



Homework Helper Plus

Milestone 2

Course Title: Human-Computer Interaction

Course code: CSE-4451

Group members:

- Eashrat Jahan- 011201165
- Hasibul Hasan Rupok- 011201002
- Mahmudul Hasan Bipul- 011201025
- Shah Newaz Aziz - 011201437

Submitted to:

Novia Nourin
Asst. Professor
United International University

Figma link:

<https://www.figma.com/file/p6R2DPeSVuvYiLxoZmETwf/e.r.b.s-team-library?type=design&node-id=0%3A1&mode=design&t=8xX7qbhpt0oiTv02-1>

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1. Design Ideas From Insights

This section contains three design ideas from each group member, a total of 12 ideas that we have generated from the affinity diagram.

1.1 Ideas from Hasibul Hasan Rupok:

In this subsection, you will find three design ideas for efficient study content finding, group study management, and study-related task management.

1.1.1 Efficient Study Content Finding:

For finding the study materials for 4 to 12-grade students there will be a single place, where they can search for any study-related content based on the topic name. At first, the user needs to type what he/she wants and then they need to press the find or the enter button from their keypad, as soon as they press it, they will find their desired study material. Figure-1 describes all the steps.

In our survey, most of the students complained that they could not find their needed study materials online, if they find sometimes they struggled to access them because all the materials were not free to access. To solve this problem we planned this feature where all the students can access their study materials for free.

The strength of this feature is that you will not find any such application where all the students from 4 to 12 grade can find their study materials for free and in one place, but the weakness is to manage all the course contents, making them interactive using GIF & videos.

We believe that our proposed problem will solve this problem because as our target users are children we tried to make the user interface and the functionality as simple as possible. User's main problem was not finding all the resources and they are not free to access them. We have addressed this issue and proposed this to solve the problem.

When we implement the feature all the resources will be available in our database and the user can access it, the functionality is pretty simple, user's need to just type and they will get their content for free.

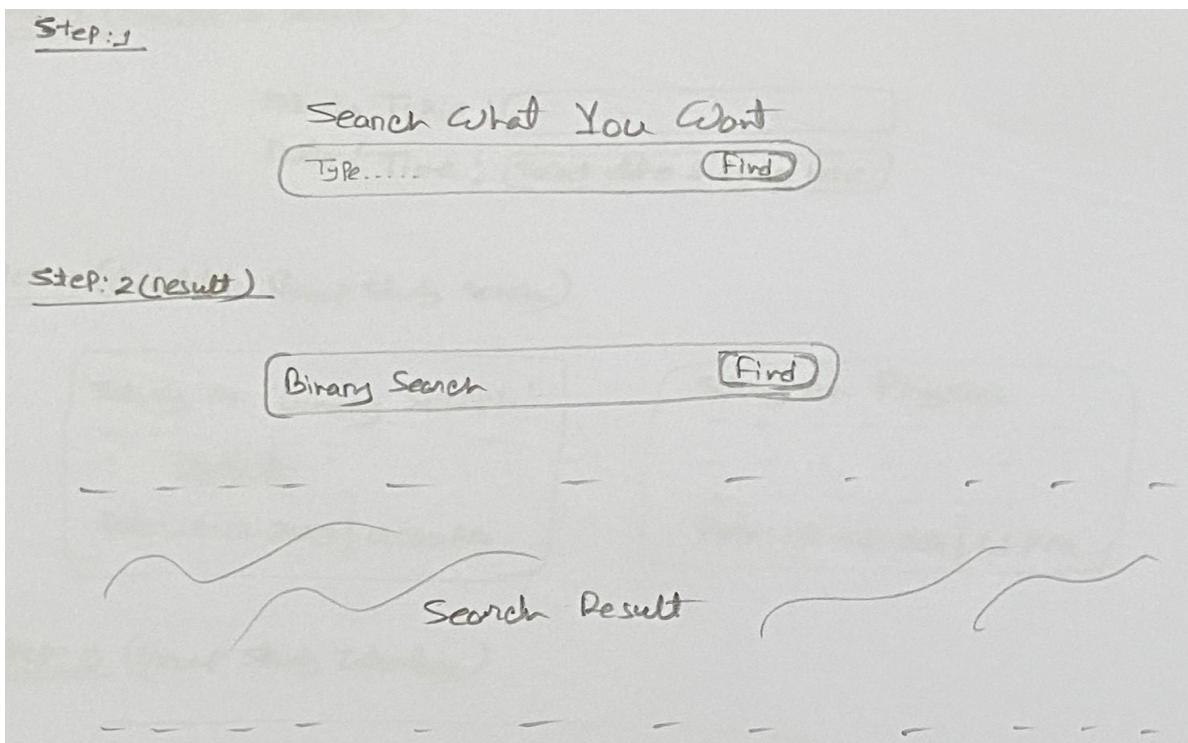


Fig 1: Efficient Context Searching

1.1.2 Group Study Management:

In this feature, we have addressed how a student can do a group study on a specific topic, and how a user share his/her group study's notification to all the users so that other users can also join this group study. There will be a fixed time slot and a mentioned topic.

In our survey, some students expressed their need for an efficient group study tool where they can get help from other students and as well as they can help other students. Based on this we have planned to develop a feature where the users can do their group study, find skilled students on a specific topic to get help, and share their study alert with other students so that they can also get help.

The strength of this feature is that it gathers all the students in one place and shares the group study notification with all the students, to the best of our knowledge there is no such application which is providing this feature, but it is tough to monitor the group study session, we are not providing that type of facility.

The problem that the students are facing is that they are not finding a place where they can find other students who can help them or they can help other students, if they want to do a group study they can not find other students, our proposed design is bridging this gap and providing a better solution.

When we implement this feature the users just need to fill up a form then they can see their group study card, students can join by clicking on that card, can also save the upcoming group study. We tried to keep the functionality as simple as possible.

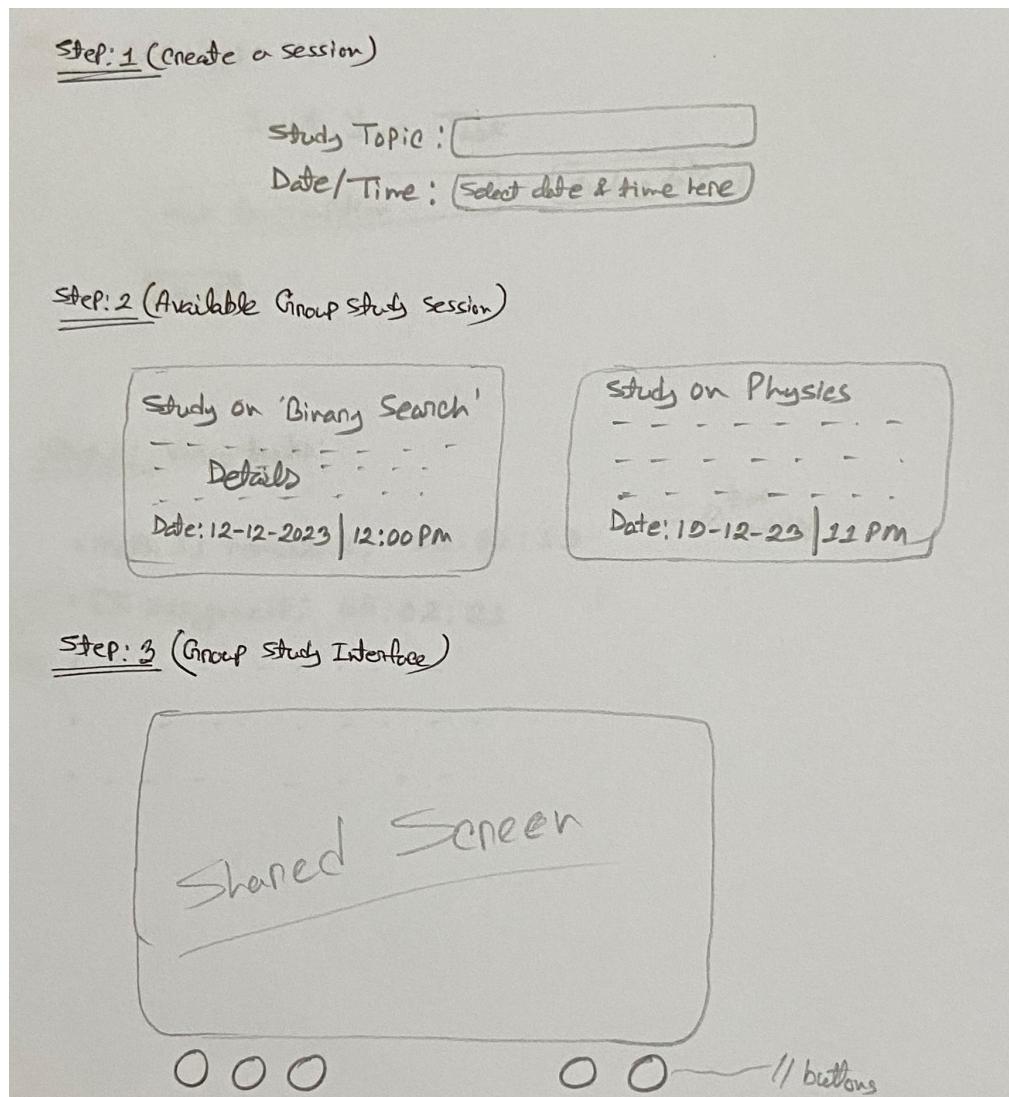


Fig 2: Group Study Management

1.1.3 Assignment/Study Management:

In this feature, I tried to solve the problem of the user who can not manage their task properly, here the user needs to add the task along with its corresponding deadline, the the task will be added to the task list which is sorted in ascending order based on the remaining time.

From the collected data we saw that a large portion of the participants were not properly managing their tasks/assignments, some of them said that they forgot to submit their assignments multiple times. Based on this we have planned to make a simple, minimalistic feature that will give a reminder to the user to complete their task.

The strength of this feature is that whenever the user visits the application if there is any task that has a very short time to complete, he/she will get a notification so that the user can complete the task, but if we look at the weakness that it may happen a user will not add a task to the application and he/she may forget in and they will miss the deadline.

The users are facing problems remembering about a task and its deadline, the proposed feature is designed in such a way that it will remind the user about the task and the deadline, if there is any task that has a very short remaining time then the system will send a notification to complete the task.

If we implement the proposed design then the user just needs to add the task, then the system will take the responsibility to remind the user, as our target users are mostly children we tried to keep the UI as minimalistic as possible, here the user needs to full up a very small form and that's it, Figure 3 shows the illustration of the feature.

