

# **Stage C GROUP TASK**

\*\*\*\*\*

## **Evaluation Report**



**Group 1 members: Fahad Ahmad (30685265)  
Muhammad Faraz Amin (30163331)  
Natasha De Almeida (30829836)  
Poorna Perera (29889413)  
Priasha Barua (31524540)  
Utkarsh Srivastava (31204279)  
Abdalla Abdellatif (30247500)**

# Introduction

This is an evaluation report for a usability test that our team conducted for **VR SENSE**.

- **Project idea summary**

VR SENSE is an educational platform that helps university students overcome current shortcomings of online learning by using Virtual Reality (VR). After logging in the application, each student is presented with a personalized interface containing their enrolled units and will be able to assign an avatar which will be later used within virtual classrooms, virtual labs, and virtual field trips. Students will be able to both join and create these virtual activities and use the generated links to access or share the desired virtual activity. The use of these virtual activities, along with features like avatars and motion sensors, inside a VR environment will ensure a better online education delivery.

- Press on the **link** to access our **prototype**.  
<https://app.mogups.com/h5aRxqjKD3/view/page/ac4dae7a1>

## Evaluation Plan

Each group member conducted the high-fidelity prototype testing with 2-3 participants, either face to face or while screen-sharing on "Zoom".

Participants are first introduced to "VR Sense" with a briefing about the application and its purpose in order to ensure they are able to test the product with a firm understanding. They will then be allowed to use the prototype and navigate through the different pages and functions to create familiarity between the participant and application. Once a solid user-foundation has been built, the participants are instructed to complete two tasks using the "think-aloud" protocol to verbally communicate their initial impressions and thought process. As a team, we will observe the participants complete the tasks and record the following: their "think-aloud" comments, time taken to complete each task, their method of completing the task, our deductions on areas they struggled with and finally their user feedback on the application as a whole.

### Task 1

Create and join a "Field Trip" simulation for the unit "ENG 2345" then exit back to the "Home Page".

The primary purpose of our app is to improve education delivery by creating educational real-life simulations that compensate for the lack thereof in real life. A huge concern amongst medical and engineering students was the reduction in practical labs and field-trips, which they used to gain practical knowledge of their course material. They expressed how this greatly reduced their motivation and comprehension during classes. Therefore, our **motivation** for this task was to conclude whether our approach at providing educational real-life simulations were successful.

Our **target** is to test the created interface to ensure that the steps taken to create simulations -in this case field trips- has good usability for its purpose and that the users are satisfied with our approach.

We **plan** to collect **data** whilst our participants simultaneously complete the tasks. From the "think aloud" protocol, we are able to gain insights on the users first impressions of the application and their thought processes whilst they are completing the task. Participants will be watched and recorded as they are completing the task in order to deduce how comfortable they are using the prototype and to find areas where they struggle. They will also provide feedback on the aesthetics, design, functionality and features as their user-feedback.

## Task 2

Explore at least 3 functions on the prototype and then attempt to join a meeting for the unit “MED 2356” then exit back to the “homepage”.

Our app provides numerous features to ensure that it is a well-rounded application and satisfies user needs. From collective desires across every persona, we included features such as: avatar personalisation, private encrypted meetings (through meeting IDs and passwords, calendars and activity tabs as educational features as well as friend lists where users are able to call/chat and so on. They expressed how these features would increase collaboration and engagement by creating an educational and distraction free interface for learning. Hence, our **motivation** for this task was to test the application of the subsidiary features included in the prototype and ensure that they met user requirements and satisfaction.

Our **target** was to test the rationality of these subsidiary features in order to conclude whether they met their goal of creating a well-rounded application with good usability by satisfying user needs. From this, we are able to deduce which features are useful and which are redundant in order to improve the overall user experience.

We **plan** to collect **data** whilst our participants simultaneously complete the tasks. From the “think aloud” protocol, we are able to gain insights on the users first impressions of the application and their thought processes whilst they are completing the task. Participants will be watched and recorded as they are completing the task in order to deduce how comfortable they are using the prototype and to find areas where they struggle. They will also provide feedback on the aesthetics, design, functionality and features as their user-feedback which will later be mapped with higher level goals i.e., effectiveness, efficiency and satisfaction.

