done so.

Participant verifies they have received the email. Non-SJSU participants will be provided with test credentials for an account that has been cleared of association with all test group data.

I would like to remind you that none of your information will be saved. The information will only be used for the duration of the test and cleared immediately after.

Make sure screen recording is on and external room cameras are rolling. Sit next to the participant and observe their actions and reactions.

Setup Review

Thank you, now I'd like to get started with some review of your own experience using Teams.

For your information, our study covers the For Education version, which does not have access to the calendar or meeting scheduling. That being said, we appreciate and would like to hear your opinion and feedback on all aspects of your Team's experience.

Do you mind showing me how you have Teams set up for work/school/personal use?

If a participant is working under NDA or is not willing to share, skip to general questions.

Setup Questions	Verbal Response	Notes
Can you show or tell me, generally, what you use Teams for and how you use it?		
Have you made any changes to the setup or integrations of your Teams account? Have you added any features, apps, or plugins? - If so, please show me.		
In what ways does Teams affect your productivity?		

Goal-Based Tasks

Now we'll walk through a set of scenarios. Please read the prompt sheet and complete objectives to the best of your ability. Just a reminder, this is not a test for you-what we want to understand is whether or not Microsoft has created a seamless experience.

Thank you for logging into your Teams account. For the purpose of this study, you are a graduate student who is organizing a school study group with 3 team members.

Goal 1: Create a group to collaborate with your classmates	Goal Based	Notes
Please create a team	Time on tasks (min) :	

<p>where you can share documents and communicate about schoolwork.</p> <p>You can name the group “Study Group”</p> <p>Please confirm if you have created a group once you finish.</p>	<p>Number of Clicks:</p> <p>Did they successfully create a group ___ Yes ___ No</p> <p>Did they successfully add members to the team? ___ Yes ___ No</p> <p>Were they able to successfully show that they added members? ___ Yes ___ No</p>	
<p><i>(If participant does not say that they have finished creating a team)</i></p> <p>Q: Were you able to create a team?</p> <p>Q: Which icon do you think that one must click on to create a team?</p>	<p>___ Yes or ___ No</p> <p>Verbal response:</p>	
<p><u>Post-Task Q1</u>: How did you feel about the process of creating a group?</p> <p><u>Post-Task Q2</u>: How do you feel about the process of generating a code to share with your group members?</p>	<p>Verbal response:</p>	

Post-Task Q3: Was there anything that you found to be difficult? If yes, what did you find difficult about the process?	____Yes or ____No Verbal response	
Post Task Q4: Is there something in the current process you just went through that you would change?	Verbal response :	
Post Task Q5: Is there anything else you would like to share?	Verbal response:	

Steps to Task 1: <u>Create a group</u> Open Web App < Log In < Teams tab < Join or create team < Add description/name < Add members	Performance Observations _ Successfully Logged In _ Clicked create a Team _ Named the team _ Added team members Check if Team Members Added _ Clicked teams _ Clicked Information Logo Behavioral Observations _ Observed confusion or Difficulty _ Asked for help _ Observed inactivity _ Staring at screen _ Flipping through multiple menus
--	---

Goal 2: Generate a code to allow members to join the group		
<p>Your group members have requested an access code that would allow them to join the group.</p> <p>Please show how you would:</p> <ul style="list-style-type: none"> a) Generate an access that would allow the participants to join the group without requiring permission from you b) Share the code with your group members through Teams c) Check if all your members have joined the group <p>Confirm if all the members have joined without requiring your permission.</p>		
<p>[If they ask for help in identifying where to generate a code]</p> <p>Probe 1: Where do you think one must look while getting a code for that particular group?</p>		

<p>[If the participant generates a link instead of the code]</p> <p>Probe 1: Do you think the participant was successful in joining the group (without requiring your permission)? Why were they not able to?</p>		
<p><i>(If participant does not say that they have finished creating a team)</i></p> <p>Q: Were you able to create a team?</p> <p>Q: Which icon do you think that one must click on to create a team?</p>	<p>___Yes or ___No</p> <p>Verbal response:</p>	
<p><u>Post-Task Q1</u>: How did you feel about the process of creating a group?</p> <p><u>Post-Task Q2</u>: How do you feel about the process of generating a code to share with your group members?</p>	<p>Verbal response:</p>	
<p><u>Post-Task Q3</u>: Was there anything that you found to be difficult?</p> <p>If yes, what did you find difficult about the process?</p>	<p>___Yes or ___No</p> <p>Verbal response</p>	

<u>Post Task Q4:</u> Is there something in the current process you just went through that you would change?	Verbal response :	
<u>Post Task Q5:</u> Is there anything else you would like to share?	Verbal response:	

Moderator: You are the admin of the study group that has just been created. As the study group grows you have to manage permissions and restrictions.