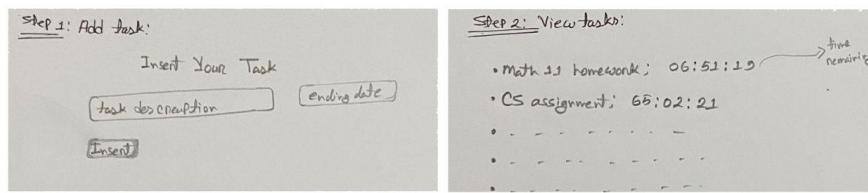


Fig 3: Assignment/Task management

1.2 Ideas from Eashrat Jahan

From our insights, the most important three features are given below which are Group study management, Developing games to make any difficult subject easy for kids and Planned and Non-planned study routine.

1.2.1 Group Study Management :

This section is about different group study rooms where students from different classes can see which classes are available for a particular day. According to her/his choice she or he can join class. Before entering the classroom, a student needs to set her/his role such as problem solver, theory discussion etc. After selecting the role, anyone can participate in the class which is a kind of online meeting but users are able to see the role of each user in the right sidebar.

In our interview questionnaires, we had a question about if they benefited from individual study or from individual study. Most of them were voted for group study where they can discuss their needs and necessary questions to each other.

Strength of my idea is, here students can join not only their school based but also globally which means students from different schools,districts can join here to share their knowledge which is a great opportunity for all students. Weakness of my idea is, as its a group study session, I don't prefer to record this session in our system for any absent student.

During data collection, I found that most of the students said that they like to do group study to solve any type of difficulties but due to time limitations at school and coaching, they can't do their group study session properly. In our system, group study sessions are online based and any student from any school can join anytime so it's a great platform for the students to gain knowledge faster than before.

In our system, there is a navbar named "Group study". When a user clicks on that, she/he'll see a section where they are able to find all class based or topic based group study sessions. According to their need they can join these classes but before entering the class, he/she needs to confirm his/her role that he/she will be playing(e.g. Problem solver, theory based discussion etc).

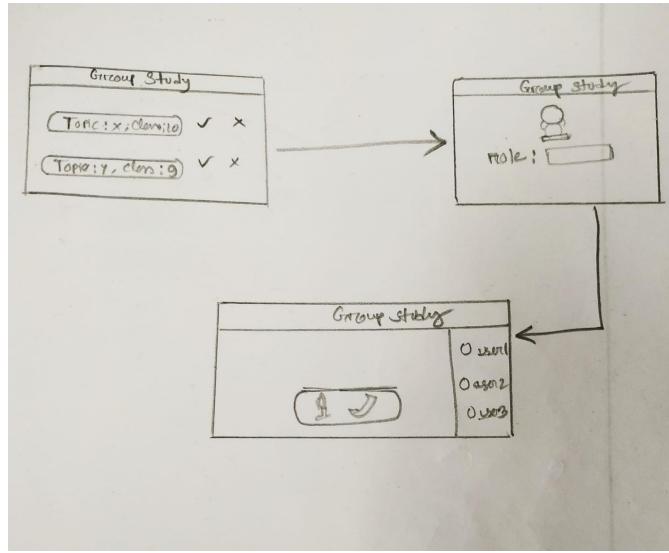


Fig: Group Study Management

1.2.2 Developing Games To Make Any Difficult Subject Easier :

Kids from class 4 to class 6 face difficulties with some subjects which create fear inside them because of basic knowledge. To make it easier for these kids, I planned to develop some games which help them to build their basic knowledge about their specific subject which they feel is difficult. By participating in these games, kids are able to learn the core knowledge with entertainment which helps them to cut their fear also.

From our affinity diagram, I found that many students are afraid of a specific subject (e.g. Mathematics, English etc). The reason behind the fearness is lack of basic knowledge and inappropriate reading material according to their age which they felt was very tough to do. So, I think some study materials which are almost like games but interactive and entertaining can help them to gain knowledge as well as change their concern about that specific subject.

The strength of my idea is that it'll attract more students than before to complete their lessons. It's an indirect version of study materials which isn't going to make any student bored for a long study period. Weakness of my idea is, it's not a feature for every grade student. This feature works for grade 4 to grade 6 students but it can be possible to make this feature available for senior students which can have restrictions because for senior students most of the subjects are not possible to develop games to gain knowledge.

As I've found that many students are weak at many subjects and they are very much afraid of that, I've planned to develop games for difficult topics of different subjects, it's going to be entertaining to the students as well as work to enrich their knowledge and grow confidence about their weaknesses.

In our system, there is another navbar named "Difficult Subject Study". A student needs to click it on the bar to get in. After clicking this bar, a student can see a list of games named by class and subject. According to his/her class she/he will click one of them and start to playing that game

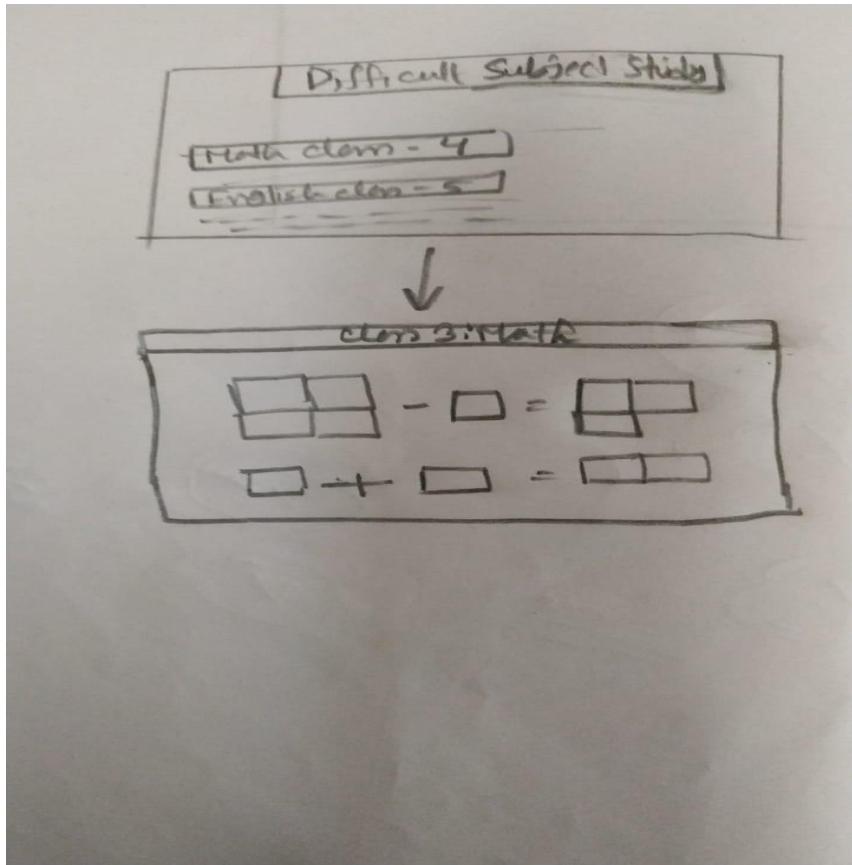


Fig: Developing Games To Make Any Difficult Subject Easier

1.2.3 Planned and Non-Planned Study Routine Management :

There is a section for non-planned students and another section for planned routine students. This is a feature for both types of students where they can allocate their task with time.

From our interview session and affinity diagram, we found that some of the students like to study with a planned routine and some of them like to study in a non-planned way. So, I planned a section for each of them to track their tasks and save history according to dates which will help them in future.

Strengths of this feature is that a student can make a record or list inside this system according to his/her choice with other facilities and weakness is the basic structure of this feature may already have in almost every mobile phone as "note" and "clock" which mean in different applications but in our system they got both at a time.

My designed "Planned Study Routine" section helps the students to allocate their task with time and they'll get notification according to their fixed time. On the other hand, "Non-planned Study Routine" students can make a list of which tasks are going to be done by a specific day. This feature encourages students to use the overall system as it benefits them as per their need.

Firstly, there is an option on navbar named "Routine" which has two other options named "Planned" and "Non-planned". If a student selects the "Non-planned" one, the non-planned section will be presented and the user can write her/his necessary tasks and notes there. On the other hand, if a student selects the "Planned" one , the planned study routine section will arrive and there a student can note the tasks with starting time and he/she will get notification according to time to remind himself/herself about the task.

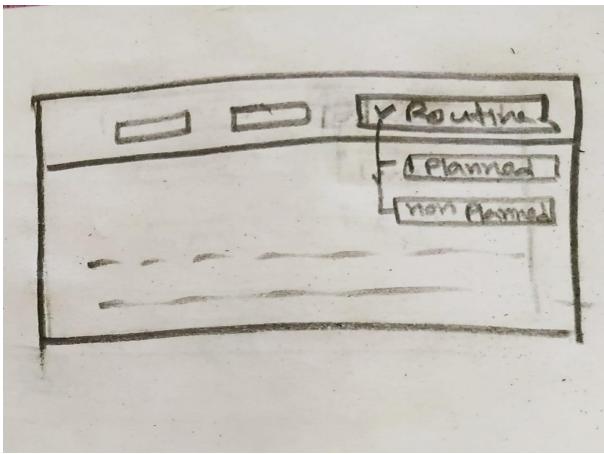


Fig: The home page including navbar

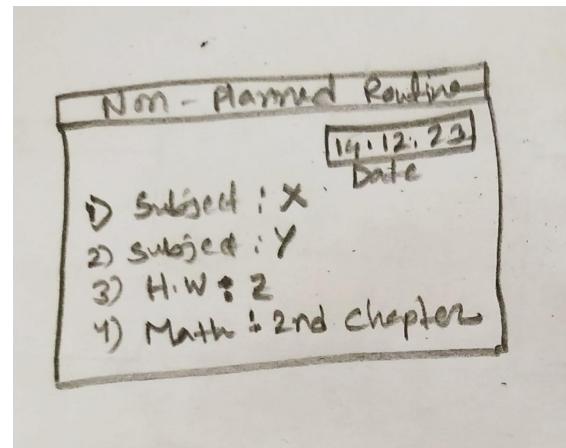


Fig: The Non-planned Routine Section

| Planned Routine | |
|-----------------|---------|
| Date : 14.12.23 | |
| Task | Time |
| Xyz | 2.30 pm |
| Past | 8:30 am |

Fig: The Planned Routine Section

1.3 Ideas from Mahmudul Hasan Bipul

In this subsection, you will find three design ideas for help from tutors, self-study, and help from parents.

1.3.1 Help From Tutor/Guidance Hub:

This feature will be used when a student sits to study and after choosing a subject, if he fails to understand a topic, he can immediately seek help from his tutor. This feature includes calling, video calling, and texting his tutor.

From the affinity diagram, I came to learn that many students fail to understand various topics at the first time when they are taught. To overcome this situation, I want to develop this feature, where a student can directly call or video call or via text to connect with his teacher and ask for help.

This is a very powerful feature that can directly connect students with their respective teachers. Then the teacher will be informed of the problem, and after learning the problem he can solve the problem via consulting that specific student. And thus the student problem will be solved like that.

The teachers are not always free, so there might be a problem when students try to reach them.