# Results

## User testing form:

<https://forms.gle/9HpPRUByD9RdYz4o6>

We instructed our team members to use our standardized form to observe and record data during user testing. We used the think-aloud protocol for user testing.

## Guidelines for the participants

- Use the link to access our prototype.  
<https://app.moqups.com/h5aRxqjKD3/view/page/ac4dae7a1>
- Light briefing about the application.
- Use the Prototype for around 5 minutes to get an idea about the contents and navigation.
- Complete task 1 and 2 while verbally explaining your thought process.
- **Task 1**, Attempt to create a meeting. The meeting should be a “Field Trip” for the unit “ENG 2345”. Join the meeting and exit back to the “Home Page”.
- **Task 2**, Explore the at least 3 functions on the home page and then attempt to join a meeting for the unit “MED 2356”. Exit back to the “Home Page” when done. Read the prompts on the website for help.
- Give feedback about changes you would like to see about the layout, labels and aesthetics.

## Data Collected

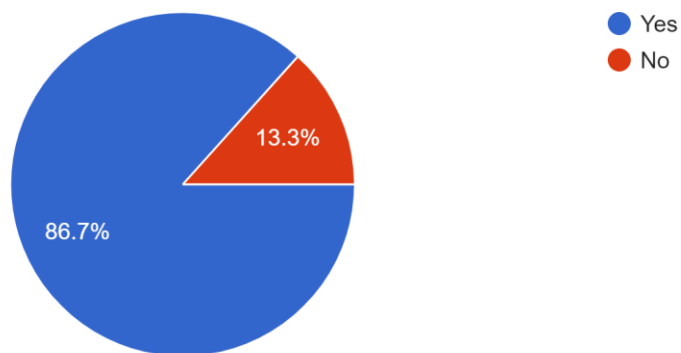
### Raw data

[https://docs.google.com/spreadsheets/d/1olaAzPk5fKV\\_DtmakEVx5UOI2G5X6JnD7NhWnzgijjI/edit?usp=sharing](https://docs.google.com/spreadsheets/d/1olaAzPk5fKV_DtmakEVx5UOI2G5X6JnD7NhWnzgijjI/edit?usp=sharing)

### Sample size of our user testing: 15

- Majority of the participants that we tested were in the 18-25 age bracket.
- While most of the participants were university students, there were some high school students and older people as well.

Do you have prior knowledge regarding these types of web applications? ( Educational platforms )  
15 responses

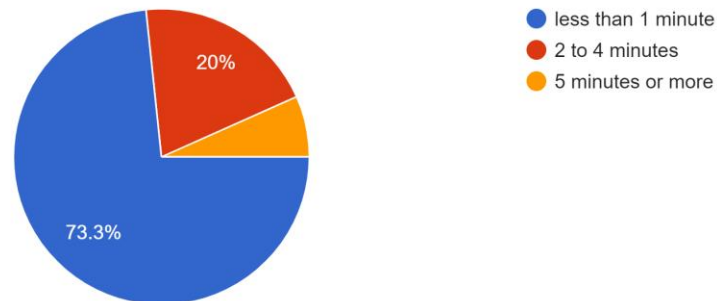


**Insights:** Majority of the participants (86.7%) have prior knowledge regarding this type of educational web applications. We found that university students with prior knowledge of learning platforms performed better when completing tasks compared to those who were new to this.

**Task 1 - Create** and join a “Field Trip” simulation for the unit “ENG 2345” then exit back to the “Home Page”.

How long did the user take to complete Task 1?

