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COVID 19 Impact Use of web 2.0 Tools in Undergraduate Agricultural Education Qualitative Action Research from Northern India

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ABSTRACT

The present action research carried to understand better how Web 2.0 tools work in work from home context of teaching and learning in Agricultural education for better student participation and engagement in the initial first phase of lockdown under COVID-19 pandemic for 49 days. Materials and methods involved exploration of web 2.0 tools for communication, collaboration and creativity.

Then structuring and delivering of lesson plans was done based on instructional issues faced on day to day basis of lack of student participation and engagement. Action research indicated that uploading PowerPoint, pdf notes in learning management system was not useful in student engagement and participation. Even when Web 2.0 tools like Zoom, online polls, quizzes, YouTube video lectures student participation and engagement was better though not cent percent. Most students used android phones for studies. Unstable internet connection and electricity issues was most prevalent problems faced by teachers and students.

Indian Government needs to upgrade last-mile internet connectivity for the future of online education. Besides teacher training is required in the Web 2.0 tools for the COVID-19 forced online education period.

INTRODUCTION

India ranks second-largest in population of the world after China, where COVID -19 cases are on spike even though following early strict social distancing by nationwide lockdown with the curfew. India is "one of the largest education systems in the world with 1,000 universities, 45,000 colleges, 15 lakh schools, 33 crore students and more than one crore teachers; we confront multiple challenges with the closure of our institutions". The COVID-19 pandemic left no option to nations but to shut down face to face classroom education and rapidly to shift to distance and online learning. Situations are, now mortar and brick universities beautiful campuses are empty, residential hostels are empty, universities are closed, and education seems to have come to a standstill by making a stop for growth and development of youth. Teachers work from home, student study from home. Social distancing under pandemic has turned life into a series of lost opportunities for learning and team work [1]. Circumstances like these need solutions in the form of Web 2.0 technology tools adoption in urgency similar to washing hands with soap or using sanitizer. Yet shift from a regular face to face mode of instruction abruptly to an innovative model of instruction has arrived and in Agricultural Education at higher education teachers and students were least prepared for it. Although the use of the online mode of education for COVID 19, in medical school, is reported in Australia, New Zealand, United Kingdom, The Republic of Ireland and USA yet its use in Agricultural Education in India we know very little. Therefore research question formulated regarding how Web 2.0 tools work in work from home context of teaching and learning, and a mini action research envisaged.

Technological Pedagogical and Content Knowledge (TPACK) is a framework used to describe the relationship between technology, teaching pedagogy and content knowledge. Essentially there are three domains which teachers can draw from when planning lessons and/or units of work. There is a fourth domain encompassing the other three, that being the context in which a teacher works. This framework was used for the current study.

LITERATURE REVIEW

The location of this study was Punjab, India. The students belonged to School of Agriculture, Lovely Professional University (LPU) Phagwara Punjab and were sent back to their residences located in other Indian states and union territories. For conducting online classes various web 2.0 tool were explored.

Exploration of Various Web 2.0 tools available for use in Agricultural Education in COVID-19 situation. There are various web 2.0 tools that one can use to solve the instructional issues. But before going there, question comes in one's mind what is meaning of web 2.0? These tools are internet tools that allow the user to go beyond just receiving information through the web [2]. The user is expected to interact and to create content with others. Web tools can be used to enhance teaching and collaboration among teachers and students as well as increase professional collaboration between educators. Various web 2.0 tools made for communication, collaboration, creativity available on the internet were explored which as follows.

The faculties were given online training for conducting online classes because of COVID-19 problems. For the present action research, the teacher was teaching two courses through online mode- i) Fundamentals of Agricultural Extension Education and ii) Fundamentals of Rural Sociology and Educational Psychology. For these two courses, mid-terms were over before 17th March, and three units for both the courses were remaining along with assignments and end-term exam.

Zoom meetings, Google Hangouts, Skype, Meet, Web X, Microsoft teams, were started to get on board. Under business, as usual, these tools are used for virtual meetings by companies, NGOs in geographically distant places. Issues began to emerge in pedagogy regarding group assignments after COVID-19 nationwide lockdown, groups existed. Still, equal task participation by student group members were missing, and some active students start to complain, that they do all the work and those who do not contribute evaluated equally. Further problems began to emerge when most of the students made use of android mobile and did not have laptops for assignment submission. Slow internet speed are the most significant constraints in homes for months now. Video calls become pixelated. Audio delayed, papers/books take longer times for downloads. And while on the other side opening of higher educational institutions is in Limbo. Though its altogether a different fact that India, the second-most populous country in the world, it is projected that number of smartphone users in India will reach 442 million in

2022. Though infrastructure, technology available at Lovely Professional University is unparallel, with high-speed internet, with copper optic fibre, spread around the campus. Yet, this facility was unavailable as the university human resources were working from home per the government of India order. Teachers started to work from home, and they utilised their resources in terms of laptop, internet services [3]. This was far less than satisfactory than university facilities and technology backstopping at their house was mainly mobile internet-driven with less than 8 Mbps internet speed.