This proposed feature is designed in such a way that can solve the problem during data analysis when a student fails to understand a topic when he was taught in class or in private tuition.

If implemented, the design supports users by enabling students to instantly connect with their teachers through calls, video calls, or texts when struggling with a topic. Students adopt the system by accessing the features within the educational platform, selecting the subject, and initiating communication. Users utilize the system for real-time assistance, allowing students to promptly seek help and teachers to address learning difficulties effectively.

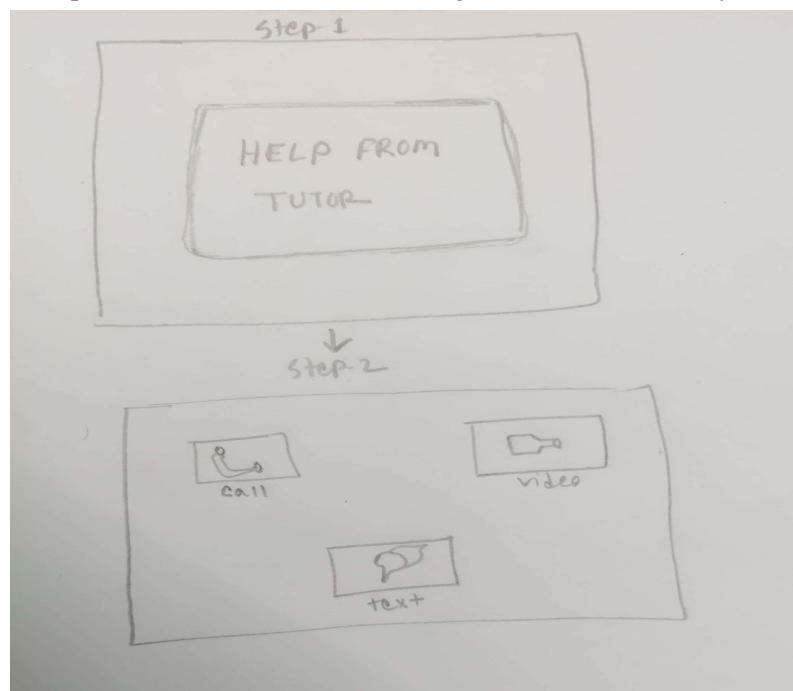


Fig: Help from tutor

1.3.2 Self-Study

This design is solely designed for those students who maintain their daily routine neatly. Here, a student can add tasks, add date of the task and time of the task, can see the completed tasks, due tasks, and upcoming tasks.

From the affinity diagram, I came to know that, many students are lagging behind their usual tasks which leads them to nowhere and so a massive mental pressure creates. And to overcome this, I came up with this feature.

The task management feature supports students in maintaining an organized routine by allowing them to add, schedule, and track tasks. Its strengths lie in providing visibility into completed, due, and upcoming tasks. However, potential weaknesses include dependency on user discipline and the risk of overwhelming users with extensive task lists. The design addresses the issue of students falling behind by offering a structured solution. Users adopt the system by integrating it into their routines, inputting, updating, and monitoring tasks to reduce stress associated with incomplete assignments.



Fig: Self-Study

1.3.3 Help From Parents:

This feature is for those students whose parents are very busy with their respective works. Using this feature both the student and their parents will be greatly benefitted as they can interact with each other and also the parents can teach and guide their children .

From the affinity diagram, I learnt that some students do not spend much time with their parents. So keep this reason in mind i have proposed this design and This feature facilitates enhanced communication and collaboration between students and their parents, providing an avenue for interactive engagement. Additionally, it empowers parents to play a supportive role by offering guidance and educational assistance to their children.

This feature facilitates improved communication and collaboration between students and busy parents, alleviating the challenge of limited time spent together. It empowers parents to actively engage in their children's education by providing guidance and educational assistance. However, its effectiveness depends on consistent parental involvement, and it assumes a certain level of teaching skill. To address the issue of limited parental time, the design promotes interactive communication and involvement, allowing parents to support their children's education despite busy schedules. Users, including students and parents, adopt the system by actively participating in collaborative learning through the platform.

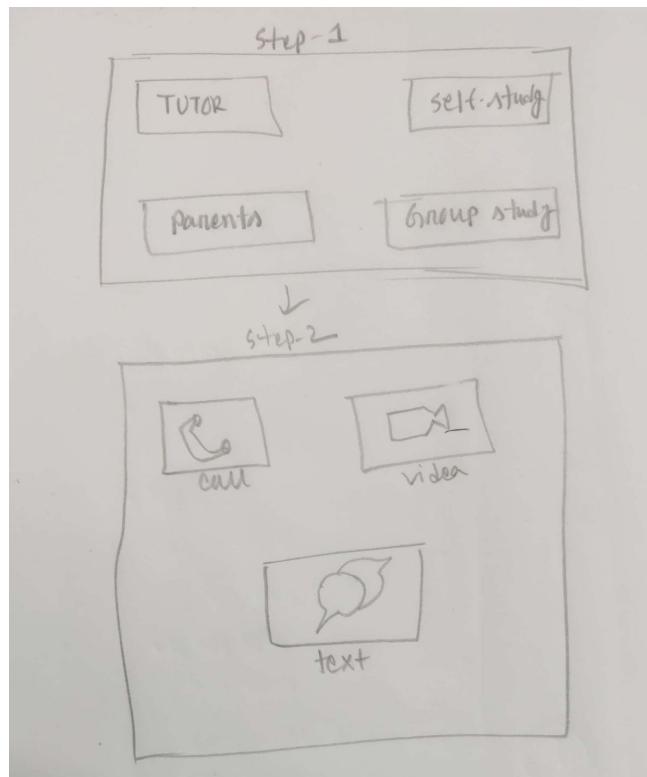


Fig: Help From Parents

1.4 Ideas from Shah Newaz Aziz

In this subsection, you will discover three design ideas for posting study-related problems and receiving feedback from your teacher, classmates, or friends. Additionally, AI will assist you in solving these problems.

1.4.1 Post Study Related Problem:

Students can submit their academic challenges or questions, describing the specific problems they are facing in their studies. This feature allows users to seek assistance from their friends, classmates, or peers by posting comments. Friends can provide insights, explanations, or solutions through the comment section associated with the posted problem. For each posted problem, there is likely a dedicated discussion thread or comment section where other users, such as classmates or friends, can provide feedback, suggestions, or solutions. The feature promotes a collaborative learning environment by encouraging users to engage in discussions, share insights, and collectively work towards solving problems. Users receive notifications when there are new comments or responses to their posted problems. This ensures timely awareness and facilitates active participation in discussions.

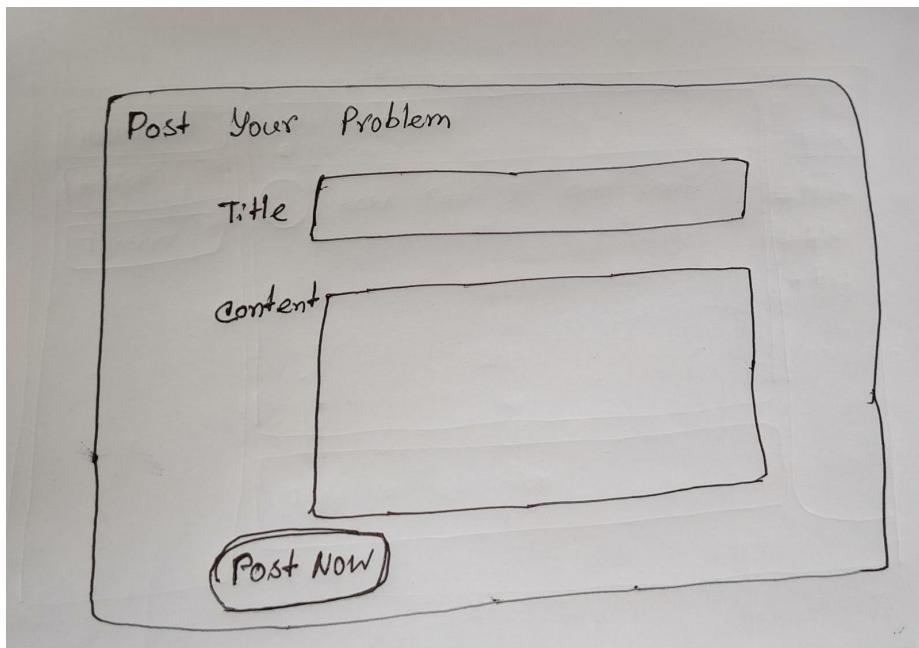


Fig 1.4.1: Posting Problems

1.4.2 Bot Assistance:

In this features an AI bot that is designed to understand and respond to study-related queries. Students can receive automated assistance and solutions from the AI bot, which is programmed to provide helpful information and guidance.

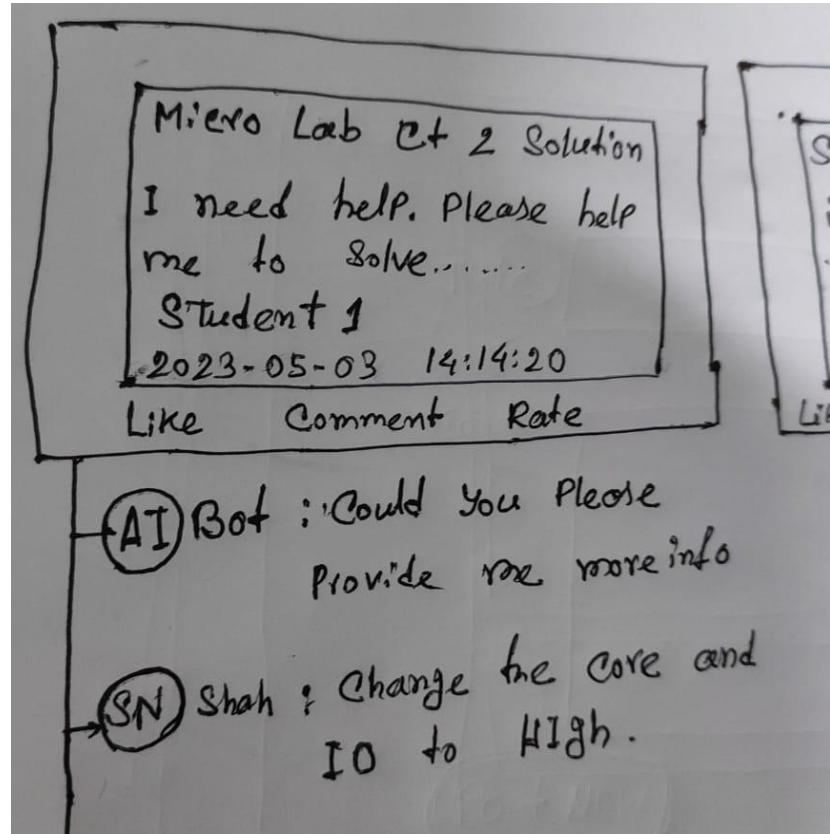


Fig 1.4.2: Bot Assistance

1.4.3 Feedback Rating System:

Students can rate the helpfulness of comments and AI bot responses, creating a feedback loop that helps improve the quality of assistance over time. As students engage with the posted study-related problems and the ensuing discussions, they have the opportunity to express their judgment on the helpfulness of the advice received. This user-driven evaluation process serves as a constructive feedback mechanism, informing both peers and the AI system about the effectiveness of the solutions provided. Over time, as students consistently rate the helpfulness of comments and AI bot responses, the platform gains valuable insights into the strengths and areas for improvement in the assistance offered.

