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**Questionnaire link :** <https://forms.gle/ufapYM6oArMNN16J9>

## **Basic idea:**

We are going to provide a virtual environment for classes, labs and tours for our university students so that interactivity between teachers and students can be increased. Along with that, students would be able to engage with other students and this would help to increase understanding and knowledge. The most important aspect of the idea is to provide virtual experience of labs as students will be able to practice labs with virtual tools which will help to get real time experience same as on campus labs. This will lead to greater understanding of concepts and will them more competent and confident when they actually use those tools in on-campus labs or in their future jobs. The virtual tours for civil engineers who will be able to go onsite and get industrial experience

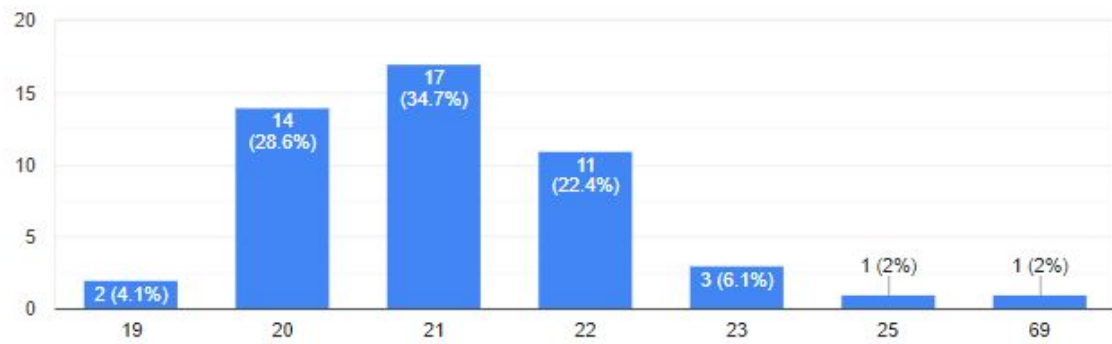
## **Data Collected:**

In order to do data collection, I made a questionnaire which was answered by 49 university students from different departments and universities all over the world. I made 12 questions which focused on demographics, environment, goals for e-learning and pain points due to e-learning during the pandemic.

The results were quite astonishing and now we are going to analyse and discuss them by using google forum summary graphs.

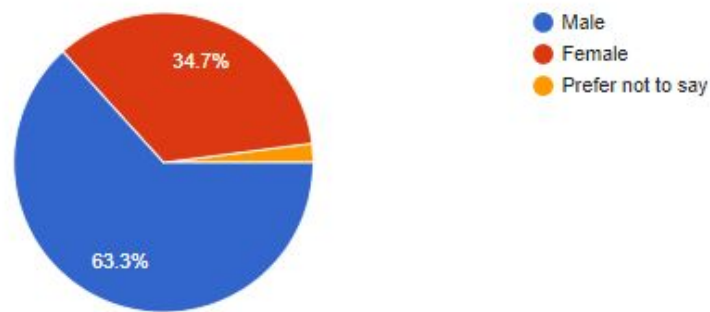
Age:

49 responses



Gender:

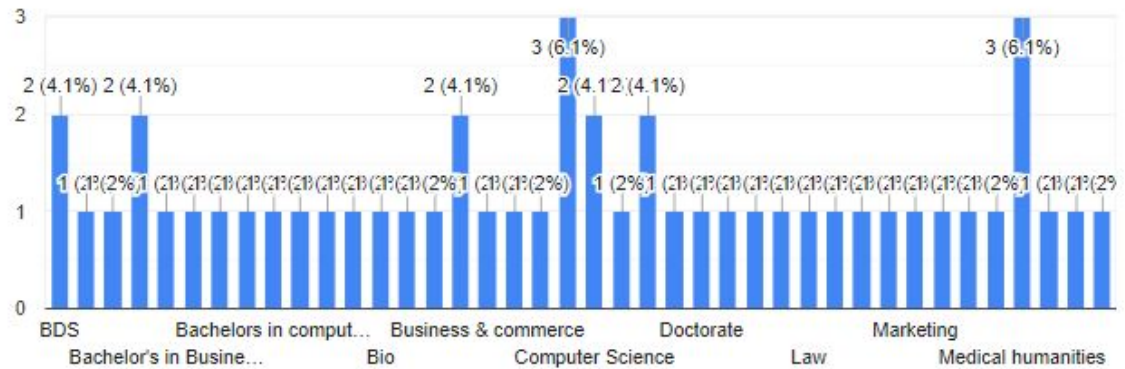
49 responses



The following graph shows that the age of our questionnaire respondents are mostly between 20-22 and more males have filled the questionnaire rather than females.