And with mobiles, under different economic background, housing, number of family members living together, net etiquettes prevalent among them varied, for example, all members of a household – were using online platforms for entertainment, education, learning, working from home, attending online instructions, meetings with pixelated images, with breaking video voices. There were no quiet places in the rooms, as depending upon the economic situation, the number of rooms were limited in the teachers as well as students households. In COVID 19 times, the government allowed the construction and deployment of internet facilities. As a result, there was 9 am to 5 pm construction loud noises at one of the faculty's neighbourhood. Finding a quiet place was an issue to some students as well as teachers.

Before COVID 19, face to face classroom teaching, assignments, reports, practical and theory exams conducted, after COVID -19, the teaching and learning scenario changed. When Students were requested to leave hostels and to go to their home bases and even though classes conducted online religiously. Losses on completion of covering the course curriculum was not warranted. Having a technology was not a problem, but the data download and upload for education purpose was the issue coupled with students disinterest. In India, commercial places had internet speed with 100 Mbps/second. In comparison, residential areas had an internet speed of 8 Mbps in terms of broadband because of user segmentation logic of the internet service providers.

Besides, electricity was also unreliable as not all the households had inverter facilities available. The student participation and engagement in the use of the Learning Management System (LMS)/University Management System (UMS) observed. Some students only wanted upload of course material in toto at the UMS link, and wanted no engagement, participation in the teaching-learning process. So was the case with teacher efforts, some teachers were updating themselves for new Web 2.0 tools which were innovative to them, and finding new ways to make their obsolete technology like Microsoft office package of 2007, 2010 to be able to be compatible enough for inserting audio links, or converting lectures into mp4 videos and uploading them to YouTube as unlisted. Use cam recorders to make audio and video files for lectures, PowerPoint presentations etc. Those who could not solve their obsolete technology issues at the individual end, tried to use paper and pen to for writing important concepts and using scan recorder in mobile android app uploaded it for the students.

DISCUSSION

If the teacher uploaded all the course content, they were happy. University management provided online messenger for students and teachers to connect, head of the department, quality control managers, deans were also observing the online education deliverance. The same platform also provided an avenue for creating online polls, video and audio options. A few students posed questions for lectures, showed interest, attempted quizzes, mock tests and as per the time table. Student effort observed when a few students tried online polls. Some even used pen and paper for answering using scan recorder created images and pdf and sent for teacher's feedback. Some students recorded their responses through audio mode. Yet when it came to online submission of assignments by due dates cent per cent attendance was registered as well as assignment submission, which was cross-verified during marks upload in online UMS platform. Student participation and engagement was more when the teacher used course content delivery through self -made unlisted you tube link, inserting audio in power point presentations for explanation. They observed the videos and presentations at self- paced mode. Giving more you tube links along with course ppt was also a good tool. Novel technology and variety helped some students to be interested in the subject at undergraduate level. At the end of lectures reading materials were provided, polls, quizzes were given yet student engagement and participation in most of the courses were negligible [4]. In a class of 60 students maximum attendance prevalent was 15-20 students. Further, initially teachers were not well up to date with creation of online e- learning techniques, the university trained them through online videos for using web 2.0 tools. Teachers and students were new to some of these tools like Zoom meeting, Meet, in the present case study. Further during this time, serious concerns were also emerging for online conducting of classes through Zoom meeting, as it had privacy and security issues. Hacker could potentially steal information regarding on-line banking of people using the app.

The Google MEET app started to be used by students and faculties. Course end term examination made online using platforms which allowed not to open any other browser, with a warning. For online MOOC proctored courses student were using a browser, which was monitoring their activities for any unfair means using their computer audio and video. Also, instructions given to upload valid id, to sit in a room with sufficient light. Yet here even internet speed, connection with examination servers was an issue though addressed as the browser was saving the options and use to start from there where internet connection was lost. It was beneficial for the students in the households where electricity and internet connection was not an issue. With flickering internet and electricity, the same exam was difficult for the students. And in-person examination orders have not been given by the government of India as well as state governments. This uncertain situation created stress to students as well as teachers.

At the other side, India is offering schemes like Study In India, which aims to make India a preferred education destination/hub for international students and improve the global ranking of Indian Institutions. Not only this, during COVID 19 health emergency, Union finance minister Mrs Nirmala Sitharaman has announced technology-driven education, by the launch of PM e-Vidya which unifies all efforts related to digital/online/on-air education and expansion of e-learning in higher education by liberalising open, distance and online education regulatory framework. Top 100 universities under which will be allowed to start the online classes after May 30th 2020. The PM e-VIDYA initiative will bring together digital platforms such as Diksha (the nation's digital infrastructure for providing quality content for school education), Swayam (the online courses in MOOCS format), radio, community radio etc. Unless Indian provide subsidised internet to its students and teachers, online education will remain a challenge in a diverse country like India [5].

CONCLUSION

The present mini action research was an example of creating opportunities to develop new online resources and the option to forge new academic collaborations. However exploring web 2.0 tools is a challenge because time constrains could place on the quality and effectiveness of these resources; as we are trying to compensate for face to face student engagement and participation. Yet in the present COVID 19 times university have responded to balance this demand. In online education scenario, the tools that I recommend for communication is Zoom for effective communication. For work-sharing google docs is a useful tool for student engagement and participation. Policy support is required to reach last mile connectivity with high speed internet.

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