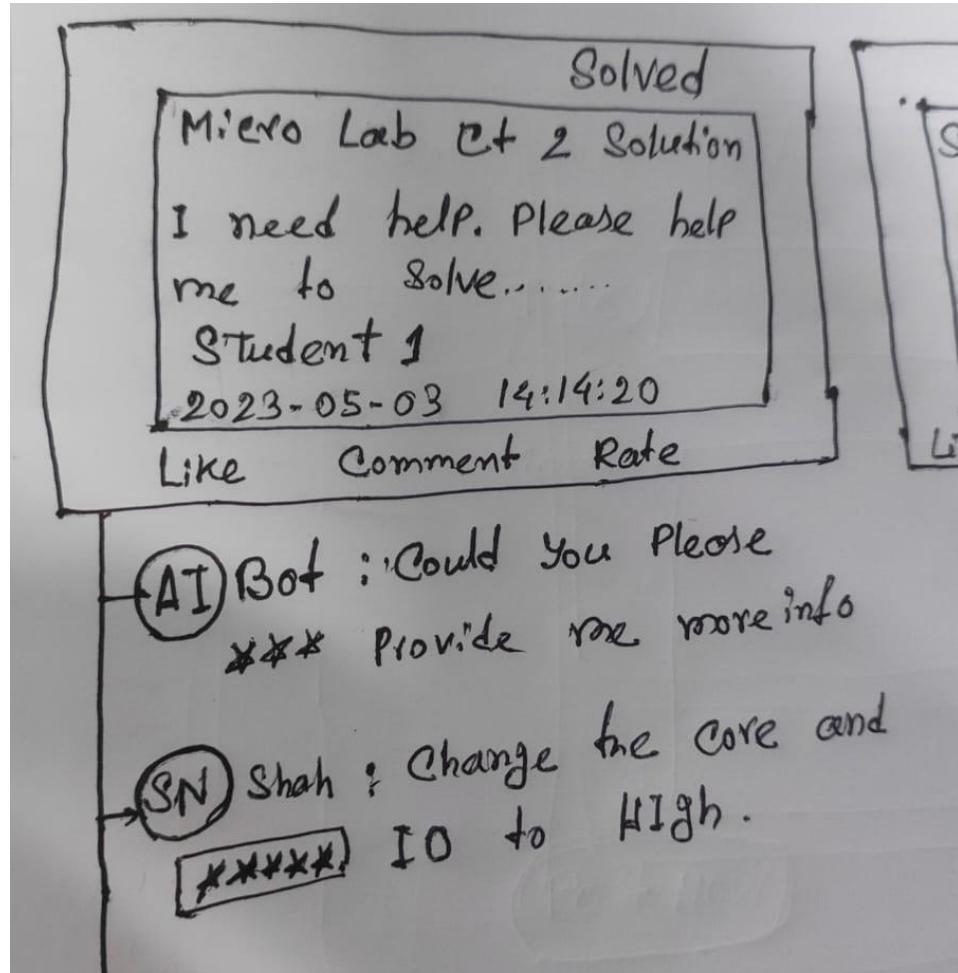


Fig 1.4.3: Feedback Rating System

2. Short-Listed Design Ideas

We have a total of 12 design ideas, these are:

1. Study content searching
2. Group study management
3. Task/assignment management
4. Group study management
5. Developing games to make any difficult subject easy for kids
6. Planned and Non-planned study routine
7. Help From Tutor/Guidance Hub
8. Self Study
9. Help from Parents
10. Post study related problems
11. Bot Assistant
12. Feedback rating system

From here we have selected 4 ideas for the final prototype. For selecting the final ideas we individually rated all the 12 design ideas on a scale of 0 to 5 using an excel sheet where we inserted all of our features and voted everyone as per our priority and then we took the 4 top-rated designs for the final prototype.

| Ideas | Rating | | | | Total |
|---|--------|-------|-------|-------|-------|
| | Rupok | Annee | Bipul | Newaz | |
| Efficient Study Content Search | 5 | 4 | 4 | 4 | 17 |
| Assignment/Task Management | 4 | 3 | 3 | 2 | 12 |
| Group Study Management | 5 | 5 | 4 | 4 | 18 |
| Help From Tutor/Guidance Hub | 4 | 4 | 5 | 5 | 18 |
| Self-Study | 3 | 4 | 4 | 4 | 15 |
| Help From Parents | 4 | 3 | 4 | 4 | 15 |
| Post Problem | 4 | 4 | 4 | 5 | 17 |
| Solution By Bot / Users | 3 | 3 | 4 | 4 | 14 |
| Feedback Rating System | 3 | 3 | 4 | 4 | 14 |
| Group study system | 5 | 5 | 4 | 4 | 18 |
| Developing games to make any difficult subject easier | 4 | 4 | 3 | 4 | 15 |
| Planned and Non-planned study routine management | 4 | 4 | 4 | 3 | 15 |

[N.B:Two members of us initially designed the same named feature from our affinity diagram.So, one feature is overlapped but we accept it from one's corner.]

Here are the selected 4 final design ideas for the prototype:

1. Efficient Study Content Searching
2. Group Study Management
3. Help From Tutor/Guidance Hub
4. Post Problems

We'll work on these prototypes for the next.

3. Low-Fidelity Prototype

In this section, we have provided all of our selected design ideas with low-fidelity prototypes.

3.1 Efficient Study Content Searching:

For efficient content searching the user needs to type the content name or any other related information about that specific content.

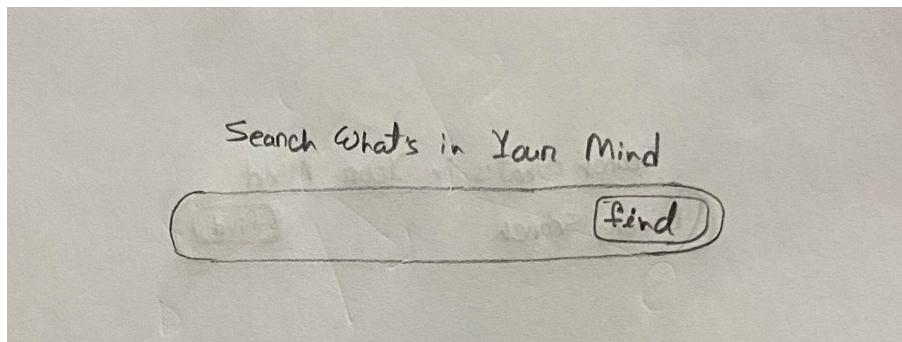


Fig: Content Search Bar

This picture illustrates the first screen for efficient content searching, here a user needs to type which content he/she wants inside the input field then he/she needs to press the find button or press the enter key from the keyboard. When the user starts typing inside the input field, the system will provide suggestions.

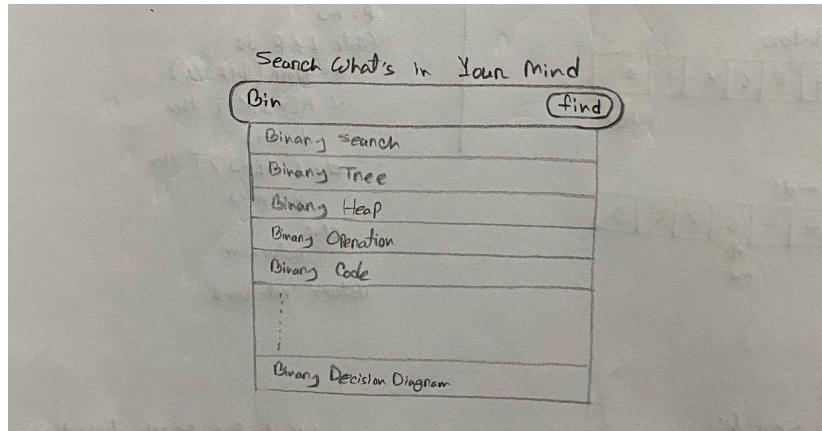


Fig: Search Suggestion

In this picture, you can see that when the user types 'Bin' the system suggests some related content from our database, now there is no need to type the full content's name, the user can click the content that he/she wants from the suggestions. It will redirect the user to the content page.

Inside the content page, the user will various type of content which includes scenario, description of the scenario, text, video, and other type of content if needed. From the content page if a user wants to change the content (read another topic) at the top of the page the user will find the search bar to search other content. Here the user will get the same features that the user got previously for searching including suggestions. If a user searches content and it is not present inside the database obesity he will not find it but a token will be saved for the admin a user searched for XYZ content but that is not present so that the admin can improve their service by adding more useful content for the users.

