TOJDEL
The Online Journal of Distance Education and e Learning

ISSN 2147-6454

The Online Journal of Distance Education and e-Learning

Volume 9 Issue 4
October 2021

www.tojdel.net
October 2021

Contact Address:
Prof. Dr. Aytekin İŞMAN
TOJDEL, Editor in Chief
Sakarya-Turkey

Published in TURKEY

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October 01, 2021
Prof. Dr. Aytekin ISMAN
Sakarya University

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EXPERIENCES OF TEACHERS ON ONLINE TEACHING AT HIGHER EDUCATION LEVEL DURING COVID-19 PANDEMIC

Dr. Sudarshan Mishara
Dr. Ajaya Kumar Mohanty

ABSTRACT
The COVID-19 pandemic has been caused for closing down of all institutions imparting face to face mode of teaching globally. In India, the UGC instructed all its institutions running regular courses to opt online classes during the pandemic. The state of Odisha is adhering the decision of the UGC. The present survey is intended to study the experiences and problems confronted by the teachers during and after online classes. The undergraduate, postgraduate and research degree teachers participated in the online survey in a sizable number. The teachers' engagement before and during classes characterized by preparation of class note and PPT, asking questions to students for making the class interactive, sharing of reading materials, delivery of lecture on the content and clearing of students' doubts. The post class engagements are collection of assignment for checking, collection of feedback from students and reflection for improving the teaching etc. The benefits of online classes to teachers are; it saves time in course coverage and have increased their presentation, communication and interpersonal skills along with increased exposure to collaborative technologies. The suggestions for improvement of online classes directly related to exposure of teachers towards online pedagogy and collaborative technology, increased online infrastructure at the institutional and state level, ensuring the preparation of E-learning materials and handhold support to financially poor students.
Keywords: Online teaching, Higher Education, Teacher Experiences, COVID-19

INTRODUCTION

The worldwide spread of COVID-19 has led to a significant disruption in the normal teaching-learning activities of all higher education institutions. All the educational institutions are closed since March 2020 as a measure to mitigate the risk of contracting the virus. Billions of the students and teachers are safe at home but losing their learning times for themselves and for the nation as well. Today 1.2 billion students are affected by lockdowns globally. In the Commonwealth, there are still 574 million students affected by institutional closures. Countries were clearly not prepared and had to look for immediate solutions. Online provision was the preferred option (Commonwealth of Learning, 2020a). COL's experience shows that open, distance and online learning, if done well, can have the same outcomes as campus education without requiring teachers and learners to be in the same place at the same time (Commonwealth of Learning, 2020b). However, all colleges and universities in India are currently not well-prepared to fully utilize the potential of online learning. India, having the second largest education system has been taking the rampant pain. The University Grants Commission, the higher education statutory regulatory body, advised all higher education institutions to opt for online teaching as an immediate strategic solution for continuity of learning activities in the academic year 2020-21. The Government of Odisha has shown its pro activeness to execute the decision of online teaching for all its universities, autonomous and affiliated colleges and self-financing institutions. It also issued a notification to start online classes from 13th July 2020 in all its higher education institutions. The government instructed teachers to provide soft copies of notes, text books, PPTs and recommended lectures either through WhatsApp or e-mail to students. Teachers have been instructed to take online classes for at least 2-3 hours a day for 3 days a week using Google Meet, Zoom or Skype or other digital platforms.

An overview of the higher education institutions of Odisha reveals that it has 26 state public and private universities including one Open University, 2 private deemed universities and 1641 affiliated degree colleges of different liberal and professional courses (DHE, Odisha, 2020 & UGC list of universities, 2020). The 1641 affiliated colleges shared a large part of student's and teacher strength having a sizeable number of students from rural and remote locations. The researchers conducted a survey on students' experiences of online teaching in the state of Odisha and found that a great majority of students and teachers are facing the problem of internet connectivity, physical discomfort and inappropriate timetable. There is also shortage of devices to some students. Though students were satisfied with the teachers' effort but lose social learning and the pedagogy adapted by the teachers of face to face mode. The teachers were lacking competencies of collaborative technologies (Mishara & Mohanty 2020). After getting the students experiences and suggestions for improvement, the researchers attempted to know the experiences of teachers and their suggestions as well for improvement of online teaching in the state of Odisha.

The studies reveal that the COVID-19 pandemic is proving to be a constructive disruptor, giving an opportunity for restructuring the present conventional classroom based educational system. The studies of teacher characteristics in relation to online teaching reveals that effective online teachers facilitate, connect, lead and work in synchrony with students to obtain indicators of quality such as student success, student improvement over time,

and student application of knowledge to the professional role (Christine Frazer 2017). The study also pointed out the five high-impact principles for online education: (a) high relevance between online instructional design and student learning, (b) effective delivery on online instructional information, (c) adequate support provided by faculty and teaching assistants to students; (d) high-quality participation to improve the breadth and depth of student's learning, and (e) contingency plan to deal with unexpected incidents of online education platforms.(wei Bao 2020). The research also argues that whilst technological challenges and the sheer amount of change that teachers were faced were largely responsible for some of the negative attitudes reflected in teachers' opinions about the course, a less obvious, broader explanation for the difficulties that teachers encountered might be found in the way that learning, teaching and training are conceptualized by both teachers and the institution (Comas-Quinn, 2011). A study reveals that teachers portrayed themselves as selves , both built on a plethora of previous experiences and reformed with the affordances and limitations of the online environment, went through a process whereby teachers were constantly challenged to make themselves heard, known, and felt by their students. The programs that prepare faculty to teach online may need to encourage teachers to reflect on their past experiences, assumptions, and beliefs towards learning and teaching and transform their perspectives by engaging in pedagogical inquiry and problem solving (Baran, Correia & Thompson, 2013). One more study reveals that the design of learning activities with certain characteristics, the combination of three types of presence (social, cognitive and facilitatory) and the need for adapting assessment to the new learning requirements (Rampanta & Boturri 2020). The study relating to next generation pedagogy in digital world reveals that a five-part framework which can be summarized in the acronym IDEAS: Intelligent, Distributed, Engaging, Agile and Situated. Is best fit to online teaching and learning (Gauradia, Witthua, & Girona, 2016).

Thus, the research reviews claim a specific mode of teaching principles or pedagogy for online teaching. Almost all the pedagogy generated out of the researches is student centered. All the studies pointed out the teacher preparedness is must. The negative attitude of the teachers towards online teaching has great negative impact on their role and responsibilities and perceives the difficulties or challenges a lot. In contract few studies claim that India is the second-largest consumer of e-Learning after the United States, which indicates that online education in India is not a new phenomenon. Instead, it is an accepted norm of teaching-learning in some leading educational institutions. As our core education sector is governed by the government, shifting to online education from the traditional education system continued to face many hurdles both from academicians and sometimes from the system. However, in the wake of COVID–19, the importance of adapting online education practices in tandem to the traditional method has been realized (Raju, 2020).

PURPOSE AND RESEARCH QUESTIONS

The above reviews focused on the accessibility of necessary technology and teacher's promptness, pedagogical and content organization style, impacts on students' engagement and the most vital point is to understand teacher's views on online teaching on this transition period. The present survey is intended to study the experiences and problems confronted by the teachers in Odisha during and after online classes. More precisely, the answers of the following research questions were sought in this study:

1. How do teachers conduct online teaching during this pandemic?
2. What are the problems confronted by the teachers in online classes?

METHOD

This online survey was supported by Google form. The teachers teaching at undergraduate, postgraduate, M. Phil and postgraduate diploma and integrated courses were the target population. The link of the questionnaire was shared through different online platforms to universities and affiliated colleges. All the teachers with whom link of the questionnaire are shared may be defined as accessible population. The questionnaire link was open for five days and finally 307 responses were received. A questionnaire having 18 restricted items and one open-ended item for suggestions were included in the study. Items are formed on the demographic and professional information of the respondents, their experiences relating to content delivery and pedagogical skills, engagement during and after class, problems confronted by them and their suggestions for improvement of the online classes.

RESULTS

Profile of the respondents

Table 1 depicts that 71% of the total respondents were Assistant Professors whereas the remaining 29% were the Associate Professors and Professors, which better proportionate with the prevalent situation of higher education of Odisha. The gender situation better represents the almost the real ratio of the male and female employed in the higher education of Odisha. The number of the general category is skewed enough. Relating to higher qualification of the respondents it can be said that as there are 29% of the Associate Professors and Professors were participated and Ph.D is must for them as per UGC guidelines, thus the remaining 37.7% of the Assistant Professors having Ph.D degrees. All most 81% of the respondents are from Govt universities or colleges which has good resemblance

with the current situation of the higher education of Odisha especially for liberal and traditional courses. The participation of university and degrees colleges in the sample also fine. But the number of the universities and colleges included are more from urban or semi urban areas. Thus, the sample is skewed towards urban representation. The number of the dibyanga teachers in the sample also coincides with the current situation.

