



e-ISSN: 2319-8753 | p-ISSN: 2320-6710

# IJIRSET

International Journal of Innovative Research in  
**SCIENCE | ENGINEERING | TECHNOLOGY**



# INTERNATIONAL JOURNAL OF INNOVATIVE RESEARCH

IN SCIENCE | ENGINEERING | TECHNOLOGY

Volume 10, Issue 6, June 2021

**ISSN** INTERNATIONAL  
STANDARD  
SERIAL  
NUMBER  
INDIA

**Impact Factor: 7.512**



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# A Study on Educational Technologies Utilised From March 2020- March 2021 during Covid-19 Pandemic

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**ABSTRACT:** During the pandemic period, as there is a sudden change of focus in teaching from offline to online, all the faculty members had no choice left but to follow the same. The teachers world over had either no or less exposure to the technologies that can be adapted in the initial period. With the existing internet connectivity and shared bandwidth, with other working family members and children, it was a hard reality to continue with teaching in an online mode, satisfying the students at the same time. Various educational technologies have been explored for seamless delivery of the lecture content. The different stages of content preparation, delivery, presentation and deployment was surveyed over the Google platform. Google has rendered a tremendous support to all the teaching faculty with various resources, free and open source softwares, downloadable pdf formats of books, open course ware of universities in India and abroad. This only made the learning affordable and reachable to the remotest parts of the country. These resources could reach asynchronously to all students, with different learning difficulties.

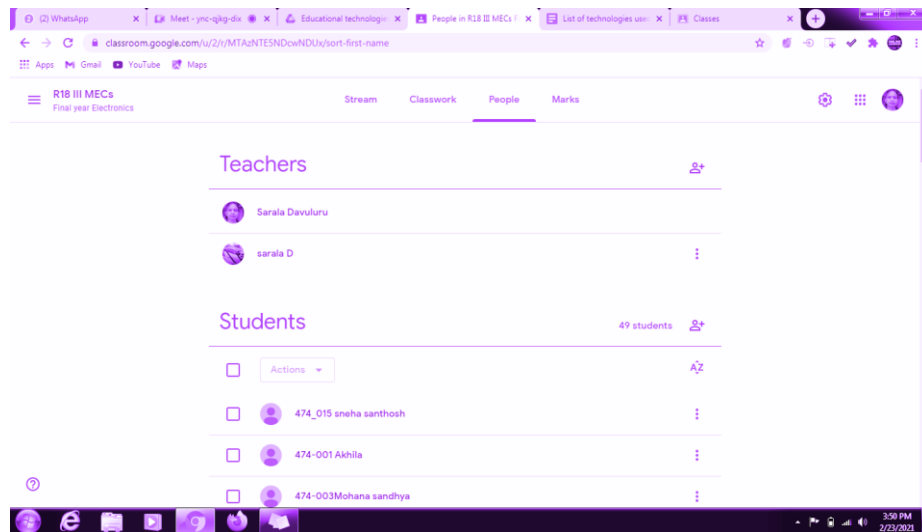
The video conferencing platforms with gmeet offering 24 hours of free access has enabled us teachers to schedule our classes and experiment with. we have hosted a number of meetings with colleagues and students for the possible information exchange and to get adapted to new technologies. This pandemic has taught us many lessons which we would not have experienced otherwise. We have organised several Faculty training programs on the use of gmeet, cisco webex and zoom platforms and several aspects of screen sharing, presenting, camera and audio control, conducting polls and surveys. Attended faculty development programs conducted by IIT, Bombay Spoken tutorials, Academic staff colleges and self learning methods. Following is the list of resources that have been utilised by me in teaching B.Sc Electronics students.

1. Google classRooms
2. Moodle LMS
3. Kahoot Quiz
4. Hot Potato
5. Screen recoding software - OBS
6. You tube Live streaming
7. Open Educational Resources
8. Virtual Laboratories
9. Simulation softwares