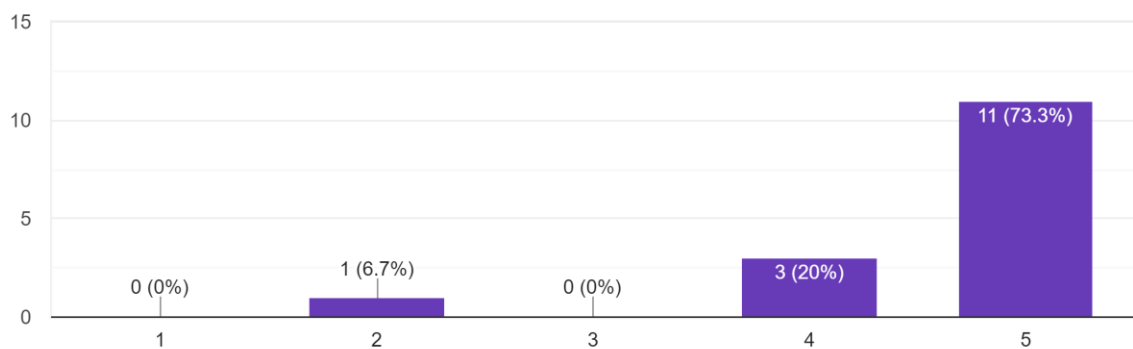
15 responses



**Insights:** Since many users have prior experience with this type of web applications and showed a good understanding of the interface, it took them less than 1 minutes to complete the task. People who took longer to complete were fairly new to platforms like this.

How comfortable was the user when performing Task 1

15 responses



**Insights:** Since the majority of the participants were university students, they performed Task 1 with ease and was quite comfortable in performing this task. Participants who are not yet university students that are younger were relatively less comfortable with the experience at the start but after using the platform for a while they were quite proficient in completing the tasks.

## Breakdown findings when performing Task 1

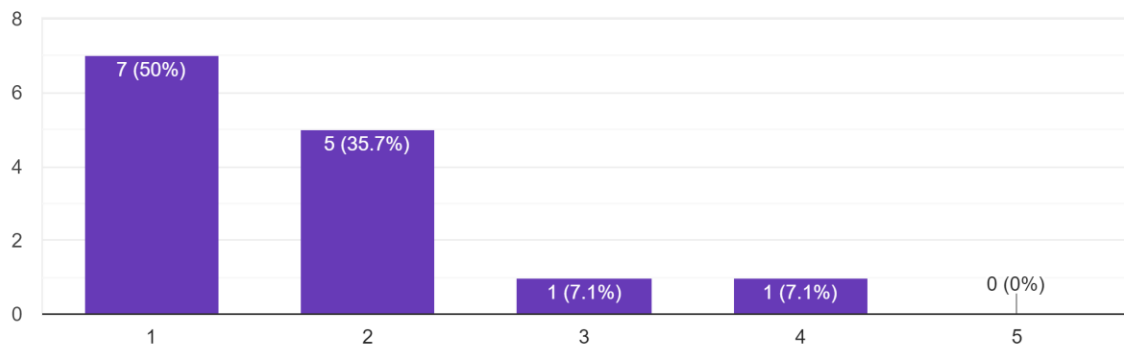
- The participant searched for a back button not knowing that you can use the navigation bar for it. (Create page)
- After creating and joining the field trip, she used the back button to go back to the home page instead of ending the VR session and exiting.
- Logo screen should be more detailed because users get confused in how to go forwards.
- Got confused in the join page about the options available under field trips, meeting rooms and labs. took a while to understand that all elements on the screen were under the field trips option.
- The user was confused a bit with the create and join buttons due to their inexperience with the site, not knowing where it'll lead.
- None.
- The steps were easy and the process to joining the meeting was smooth.
- User tried clicking on the arrows next to "Field trips" button on the "Create VR activity" page which are not supposed to do anything.
- confusions on the create page about the selection of activities.
- The participant had no problem with this task.
- They have never used these applications before, so they spent a lot of time reading and finding the current buttons before they were able to do anything. They first went to "My units", then selected the correct unit, then created the meeting.
- The logo screen needs to be tapped to move forward; it needs to act as a loading screen. Otherwise, the process was smooth.

**Insights:** Most users had issues with navigation buttons such as the back button, where the users didn't know the navigation bar can be used to go back. Users also had a hard time figuring out the logo screen due to the fact that they didn't know they should tap to launch the application. Our research says that the create page caused a lot of confusion about the data that was displayed.



What's the severity of these breakdowns for task 1?

14 responses



**Insights:** The severity of the breakdowns has less importance as you can see in the graph above. All the participants in general only experienced minor breakdowns and these issues can be quickly resolved by implementing minor changes.