Table 1
Profile of the Respondents

Designation			**Gender**		
Professor	*Associate Professor*	*Assistant Professor*	*Male*	*Female*	*Transgender*
11	18	71	61.3	38.7	0

Social Category				**Highest Qualification**		
SC	*ST*	*OBC*	*GEN*	*M.A*	*M.Phil*	*Ph.D*
8.4	3.3	13	75.3	15	18.3	66.7

Type of Management of the College			**Type of Institute**		
Self Financing	*Fully Govt aided*	*Semi Govt aided*	*University*	*Degree College*	*Professional Institute*
18.1	61.9	19.4	18	102	10

Location of the Institute			**Participation of Dibyanga**		
Urban	*Rural*	*Semi Urban*	*Remote*	*Dibyanga*	*Not Dibyanga*
64.7	22.2	13.1	0	1.3	98.7

Experiences of respondents

It is found that 36.1% of respondents are from degree colleges and teaching only undergraduate classes and the remaining 11.6 are from universities, teaching only postgraduate classes and the remaining 50.9% of the respondents are from universities having undergraduate and postgraduate classes. All the respondents have the experiences of teaching through face to face mode. More than 50% of the respondents have more than 10 years of teaching experiences in face to face mode. All those teachers are exposed to online teaching. More than 50% of the respondents have more than four months of experiences in teaching through online. More than 50% of the respondents have less than 20 classes of experiences teaching in online.52.3% of the respondent are of the opinion that they take average two classes daily.

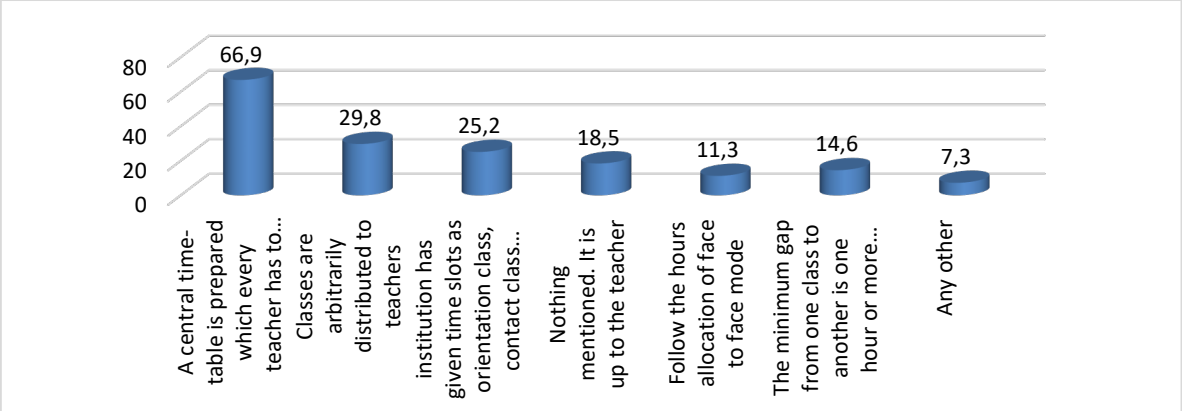


Fig. 1. Principles followed in allocation of online classes

Figure 1 presents that in 66.9% of the respondents are of the opinion that in their university or college or institute a central timetable prepared which allocate the classes to each teacher.29.8% of the teachers were of the view that there is no such rule for allocation it is given arbitrarily. But it is clear that classes allocated with varied reasons. All the reasons are administrative issues not related to any core principles of online classes.

Use of devices and online platforms

Fig No.2 presents that all most all the respondents are using Google Meet and 36.1% of the respondents are using Zoom Meet, thus it can be inferred that some of the respondents are using more than one platforms. But Google Meet and Zoom Meet are the most popular platforms. Fig.No.3 presents that respondents are mostly using mobiles

and laptops for online classes. Only 12.3% of the respondents are using desktop. It is clear from the figure that few respondents are using multiple gadgets for their online classes.

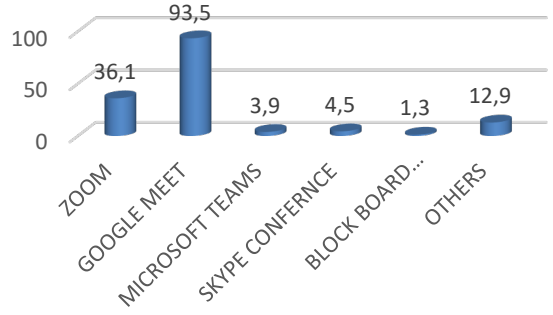


Fig. 2. Platforms used during online teaching

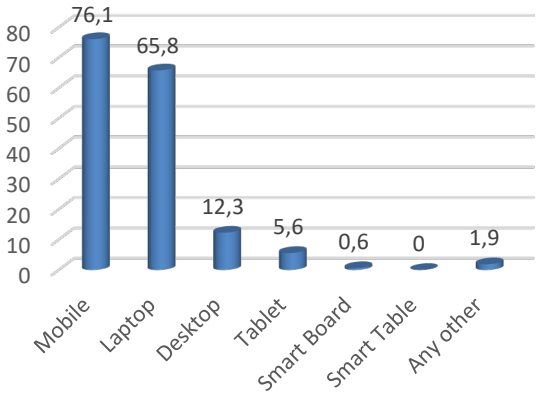


Fig. 3. Devices used during online teaching

Preparation of teachers before, during and after online class

Fig. 4 presents the preparation of the teachers before Online Class. It is found that more than 70% of the teachers prepare a class diary to deliver a lecture. During delivery of the lectures, the teachers ask few questions for ensuring student's participation and making the class more interactive. It is also found that 56.25% of the teachers share some reading materials to the students before taking conduction of online class. More than 22% of the teacher use collaborative technologies for sharing of the different kinds of the materials prepared by the teachers and provoke students to ask questions during lecture. One more thing is also noticed that 22% of teachers do not share anything either their own work or any reading materials collected from other sources with the students before online class.

Fig. 5 presents the involvement of teacher during online class. It is found that more than 64% of the teachers ask questions and ensure discussion during class. More than 34% of the teacher deliver lectures, share their own work during class through collaborative technology and share the class diary prepared before with students during class. Thus. it can be inferred that teachers attempting a lot to ensure their active participation by sharing something, delivering lecture, asking questions and ensuring discussions.

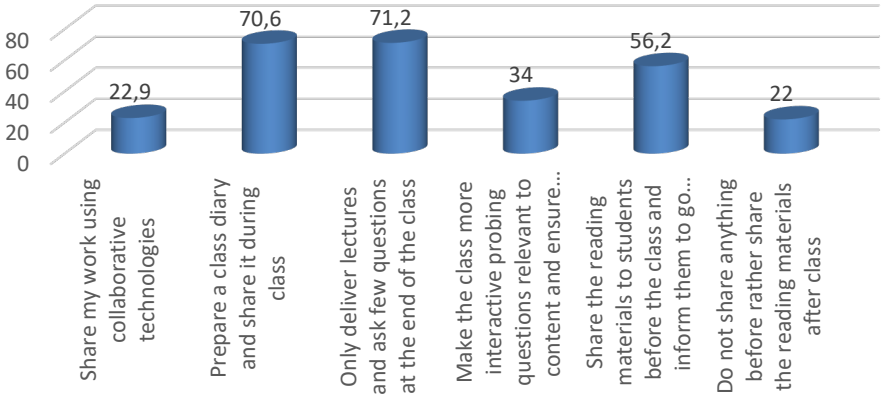


Fig. 4. Teacher preparation before the online class

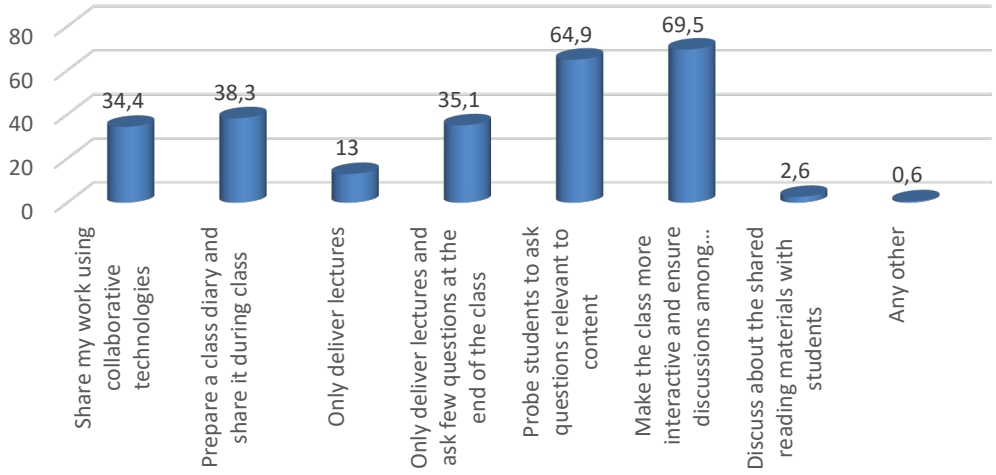


Fig. 5. Teacher preparation during the online class

Fig. 6 depicts that the most common practice of the activities accomplished by the teachers after class is collection of the assignments on the lesson delivered through online class and also share the results with students. The other common activity done by the teachers is the chat with few students and collect feedback on the online class conducted. Only 23.9% of the teachers provide hard copy of the reading materials to students.51% of the teachers introspect on the strength and weaknesses of the class conducted. Thus, it is clear from the discussion that more than 50% of the teachers like to collect feedback about their class and try to improve it.