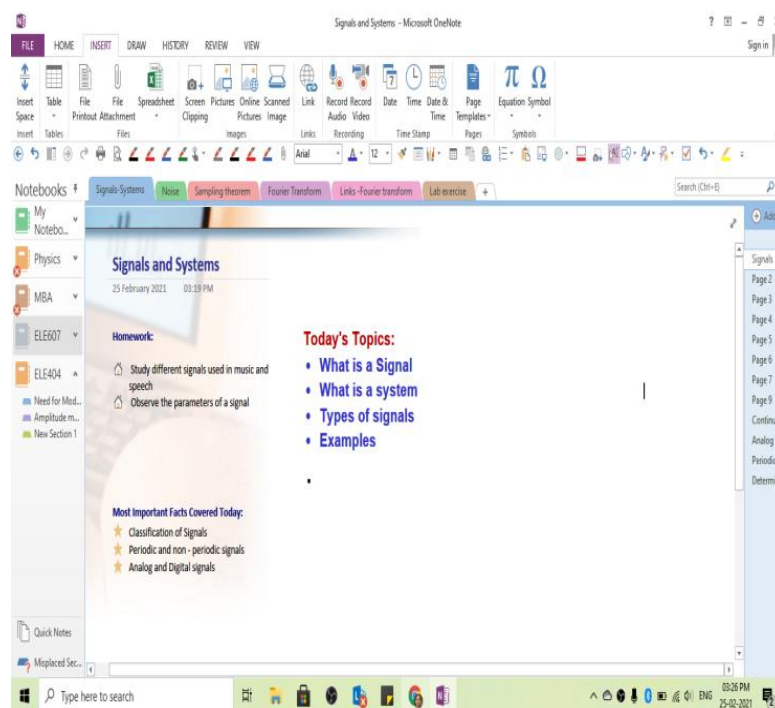
**Google class rooms:** Lecture management system was adopted and a class room was created for student interactions since 2017.

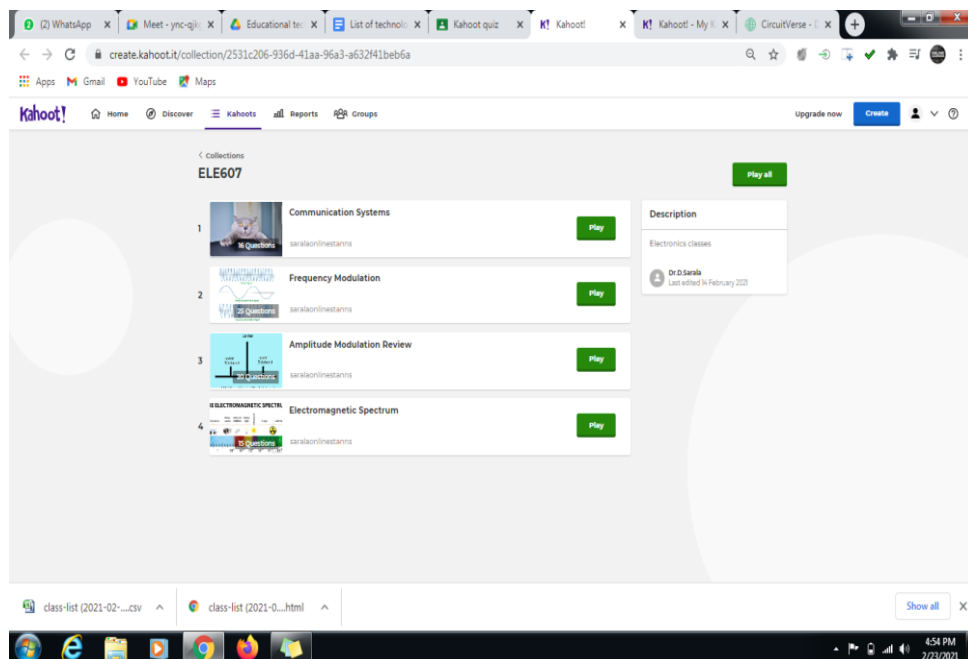
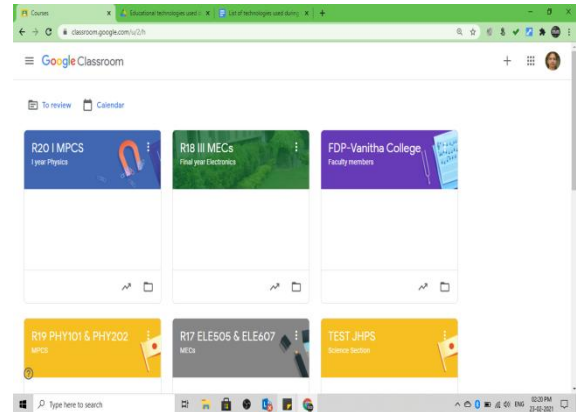
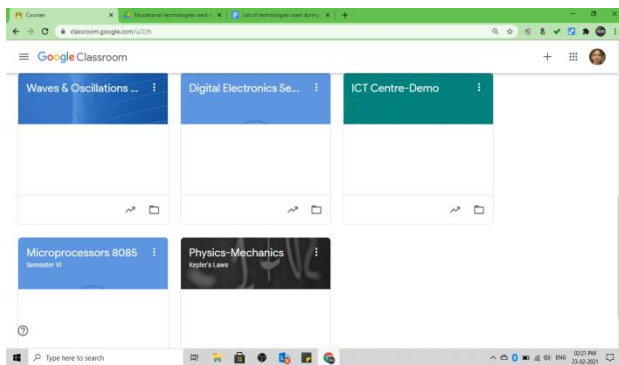
Created a google class room for all the courses taught. To create a Google class room, the requirements are:

- Gmail account with proper pass word.
- Go to <https://classroom.google.com/u/0/h>
- One can join the class already created by the class code Ex: <https://classroom.google.com/c/MTAzNTE5NDcwNDUx?cjc=uauqvxm>
- Alternately one create the class room- As a faculty member a class room was created and the code was shared with students through gmail and social media group i.e Whatsapp group.
- Once all the students join their names and along with teachers can be seen.
- More than one teacher can be chosen to co teach.



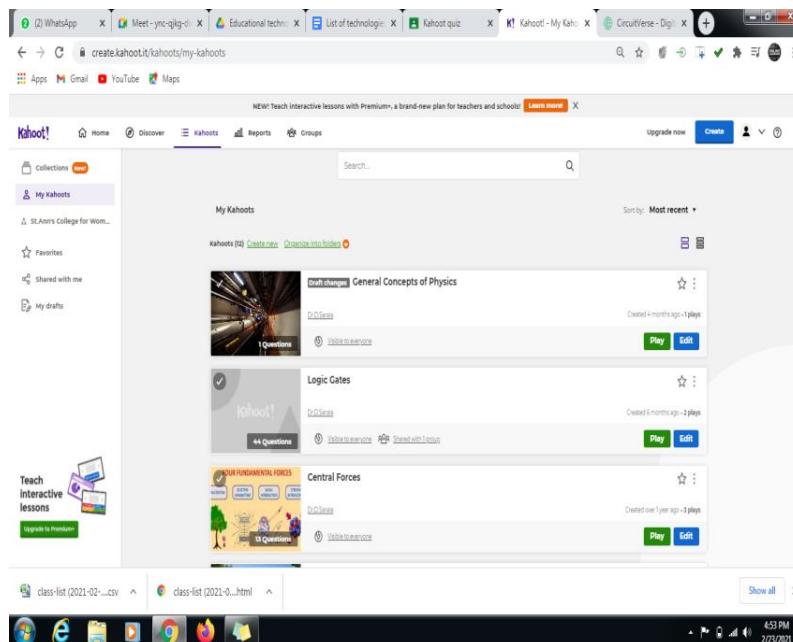
Microsoft One Note is used for creating notes, organising lectures, interactive note taking, so that the learners get the concepts written on a Digital board. This one note allows files to be copied as print outs, the power point slides , word , pdf files and images can be imported. While teaching , if a faculty member would like to add any editing feature, one note allows to add writing text/ underline with the help of pens and highlighters. The one note can be shared with shared students, annotations can be saved , and can be saved and shared. Meeting templates, lecture notes templates can be utilised for a better organised lecture notes.