#### Any changes the user would like to implement for the interfaces covered in task 1

- Add back buttons though you have a navigation bar.
- reduce clutter in the unit page (hide chat box and timeline by only giving shortcuts)
- A home button can be added in the navigation bar.
- Navigation bar allows the ability to go back to "VR interface" after clicking on "End VR session" which shouldn't be possible.
- More navigation buttons can be added in order to navigate through the web application.
- Add a separate home button though the logo acts like a home button.
- Colour coding for buttons and the icons for "Join" and "create" under the page "Unit000" does not differentiate each other.
- Create button could be on the homepage so it's easily accessible.
- Create and join buttons should be more easily accessible.
- A back button could be provided on top for users to easily navigate to the previous page.

**Insights:** According to the users adding more navigation buttons is the main change users suggested in the system. Easy access to main functions through the home page were also requested.

### How did the similarity with other websites help the user use our platform? (Task1)

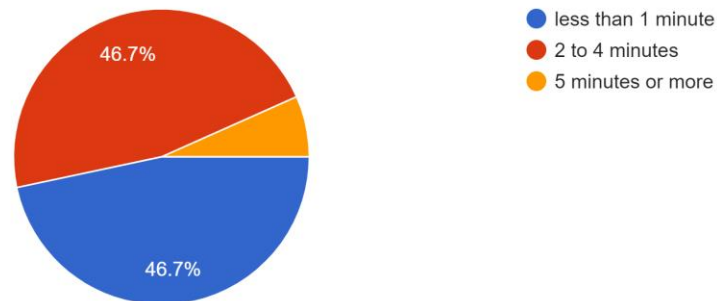
- Unit selection was similar to Moodle which helped the user in navigating through.
- Navigation bar and logo home button was similar to other LMS systems.
- Have used similar websites, so it was quite easy to use the web application.
- It was similar to the interface of Moodle which is used at her university. The interface had relevant information at every page and the transition was perfect.
- The navigation tool from Moodle is very helpful. So were the big icons for units, it makes them easier to identify.
- It was pretty similar to university learning sites, so we could use the site hassle free.
- easy navigation and controls like other similar sites
- Easy navigation between pages
- User was able to access unit through the big unit buttons as they would with Moodle, and they were able to use the big red buttons to navigate through important things.
- It did not. They were able to figure out which buttons to click due to the red colour though.
- It was already seen before, so it helped.
- They were able to click the unit buttons and follow the red buttons to quickly navigate through.
- It was a different experience. VR Technology is different from today's usual LMS used at universities.

**Insights:** Since we mainly gave this to university students, they already have existing learning management systems, so our VR learning platform is pretty similar to them and hence it made it easier for the users to navigate through. Even users who didn't have much prior knowledge performed quite well after getting familiar with the application.

Task 2 - Explore at least 3 functions on the prototype and then attempt to join a meeting for the unit “MED 2356” then exit back to the “homepage”.

How long did the user take to complete Task 2

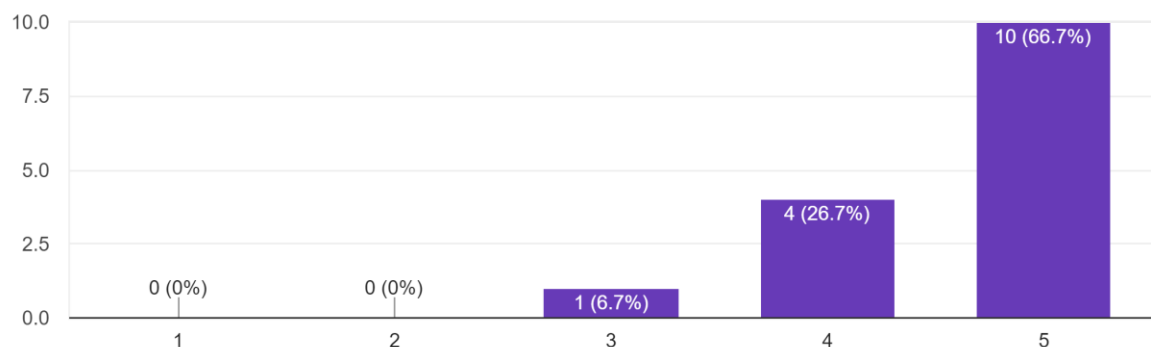
15 responses



**Insights:** Comparatively there's an equal number of users who spent less than 1 minute and who spent 2 - 4 minutes. Since this task was based on exploring the home page, we can assume that users spent quite a bit of time doing that.