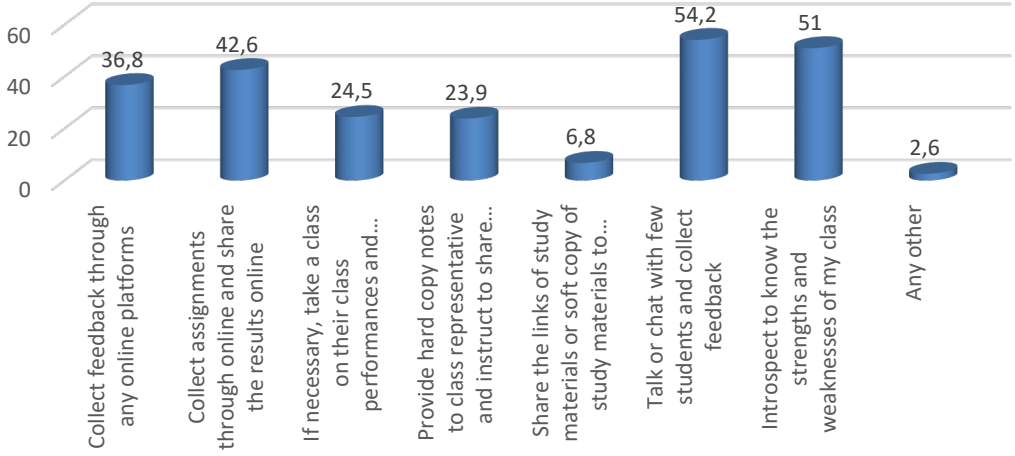


Fig. 6. Actions taken by the teachers after the online class

Reasons of online class preference

It is found that 76% of the teachers like to take online mode classes during this pandemic period. Fig. 7 shows the varied causes of preferring online classes. The most common reason among the teachers is that few proportions the syllabus can be covered. Around 38% of teachers indicate that online class is fit for a specific section of the students, for doubt clearing and for facilitating students.

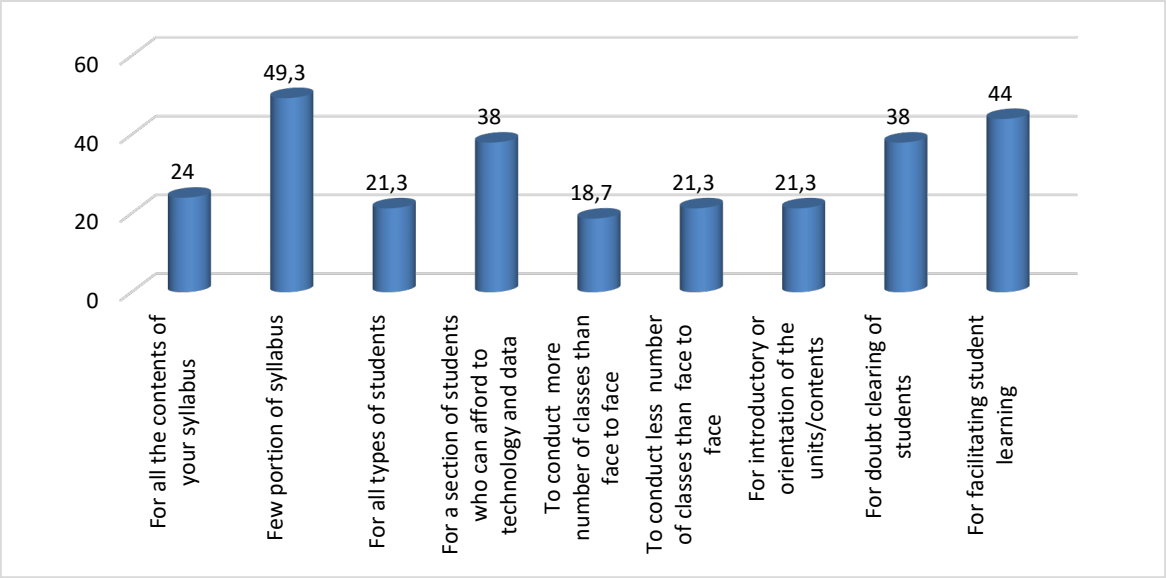


Fig. 7. Reasons for preferring online teaching

Benefits of the online class as perceived by teachers

Fig. 8 shows that 61.9% teachers are of the opinion that it is good for self-motivated students. More than 50% of the teachers are of the opinion that all students could not clarify their doubts and continuous and comprehensive assessment learning performances are not possible through this online mode. More than 30% of the teachers of the opinion that students are more self-motivated and disciplined and online mode take less time to complete the course. In contrary approximately 30% of the teachers of the opinion that students are not attentive and teachers have no control over it.

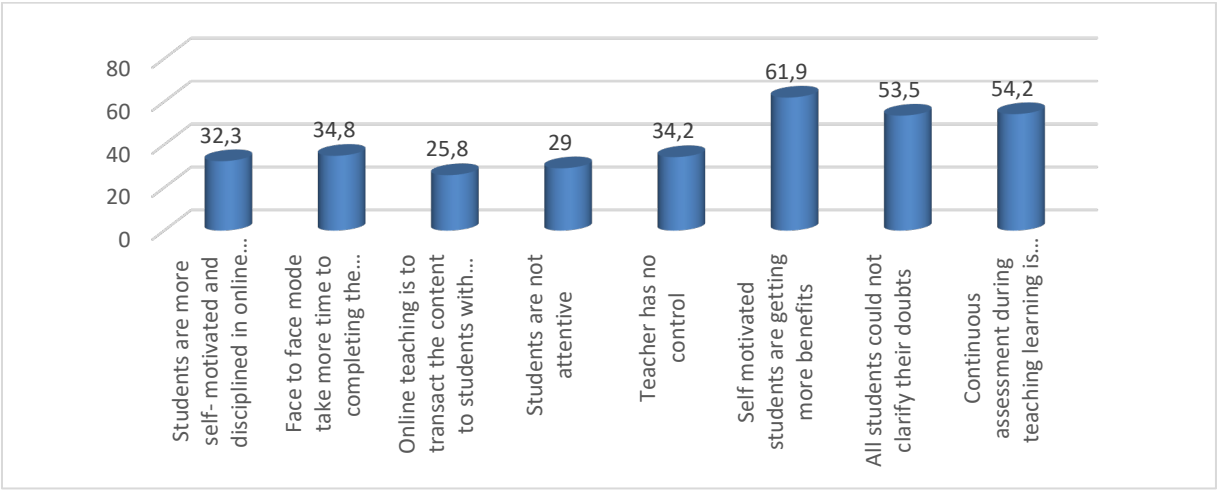


Fig. 8. Benefits of the online class for students

Fig. 9 shows the personal benefit of the teachers out of the online class experiences. More than 63% of the teachers are of the opinion that online teaching experiences have increased their skill of using collaborative technologies and presentation skills. Approx 50% of the teachers are of the view that online classes have increased their communication skills where as 33.3% of the teachers are of the view that it has increased their interpersonal skills. Thus, a number of the teachers are of the view of the benefit of the online classes for their personal development.

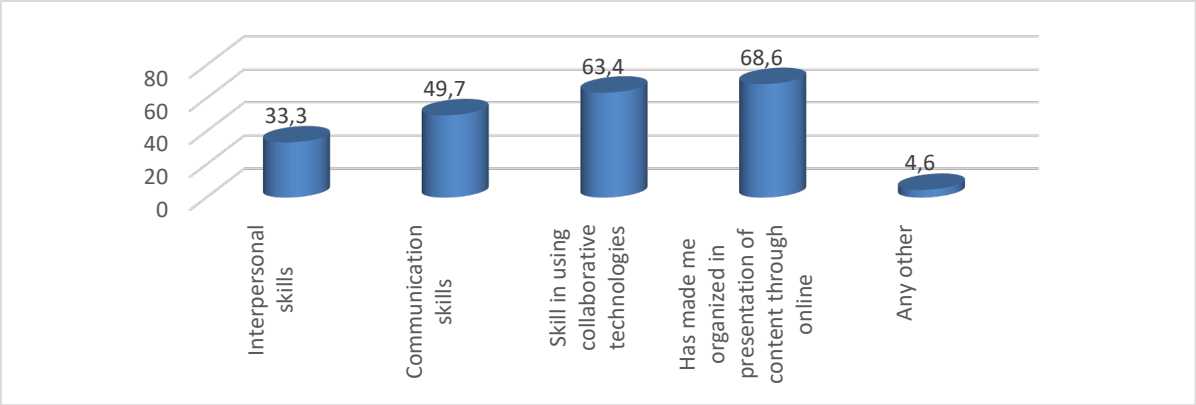


Fig. 9. Benefits of online teaching for teachers

Problems confronted by the teachers

Fig. 10 shows 10 different types of problems confronted by the teachers during online classes. The most prominent problems are serious network issues, non-availability of android or laptop or desktop to all students, heavy data consumption, concentration problem and no financial support to meet data consumption expenses for both students and teachers. All of these problems are noted by the more than 41% of the teachers. The second category of prominent problems are physical discomfort of the students, poor students attendance, poor students participation, teaching not lively, no pedagogical orientation to teachers and conduction of more than one class is difficult. All of these problems are highlighted by more than 25% of the teachers.