Goal 3: Grant admin privileges and restrict access to certain features for team members	Task Based	Notes
<p>One of the coordinating members, Vishakha Joshi, from your study group is requesting you to add them as an admin of the group so they can add new members. The member is also asking you to restrict access to certain features for the other members of the group.</p> <p>Please show us how you would:</p> <p>a) Make one of the team members an</p>	<p>Time on tasks:</p> <p>Number of Clicks:</p> <p>Were they successfully completed? ___ Yes ___ No</p>	

<p>admin</p> <p>b) Ensure that the other participants cannot add apps, add tabs, and delete channels.</p>		
<p>[If the participant is having a difficulty in identifying where to provide permission to make a member an admin]</p> <p>Probe 1: Where do you think one would need to look to modify the changes in a group?</p> <p>[If the participant is having a difficulty in restricting access]</p> <p>Probe 1: Connecting to other applications, which is the most common way to restrict access to certain features?</p>	<p>Verbal response:</p> <p>Actions:</p>	
<p><i>(If participant does not indicate completing the task)</i></p> <p>Q: Were you able to make the coordinating member an admin?</p> <p>Were you able to add the restrictions? What shows you that you have</p>		

implemented this?		
<p>Post-Task Q1: How did you feel about the process of making a person an admin?</p> <p>Follow-up: What are your thoughts on the process flow in restricting the access for the group members?</p>	<p>Verbal response:</p>	
<p>Post-Task Q2: Was that difficult? Please rate it from 1 to 5. 1 being easiest and 5 being most difficult</p> <p>If yes, what was particularly difficult?</p>	<p>___Yes or ___No</p> <p>Verbal response</p> <p>1 - 5:</p>	
Post Taks Q3: Is there anything you would change about the current process?	Verbal response:	
Post Task Q4: Is there anything else you would like to share?	Verbal response:	
<p>Task 3</p> <p>Teams < Hover over group < More options < Manage Team < Change Role Dropdown < Settings < Member permissions AND guest permissions</p>	<p>Performance Observation:</p> <p>_Clicked on Teams</p> <p>_Clicked on "More options"</p> <p>_Clicked on "Manage Team"</p>	

	<ul style="list-style-type: none"> _ Changed role dropdown _ Clicked on settings _ Changed appropriate member permissions _ Changed appropriate guest permissions <p>Behavioral Observation:</p> <ul style="list-style-type: none"> _ Observed confusion or difficulty _ Asked for help _ Observed inactivity _ Staring at screen _ Clicking on every button. _ Verbal Confusion or Frustration _ Negative Body Language _ Positive Body Language 	
--	---	--

Moderator: Thank you for getting this group started and for providing access to the members, as well as, setting up admin permissions. Now you have to collaborate with your

group members and consolidate the notes you have made during the lectures. This requires you to create a notebook that allows you to take notes in a freeform manner.

Goal 4A: Create a digital document using a note-taking application	Goal Based	Notes
<p>Your goal is to create a shared set of notes that can be accessed and updated by all members of the group in real-time. It would be beneficial if the note-taking application can accommodate freeform ideas including notes, images, videos, etc with no restrictions or formatting.</p> <p>Please show how you would:</p> <ul style="list-style-type: none"> a) Create a new notebook specifically for your study group. b) Organize the subjects as sections c) Name the sections related to the subject d) Create pages in each section for each topic e) Name the pages related to the topic f) Draft the content for each page 	<p>Time on tasks:</p> <p>Number of Clicks:</p> <p>Were they successfully completed? ___ Yes ___ No</p>	
<p><i>(If participant does not use the right tool)</i></p> <p>Probe 1:</p>	Verbal response :	