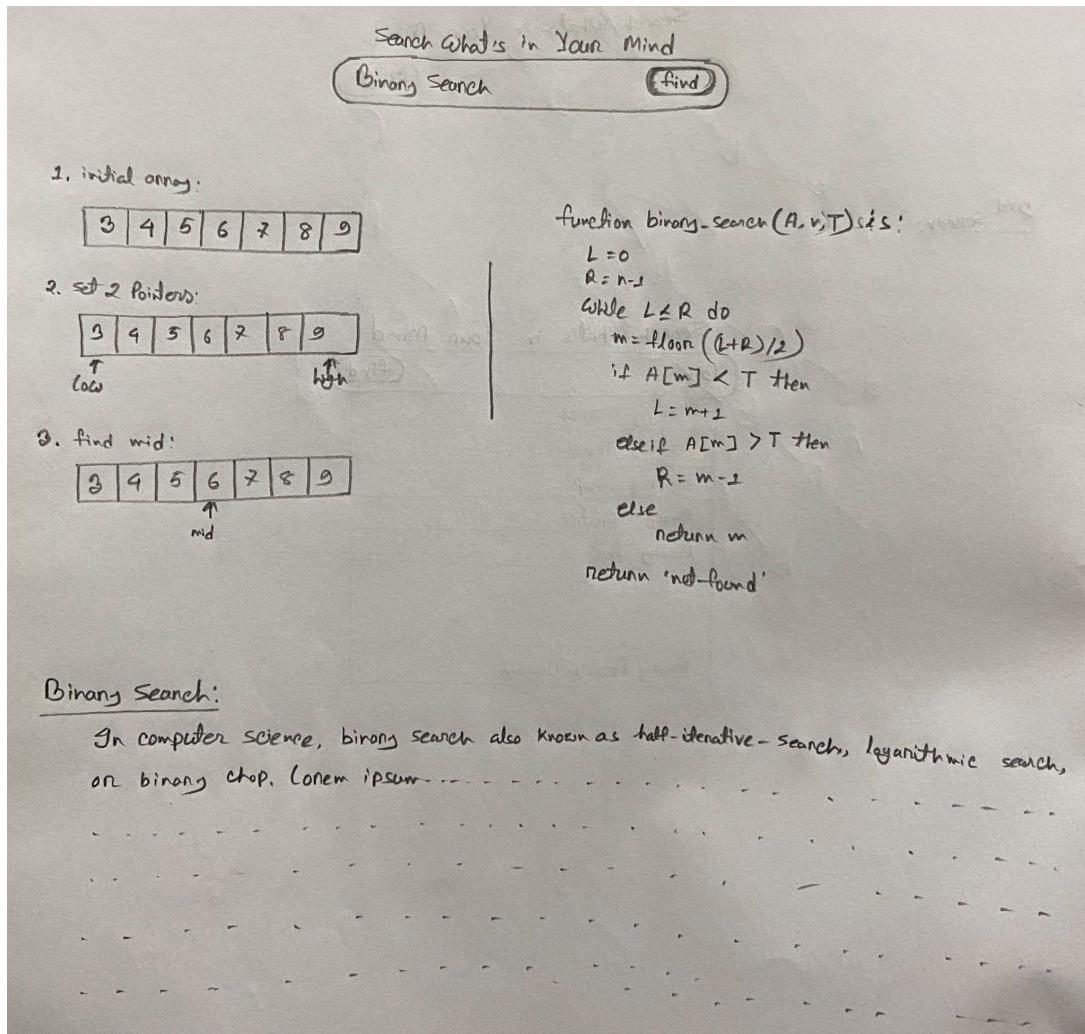


Fig: Searched Content for Binary Search

In this figure you can see the search result for the user which the system will provide when they search for any content.

3.2 Group Study Management:

“Group Study” is a feature which is shown in the navbar section. To enter this section, every user needs to face 3 steps these are given below:

Step-1: Select the preferred group study room to join:

When a student clicks on “Group Study” he/she will see the given page where he/she can search for a group study session by putting his/her subjects or class name or find manually. This page shows all of the group sessions that are held for a specific day. For each session there is a “Right” sign and “Cross” sign here. Using the “Right” sign anyone can go for the next phase of this session before joining the class.

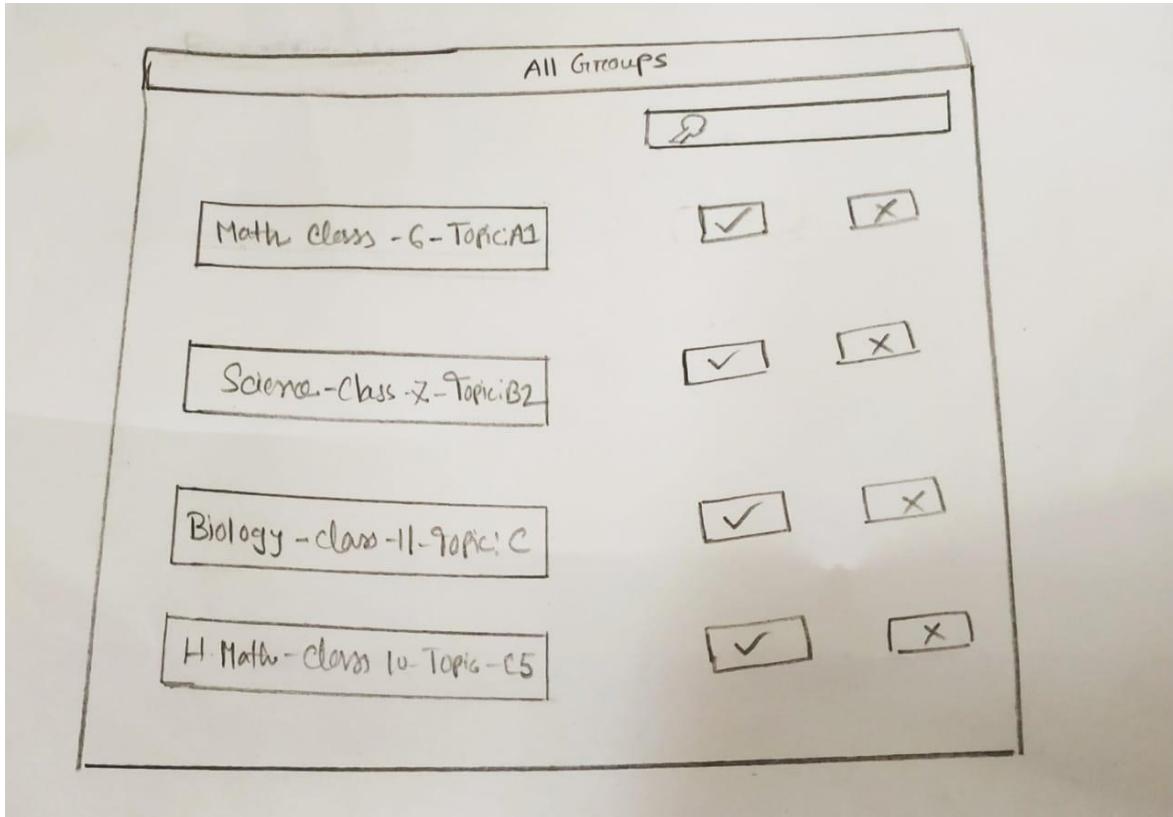


Fig: Select the preferred group study room to join

Step-2: Select Your Role:

Before joining the class, a user needs to select one of these options which mean as a student which role she/he will be played throughout the group session. Some students join these group sessions for problem solving, some students need basic theory, some students like to find all possible questions based on a topic etc. So, according to the user's choice she/he can choose her/his role. The given image showed a student choosing her role to do problem solutions.

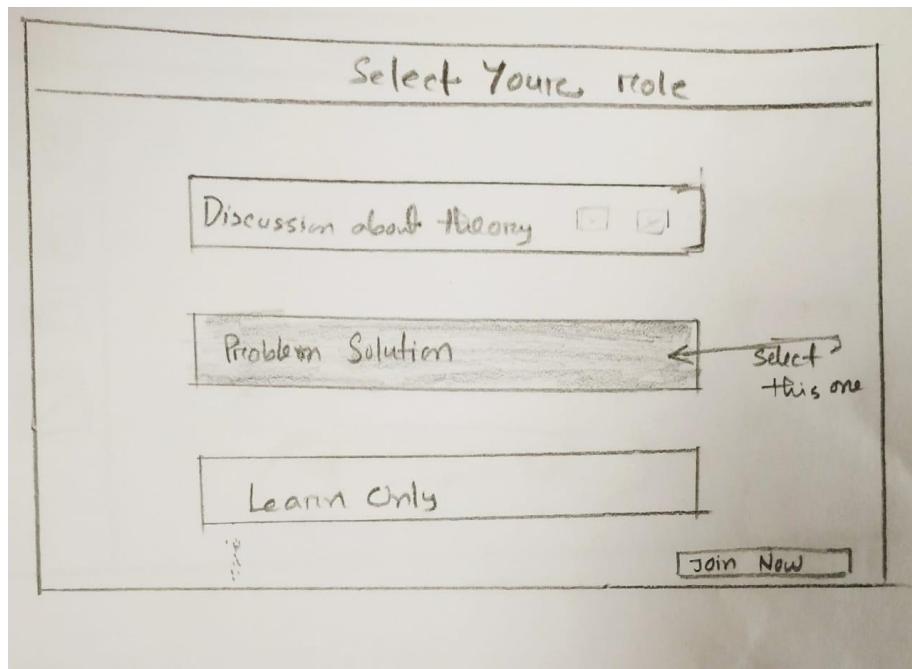


Fig: Select a role

Step-3: Enter the room: After selecting the role, the user can enter the room. The room is basically an online classroom which has three vertical sections. Left section contains a Text box, Arrow, Shapes, and sticky notes. In the middle section ,

users can see others' screens or own one if the user shares. There is a section below including mic, camera, end call and 3 dots which again contain "share screen" and "mute all" options. On the right side, users can see who are joining this classroom.

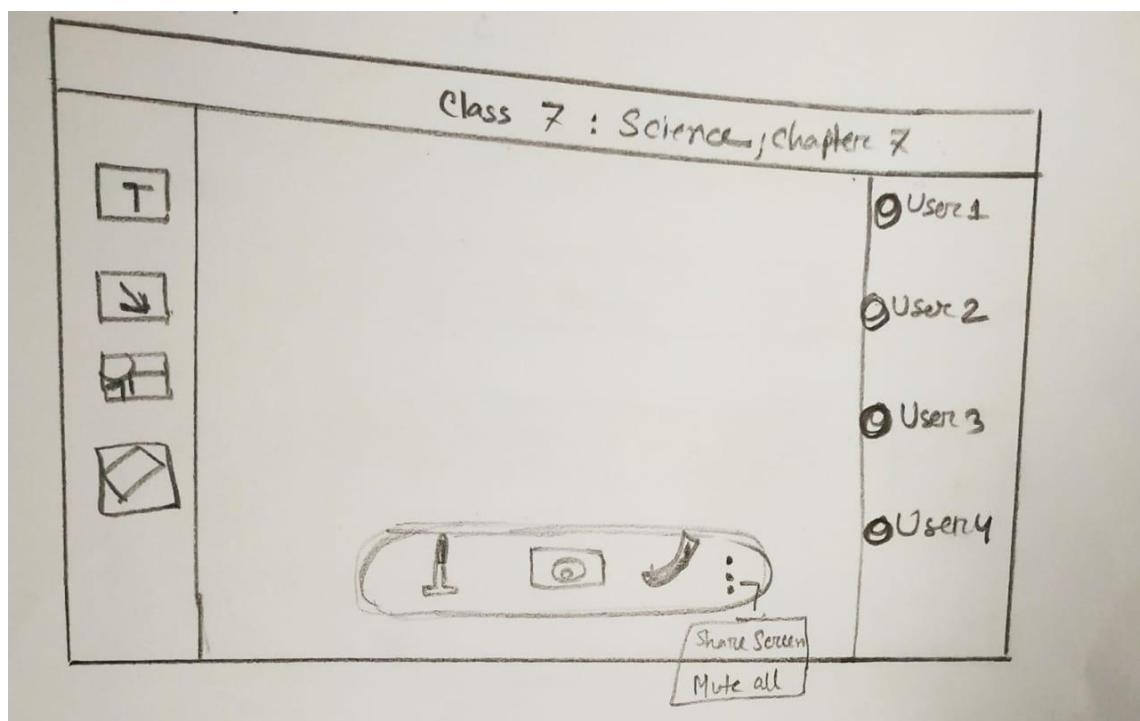


Fig: classroom

3.3 Help From Tutor/Guidance Hub:

Imagine a helpful tool that's there for you when a tricky topic pops up during your study time – that's exactly what this feature is all about! We noticed from our research (in the affinity diagram) that students sometimes find it tough to understand new things right away. So, we designed a cool feature that lets students connect with their tutors super quickly. If a student is studying a subject and hits a roadblock, they can call, video call, or text their tutor right then and there. Given images are the first impression, when the "help from tutor" button on the left side image is clicked the right side page is loaded, here a student can make a call, video call or send a text to the tutor.