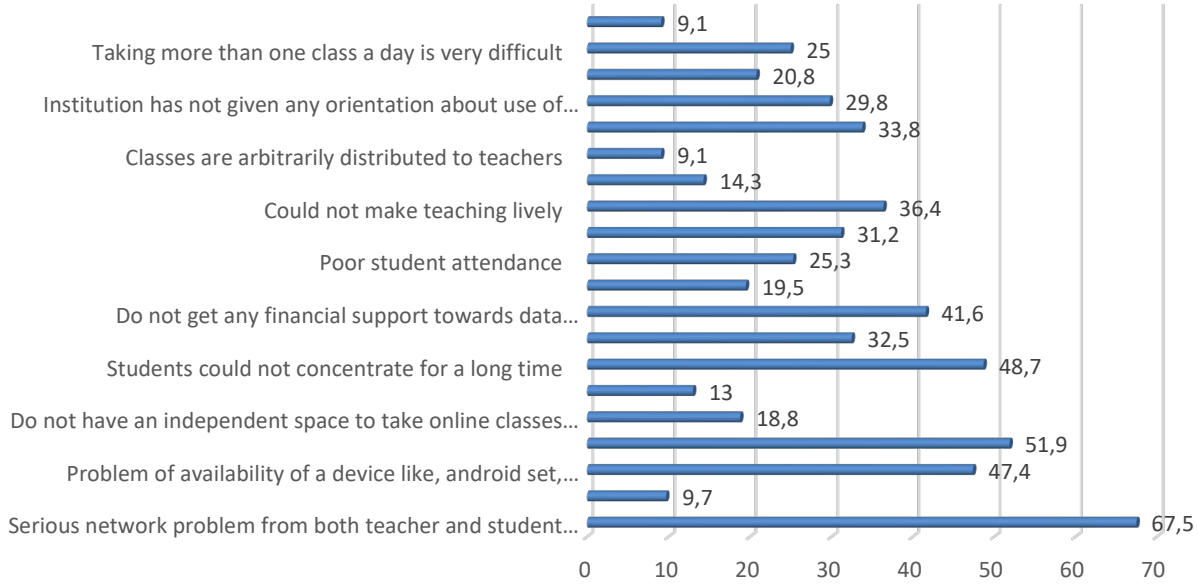


Fig. 10. Problems faced by the teachers during online teaching

COCLUSIONS

An analysis of the profile of the respondents reveals that there is increased inclusion of teachers working in urban and semi urban universities or colleges. Almost all the institutions included are Govt. managed. Thus, it can be expected that the study will present the phenomena of the urban teachers, students and institutions than rural or remote. But the study included 22.2% of the teachers from rural colleges which seems negligible compared to state scenario. The study deals with online teaching which is a new strategic mode to impart learning in this pandemic situation for all the institutions and teachers. Thus, the social category, gender and institutions having higher pursuit of learning will not influence much. All the teachers have experiences in face to face mode of teaching. Due to pandemic all were exposed to online teaching however more than 50% of the teachers have already more than four months experiences. More than 50% have less than 20 classes' experiences and they take maximum 2 classes in a day. It can be inferred that all the teachers are beginners in online teaching. Even though the institutions

follow the pattern of class allocation of face to face and take it as a stop gap arrangement. Neither the teachers nor the institutions are exposed to core principles of the online class thus, the online class allocation are away from core principles of online teaching. It is felt that if online education will be long term phenomena for imparting learning at higher education or move towards the blended approach then the teacher, students and intuitional resources should be oriented to understand and adopt it. It is found that majority of the teachers have the exposure to Google Meet and Zoom Platforms. Either the teachers are not oriented about other platforms or these platforms do not fit much. In relation to devices it is clear that teachers use mobile, laptop and desktop and majority teachers do not use tab, smart board and smart table.

The teacher preparedness before class is characterized by preparation of lecture and sharing of reading materials. That means the essentials of the online class is being accomplished by the teachers. For ensuring participation of the students they are asking questions and provoking discussions. After the classes, a majority of the teachers are collecting feedback and reflect on the strength and weaknesses of the class. The teacher is attempting to reach to the students to the best of his/her knowledge and skill. There is transfer of skills and competencies of the teachers from face to face mode to online mode.

76% of the teachers preferred online teaching for varied reasons. It is clear that teachers recognize the benefits of the online classes for speedy course completion, best fit to few sections of the students, clearing student's doubts and facilitating students learning. In contrary there are teachers who viewed online class is fit for all students and for better learning assessments and introductory classes for the new contents etc. Thus, all the teachers recognize the benefits but there is variation of reasons which need to take care of by the institutions to built right attitude towards online classes by giving exposure to the core principles of online classes. It will ultimately enhance the prevalent quality of online classes. Again teachers also better recognize the benefits of the online class for their personal development. As they viewed for development of communication, interpersonal skills, presentation and use of collaborative technologies etc. These perceptions of teachers are after minimum four months exposure to online classes, There are variations in the rate of the benefits to each of these components. As the experiences will increase teachers may realize the other benefits of the online classes to students and for themselves.

All of the prominent problems highlighted by the teachers are related to policy decisions. The problems like heavy data consumption and no financial support to meet data consumption expenses for both students and teachers can only be shorted out when necessary provision will be made by the Government. There are certain problems relating to students' habits and teachers' pedagogical exposures. The respondents also shared the following suggestions to bring improvement in the existing online class scenario of the state.

- Subject specific contents can be selected for online teaching
- Class size may be reduced to make the class more interactive
- Smart boards should be used maximum.
- Teachers and students should be oriented for online teaching learning process and they are allowed to carry their individual way of teaching process
- There are topics that can be explained better through a video already available in online, Thus, teachers can use those during online teaching
- Study materials through various e - sources should be made available to students
- Time schedule should best fit the teachers
- Regular classes should be continued with limited number of students. Each student should get chance to attend online classes at least two days in a week.
- Training on online classes may be arranged for teachers. Smart board facilities with High speed internet connection may be arranged.
- Reducing the time limit of the class from one hour to 40-45 minutes
- Enhance the students learning by clearing their doubts and providing learning materials.
- To broadcast in teaching in national TV channels
- Ensuring uninterrupted internet to the students
- State should introduce a common software for online teaching mode which can be available to all the teachers and students
- The students of below poverty line must be provided with the facilities in terms of hand held along with data pack to attend the classes.
- The state can allow more e- books and journals to be accessed by everyone free of cost.
- Providing training to the teachers and re-orienting for proper utilization of resources and information technology for better management. Extra financial assistance should be provided to use the internet as well as Technology.
- Technological support, incentive and training must be provided to teachers & students.

- Good and proper study materials should be prepared with PPT for standardization of teaching.
- Government has to step in a massive manner to augment the digital infrastructure. It must also distribute laptops to the needy and meritorious students.
- Making a database of subject in local language

REFERENCES

Rapanta, C., Botturi, L., Goodyear, P., Guàrdia, L., & Koole, M. (2020).*Online University* Teaching During and After the Covid-19 Crisis: Refocusing Teacher Presence and Learning Activity. *Postdigital Science and Education 2*(3), 923-945.

Frazer, C., Sullivan, D.H., Weatherspoon, D., & Hussey, L. (2017) Faculty Perceptions of Online Teaching Effectiveness and Indicators of Quality. *Nursing Research and Practice* 9374189. https://doi.org/10.1155/2017/9374189

Comas-Quinn, A. (2011). Learning to teach online or learning to become an online teacher: An exploration of teachers' experiences in a blended learning course. *ReCALL, 23*(3), 218-232. doi:10.1017/S0958344011000152

Commonwealth of Learning (2020a). COVID -19: COL Response. http://oasis.col.org/bitstream/handle/11599/3577/2020_Kanwar_COMSEC_Board_Meeting_Transcript.pdf?sequence=3&isAllowed=y

Commonwealth of Learning (2020b). *Keeping the doors of learning open COVID-19.* Retrieved from http://oasis.col.org/bitstream/handle/11599/3518/2020_COL_Keeping_doors_of_learning_open_COVID19.pdf?sequence=1&isAllowed=y

Department of Higher Education, Odisha, (2020). District wise list of colleges. Retrieved from http://dheodisha.gov.in/DHE/DistrictWiseCollegeList.aspx?id=J

Baran, E., Correia, A., & Thompson, A. (2011) Transforming online teaching practice: critical analysis of the literature on the roles and competencies of online teachers. *Distance Education, 32*(3), 421-439, DOI: 10.1080/01587919.2011.610293

Witthua, G., Rodrigues, D.C.P., Guardia, L., & Campillo, C.G. (2016). Next Generation Pedagogy: IDEAS for Online and Blended Higher Education. *Final report of the FUTURA Project.* Retrieved from http://hdl.handle.net/10609/51441,DO -10.13140/RG.2.1.3496.1527,16/06/2016

Mishara, S. & Mohanty A. K. (2020, Aug.30-Sept.6). Status of online teaching at Higher Education level during Covid19 pandemic. *University News, AIU, 58*(35).

Rapanta, C., Botturi, L., Goodyear, P. *et al.* (2020). Online University Teaching During and After the Covid-19 Crisis: Refocusing Teacher Presence and Learning Activity. *Postdigit Sci Educ* 2, 923–945. https://doi.org/10.1007/s42438-020-00155-y

UGC (2020) List of Universities. Retrieved from https://www.ugc.ac.in/stateuniversitylist.aspx?id=26&Unitype=2

Waits, T. & Lewis, L. (2003). *Distance Education at Degree Granting Postsecondary Institutions: 2000–2001.* Washington, DC: National Center for Education Statistics. Retrieved from https://nces.ed.gov/pubs2003/2003017.pdf

Warschauer, M. (1998). Online learning in sociocultural context. *Anthropology & Education Quarterly, 29*(1), 68-88.

Bao, W. (2020). COVID-19 and online teaching in higher education: A case study of Peking University. *Human Behavior and Emerging Technologies*, Wiley Online Library, April 2020.