<p>Have you ever used a note-taking application that allows you to organize your topics as sections, create multiple pages, and allow real-time collaboration?</p> <p>Probe 2: Microsoft has a digital note-taking application that is typically used for collaboration. Do you know if there is a similar application by Microsoft in the Teams software?</p> <p>(If they say yes) → In that list, can you identify an application that you think can be used for note-taking and organizing your notes?</p>		
<p>Goal 4B: View the changes made by your group members on the Notebook</p>		
<p>You have been requested by your group members to review the notes that they have added in the notebook.</p> <p>Please show how you would:</p> <ul style="list-style-type: none"> a) See the changes made by your group members b) Identify which group member contributed to the notebook 		





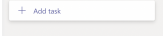
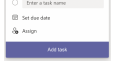

<p><i>(If the participant is not able to identify which team member contributed to the notebook)</i></p> <p>Probe 2: While working on collaborative documents that you have used in the past, how would you typically check to see if a person has made a change. Try using that understanding to locate the feature that lets you know who made the change.</p>		
<p>Task 2 Steps</p> <p>Creating a OneNote in the group</p> <p>Teams < Study Group Team < Click on the “+” icon on the top tab < Add “One Note” < Create a New Notebook < Show Navigation < Add Section/Add Page</p> <p>Viewing the change</p> <p>Teams < Study Group Team < Click on the “+” icon on the top tab < Add “One Note” < Create a New Notebook < Show Navigation < “History” Section < View < View Authors</p>	<p>Performance Observations</p> <p>2A:</p> <ul style="list-style-type: none"> _ Successfully added One Note to the group _ Successfully added sections and renamed the section _ Successfully added pages and renamed the pages <p>Observations 2B:</p> <ul style="list-style-type: none"> _ Successful in seeing the changes on the “History” section _ Successfully clicked on the View tab _ Successfully clicked on “View Authors” <p>Behavioral Observations</p> <ul style="list-style-type: none"> _ Observed confusion or Difficulty _ Asked for help _ Observed inactivity 	

	_ Staring at screen _ Flipping through multiple menus _ Verbal Confusion or Frustration _ Negative Body Language _ Positive Body Language Behavioral Observations _ Confusion _ Confident _ Calm _ Frustrated _ Positive Body Language _ Negative Body Language	
(If participant does not state if they had added the notebook in the Study Group Channel) Probe: Were you able to add the notebook to your Study Group team?	____ Yes or ____ No Verbal response :	
<u>Post-Task Q1:</u> How did you feel about the process of adding a notebook? <u>Post-Task Q2:</u> How did you feel about the process of viewing the changes and who made changes to the notebook?	Verbal response: Verbal response:	
<u>Post-Task Q3:</u> Was anything difficult or confusing?	____ Yes or ____ No Verbal response	

If yes, what made it so?		
Post Task Q4: Is there anything else you would like to share?	Verbal response:	

Goal 5: Create to-do list task and assign them	Task Based	Notes
<p>Your group is looking to you for guidance. Please let them know what they would have to do.</p> <p>Please show us how you would:</p> <ul style="list-style-type: none"> c) Delegate responsibilities to each team member d) Please complete this in a way that tracks progress and maintains organization e) Add a label, the due date, priority level, and a note to the to-do list task. <p>You have been provided with a list of names and their specific assigned tasks and due date</p>	<p>Time on tasks:</p> <p>Number of Clicks:</p> <p>Were they successfully completed? ____ Yes ____ No</p>	
[If the participant is having a difficulty in identifying where to locate the to-do	<p>Verbal response:</p> <p>Actions:</p>	

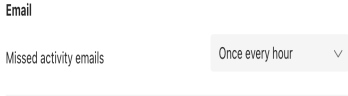
list] Probe 1: To create a to-do list within a team, where do you think you must be looking in? Probe 2: Do you think you are able to view anything that is similar to creating a list? Probe 3: Where have you found most of your tasks starting from? Can you find an expandable tab that could potentially be helpful for you?		
<i>(If participant does not indicate completing the task)</i> Q: Were you able to create a to-do list and are you able to view the one that you had assigned to the other members?		
Post-Task Q1: How did you feel about the process of creating the to-do list task?	Verbal response:	
Post-Task Q2: Was that difficult? Please rate it from 1 to 5. 1 being easiest and 5 being most difficult If yes, what was	___Yes or ___No Verbal response 1 - 5:	