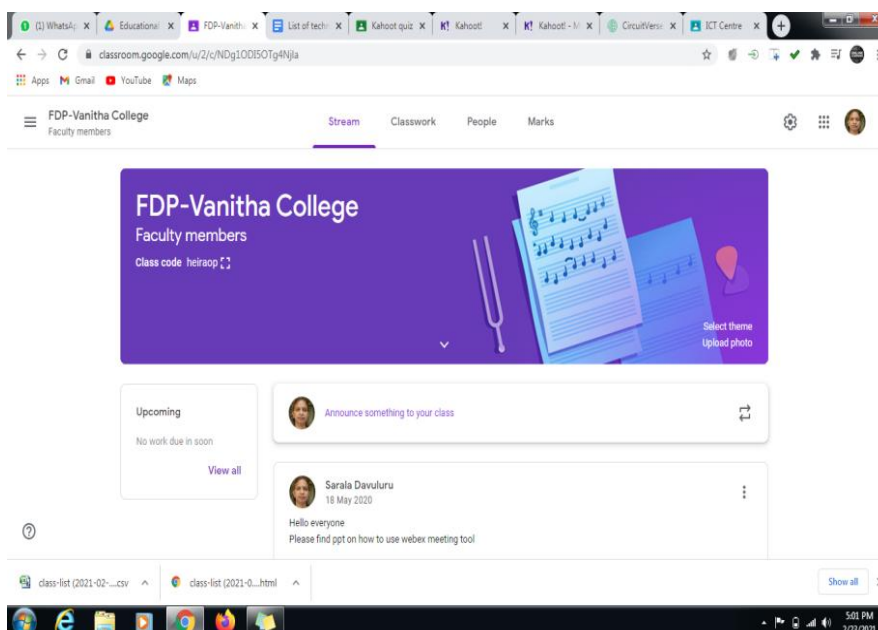


The google classrooms have been created for different classes and courses taught from the academic year 2016 onwards. The course material, presentations, assignments and quiz were posted in the group . The in -class lectures and laboratory experiments were video recorded and posted on youtube maintained personally and encouraged all the faculty members to record their lectures on different youtube channel maintained by the Departments of Physics & Electronics and ICT Centre of St.Ann's college for Women. With theKahoot and Google integration, , created a few quiz questions on the topics learnt in earlier semesters to ascertain the prior knowledge of the learners. This methodology has immensely helped us to bridge the gap of learning across the different semesters and from the Pre - Degree courses.

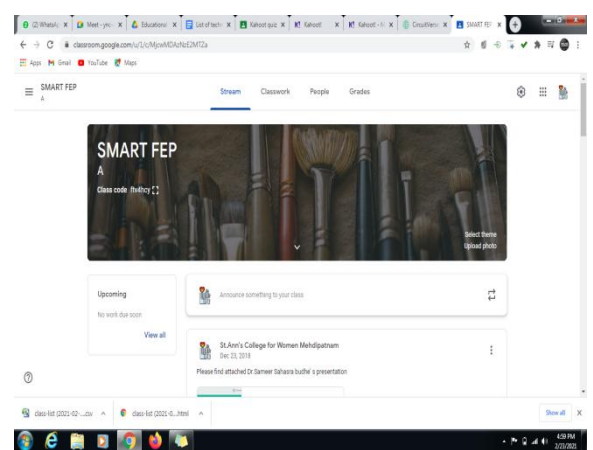
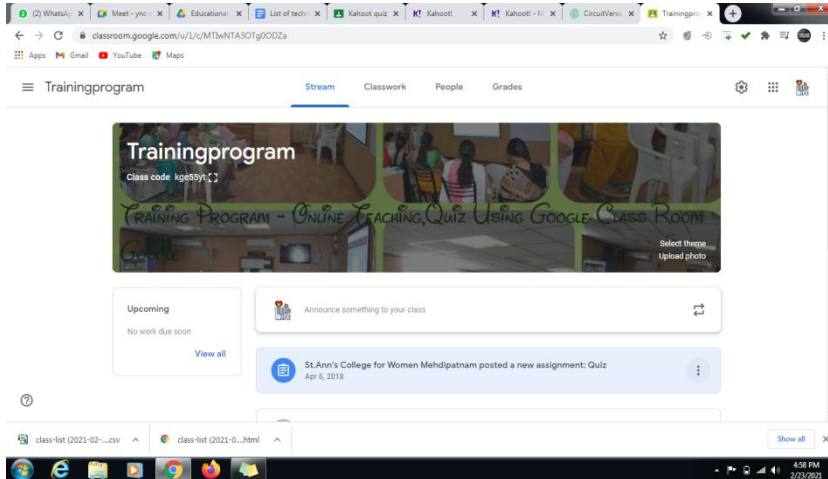