How comfortable was the user when performing Task 2

15 responses



**Insights:** Participants were quite comfortable in performing Task 2, where they now have the experience of working on task 1 as well, so they are quite familiar with the web application by the time they perform task 2.

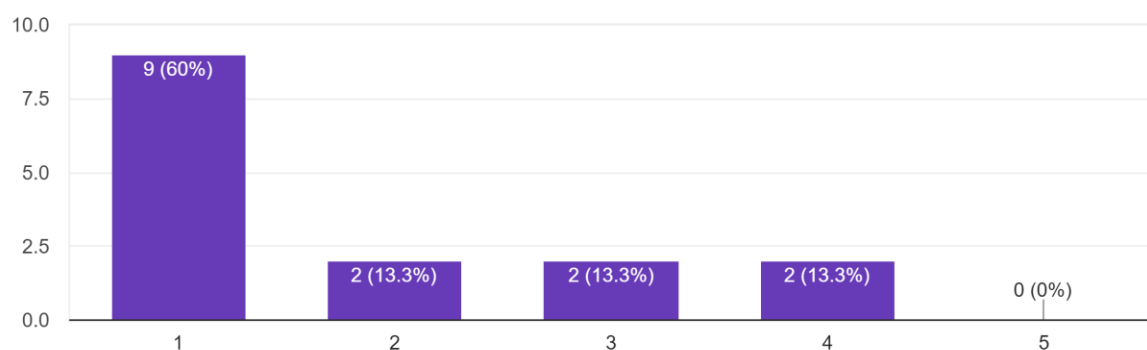
### Breakdown findings when performing Task 2 (State what page and what specific feature they had issues with)

- Had confusion on the join page about selecting a meeting and pasting links options.
- Didn't have any issues.
- The functions of the join page are confusing, and features should be placed according to importance.
- The join page can be a bit more descriptive.
- From the "Field Trips" page when the user tried going back to the previous page (Join), it took her to the create page instead of the Join. The user did this twice and stared at the evaluator.
- Made errors in the join page when completing the task.
- No breakdowns observed.
- They re-did steps from task 1 to access the create and join buttons so they were a bit faster this time.
- There is no way to go back to join page when the user is on VR functions page.

**Insights:** Majority of the users faced difficulties in the join page of our web application where they had trouble figuring out where to paste the link to the VR meeting. Users also faced trouble in going back to the join page when the user is on the VR functions page.

What's the severity of the breakdowns for task 2?

15 responses



**Insights:** While most of the participants had minor issues, even the more server issues can be fixed with small changes to the system.

## Any changes the user would like to implement in task 2.

- reduce clutter in the join VR session page to have a clear idea about choosing meetings.
- Create and join in the unit page can be more descriptive since users using the platform for the first time may not understand what they are creating or joining at first before going to the create page.
- Get rid of the calendar in the join event page to reduce clutter and highlight the important functions.
- A help button can be added to all the pages to resolve any issue the user might have.
- None.
- All the required tabs and information to access relevant pages is accessible and available on the home page which easily directs the user to their destination.
- Making sure the navigation bar is also present in other features such as friends, calendar and My units.
- Move the Live VR session box to left of the page, add help function to all pages in case users get stuck.
- Different tabs for "friends" and "groups"
- A smaller calendar/method of seeing the date. No need for the LIVE VR sessions, because they didn't look at it while joining.
- Join button could also be at the homepage so that it is easily accessible.
- Join button should be easily accessible.
- When the user needs to go back to "join page" there should be some sort of navigation. Instead, it takes the user to "create a page".