EXPLORATION IN COVID-19 PANDEMIC: ANALYSIS AND ASSESSMENT OF ONLINE LEARNING WITH OFFLINE LEARNING IN THE CONTEXT OF STUDENTS

Swati
Sanskriti University Mathura
swativishnoi1@gmail.com

Ankur Sisodia
G L Bajaj Group of Institutions Mathura
ankur22887@gmail.com

ABSTRACT
As the outbreak of COVID-19 is going on in every country whether it is developed or developing. Education is equally important for wealth and health as well as for the growth of any country, but for the foundation of every country, education plays an essential role. Since this pandemic has forced all nations to force lockdowns across the board. Due to this, they have to go for the online education and adopt innovative methods of teaching. Therefore, they now need to adopt new strategies & policies in response to this. These policies can be beneficial to our education system and also for students as it can decrease the work load of both the students and teachers. As we know that from various studies we have analysed that study loads of students is increased so much that they are not able to cope with all the curriculum easily and positively. These innovative methods also opens the doors of technical aspects to the teachers and students who never dream about to use these technologies, but every positive things have some darker side also as it cannot be easily adaptable to all. In this paper, we try to consider all positive and negative aspects of online studies by making a small survey with the help of some number of students of different organizations and try to compare all the aspects of online and offline studies with certain imaginary parameters like Understanding of the subject, Interaction with Teacher, Student Satisfaction, Assignment submission, Liking for study material and acceptability.

Keywords: COVID-19, Online Learning, Offline Learning, Friedman Test, Garrett Mean Score.

1. Introduction

COVID-19, which is an infection disease which spreads in a rapid way from human to human which force countries to force lockdown in the whole country. Due to this, the whole education system is also blocked. Due to this, for smooth functionality every country has to think for the other effective strategies & policies to implement in terms of the educational system not only on the basic school level also for the higher education levels. Therefore, this outbreak forced the education society to go for online classes which we want to apply, but somehow we are not able to apply successfully but now this is the need to apply these policies. As this online system is not easy to apply for a developing country like India who's most of the students are not able to afford tools required for online classes like computer, mobile, internet connection because they don't have so much money to buy and also they don't have proper infrastructure like internet-connectivity, etc., One of the major issue is also comes in India for the teaching staff to adapt these tools because the government school employees are not so much familiar to apply online classes.

2. Literature Review

The motivation behind this examination is to consider different exercises acted in e-learning climate. This paper will introduce the similar investigation of broadly received e-learning stages. This examination would be gainful for educationalist while receiving a web based learning stage (Swati Kirange, 2021).

In (Chavda, 2021), they attempt to recognize factors influencing on the web instruction among employees and understudies. Two online examinations (N= 500 understudies and N = 250 employees) have been done with the assistance of organized surveys. Exploratory factor examination and Confirmatory factor investigation were utilized to distinguish the elements; Infrastructure and Technology measurements, understudies' connected measurements, workforce's connected measurements, working with measurements, social impact measurements, exertion measurements, seen value, execution assumptions measurements and security and hazard measurements. The paper examines the reasonable ramifications of these discoveries.

In (Paritosh Mahato, 2021), they lead a review to analyze the demeanor of Post Graduate understudies towards Blended Learning in Purulia District of West Bengal, India. The Descriptive strategy was utilized. A sum of 148 PG Students (Second Semester - 54 and Fourth Semester-94) from Sidho-Kanho-Birsha University in Purulia District of West Bengal were taken as agent tests of the populace in general. A delineated irregular inspecting procedure was embraced to choose Post Graduate understudies. An Attitude Scale (Likert type) was used for social affair the information. Mean, S.D., t-test and F-test were utilized to examine the information. The investigation uncovered that the level of mentality of Post Graduate understudies towards mixed learning in Purulia District of West Bengal is normal or moderate. The examination furthermore uncovered that demeanor of Post Graduate understudies towards mixed learning with respect to their Gender (Male-Female), Locality (Rural-Urban), Semester (second – fourth), Internet (User-Non client), Family type (JointNuclear), Caste (Hindu, Muslim, and Sari), Guardians Occupations didn't vary altogether. Then again, disposition of Post Graduate understudies towards mixed learning regarding their Streams (Arts, Science and trade) contrasts essentially.

In (Azad Ali, 2015), they surveyed about the impact of social separation on understudies took on online courses versus understudies tried out nearby courses (brought in this paper Face-to-Face or F2F). Grade information was gathered from one online area and two F2F areas of a PC proficiency course that was as of late educated by one of the creators of this investigation. A similar teacher showed all segments in this way giving a controlled examination between the two types of instructing (F2F and on the web). This paper initially presents the arrangement and the impediment of this investigation. It gives a writing survey and notes the pattern of social detachment found in online courses. This paper then at that point presents a synopsis of the gathered information; and offers an end dependent on the gathered information.

In (Adhikari, 2021) examines about understudies' inspiration towards mixed learning strategy in application in the pandemic circumstance of COVID 19 through a little review led upon Under Graduate understudies of West Bengal. A poll was created utilizing on the web stage (jotforms) and coursed among understudies through friendly contacts. UG understudies having a place with age gathering of 18-21 were focused on in the examination. 75 reactions were gotten on line as recorded. Understudies are believed to be quick to go to online classes yet related to on location classes in the pandemic circumstance. They like the significance of online classes. Notwithstanding, to the extent that testing or assessment is concerned a larger part of them don't support online mode as of now.

3. Tools for Online Classes:

3.1. Google Classroom

Google classroom is the most effective tool to provide written notes and assigned assignments to students. As in the google classroom, a tutor is able to share their notes unit-wise to the students which can be easily accessible by each and every student(Zayapragassarazan, 2020). For this purpose, tutors upload their study material, which student can access through unique link.For assigned assignments, a tutor uploads an assignment and he will decide a particular date for completing the assignment and he will award marks to every student according to their work.

3.2. Video Lectures

Teachers can also share their content by making their videos about the topic and they can upload these videos on YouTube channel or they can send these videos to the whatsapp group or Facebook messenger.

3.3. Live Classes

For the live class session, teachers are using tools like Zoom, Webex, GoogleMeet etc through these they can schedule a meeting on particular date and time. According to the time-table or meet and provide a lecture to a particular batch of student. For this, they need to share meeting ID and password among the student.

3.4. Webinars

For college going students' special webinars can be arranged with the help of experts where the experts share their knowledge which can be beneficial to both teachers & students.

3.5. For quiz

We can make multiple choice questions also. Some software's are available for this like TestInvite, Examtott, etc.

3.6. Google Form

Google Form can be used to collect the assignments from students and we can also use Google form as a feedback form of every teacher for effectiveness of the classes from the college and school site.

4. Impact of Online Classes in School & Colleges:

In this difficult situation of crisis, COVID-19 forces the education system to adapt online education system, which has positive impacts on the basic education of our schools as they force both students and teachers to adapt new methods of teaching. Due to this, now they are more familiar with the new technologies as they before afraid to use them. It is also helpful to students in their future because they have to go for higher studies. For this, they must have basic knowledge of the computer. Due to this knowledge, now the students are keener to explore new platforms for learning and trying to implement their new ideas.

The concept of alternate learning platforms is becoming more popular among college students as they started registering for different Webinars led by experts where they learn about different topics like machine learning, IOT etc. and the students also do different online certification courses which are organised by MHRD, UGC organisations like NPTEL, Couseera, Unacademy etc. With this knowledge, students begin to focus on research area, for which they refer to different journal's research publications and additionally, the scenario benefits college faculties by offering them new ideas for research.

5. Challenges:

5.1. Flexibility to adapt changes

Flexibility of human nature is the main issue in this regard. As suddenly we force both teachers and students to use the online platform and it is not easy as the students like to face the instructor face to face as comparison to online because of the interactive nature. It follows same for the teachers also. This human nature doesn't allow him to flexible towards this new change. As the students likes to note the contents from white board in comparison to follow the contents from e-contents like power point presentation etc.It also creates problems for teachers as they are used to apply traditional methods of teaching. But for the future perspective of both the students and teachers, it is beneficial to adapt online teaching in spite of old traditional methods of teaching.

5.2. Issues related to Technology

There are many issues related to the online classes in terms of technology, and also in our country infrastructure is the major issue for implementing the online classes. Because lots of students belong to the families who are not able to provide the proper infrastructure like Mobile Phones, Laptops, Computer System, Internet Connection etc. to the students. And many students who are having these infrastructure, they are having some other problems like bandwidth of internet connection to access online classes and their study materials. Due to this lacking of infrastructure, students and teachers both are facing problems to adapt this new trend of online classes.

5.3. Knowledge of Computer

In this era, students are more aware of new technologies and have the knowledge to use them, but issues arise for students who are from poor families as they do not have so much literacy of MS Word, Power Point presentation etc. Teachers of applied sciences also face this problem since they are unfamiliar with these tools. For online classes, this is the basic requirement of online classes to have proper proficiency about these tools.

5.4. Lack of student interest

Student' interest is also playing a vital role in accepting the new trend. Because students are not willing to attend the online classes regularly because they are not self-motivated to attend the classes and they felt bored during

the classes as these classes are less interactive and they also have technical issues like network, voice breakage etc.

5.5. Problems arises to perform experiments

Coverage of lab practical's is one of the issue facing by the education system in the online classes as they don't have proper platform to perform the practical because they don't have proper tools and apparatus which cannot be easily demonstrate online. This issue is not only faced at the school level but it is also faced at Higher education level like engineering colleges, medical colleges etc.