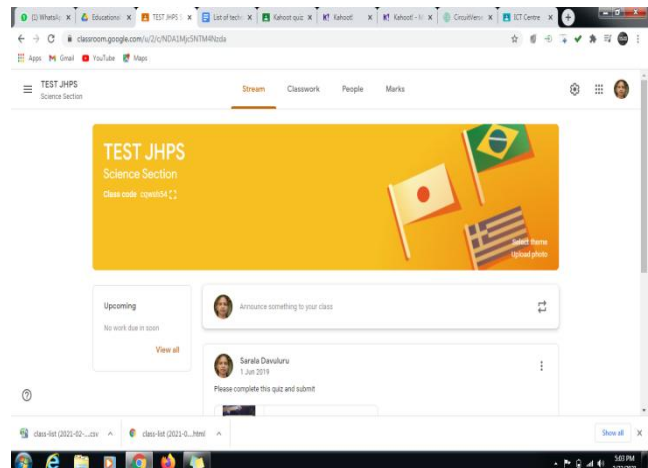
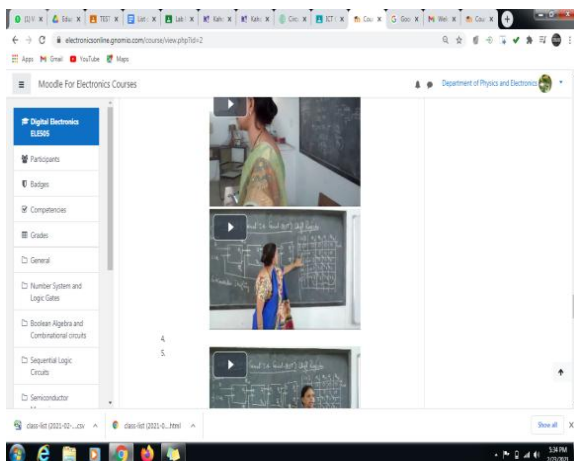
In the offline mode, the Google quiz was used to test the comprehension of the subject, and the grades so obtained were utilised for continuous internal assessment. Once the decision to shift to online mode of teaching was adopted, this Google quiz was also made available online. Since most of the learners have been using SMART phones and have moved to their villages with the onset of COVID-19 pandemic and subsequent Lock down, this Kahoot quiz allowed the learners to log in through mobile phones and perform online quiz in an interactive manner. The quiz has been assigned to all the learners and posted in Google class room.



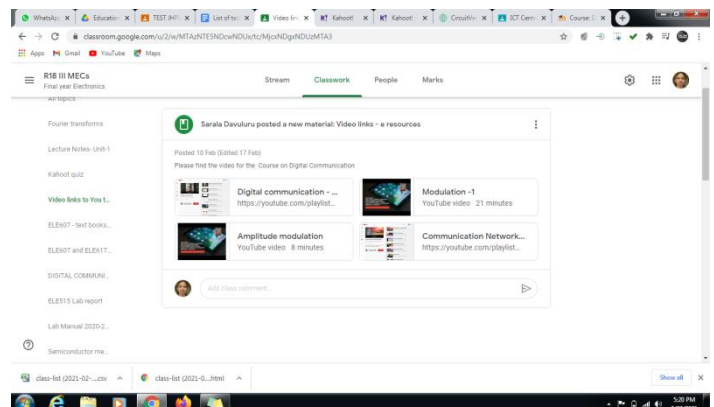
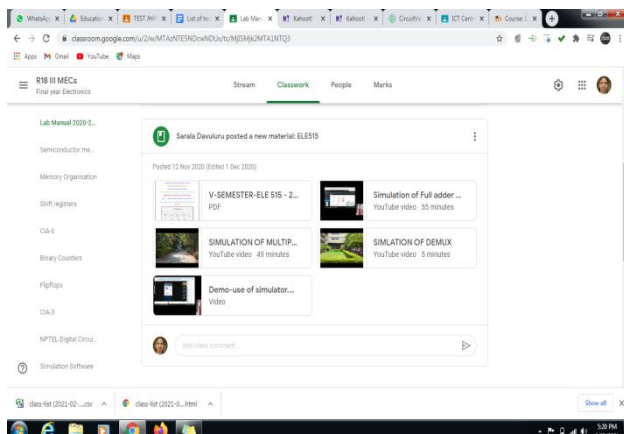
A training program for all the faculty members of the college was organised and motivated to create the class room which is beneficial for virtual delivery of lectures.