**Insights:** Most of the users suggested that the clutter in the join page should be cleared and removing the calendar can be done when clearing the clutter. The lack of proper descriptions in the join and create pages cause a little confusion for first time users. Adding help buttons to all pages was a good suggestion from the participants.

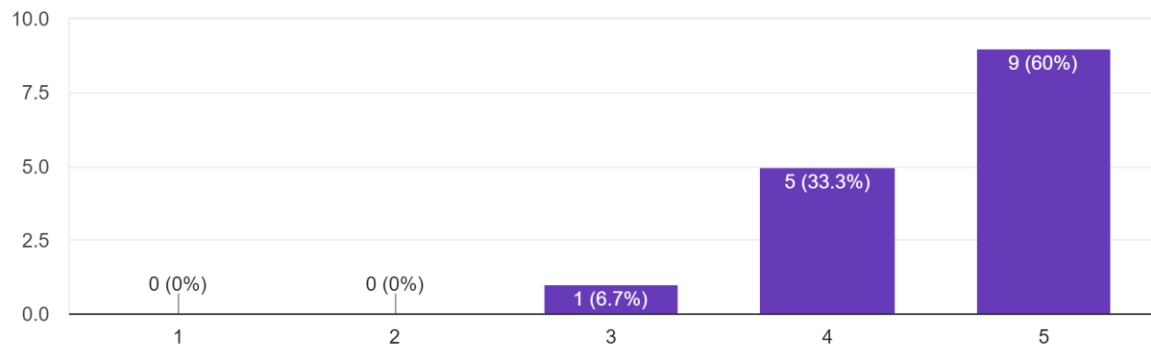
## How did the similarity with other websites help the user to use our platform? (task 2)

- Moodle has similar unit selection mechanisms which helped the user to select faster.
- Navigating through pages were easy due to experience gained by using similar sites.
- Have used similar types of sites such as Moodle so it was easy to navigate around the page.
- The similarity is accurate to how it should be for students on university platforms so they can easily access the pages and reach their destination smoothly with no confusion.
- The navigation bar from Moodle again
- The site being similar to other learning management systems made it pretty easy for the user to navigate through.
- was pretty familiar with using links to access meetings.
- The participant found the Session End progress report to be helpful and engaging.
- They understood the concept of joining meetings because of Zoom.
- They were able to use the top bar.
- It was already seen before, so it helped.
- They know how to use zoom so they were able to quickly figure out the concept of "pasting links" to join meetings etc.
- Navigation through units were similar to the LMS used at universities so it made it easier to progress through.

**Insights:** The use of navigation bars from current LMS systems were a huge help to introduce some prior knowledge to university student participants. Since the Controls in meeting rooms were similar to apps like zoom, the participants were comfortable with using controls in our platform.

### Overall satisfaction

15 responses



**Insights:** Majority of the users were highly satisfied with the system. Participants who were less satisfied had good feedback. We can improve the usability of the platform with minor changes.

### Name and remarks of the evaluators

- Poorna, the participant was new to using a learning platform. She got hold of the controls and completed the task fairly quickly. Had good feedback on what functions to add.
- Natasha De Almeida, As the above-mentioned improvements can be made in order to improve the system.
- Poorna, the participant completed the task with ease and gave a lot of feedback on improvements.
- Natasha De Almeida. The user was quite interactive with the system and performed the tasks well giving pointers to improve the system as well.
- Faraz Amin -The user seemed comfortable while using the prototype and suggested that universities should implement such technologies for their future study plans which may include VR technologies for students to access the real-world environment at the ease of their homes. People often argue that universities ask for huge amounts of money while the student is at home, but this technology could justify that amount as well.

- Utkarsh, the participant learnt the interface quickly and took their time to go through each function. Overall, it was really easy to use for them and could be improved if some of the navigation features were improved.
- Natasha De Almeida. The user was quite engaged with the web application and was overall satisfied with it.
- Poorna, Since the participant was a college student, he was pretty familiar with navigation through the pages but made a few errors when completing task 2
- Utkarsh, the participant was quickly engaged with the website and showed motivation towards the usability of its features.
- Priasha. The evaluator is a current university student in Monash, so they are very well versed with the application despite using it for the first time. They were able to complete the tasks very quickly.
- Priasha. The evaluator is my dad, and he doesn't have a lot of experience using applications like this. He was able to figure out how to perform certain tasks through trial and error and reading the buttons and descriptions.
- Faraz Amin - Great initiative. Could be used for future educational activities.