What degree are you pursuing?

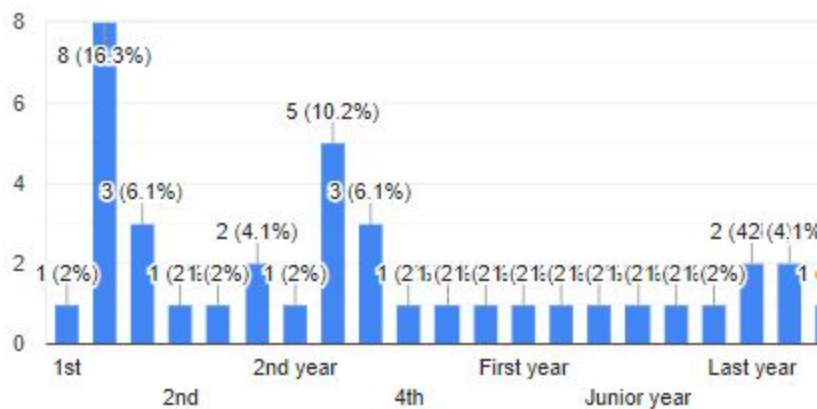
49 responses



The following graph is not that clear because some students have written short form of their degrees as it was open ended question but I went through the 49 response for this questions and found that most of the students who answered this survey were doing Bachelor of Dental Surgery (BDS), Bachelor of Civil Engineering, Bachelor of Business Administration (BBA) and there were few students from other bachelor degrees.

What year of university are you in?

49 responses

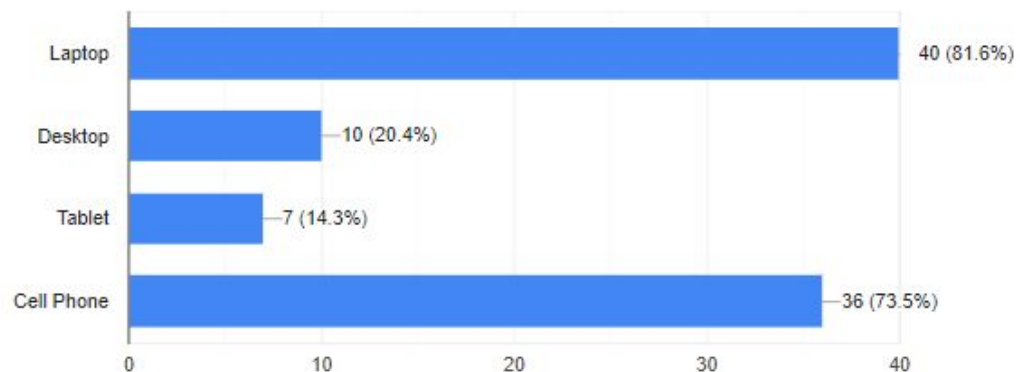


The following graph shows that our survey showed that the university students who responded were actually evenly distributed from freshman year to the last year and that

meant that our survey contained students from no experience (first year) to experienced students (last year).

What devices are easily accessible for you?

