

Team Name – UnicornDev

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Domain Selected

EdTech





What was the new
normal in 2020?

Online classes and digital events

- 80% of all events that took place in 2020 were online.
- 99% of all educational institutions had to switch from offline to online.
- There are pros and cons for this model.

What are the **cons**? and who are **affected** the most?

- Students who don't have access to sufficient bandwidth.
- Students from developing cities and rural areas.
- Online classes that repeatedly lost connection made it tedious for students to learn and understand the topics

- An average online class lasts for 4 - 6 hrs.
- High quality like streams will cost 810Mb to 2.4GB per hour.
- Low quality like streams will cost 280Mb - 630Mb per hour.

Reason and cost

- Streaming video & audio from the presenter is really expensive even if there is not a lot of things going on in the screen.
- This causes the data consumption to be higher.

Solution proposed

“A platform that is meant for conducting online classes and presentations.”

Existing solutions

- 90% of the online classes are conducted on platforms like google meet, zoom etc.
- These platforms are made for video calling/streaming.
- They are optimized for **video calling** rather than conducting **presentations and online classes**

Existing solutions

“Google Meet is a video-communication service developed by Google.”

“Zoom Video Communications, Inc. It provides video telephony and online chat services through a cloud-based peer-to-peer software”

Our Efficient Approach

UnicornTeach



From
UnicornDev

Redesigning Education



An **efficient** approach & How to **improvise** without developing an infrastructure?

- Rather than streaming content like its a movie.
- Passing the information of movement can be a lot efficient.

An **efficient** approach & How to **improvise** without developing an infrastructure?

- This approach can most benefit when the tutor explains topics by writing and drawing. Which is what is happening in most cases.
- Even If there are just presentations it can be transmitted over without streaming.
- This can be insanely useful in saving data consumption and bandwidth.

Technical aspects: working

- eg. If a hypothetical tutor moving the mouse to draw a line at the axis(x, y) to the axis(x2, y2) that data of movement can be passed to the client (student's machine) making the student's machine draw that lines automatically rather than streaming large chunks of data of the whole screen.

Technical aspects: working

- As there are just lines/writing to render. There is no or very less possibility of failure on the clients machine.
- If the presenter decides to teach with **presentations/pdfs**. The presentation/pdf will be divided into different images and transmitted over to the client's machine which again saves data consumption.

Technical aspects: working

- In case of dynamic presentation where there are a lot of animations and movements on the presentation. We could send the ppt to the client's machine and make action according to the presenters actions. Making it in complete sync with the presenter.

Technical aspects: scalability

- This approach can be highly scalable as there is no requirement of developing physical infrastructure.
- This approach also makes it easier in terms of accessibility.

Technical aspects: features

- Users can enter a room ID or create a private room.
- Can draw or write on canvas.
- Communication over voice.
- They can also communicate with one another using the chat feature.
- Functionality for sending documents in the chat feature.

Technical aspects: stack

- Node : Backend
- Express.js
- Vue.js, HTML, CSS3: Frontend

Technical aspects: stack

- Redis: Caching
- Hosting: Heroku
- Version Control: Git

Advantages over existing solutions

- Disconnecting from classes happens way less as there are no huge chunks of data to be downloaded.
- As this is a platform made for online classes and presentations rather than video calling this will be highly efficient while comparing with the existing solution.

Advantages over existing solutions

- This approach will make “Students who don’t have access to sufficient bandwidth” also feasible towards online classes.

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**“Education is the most powerful weapon
which you **can** use to **change the world.**” -
Nelson Mandela**



Thank You.