# Report

## Introduction

For the usability evaluation of our website “VR SENSE” we implemented the think-aloud protocol to carry out our user testing. A total of 15 test users participated, we decided that it was a big enough sample size to figure out the main issues we have to improve on, to make our platform more usable. The test users were first introduced to the domain and then given the tasks, meanwhile the evaluators silently observed and recorded breakpoints. Afterwards the evaluators inquired the participants about what improvements should be made and how similarities from other websites helped them to use ours. The majority of test users are university students with prior knowledge regarding web-based educational applications (almost 87%). These observations were then discussed among evaluators.

## Breakdown one

Participants who were new to using online learning platforms struggled a little with navigation through interfaces. Though participants that were familiar with the navigation bar appreciated its functionality on giving them control, novice users still preferred back buttons throughout all interfaces. Another example of a navigation problem would be using the logo as a home button. Though experienced users made use of it, Novice users suggested that we add a home button to the top bar menu. The users rated these issues with medium severity. We are hoping to overcome these breakdowns by implementing small changes to the navigation functions like adding home buttons and back buttons throughout the pages except the VR preview page since you have to use the end session (Leave meeting) function to save and exit with your progress. We detected small mapping problems in the prototype during the testing which can be fixed with small improvements.

## Breakdown two

Another breakpoint was observed when the test users were presented with multiple options to do the same task. For example, a user can access units from both the “Home page” and the “my Units” on top bar or navigating back to the “Home page” which could be done by either clicking on the icon or the navigation bar. Thus, different users completed the same tasks in different ways which affected the time they took for those tasks. The effect of this is minimal to the website’s usability and experience making it a low severity problem. The problem appears when the user chooses a longer approach to a feature when there is a shortcut already present. To make it easier for users to identify these shortcuts, we can change the design for more affordance and signifiers and efficiently change the accessibility of buttons that are causing this problem. Some of the user suggested changes are making the “Create” and “Join” button accessible on the “Homepage” instead of the “my Units” for easier access. However, this might make it less efficient for other users as the design flow is broken.

### **Breakdown three**

A breakdown novice user struggled with was the lack of descriptions and help functions when they got stuck during tasks. They preferred small descriptions for the main functionality and have a help prompt appear in all the pages in case if they get stuck, they have an easy way to get advice to proceed with the task. They also wanted to not solely depend on metaphors when it comes to main functions that are important when completing tasks. These breakdowns seem to have low severity and can be resolved with some quick fixes. Our team decided to add a help icon to all the pages to give info about the functionality each page offers. These will be hidden and can be accessed if needed by the users. We are also planning on adding a virtual help agent to VR activities to help participants be guided through activities.

### **Breakdown four**

Another breakdown point for the users was the "Join Page" which was quite confusing. The features of the join page could be placed according to the importance and can be improved by adding more description. This breakdown has a high severity on our system due to the fact that it's a main page and implementing fixes must be done soon, so that it resolves the matter and enhances user experience. There were many suggested changes by the user, and they are mainly to reduce the clutter by giving shortcuts which will help the user to easily navigate through the web application. Another suggested change is to add colour coding to the page which will help the user in going to the destination he/she prefers easily. Removing or making the calendar in the join page, smaller in size was another change requested by the user. Lastly removing the live VR tab in the join page can reduce the cluster and help the user in improving usability.

### **Conclusion**

In conclusion, we can see that our educational VR system is highly effective and efficient for the chosen demographic and is easy to navigate through which helps users perform their tasks with ease. From the evaluation process, it is fair to say that the majority of users concluded the given tasks with comfort and satisfaction giving us ample feedback to improve our system. The web application is highly engaging and motivating as per our user stories and tasks were completed with minimal errors due to the similarity with other education delivery websites. The user experience and usability can be significantly improved if the suggested design fixes are implemented. Though the users are highly satisfied with our system, it needs to be improved for untrained and inexperienced users.