6. Comparison of Offline and Online Classes:

For comparison, we have taken a survey ofdifferent schools from class 9th to 12th and college students at private and government level with different courses like technical courses like BCA, B.SC.(H) CS, B.Tech(CSE), B.Sc.(Animation) and various graduation courses like B.Com, B.A., B.Ed. etc. In which, we gave 6 questions to students to rate the questions between 1 and 5. From which we get this data of 300 students of school and 300 students of college. For the assessment of this survey we make these six parameters for the evaluation:

- Understanding of Subject
- Interaction with teacher
- Student satisfaction
- Assignment Submission
- Liking for study material
- Acceptability

Demography profile can be defined as "the study of the composition of a social entity in terms of its members' attributes" (Singh, 2012), (Marie Bienkowski, 2012). Student's perception towards online education differs from gender, a group selected residential area, etc.

The analysis of demographic data shows that among 300 students at School level, we summarize the data in two categories with Private School and Government School in which 59.37% Male students are in Private School and 57.14% are in Government School. We further classified our data streamwise and areawise. 65.71% of students in government schools are from rural areas, and 71.88% are from urban areas. The student ratio of Arts and Science group is somehow similar in both the private and government school. 58.57% students of government school belong to a family that earns monthly income less than Rs. 20,000 and 73.13% students of private school belong to a family that earns monthly income more than Rs. 20,000. Beside this, Mostly students use mobile phone to attend online classes irrespective of private or government school.

The summarized table [Table-I] for the school level students is as follows:

Table I: Demographic Analysis of Students at School level

Enumeration Factors	**Organization**			
	Private School	**Government School**	**Private School**	**Government School**
	Number of students	Number of students	Percentage	Percentage
Stream				
Arts Group	74	65	46.25	46.42
Science Group	86	75	53.75	53.58
Gender				
Male	95	80	59.37	57.14
Female	65	60	40.63	42.86
Area				
Rural	45	92	28.12	65.71

Urban	115	48	71.88	34.29
Family Income (Monthly)				
<Rs. 20,000	43	82	26.87	58.57
>Rs. 20,000	117	58	73.13	41.43
Gadget Used				
Mobile	109	121	68.13	75.62
Desktop/Laptop	51	19	31.87	24.38

The analysis of demographic data shows that among 300 students at College level, we summarize the data in two categories with Private College and Government College in which 56.67% Male students arein Private College and 54.67% are in Government College. We further classified our data stream wise and area wise. Government colleges have 47.33 percent rural students and private colleges have 78% urban students. We also classify our college level data according to the stream as it is needed because technical students are more familiar with the ongoing online study tools in comparison to graduation courses students. We summarize the data as 71.33% student of technical courses belongs to private college and 51.33% students belong to Government College. 46% students of Government College belong to a family that earns monthly income less than Rs. 20,000 and 83.33% students of private college belong to a family that earns monthly income more than Rs. 20,000. Mostly technical courses student (86.67%) of private college have their desktop/laptop with them for their studies so they prefer using that in comparison to mobile phones whereas government college student's ratio is less. Only 50.67% students are having Desktop/Laptop for their studies.

The summarized table [Table-II] for the school level students is as follows:

Table II: Demographic Analysis of Students at College level

Enumeration Factors	**Organization**			
	Private College	**Government College**	**Private College**	**Government College**
	Number of students	Number of students	Percentage	Percentage
Stream				
Graduation Courses	43	73	28.67	48.67
Technical Courses	107	77	71.33	51.33
Gender				
Male	85	82	56.67	54.67
Female	65	68	43.33	45.33
Area				
Rural	33	71	22.00	47.33
Urban	117	79	78.00	52.67
Family Income (Monthly)				
<Rs. 20,000	25	69	16.67	46.00
>Rs. 20,000	125	81	83.33	54.00
Gadget Used				
Mobile	20	74	13.33	49.33
Desktop/Laptop	130	76	86.67	50.67

The researcher surveyed the students of both school and college level by defining certain factors which must be considered for the effective online/offline classes and these parameters includes as Understanding of the Subject, Interaction with teacher, Student satisfaction, Assignment Submission, Liking for study material, Acceptability. The researcher asks student to rank these parameters from rank 1 to rank 5 in which rank 1 signifies the Very

good and rank 5 signifies the Very poor. After collecting this data, we summarize the data and calculate Friedman Mean Rank using Friedman Test (Pasi Porkka, 2008), (Salkind, 2010)(Dulce G. Pereira, 2015)so that we can get the response of students how they think about the offline and online classes. These are the results of the estimation of student responses in Table-III and Table-IV:

Table III: Comparison of different parameters for Offline and Online Classes at School level

Parameters		Very Good		Good		Average		Below Average		Very Poor		Friedman Mean Rank
		N	%	N	%	N	%	N	%	N	%	
Understanding of the Subject	Offline	118	39.33	113	37.67	48	16.00	11	3.67	11	3.67	2.89
	Online	11	3.67	32	10.67	113	37.67	96	32.00	48	16.00	2.59
Interaction with teacher	Offline	155	51.67	75	25.00	38	13.67	16	5.33	16	5.33	3.99
	Online	21	70.00	54	18.00	96	32.00	80	26.67	48	16.00	2.76
Student satisfaction	Offline	123	41.00	86	28.67	64	21.33	5	1.67	22	7.33	2.81
	Online	5	1.67	43	14.33	70	23.33	118	39.33	64	21.33	2.41
Assignment Submission	Offline	96	32.00	102	34.00	59	19.67	11	3.67	32	10.67	2.35
	Online	118	39.33	86	28.67	48	16.00	21	7.00	27	9.00	3.87
Liking for study material	Offline	107	35.67	107	35.67	54	18.00	11	3.67	21	7.00	3.64
	Online	59	19.67	96	32.00	48	16.00	64	21.33	32	10.67	3.17
Acceptability	Offline	123	41.00	113	37.67	43	14.33	5	1.67	16	5.33	3.65
	Online	38	12.67	48	16	113	37.67	59	19.67	43	14.33	2.97

Table IV: Comparison of different parameters for Offline and Online Classes at College level

Parameters		Very Good		Good		Average		Below Average		Very Poor		Friedman Mean Rank
		N	%	N	%	N	%	N	%	N	%	
Understanding of the Subject	Offline	115	38.33	111	37.00	52	17.33	9	3.00	13	4.33	3.98
	Online	15	5.00	35	11.67	105	35.00	92	30.67	53	17.67	2.15
Interaction with teacher	Offline	148	49.33	78	26.00	35	11.67	19	6.33	20	6.67	3.82
	Online	25	8.33	51	17.00	92	30.67	77	25.67	55	18.33	2.65
Student satisfaction	Offline	119	39.67	82	27.33	62	20.67	12	4.00	25	8.33	3.79
	Online	10	3.33	45	15.00	68	22.67	115	38.33	62	20.67	2.12
Assignment Submission	Offline	94	31.33	98	32.67	55	18.33	18	6.00	35	11.67	2.86
	Online	112	37.33	84	28.00	45	15.00	26	8.67	33	11.00	3.10
Liking for study material	Offline	104	34.67	102	34.00	52	17.33	16	5.33	26	8.67	3.15
	Online	66	22.00	105	35.00	40	13.33	66	22.00	23	7.67	2.75
Acceptability	Offline	120	40.00	108	36.00	40	13.33	17	5.67	15	5.00	3.67
	Online	40	13.33	42	14.00	110	36.67	62	20.67	46	15.33	2.90

We found that students of both School and College have better understanding of subjects in Offline mode as compared to online mode based on their Fried mean rank i.e. 2.89 and 3.98 respectively. Similarly, for other factors like Interaction with teacher, Student satisfaction, liking for study material, acceptability shows better results towards offline mode in comparison to Online mode. But the factor Assignment Submission shows better result in online mode in comparison to offline mode i.e. fried mean rank is 3.87 and 3.10 in online mode. For more accuracy, we also calculate Garrett Mean Score(Ashok Kumar Sahoo, 2020), (S, 2020), (Sama Hanumantha Rao, 2019)of our surveyed data and find out the ranks of different parameters in Online and offline mode. For this, Table-V and Table-VI stated below:

Table V: Garrett Mean Score and Rank of different parameters for Offline and Online Classes at School level

Parameters	Offline			Online		
	Total Score	Garrett Mean Score	Rank	Total Score	Garrett Mean Score	Rank
Understanding of the Subject	24261.04	80.87013	3	14429.44	48.09813	5
Interaction with teacher	24505.6	81.68533	1	15782.96	52.60987	4
Student satisfaction	23293.52	77.64507	4	13883.68	46.27893	6
Assignment Submission	22221.84	74.0728	6	22761.92	75.87307	1
Liking for study material	23212.16	77.37387	5	19646.64	65.4888	2
Acceptability	24382.64	81.27547	2	16837.04	56.12347	3

Table VI: Garrett Mean Score and Rank of different parameters for Offline and Online Classes at College level

Parameters	Offline			Online		
	Total Score	Garrett Mean Score	Rank	Total Score	Garrett Mean Score	Rank
Understanding of the Subject	23964.96	79.8832	3	14636.4	48.788	5
Interaction with teacher	24137.04	80.4568	1	15770.56	52.56853	4
Student satisfaction	22814	76.04667	4	14276.4	47.588	6
Assignment Submission	21838.96	72.79653	6	22196.88	73.9896	1
Liking for study material	22714.4	75.71467	5	20559.92	68.53307	2
Acceptability	23970.88	79.90293	2	16568.32	55.22773	3