particularly difficult?		
Post Taks Q3: Is there anything you would change about the current process?	Verbal response:	
Post Task Q4: Is there anything else you would like to share?	Verbal response:	
<p>Task 5</p> <p>Teams < Plus  < Click on “Tasks by Planner and”</p> <p> < “Create a new plan,” < check “post to the channel about this tab” < Save   < Click on “Add Tasks”  < Name the tasks and add it to the channel  < Click on the tasks  < Edit the information</p>	<p>Performance Observation:</p> <p>_Clicked on the plus button</p> <p>_Clicked on the “Tasks by Planner and Button”</p> <p>_Clicked on “new plan”</p> <p>_Checked “post to the channel about this tab”</p> <p>_Clicked on save</p> <p>_Clicked on “add tasks”</p> <p>_Clicked on the tasks</p> <p>Behavioral Observation:</p> <p>_Observed confusion or difficulty</p> <p>_Asked for help</p> <p>_Observed inactivity</p> <p>_Staring at screen</p> <p>_Clicking on every button.</p> <p>_Verbal Confusion or Frustration</p>	

	_Negative Body Language _Positive Body Language	
--	--	--

Goal 6: Missed Activity Email Notification	Task Based	Notes
<p>Moderator: With the exams being around the corner it is important that you stay up-to-date with all the notifications and receive them to your email.</p> <p>Please show how you would ensure that you receive email notifications to help you stay on top of updates and deadlines.</p> <p>Once you have done so, confirm the completion of the task with me.</p>	<p>Time on tasks:</p> <p>Number of Clicks:</p> <p>Were they successfully completed? ____ Yes ____ No</p>	
<p>[If they ask for help with creating a new team]</p> <p>Probe: Where would you expect to go if you need to make changes in your profile? Are there any relevant terms that you can click on to change things</p>	Verbal Response:	

<p>on your profile?</p> <p>[If they are not able to view information about other members]</p> <p>Probe: What term looks like it might give you information about making modifications?</p>		
<p>(When the participant is done with task)</p> <p>Q: Can you reflect on your experience in identifying the missed activity email notifications?</p>	<p>Verbal Response:</p> <p>Does the participant go to the main settings page on the profile in Microsoft Teams?</p>	
<p>Post-Task Q1: How did you feel about the process?</p>	<p>Verbal response:</p>	
<p>Post-Task Q2: Were there any issues or challenges that you encountered?</p> <p>Please rate it from 1 to 5. 1 being easiest and 5 being most difficult</p> <p>If yes, what was particularly difficult?</p>	<p>___Yes or ___No</p> <p>Verbal response</p> <p>1 - 5:</p>	
<p>Post Taks Q3: Is there anything about this process that you feel would be better if changed?</p>	<p>Verbal response:</p>	
<p>Post Task Q4: Is there</p>	<p>Verbal response:</p>	

anything else you would like to share?		
<p>Tasks 6 Steps</p> <p>Settings Icon (Near Profile) > Notifications > Email</p> 	<p>Performance Observation</p> <ul style="list-style-type: none"> -Navigate manage settings icon -Click on notifications inside the settings -Change the drop and select option <p>Behavioral Observation</p> <ul style="list-style-type: none"> _Observed confusion or difficulty _Asked for help _Observed inactivity _Staring at screen _Clicking on every button _Verbal Confusion or Frustration _Negative Body Language _Positive Body Language 	

Moderator: Your group members are grateful for all the effort that you took in creating the notebook. It is now your responsibility to make sure everyone is contributing to the notebook and that all the notes are compiled.

Moderator: Now that you have had a meeting with members of your group. You need to divide responsibilities for an upcoming assignment. This involves creating a To-do list. Remember you have to accomplish this using internal, first party tools available to you in

Microsoft Teams.

Freeplay Prompt

Thank you, that marks the end of the guided portion of this usability test. I'd like you to take the next 5 minutes or so to explore the application at your leisure. Feel free to poke around, revisit tasks, and click on and/or enter anything that catches your attention. This is a test environment, so any changes you make, messages sent, etc. will not affect anything significant.