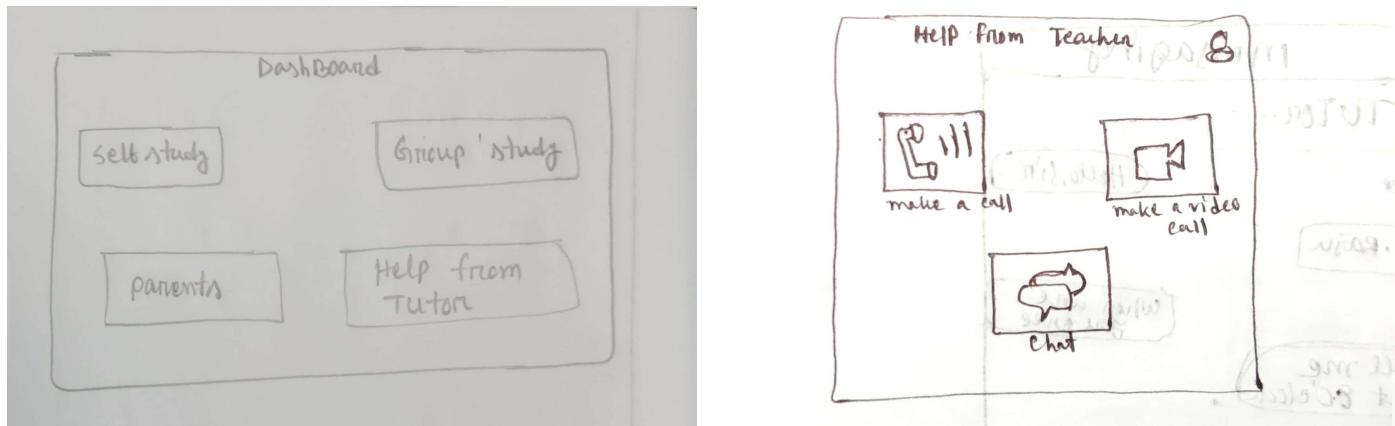


Fig: Help from Tutor updated design

In the initial version, the commuting options were discrete and not so good looking, there was just a button on the side in the Dashboard. But now in the updated version, a user can easily know what to do step by step. Moreover, in the updated version symbol quality is improved significantly.

The idea is to make sure students get help right when they need it. When a student reaches out, their tutor is instantly notified. It's like having a superhero teacher who swoops in to save the day! This feature doesn't just wait for problems; it actively looks for areas where students might be struggling, especially when they're learning something new in class or during private tutoring. So, it's not just about fixing issues – it's about making sure students have a smooth learning journey.

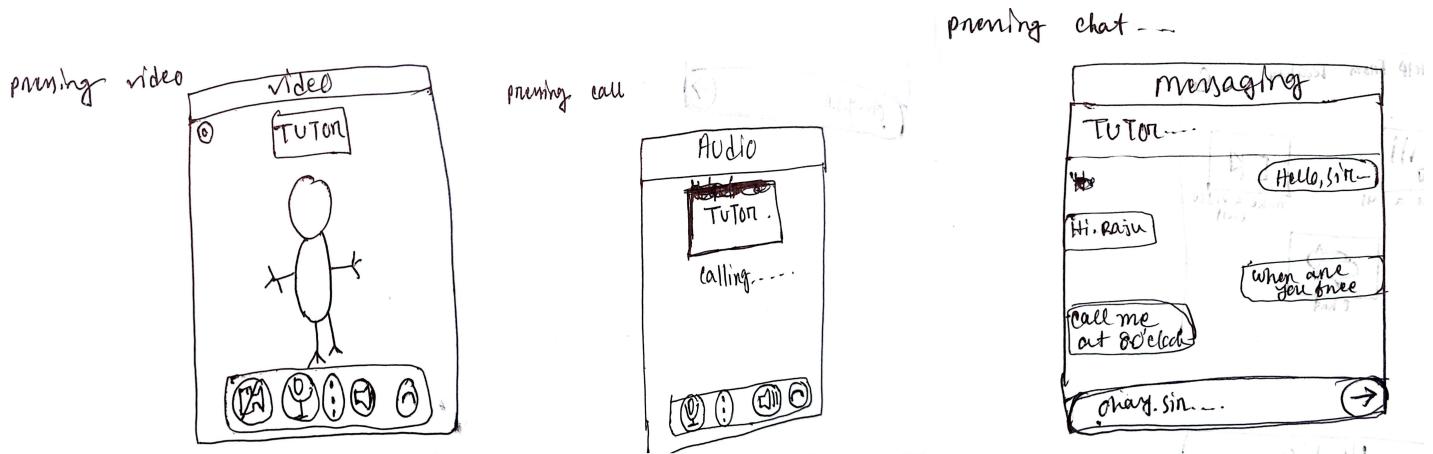


Fig: Updated Pop-Up Pages

In the updated design, we add pop-up windows for each medium. When a user uses a medium, then each click on the specific button leads to a specific window, which is given in the above images.

If we put this feature into action, students would easily use it by going on the educational platform, picking the subject they need help with, and getting in touch with their tutor as simple as sending a message. It's like having a study buddy right at your fingertips, making learning easier and more fun!

3.4 Post Problems:

The "Post Problem" feature is a valuable tool empowering students to seek assistance and share their study-related challenges within the learning community. Leveraging this feature involves a few straightforward steps to maximize the benefits:



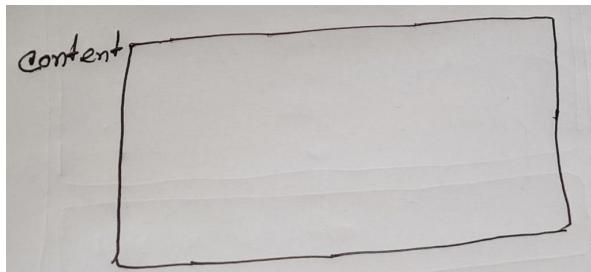
Step 1: Title and Tagging:

Upon accessing the "Post Problem" section, the student initiates the process by providing a concise and informative title for their post. This title serves as a quick reference point for others to understand the essence of the problem. Additionally, the student is encouraged to use relevant tags, helping categorize the post and making it easily discoverable by those with expertise in the specific subject or topic.

Step 2: Problem Explanation and Attachments:

Moving on to the second step, the student articulates the details of their study-related problem. This can involve a thorough explanation of the challenges faced or the inclusion of relevant files, documents, or images that provide

additional context. The ability to add multimedia elements ensures a comprehensive understanding of the problem, facilitating more accurate and targeted assistance from peers and teachers.

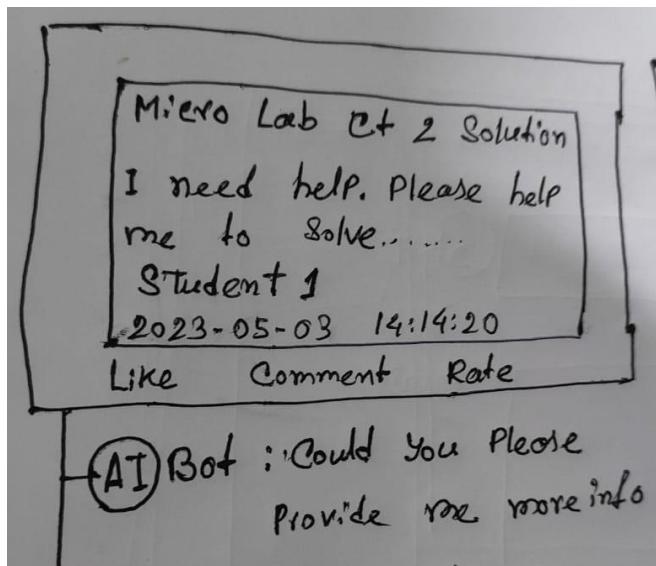


Step 3: Post Submission:

Once the title, tags, and problem details are entered, the student simply clicks on the "Post Now" button, initiating the process of sharing their academic concern with the learning community.

Bot Feedback:

Shortly after the post is submitted, an AI bot promptly analyzes the content. Within a few seconds, the bot provides initial feedback to the student. This feedback may include references to previously solved problems or indicate whether relevant data on similar issues is archived within the system. This quick response aims to expedite the problem-solving process and direct students to existing solutions or resources.



Community Engagement:

As time progresses, the student's post gains visibility within the learning community. Friends, classmates, and even teachers have the opportunity to engage with the posted problem. They can offer insights, suggestions, or solutions, creating a collaborative and supportive environment for tackling academic challenges.

Continuous Learning:

The "Post Problem" feature not only provides immediate assistance but also contributes to a continuous learning experience. As students and teachers interact, share knowledge, and collectively address challenges, the platform evolves into a vibrant educational community where everyone benefits from the shared insights and diverse perspectives.

4. User Study Protocol

In this section we have provided the user study protocol of how we introduced us and how we have conducted the user testing.

4.1 Introduction

Hello, I'm Hasibul Hasan Rupok and I'm part of the team working on Homework Helper Plus. Today, we're conducting user testing to gather feedback on our low-fidelity prototype and improve its functionality based on your insights, our goal is not to judge whether the user can successfully perform the task or not, our goal is to collect the data so that we can improve our system so that everyone can use it fluently.

4.2 Project Description

Our project aims to help student from 4 to 12 grade to complete their homework at home fluently. We're focusing on providing a system where students will get help from other students, and teachers to complete their homework, and understand difficult topics to enhance their overall study. This testing session will help us understand how well the prototype meets user needs within its intended context.

4.3 Participant Question Opportunity

Before we begin, do you have any questions about the project or what this testing involves?

4.4 Introduction to Think Out Loud

In this session, we encourage you to vocalize your thoughts, feelings, and observations while interacting with the prototype. Your verbalized reactions provide invaluable insight into your experience, allowing us to grasp how you navigate, interpret, and engage with the prototype's functionalities. Sharing your impressions as they occur, whether positive or negative, helps us comprehend the challenges you encounter, the elements that resonate, and the aspects that might need improvement. This open narration helps us better align the prototype with your needs and preferences, ensuring a more user-centered and effective final product.

4.5 Participant Question Opportunity

Write here..... Write here..... Write here..... Write
here.....

4.5 Thank You and Additional Question

Thank you for participating! Once you've completed the tasks, we'd appreciate any additional thoughts or feedback you might have. Are there any questions or comments you'd like to share before we conclude?