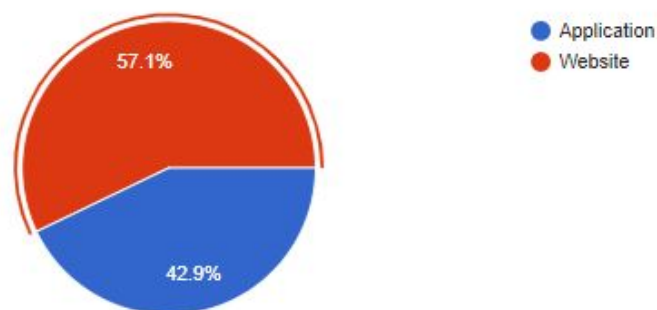
49 responses



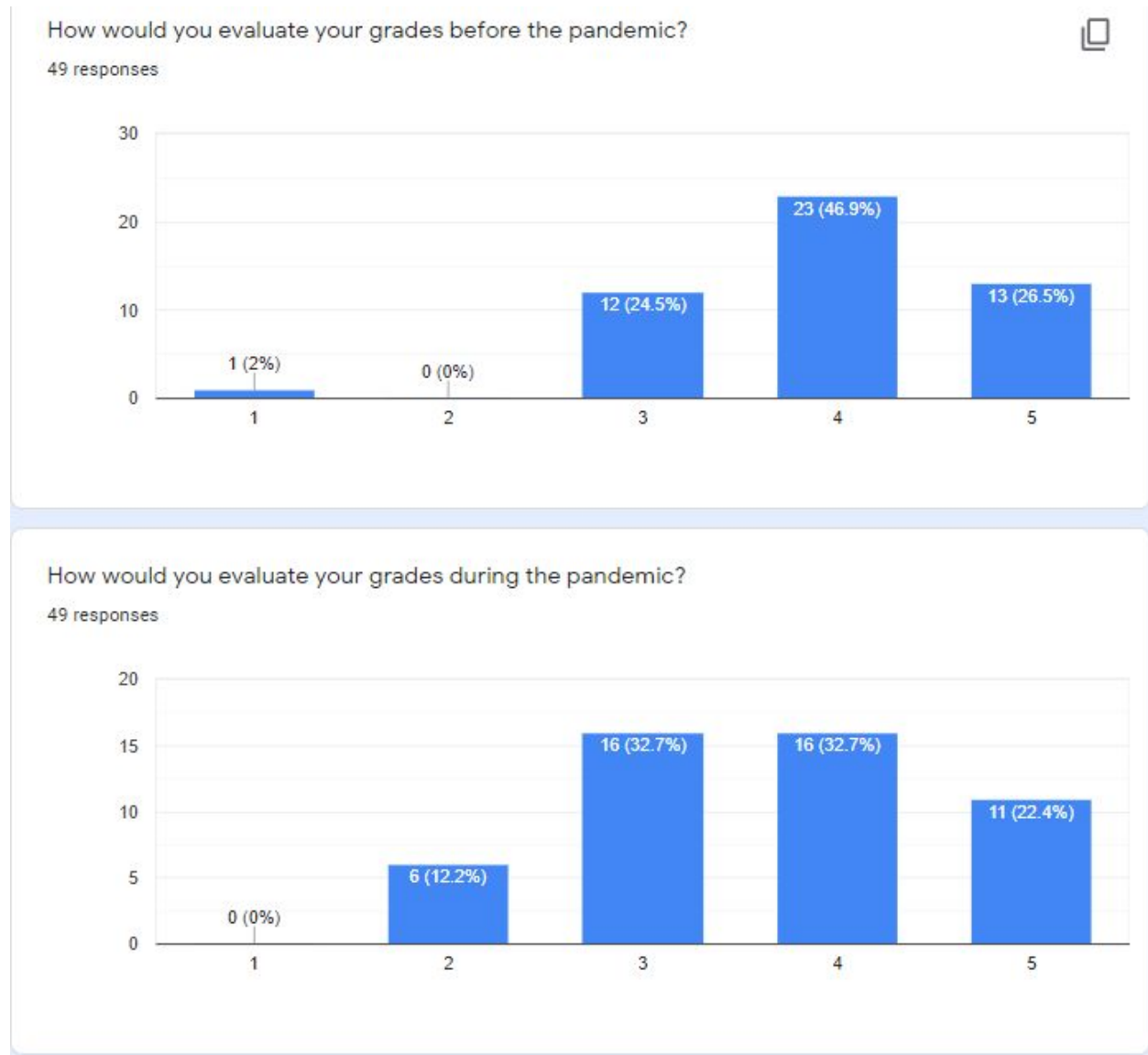
The analysis of the following graph would be that most of the students recommended to use Laptop for their e-learning classes as it is easily accessible but we can not eradicate the other options as some students are still using other devices and our new project should be compatible with all of the devices in order to be available for all the students in the university.

Which platform do you think is more convenient for you to access?

49 responses



The following graph shows that most of the students prefer using websites so our new project should be accessible by the website.



The following graph shows that grades of most of the students have been affected by online classes as during the pandemic most of the schools shifted to online classes and this makes us think that there might be some issues in online classes which led for most of the students perform bad.

What problems have you faced in the current learning or teaching methods during this time?

What changes would you suggest should be made in our current online education system?

The above two questions helped us to understand students pains and goals as it was a open ended question, I had to look carefully through each response and then categorise students according to that. The most interesting thing I found was that medical students