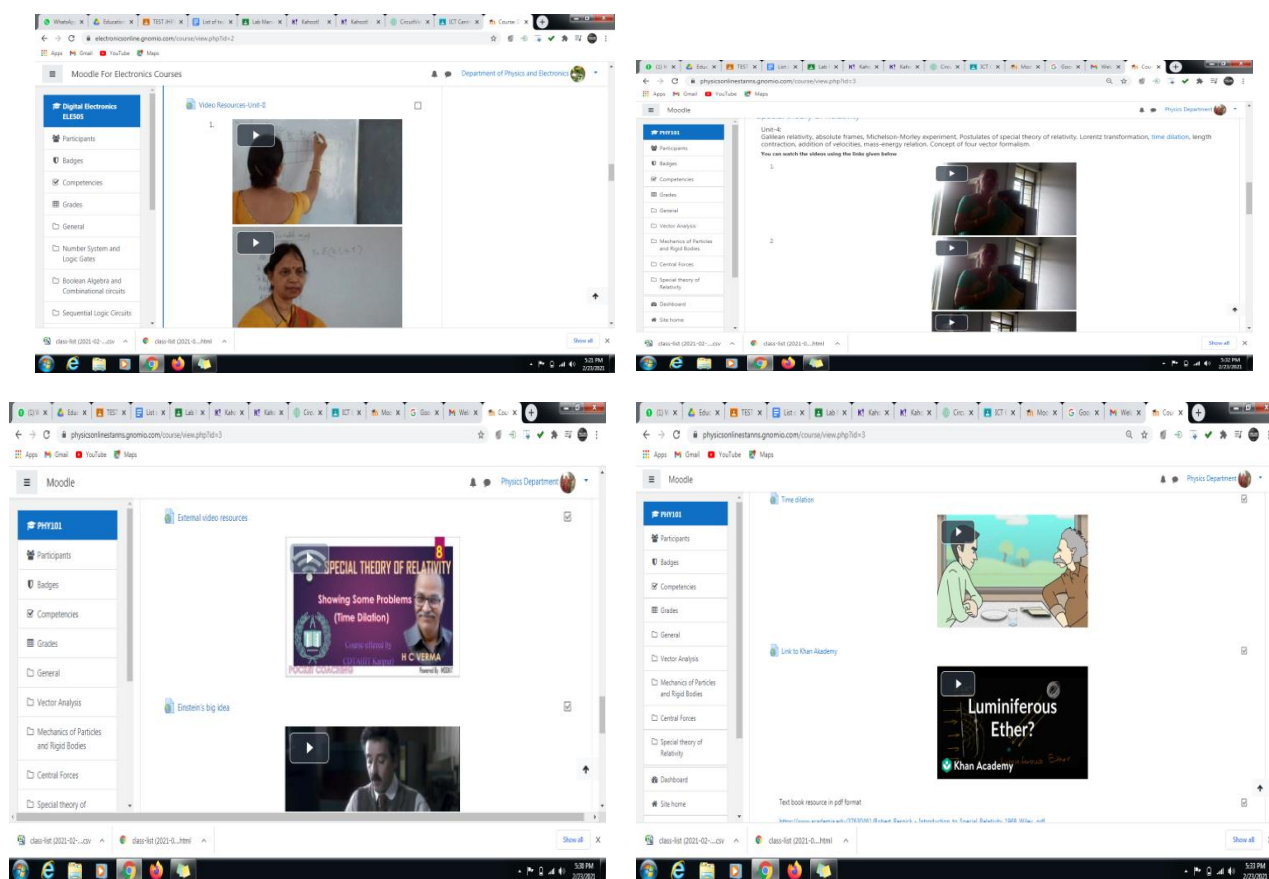
A demonstrative workshop has been conducted for high school Science teachers and Lecturers at other colleges, on creation and conduction Class rooms and Quiz.



Shared video resources with different classes.



As I have attended Faculty development programs organised by Administrative staff colleges of University of Hyderabad, Jawaharlal Nehru Technological university, a new insight into the Learning Management system was explored. This has resulted in Moodle to be used for the current batch of students. This feature was offered for free for a limited period as a free and open source, and henceforth shifted to gnomio platform, the necessary impetus was provided by Spoken tutorials IIT, Bombay. However Moodle Learning Management system was a mobile friendly app, it has offered various features like inline video recording, creating assignments, quiz. This feature enabled active learning platform, post messages, grade assignments and interactive learning.



Using this gnomio LMS, flipped class room approach was adopted. The recorded videos are shared much before the scheduled class allowing learners to get the grasp of the topics to be covered in the class. Later in-class discussions and analysis of the areas which were abstract for the students have been carried out. This method was exceptionally useful for conducting laboratory work. The videos explaining the experiment were posted, so that the overview and recording of observations were well perceived by the learners. The flexible and open source tool is a boon to teaching community. H5P - html-5-package which is a plug-in introduced in moodle, helped me to introduce interactive video content into my youtube videos.