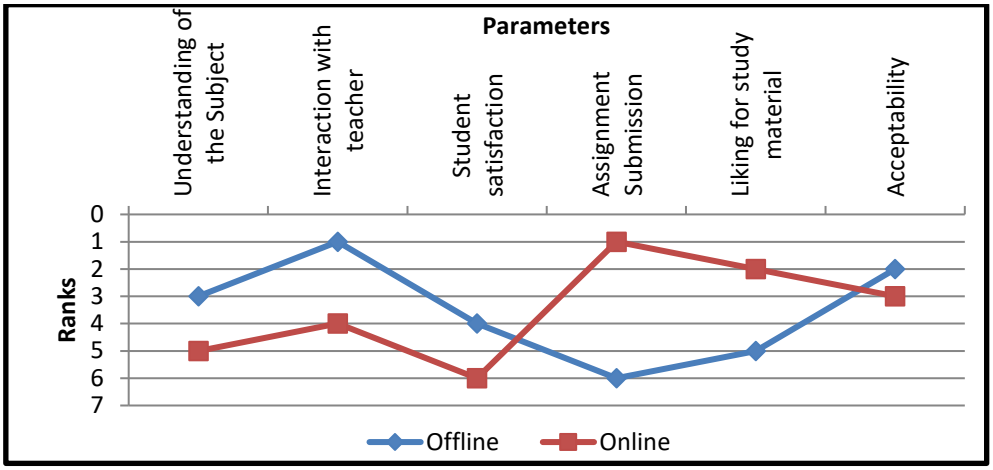


Figure 1: Garrett Mean Rank of different parameters for Offline and Online Classes

From the above tables Table-V and Table-VI, we are getting the same result as we find out in Friedman Test given in Table-III and Table-IV. In both the school level and college level, Interaction with teacher parameter got the rank 1 in offline mode, and assignment submission parameter got the rank 1 in online mode. Hence, we can say that interaction with teacher is more in offline mode in comparison to online mode. The Garrett mean score of offline classes are greater than the score of online classes as shown in above tables Table-V and Table-VI. Hence, students likely to follow offline classes as compared to online classes. By this, we can conclude that

many problems like low attendance, irregular behaviour, less understanding of subject etc. which are facing by the teachers in online mode is because of the low interest of students in online mode.

7. Conclusion

With the help of above survey, we are concluding our assessment by analysing the six parameters with the help of Graphs i.e. percentage of students ranking of parameters in both online and offline mode at school level and college level. The parameters which we have used in this survey are well efficient to prove that what students likes. The success of any mode adaptation whether its online or offline depends on how the students react to it. From above data we can state that students liking is towards offline mode but at present scenario there is a need to adopt new education system to continue learning in efficient manner. Whether it is the teacher or a student, efforts are needed from both ends for online education to work. In order for students to show interest in online education, teachers must think more creatively and be more interactive, and of course students must do the same.

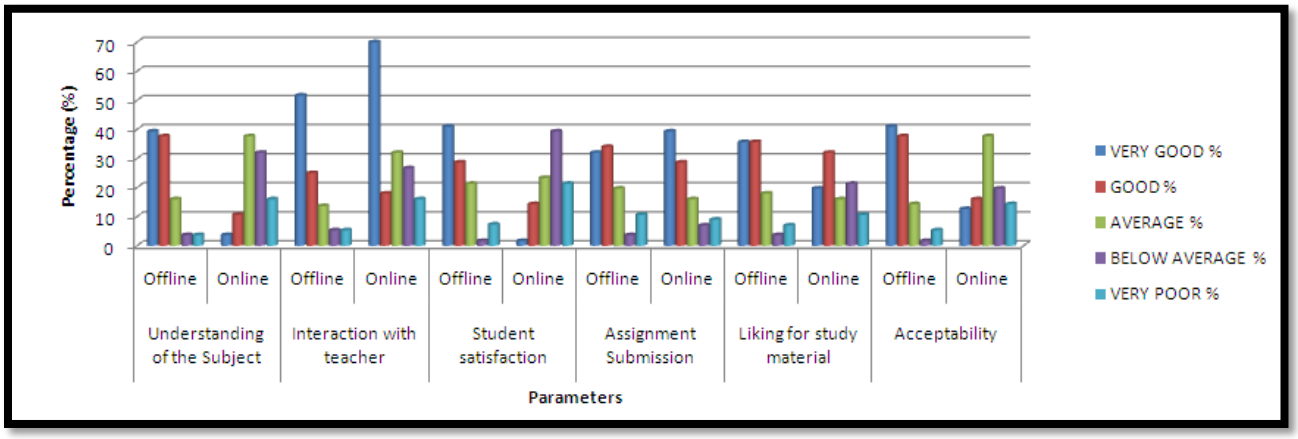


Figure 2: Percentage of students ranking of parameters in both online and offline mode at school level

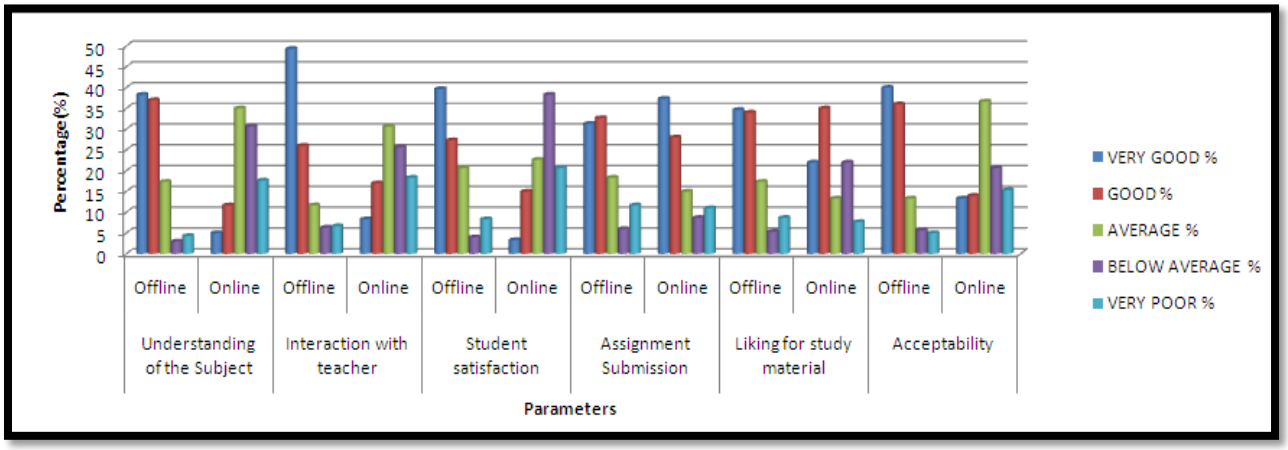


Figure 3: Percentage of students ranking of parameters in both online and offline mode at college level

In the last, we are not stating that online system is ineffective, may be in future students ready to adapt this online education system which may be as effective as offline education system.

References

Adhikari, D. (2021). Blended Learning During Pandemic (Covid 19): Students' Perspective. *The Online Journal of Distance Education and e-Learning*.Volume 9, Issue 2

Ashok Kumar Sahoo, S. D. (2020). The Application of Garrett Scoring Techniques for Assessment of the Farmer Problems in Obtaining and Repayment of Agricultural Credit. *International Journal Of Scientific & Technology Research, 9*(3).Volume 9, Issue 03, March 2020, ISSN 2277-8616

Azad Ali, D. S. (2015). Comparing social isolation effects on students attrition in online versus face-to face courses in computer literacy. *Issues in Informing Science and Information Technology*.12, 11-20. Retrieved from http://iisit.org/Vol12/IISITv12p011-020Ali1784.pdf

Chavda, D. V. (2021). Assessment of factors affecting adoption of online education,. *The Online Journal of Distance Education and e-Learning*.April 2021 Volume 9, Issue 2.

Dulce G. Pereira, A. A. (2015). Overview ofFriedman's Test and Post-hoc Analysis. *Communications in Statistics - Simulation and Computation*.,44:10, 2636-2653, DOI: 10.1080/03610918.2014.931971.

Marie Bienkowski, M. F. (2012). Enhancing teaching and learning through educational data mining and learning analytics: An issue brief. *conference on advanced technology for education*, (pp. 1-64).

Paritosh Mahato, D. S. (2021). of Post Graduate Students Towards Blended Learning. *The Online Journal of Distance Education and e-Learning*.April 2021 Volume 9, Issue 2.

Pasi Porkka, J. J. (2008). , Using Friedman Test for Creating Comparable Group Results of Nonparametric Innovation Competence Data. *The 5th International Conference on Innovation and Management (ICIM2008).*

S, V. M. (2020). Exploring the Factors Affecting Purchase Intention of Consumers for Green Products. *Online International Interdisciplinary Research Journal, {Bi -Monthly}, 10*(4).},ISSN 2249-9598, Volume-10, Issue-04, July-Aug 2020 Issue.

Salkind, N. J. (2010). Encyclopedia of research design . *Thousand Oaks, CA: SAGE Publications, 1-0*.Inc. doi: 10.4135/9781412961288.