5. User Testing

| Homework Helper plus | User 1 | User 2 | User 3 | User 4 |
|-----------------------------|--------|--------------------------------------|-------------------------------------|--------|
| Efficient Content Searching | ✓ | ✓ | ● | ✓ |
| | | | Face problem to find the search bar | |
| Group Study Management | ✓ | ● | ✓ | ✓ |
| | | Face problem but successfully done | | |
| Guidance Hub | ✓ | ✓ | ✓ | ✓ |
| | | | | |
| Post Problems | ✓ | ● | ✗ | ✓ |
| | | Face problem to find the Post Button | Can not complete | |

6. Findings of User Testing

From Rupok:

From Anne:

Firstly the users need time to understand the whole application and the features “Group Study Management” as it’s a new experience for them and this is the first time they’ve seen such an application. From 4 users, 3 of them easily got the flow about the group study and gave us some suggestions. From these we accepted most of them which seems important to us too and incorporated these points in our updated version but one of them faced a problem in step-2 which is about “Select a Role” because he was not familiar with the term “selecting role”. When I made it clear to him, he had easily done the next other procedures .

From Bipul:

From Shah Newaz Aziz :

Upon the introduction of the 'Post Problems' feature, users embarked on a journey to understand the nuances of this novel tool within our educational platform. This experience marked the first encounter with such a feature for most of the users. The learning experience wasn't uniform for all users. One individual encountered a hurdle during Step 2, which involves 'Add Title' also The term 'Content' was unfamiliar to this user, prompting a momentary challenge. Upon clarification of the concept, the user seamlessly progressed through the subsequent steps, showcasing the adaptability of the feature. This specific feedback emphasized the importance of ensuring clarity in terminology, prompting us to reflect on and refine the user interface. The commitment to enhancing user understanding and experience remains a priority as we continue to evolve the 'Post Problems' feature, ensuring that it serves as an intuitive and accessible tool for all users in their academic pursuits.

7. Updated Lo-Fi

7.1 Efficient Content Searching:

To test this design we told the user to perform a study material search and told him to speak loudly about what if he thinks anything while performing the task. There were a total 4 users, and all of them performed the task easily except one, she was confused which is the input field for study material search as there is no exact saying that it is the place for study while using the search functionality for the first time, by considering this we have changed the title and made it 'Search material, the title was 'Search What's in Your Mind', as the children are our target user group, so they may get confused Any Study Material'. In the figure below, you can see the updated designs.

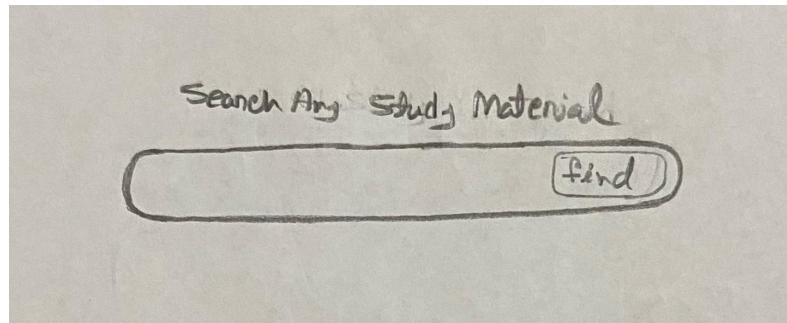


Fig: Search feature updated screen 1

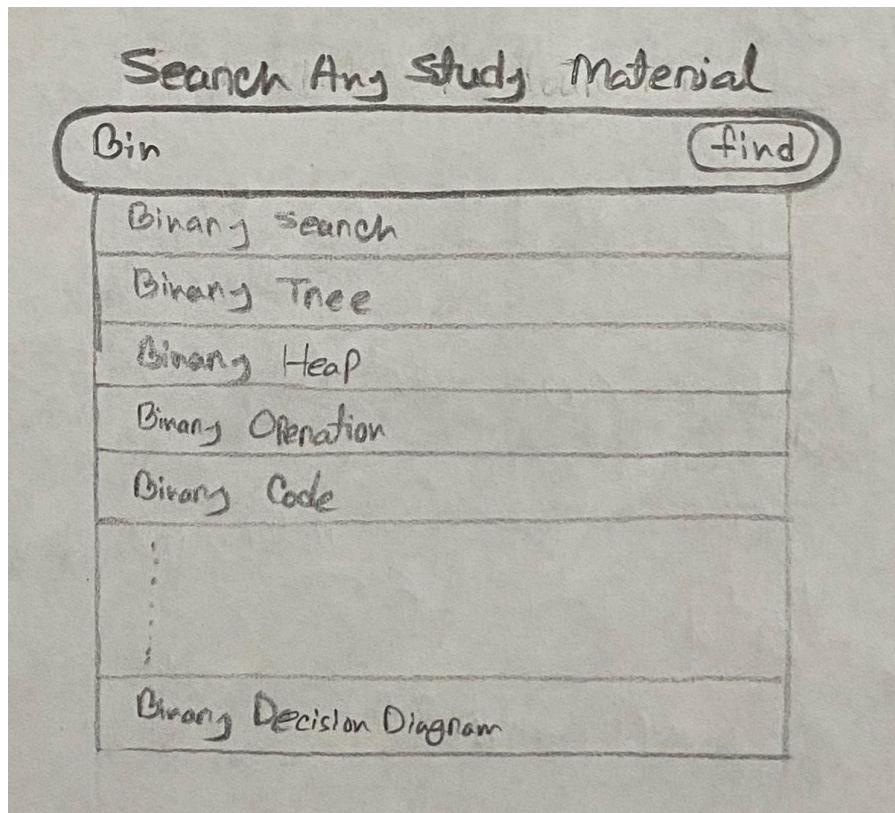


Fig: Search feature updated screen 2

7.2 Group Study Management:

Based on the user's suggestions, I changed some of the structure which I discussed below as per steps as the previous one.

Step-1: Select the preferred group study room to join:

1) In the previous version, users can see all the rooms which are titled and based on subjects or classes which seem mess to them. Most of the users want that the classes need to sort as class based and these classes include subjects of it's class which can be shown if a student clicks on the select arrow which is located at the right side of each class.

2) To move forward, we used the "Right" sign and the "Cross" sign to signify if users agree to join or not. Now, users suggest us to use buttons named "join" and "cancel" instead of single signs.

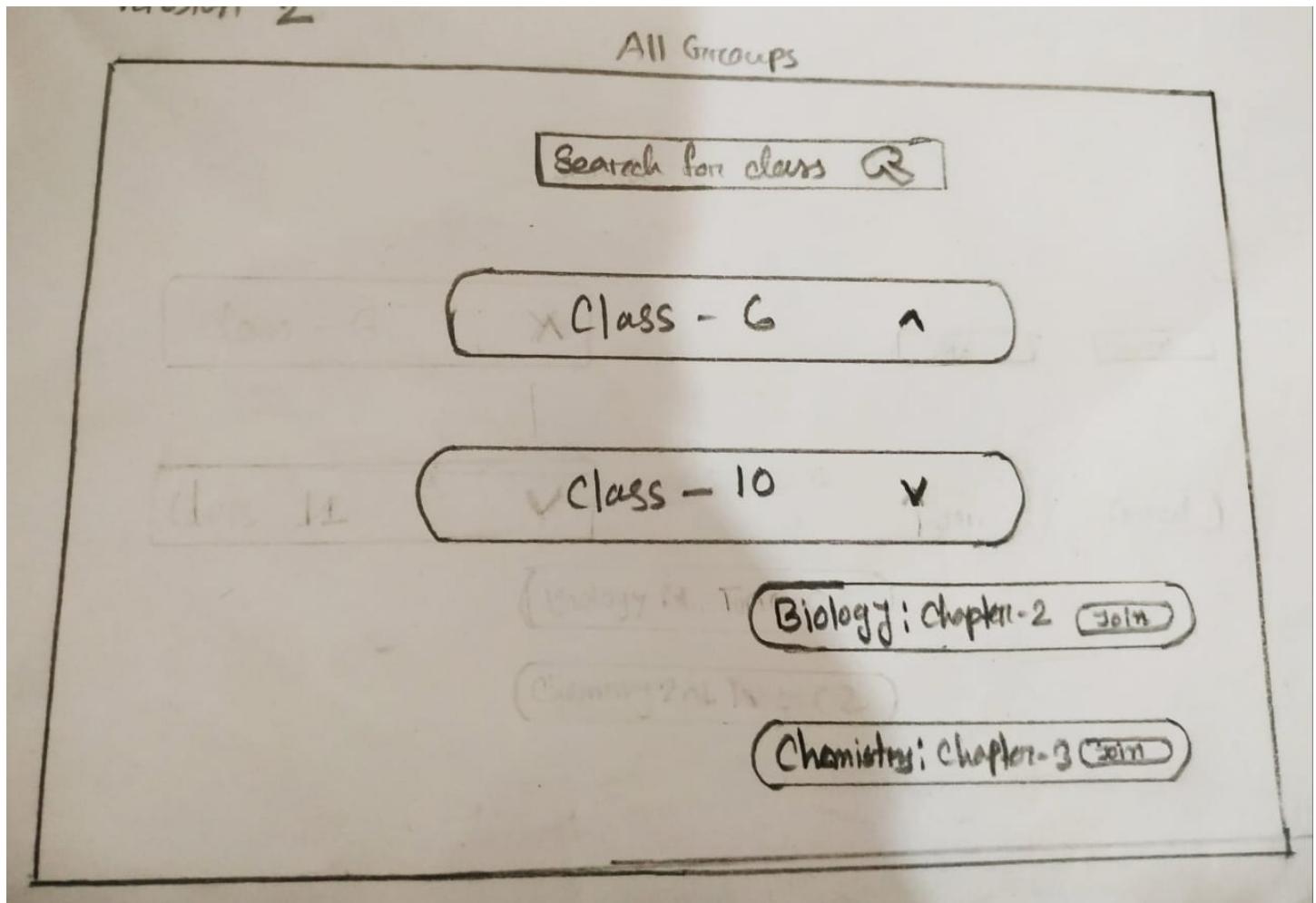


Fig: Updated Select the preferred group study room to join

Step-2: Select Your Role:

In our previous version users just selected only one role at a time. According to some users, they proposed that a user can play a different role in a class which is a valid thought. So we change the functionality of this case. In the updated version, by clicking the "Right" sign people can select her/his role and it can be multiple roles at a time.

