**Think Aloud Protocol For TABLES**

Tutor Assisted Browser-based Learning Environment for Students (TABLES) is a collaborative online synchronous learning center for math assistance. Our proposed project is intended to recreate a MATH tutor center which provides guidance and assistance to students on mathematics concepts. However, over the time the team felt that we can apply a generic concept to our designs rather than considering only one Course - “MATH”

We incorporated the findings from testing our first prototypes into building a dynamic prototype. Some of the additions we made to the dynamic prototype are:

* Making the chat feature clearer.
* A noticeable archive button
* Better description of courses.
* Ease in joining group chat.
* Pen control feature well explained and developed.
* It was not clear to them if the equation displayed could be clicked on.
* Badges and endorsement for the tutor to gain recognition

We built a high fidelity prototype using Marvel. Marvel was used to develop the prototype because we wanted good interactivity. Additionally, we wanted to best simulate the envisioned product so that we could get more and better feedback to incorporate in the further prototype development and the designs.

Link to Prototype: <https://marvelapp.com/iff8b6>

**Testing the High Fidelity Prototype**

Out of different usability testing methods, we considered using Think aloud method. The protocol consists of observing a user working with an interface while encouraging them to "think-aloud"; to say what they are thinking and wondering at each moment. Think-aloud protocols are of particular value because they focus on the problems a user has.

We will specifically test users of the MACLab because they are familiar with the process. We will test it on both tutors and students of the MACLab since the prototype affects both.

In order to avoid bias we will ensure the following.

* That user realises that the interface, not they, are under scrutiny.
* That the user should at all times comment liberally on his/her actions, intentions and thoughts.
* That the user is at ease. This involves explaining that you may give only a bare minimum of help to the user, and apologising in advance for this. The user should try to find their own way as much as possible.
* Any help given to the user should be carefully thought out, in order for its effects to be recorded as part of the experiment.

**Advantages**

* Rapid, high-quality, qualitative user feedback (e.g. as compared with questionnaires).
* Data is available from a broad range of sources, such as:

o Direct observation of what the subject is doing.

o Hearing what the subject wants, or is trying, to do.

* If the subject gets into difficulties, the observer has the chance to clarify the situation.
* High degree of flexibility; the experiment may easily be steered by the observer.
* The presence of two people allows meaningful, direct dialogue.

**Roles in the Think Aloud**

Two people will conduct the Think Aloud Protocol on each user. One will the observer who will write notes and record if allowed by the user while the other will interact with the user.

**Results from Think Aloud Protocol**