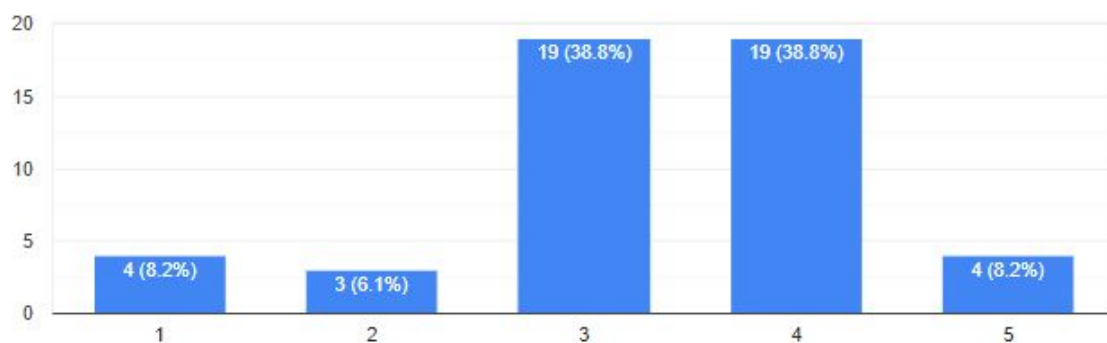
and dental students mostly complained about their labs as they were quite suffering with online labs as it did not have that much understanding because they were not able to use different tools and get experienced with them and they did not have the model dummies to observe internal organs/teeth and their placement in the body and they felt they will not be competent enough to work in real world/industry after they graduate. They also felt that interactivity with teachers and peers was less and they wanted more engagement involved. The most important thing was that most of the medical/dental school also complained about signing into different apps in order to online lectures, labs and etc.

The second most important trend I found was that most students felt lack of motivation to study and in group assignments students can't form bond with their group members because of lack of interactivity and were missing their educational tours which helped them to understand in greater depth and along with that the accessibility to study material was not quite easy for students.

The third most important which I found was that most student found the existing application and websites for e-learning have some compatible issues and consumed a lot of data of their internet and it was tough for freshmans to keep track of their deadline for assignments and many freshmans were not able to make new friends as they were new to the university and the existing online e-learning platform did not have social engaging activities.

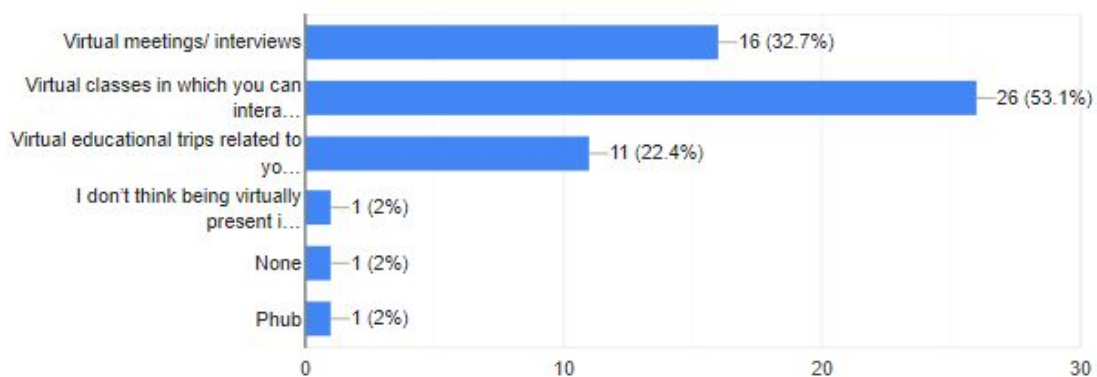
How comfortable do you feel to use Virtual Reality for e-learning purposes?

49 responses



If we were to develop a Virtual Reality Simulator, what would you prefer to use it for?

49 responses



These last two questions helped me to decide whether we should use a virtual reality platform for students and for what activity we should use that platform for. The trend that resulted from this was that most of the students were comfortable with using virtual reality for e-learning purposes and wanted virtual classes/labs in a virtual environment.

## Personas:

### Persona 1:

**Name:** Jayce Hollis

**Photo:**



**Demographics:**

**Age:** 21

**Gender:** Male

**Environment:**

Jayce Hollis is a University student studying Bachelor of Dental Surgery. He is a Fourth year student who was doing quite well before the pandemic started but after the pandemic his studies were quite affected. He finds access to his laptop and cell phone quite easy and found websites to be more convenient for him to access. Along with this, he is quite comfortable to use virtual reality for e-learning purposes.

**Goals:**

He wants to be able to have more engaging and better interactive lectures. Along with that, he wants online labs which give the same experience and details as the on campus labs. He wants an application which contains all the functionalities of online meetings, forums, online lectures and labs.

**Pain Points:**

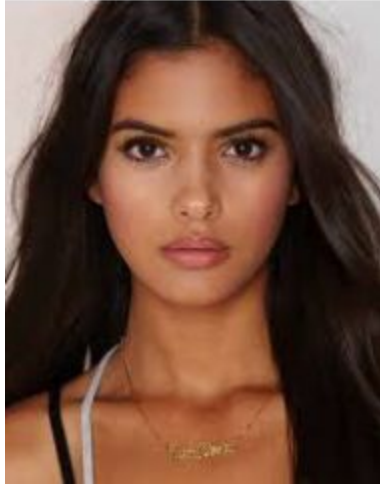
He is unable to interact effectively with teachers and his fellow peers as the interaction on zoom is quite different from the real time experience. Labs are difficult to understand using zoom because physically doing the lab leads to more understanding. He finds it quite complicated to use different applications for online meetings, lectures, labs and forums.