Free Play Comments/Notes:

Added two poll plugins

Moderator: That concludes all the tasks of this usability study. Thank you for cooperating and helping us learn more about this program. Before we let you go, there are a few final questions we would like to ask you. Feel free to respond as you feel. There are no right or wrong answers.

Final Questions and Redesign Feedback	
What statement most closely describes the experience you just had with this program with similar software you might have used in the past?	<p><input type="checkbox"/> This exceeds in quality and availability of services as compared to other similar software</p> <p><input type="checkbox"/> This feels the same as the other collaborative software I've used in the past with similar extent of features</p>

	_ This falls short compared to other similar programs I've used in the past, or currently use. The functionality is limited and quality is lacking
Q: Do you have any additional comments regarding Microsoft Teams	Verbal Response:
Q: Were there any issues you have experienced using Microsoft Teams that were not addressed during the study? If so, please explain:	Verbal Response:
Q: Is there anything you would change about Microsoft Teams?	Verbal Response:
How intuitive did you feel it was to execute these tasks? [Moderator provides printout of Likert Scale]	(1= not intuitive at all, 5= very intuitive) Verbal Response:

Post-Session Questions:

1. With your background and experience using Microsoft Teams, what features do you feel could be improved?
2. Did you change any initial startup settings for the program? Did you add or remove any apps or plugins? What was the reason for changing these settings? What bothered you about the initial setup?
3. How do/did you typically use Microsoft Teams?
4. Apart from the calendar and scheduling, what were some of the most useful features that you relied on?
 - a. Anything you noticed missing while using this version?

Appendix I: Expert Scenario Sheets

Scenario 1

You are kicking off a team with 3 members for your study group, listed below. You are leading the group and will be responsible for getting everyone organized.

You are responsible for creating a group to consolidate shared files, messages, and meetings.

1A) Please show us how you would create a Team for the group

You may name the Team “Study Group”. You can skip adding members for now.

Scenario 2

After creating the group, produce a code that lets non-members add themselves to the group when they have access to the code.

Provide us with the code by messaging the members from the list below and check that the members have added themselves to the group.

- Vishakha Joshi - vishakha.joshi@sjsu.edu
- Gayatri Vasudevan - gayatri.vasudevan@sjsu.edu
- Amanpreet Singh - amanpreet.singh@sjsu.edu

Scenario 3

You are the admin of the study group you just created. Another member of your group has to be made admin. As the study group grows, you realize you need to make sure nobody makes changes to the Team setup without your permission. Show us how you would:

- A. Make one of your Team members an admin. Here is the team member that needs to be made admin: Vishakha Joshi - vishakha.joshi@sjsu.edu
- B. Make sure you and the other admin are the only ones who can:
 - a. add Apps
 - b. add Tabs
 - c. delete Channels
- C. Ensure that the other group members cannot add apps, add tabs, and delete channels

Scenario 4

- A) Now you have to jot down all the ideas your study group has for particular classes. This requires you to create a document that allows you to take notes in a freeform manner. This notebook has to be shared only with your study group.

Please create a notebook and name it “Study Group Notes”. Also add sections with information about each class with this information:

Sections

- History
 - The Trojan War
 - World War II
- English
 - Grammar
 - Prose
 - Poetry
- Math
 - Addition
 - Multiplication

- B) Looks like someone made changes to one of the notebook sections. View changes made by your classmate. Find out which person from the group made this change. Let us know when you discover which classmate.

Scenario 5

You are responsible for making sure everyone is on track to complete their items. Show us how you would:

- A. Delegate the following responsibilities to the respective team members (listed below)
- B. In a way that the team can stay organized and keep track of progress.

- Vishakha Joshi
 - Task: Complete the notes for Trojan War
 - Due: June 20, 2023
 - Priority: Urgent
 - Notes to be added: Please add in the dates and the main details of the war
- Gayatri Vasudevan
 - Task: Grammar Homework
 - Due: May 5, 2023
 - Priority: Medium

Scenario 6

Exams are coming up soon! You cannot miss any exchange of information from your group. In order to stay up-to-date make it so that all the activity gets emailed to you.

Please show how you would ensure that you receive email notifications to help you stay on top of updates and deadlines.

Once you have done so, confirm the completion of the task with me.