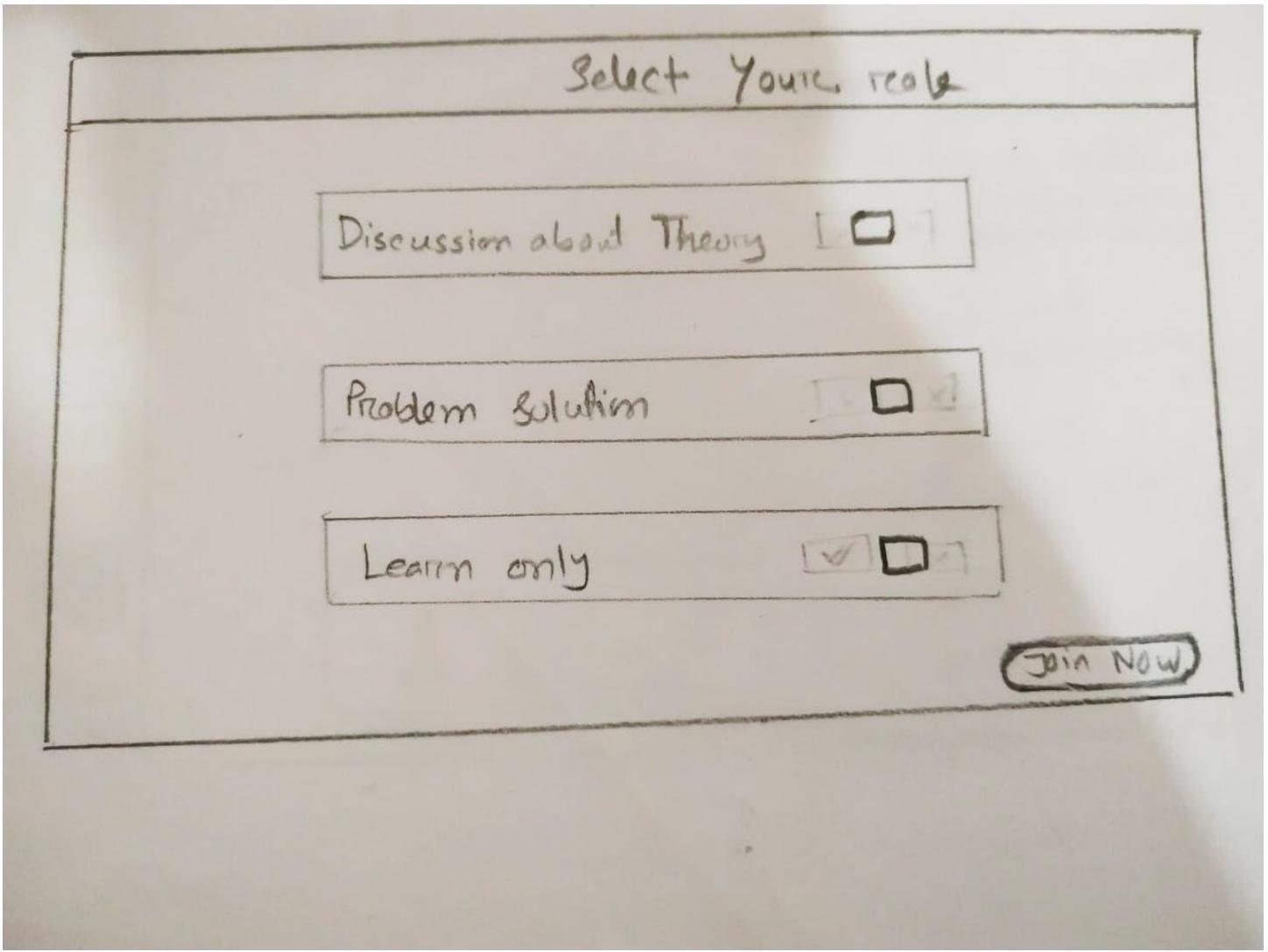


Fig: Updated Select a Role

Step-3:Enter the room:

For the classroom section:

- 1) Users want to see all the users name with their role which she/he would play which helps a user to ask their question by mentioning their name as per their roles.
- 2) They also ask us to add some more functionality such as uploading images at class hour on board, keep history of media files which they shared throughout the session etc which we added to our latest version.

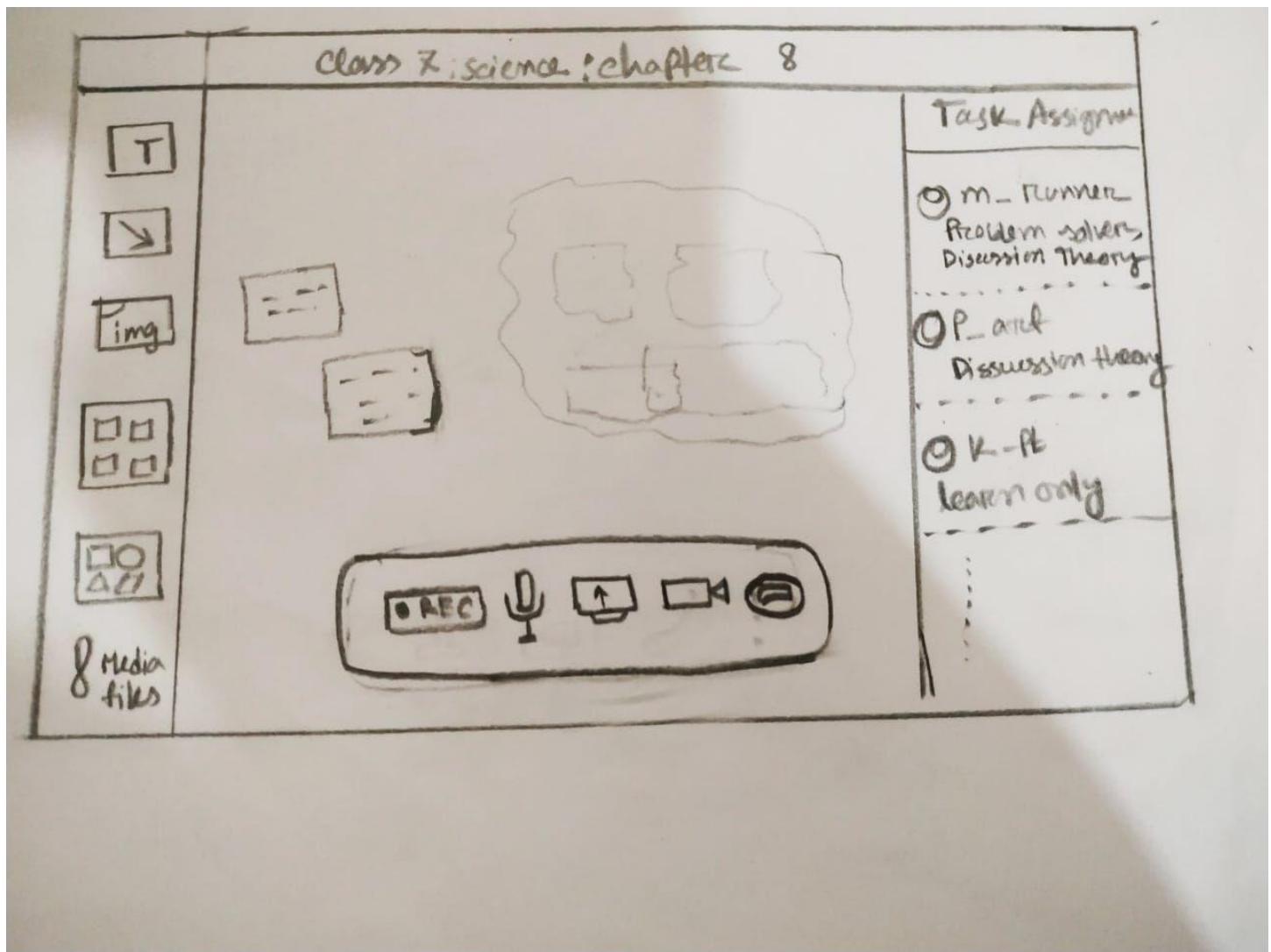
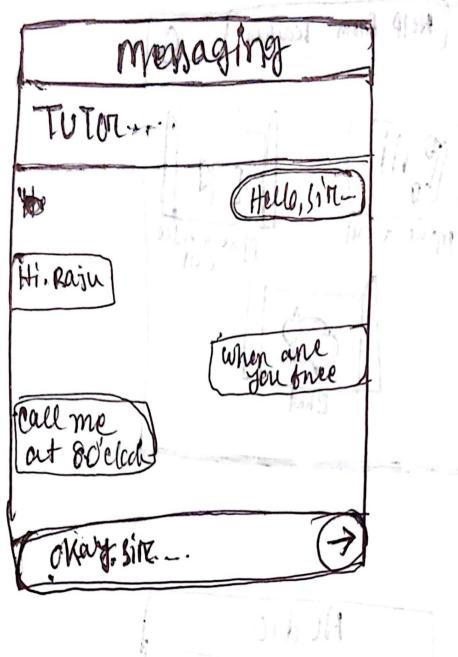


Fig: Updated Class Room

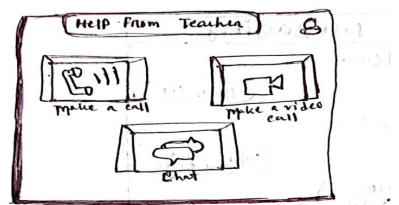
7.3 Guidance Hub/Help From Tutor:

To evaluate the efficacy of this design, we instructed users to conduct a study material search while vocalizing their thoughts aloud. The task was administered to four participants, all of whom successfully completed it with ease. Although there is not any problem with the design, but we updated some designs such as adding some functionality in video calling, we highlight the symbol more efficiently so that the user can see it more vividly.

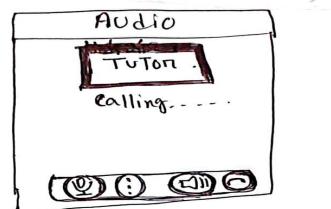
With pressing chat area.



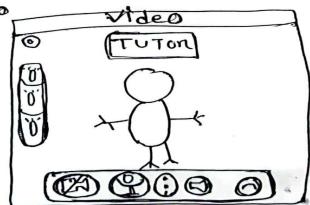
1st:



2nd: pressing call



3rd: pressing video



7.4 Post Problems:

To assess the usability of our design, we provided it to four users for evaluation. Unfortunately, two of these users encountered confusion regarding the posting process—they couldn't locate where to post content, nor could they easily find their posted items afterward. This confusion stemmed from a lack of clear guidance on where to post and how to navigate to view their posted content.

The top part shows a screen with a header "Shah Newaz A2i2". Below it is a large input field containing the text "What's Your Problem?". To the right of the input field is a large button with the word "Post" and a right-pointing arrow.

The bottom part shows a post card with the following details:

- Profile icon labeled "SN" and name "Shah Newaz A2i2" followed by the date "17-12-23".
- Section title "Exercise 9.1"
- Text "Solve each of the following equations also Verify Your Solution"
- Grade "A1" and a star rating "4.5 ★"

Acknowledging this feedback, we promptly undertook a redesign initiative to enhance the user experience. We made significant updates to the screen layout and functionality to address these specific pain points and ensure a more intuitive posting process.