**Persona 2:**

**Name:** Charlotte Bailey

**Photo:**



**Demographics:**

**Age:** 22

**Gender:** Female

**Environment:**

Charlotte Bailey is a University student studying Bachelor of Civil Engineering. She is a third year student and her grades are not affected by the pandemic although her grades are not that good. She is more comfortable to use an application and prefers to use cell phones over tablet, laptop and desktop. She is not that comfortable to use virtual reality for e-learning purposes.

**Goals:**

She is looking for a platform where she can actually get the experience of online labs just as on-campus labs and classes to be more motivating. She wants the interaction between her and her fellow peers to be more interactive so they can form a bond which helps them to be an effective team. Along with that, Platform which provides virtual tours to the construction field. She wants learning material/labs/lectures to be easily accessible.

**Pain points:**

The tools used in her practical classes are not available in online-classes which helped her to understand the concept. Less motivation as lectures are pre-recorded and live questions and answers can not be done. Her university used to take them to

educational trips related to their field which has stopped due to COVID-19. Group projects engaging is quite difficult for her as when they were on-campus they used to refer to theories while demonstrating the concept using the tools available in the lab which led to better understanding about their group members and led them to be an effective team. Consultation sessions are not that interactive and effective. It is quite difficult to find the recommended books for each unit and to find zoom links for different classes and labs.

### **Persona 3:**

**Name:** Haziq Pasha

**Photo:**



**Demographics:**

**Age:** 20

**Gender:** Male

**Environment:**

Haziq Pasha is a Freshman in the University and is studying Bachelor of Business Administration (BBA). He was doing quite well before pandemic but during pandemic his studies were slightly affected. He found desktop and cell phones to be easily accessible and he found websites to be more convenient for him to access and he feels extremely comfortable to use Virtual Reality for e-learning purposes.

**Goals:**

He wants a compatible platform and one which helps him to make new friends in university which will aid him to succeed. He also wants a platform through which it

would be easier for him to keep track of assignments' deadlines and a platform which works on low internet speed and consumes less data.

### **Pain Points:**

He found that existing applications caused compatibility, connectivity and technical issues for him. He also felt that pandemic has caused him to make no friends at the university as his first semester was online and there are less online engagement activities which restricted him to make no new friends. He is having hard time for keeping track of assignment deadlines and he found out that applications like zoom kicks the person from a meeting if his internet connection speed is low.

(4) 15 User Stories. (Produce user stories, based on your questionnaires, and tied to your personas).

### **User Stories:**

- 1) As a university student, I want more interactivity with teachers so that I can ask questions for better understanding.
- 2) As a university student, I want lectures/labs to have peer to peer interaction so that I can discuss with my peers to get greater understanding.
- 3) As a university student, I want more motivational activities so that I can concentrate during the online semester.
- 4) As a university student, I want more compatible platforms so that I can use my old devices which can be easily used for this platform.
- 5) As a university student, I want to track down the deadline of my assignments so that I can manage to submit them for the deadline.
- 6) As a university student, I want an application which provides the same exposure as a oncampus lab so I get to know how to use different lab tools when I actually use them.

**7)**As a university student I want an application which is more stable when internet speed is slow so that I do not get kicked out of the online classroom when my internet speed is quite low.

**8)** As a university student, I want an application which consumes less data so that my limited monthly subscription for my internet package does not finish up.

**9)** As a university student, I want one application which has all the functionalities for video calls,group discussion, in class quizzes, online labs and lectures so that I do not have to switch to different applications for different purposes.

**10)** As a university student, I want lectures/labs/study material to be easily accessible so that i don't keep looking for them.

**11)** As a university student, I want to go on educational industry trips so that I get to know about industry and gain some experience.

**12)** As a university student I want some online social activities so that I can get to know my fellow peers and this will help me to make new friends and allow peer to peer engagement.

**13)** As a university student, I want a private audio/chat communication channel with my peers while taking a lecture so that I can ask them questions about something i don't understand.

**14)** As a university student, I want a consultation meeting to be more interactive and to feel that I am talking face to face to my lecturer so that I can feel more engaged and can effectively ask questions about my problem.

**15)** As a university student, I want in class quizzes so that I have a better understanding of the topic discussed in the class.