Hot Potatoes software was used for crossword creation, jumbled word and jumbled sentence and matching exercises. A hands on Faculty development program was organised by ICT and IQAC cells of the college on the use of screen recording softwares by a research scientist from IIT, Bombay. With the inputs and instructions received during the workshop, I have started using the OBS- Open Broadcasting software for recording all my lectures during the corona period. OBS is a free and open source software, which supports many features like: recording and live streaming lectures. Using this software, recorded all my lectures and streamed live on you tube

Link to my channel:

<https://www.youtube.com/c/SaralaStAnnsCollegeHyderabadTelangana/about>

List of live streaming videos:

[https://studio.youtube.com/channel/UCYnWAPMkmwPBPtnG9B-](https://studio.youtube.com/channel/UCYnWAPMkmwPBPtnG9B-8KYw/videos/live?filter=%5B%5D&sort=%7B%22columnType%22%3A%22date%22%2C%22sortOrder%22%3A%22)

[8KYw/videos/live?filter=%5B%5D&sort=%7B%22columnType%22%3A%22date%22%2C%22sortOrder%22%3A%22](https://studio.youtube.com/channel/UCYnWAPMkmwPBPtnG9B-8KYw/videos/live?filter=%5B%5D&sort=%7B%22columnType%22%3A%22date%22%2C%22sortOrder%22%3A%22)

Playlists:

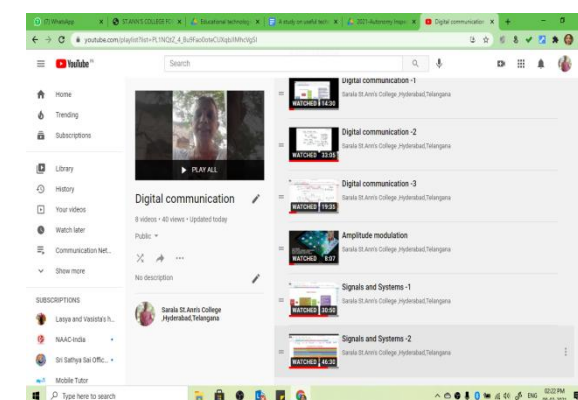
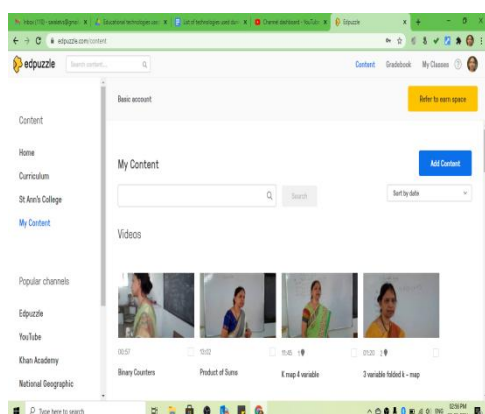
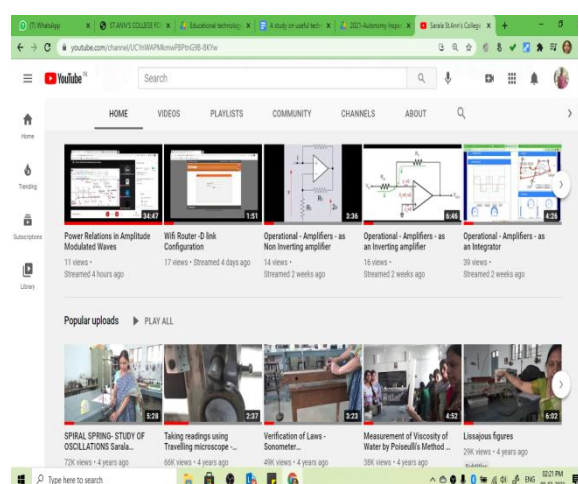
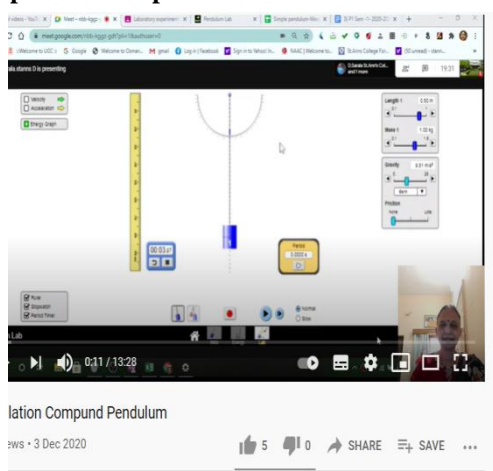
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Uploads:

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[8KYw/videos/upload?filter=%5B%5D&sort=%7B%22columnType%22%3A%22date%22%2C%22sortOrder%22%3A%22](https://studio.youtube.com/channel/UCYnWAPMkmwPBPtnG9B-8KYw/videos/upload?filter=%5B%5D&sort=%7B%22columnType%22%3A%22date%22%2C%22sortOrder%22%3A%22)

Content posted on edpuzzle:



Due to COVID-19 pandemic and subsequent lockdown announced by the Government ,all the faculty members have shifted to online mode of teaching. laboratory experiments could not be conducted in a physical mode. With the help of virtual laboratories, all the experiments were performed online. The ease of connecting the instruments and performing the experiment allowed the learners to grasp the concepts in a more easier and comprehensive manner. The procedure , theory and plotting of graphs of the relevant experiment was video recorded and shared in the Google classroom.

The list of videos :

1. [https://youtube.com/playlist?list=PL1NQZ\\_4\\_Bu8RDIWWQijKtHDiQaJOz5GJ](https://youtube.com/playlist?list=PL1NQZ_4_Bu8RDIWWQijKtHDiQaJOz5GJ)
2. [https://youtube.com/playlist?list=PL1NQZ\\_4\\_Bu970D2AWYIQ93tjwOddpV-x](https://youtube.com/playlist?list=PL1NQZ_4_Bu970D2AWYIQ93tjwOddpV-x)



3. [https://youtube.com/playlist?list=PL1NQzT\\_4\\_Bu-7zhRM07vV7pwcoYtS9AXw](https://youtube.com/playlist?list=PL1NQzT_4_Bu-7zhRM07vV7pwcoYtS9AXw)
4. [https://youtube.com/playlist?list=PL1NQzT\\_4\\_Bu9r\\_BL1jmkEMkWRFP-7r7gj](https://youtube.com/playlist?list=PL1NQzT_4_Bu9r_BL1jmkEMkWRFP-7r7gj)
5. [https://youtube.com/playlist?list=PL1NQzT\\_4\\_Bu\\_K98KqQ-K3Zvzxv2eVGrFG](https://youtube.com/playlist?list=PL1NQzT_4_Bu_K98KqQ-K3Zvzxv2eVGrFG)
6. <https://circuitverse.org/users/36041>
7. <https://www.youtube.com/watch?v=Y2d855O4jCY>
8. <https://www.youtube.com/watch?v=tLfapDdouOc>
9. <https://www.youtube.com/watch?v=I03YSf3TIVI&t=4s>
10. [https://www.youtube.com/watch?v=4GAGJjQ\\_OUI](https://www.youtube.com/watch?v=4GAGJjQ_OUI)
11. <https://www.youtube.com/watch?v=JJyxzye7Y5o>
12. <https://www.youtube.com/watch?v=AISZLVXuB7E&t=11s>
13. [https://youtu.be/duD8s\\_QOvUo](https://youtu.be/duD8s_QOvUo)
14. <https://www.youtube.com/watch?v=eW-yUg3VGrQ&t=87s>
15. <https://www.youtube.com/watch?v=NcbsN3rzyiw>

### CONCLUSION

The pandemic conditions paved way for the teaching fraternity to explore, experiment and enlighten the young minds. The challenges faced by all were successfully converted into opportunities. The students were kept engaged in a more creative manner. The poor internet connectivity was overcome by flipped classes, hybrid learning, sharing the video lectures.

### ACKNOWLEDGEMENT

I take this opportunity to thank all those who have either directly or indirectly associated with this study and made this to accomplish. Firstly, I would like to express my heartfelt thanks to the management in supporting me and encouraging me to explore the latest educational technologies and my students for cooperating with me. They have all actively participated in all the assignments, quiz and other evaluation methods. Secondly, I would like to thank all my family members, who stood by me, during the course of study and for their unstinting support during the pandemic time. Without their support, this magnum task would not have been completed.

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1. <https://classroom.google.com/u/0/h>
2. <https://www.gnomio.com/>
3. <https://moodle.com/>
4. <https://www.vlab.co.in/>
5. <https://phet.colorado.edu/en/simulations/filter?type=html&sort=alpha&view=grid>



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