Sama Hanumantha Rao, S. K. (2019). Application of Henry Garrett Ranking Method to Determine Dominant Factors Influencing Smartphone Purchase Decisions of Customers. *, Jour of Adv Research in Dynamical & Control Systems,, 11*(6).Volume 9, Issue 03, March 2020, ISSN 2277-8616.

Singh, S. (2012). Efficiency of Online vs. Offline Learning: A Comparison of Inputs and Outcome. *International Journal of Business, Humanities and Technology* , 93-98.

Swati Kirange, D. D. (2021). A Comparative Study Of E-Learning Platforms and Associated Online Activities. *The Online Journal of Distance Education and e-Learning*.April 2021 Volume 9, Issue 2

Zayapragassarazan, Z. (2020). COVID-19: Strategies for Online Engagement of Remote Learners. *Department of Medical Education Jawaharlal Institute of Postgraduate Medical Education and Research (JIPMER)*.

EXPLORING EFFECTIVENESS OF ONLINE WORKSHOP FOR ODL LEARNERS: A CASE STUDY OF YOGA PROGRAMME

Gagan Singh[1], Gopal Datt[2], Bhanu Prakash Joshi[3]

1- School of Management Studies & Commerce, Uttarakhand Open University, Haldwani, India. ORCID- http://orcid.org/0000-0002-5725-9166, E-mail: gsingh@uou.ac.in
2- School of Vocational Studies, Uttarakhand Open University, Haldwani, India. ORCID- http://orcid.org/0000-0001-7285-0600, E-mail: gdatt@uou.ac.in
3- School of Health Sciences, Uttarakhand Open University, Haldwani, India. E-mail: bhanujoshi@uou.ac.in

ABSTRACT

Due to the global pandemic of COVID 19, the use of online learning technologies becomes the necessity of every educational institution. This study aims to analyses the effectiveness and challenges of the online workshop conducted for the learners of the Yoga programme of Uttarakhand Open University, India. In such a pandemic situation where face-to-face teaching-learning seems somehow impossible. This study is descriptive research where a self-prepared and varified questionnaire was floated online (i.e. e-mail, WhatsApp) among the enrolled learners of the Yoga programme to collect the primary data. To find out the learner's attitude towards the online workshop, a total of 410 complete responses were received and analyzed. The findings of the study reflect that the online practical (i.e.- Aasana, Advanced Aasana, Mudra Bandha, Pranayama, and Surya Namaskar) and theory (i.e.- Fundamentals of Yoga, Anatomy, Yoga and Health, Naturopathy, Yoga Therapy, etc.) sessions of the Yoga, were extremely useful for the participants irrespective of gender. In the case of barriers faced by the learners during the online workshop, lack of Internet access and speed ranks first followed by lack of dedicated time to join the online workshop. Several other barriers out of the total surveyed 10 barriers are also of key attention, such as- lack of sufficient prior academic knowledge, and lack of preferred language. This study also helps to analyze and find out further solutions to improve the impact and reachability of online workshops of different subjects in the Open and Distance Learning mode.

KEYWORDS

Online Workshop, Case Study of ODL Learners, Effectiveness of Online Workshop, Online Workshop for ODL Learners, Barriers of Online Workshop

INTRODUCTION

The present scenario of Information and Communication Technology (ICT) in education is of key importance because of global pandemic COVID 19. It also changes the pedagogical structure of teaching-learning in education all across the world. ICT is an incredible tool for Open and Distance Learning (ODL) organizations to advance and improve the way of transforming education to the marginalized people. The utilization of ICT in training helps instructors and students from numerous points of view, as- to give general admittance to education, dilutes the learning partitions, upgrade the nature of learning, reinforce incorporation, an addition of GER, support for the advancement of teachers ultimately works for the enhancing quality in education. ODL organizations pulled in students all around the globe due to their adaptability and transparency for entry and exit to their students. During this global pandemic COVID 19, online teaching-learning has performed a remarkable job for brighten the hope of learning. In such kind of pandemic situation, the popularity of ODL has been increased widely (Sarkar, 2012, pp 30-31, Gulati, 2008, pp. 2-4).

Technology-enabled education is a buzzword in the 21st century. It used the applications of ICT to enhance the way of teaching-learning and also transforming the education and educational needs of 21st-century learners. Online learning provides the learning opportunity to access quality teaching-learning material beyond the physical boundaries. Integration of technology into learning focuses on the increasing quality of learning and also improves the effective use of technology to fulfill the learning needs of the aspirants. The pandemic (COVID 19) forces to shut down all the educational institutions across the world but one cannot stop learning; for continuing learning, one needs the accessibility and availability of ICT tools and applications. Gradually, students, teachers, educators, academicians, and administrators have adapted online mode of teaching-learning either willingly or unwillingly, because there were no other options to continue with the profession. This way it is an urgent need to analyze the effectiveness of online workshop(s) from the viewpoint of the learners. The conduct of online workshop provides several benefits to the learners, as- Time flexibility, Location flexibility, a large number of audience can connect at a time, Quality instructors can be connected through anywhere, immediate feedback, etc. As well as there are several difficulties to continue learning with the online mode, as- lack of personal attention, technical difficulties, everything cannot be well expressed, lack of Internet

accessibility and connectivity, lack of technological knowledge, etc. However, the Online mode of teaching-learning provides too many opportunities for future learning, such as- pedagogical innovation, digital development, the scope for designing flexible programs, provides wider accessibility of learning resources, etc.
The COVID 19 effect made Online counseling the necessity to support learners, especially for the practical/workshop based programmes. Due to several barriers of pandemic effect to conduct face-to-face sessions, online counselling becomes more widespread. The online counseling session can be conducted through digital technologies, as- computers, or smartphones. However, this study aims to investigate the effectiveness of online workshops for ODL learners of the Yoga programme offered by the Uttarakhand Open University, India. To examine the effectiveness of the online workshop, the participant's perception about practical and theory sessions was recorded in the form of a survey and analyzed statistically. Findings and implications were discussed regarding the relevant literature and some suggestions were also offered (Zeren, et. Al., 2020).

The educators/educational institutions have too many mediums of information delivery, such as Virtual Classrooms, Massive Open Online Courses, Open Educational Resources, video conferencing, online meeting applications, etc., were being an ODL institution this study explores the effectiveness of online workshop for developing further modalities in this way. E-learning or online learning includes several mediums of information delivery such as Intranet, live/recorded television broadcasting, recorded audio-video lectures, radio broadcasting/community radio, satellite transmission, etc. Active participation in online learning can be ensured using discussion forums, which is one of the common features of online learning (Zulfikara et al., 2019).

The earlier mindset of educators that e-learning is only useful for ODL (Open and Distance Learning) learners but after the emergence of Internet uses for learning, the scenario has been shifted. The objectives behind embedding ICT in ODL is to ease the students for learning and getting information via several mediums about their course notices, examination related announcements, tutorials, and so on. In today's global pandemic (like COVID 19) situation the e-learning is the most efficient and innovative application of technology for all types of learners globally. Over the past few years, MoE (India) started several initiatives to ensure the accessibility of quality education across the nation through online medium, i.e. SWAYAM, OER, NPTEL, E-PG Pathshala, NCERT e-books, Spoken Tutorial, Digital Library Inflibnet, Swayam Prabha, E-Pathshala, Talk to Teacher, Virtual Labs, National Digital Library of India, etc. With the emergence and widespread use of new technologies, the trends of online education are growing with the massive increase of Internet users. Online education started with the advent of the Internet (1990) and the World Wide Web (WWW). Since 1990, online education has accomplished a long journey where it becomes more accessible, advanced, and popular among the intended learners (Palvia, et al., 2018; Imran, 2012).

COVID 19 situation challenged the world education system from pre-primary to higher education to come up with an only online mode of teaching-learning. As earlier many institutions were supposed to unwilling to change their conventional pedagogical approach but now they have no option to shift to online mode. The Internet and ODL have indeed made it possible for aspirants to continue their learning needs from any part of the world without any constraints being imposed. Thus, Online education and ODL to be considered a boon for many of the aspirants in such situations (Dhawan, 2020).

Department of Yoga, Uttarakhand Open University-
Uttarakhand Open University, India was established in the year 2005 to provide higher education through flexible and innovative methods to ensure ‘independent learning’ to anyone, anytime and anywhere. Keeping this goal in view, the University has made concerted efforts to offer professional and job-oriented courses with regular updates of curricula and study material. The Department of Yoga was established under the School of Rural Health Science in the year 2010 to create awareness amongst the people about public health. Presently, the University has three Departments under this School, i.e., Department of Yoga, Department of Ayurveda, and Department of Home Science. The learners enrolled in the programmes of this School get knowledge about Yoga, Ayurveda, Naturopathy, Public health, and nutrition. Currently, the department of Yoga is offering, Master’s Degree, Bachelor’s Degree, Diploma and Certificates programmes in Yoga and Naturopathy. The Department also ensures the personality development of the learners enrolled in the Programmes of Yoga along with their physical, mental, social, and spiritual development. All such programmes are practice-oriented and therefore, compulsory practical classes on the fixed pattern of 10 Days’ residential workshops are organized for the learners at different learner Support centres. But due to this pandemic, University experimented with online compulsory workshops instead of compulsory residential workshops.

Table 1: Academic Session-wise Status of Enrollment of Learners in Various Programmes Offered by the Department of Yoga			
Years	No. of Enrolments in Yoga Programmes	Change	% of Change
2013-14	688	-	-
2014-15	1158	470	68.31
2015-16	2098	940	81.17
2016-17	4289	2191	104.4
2017-18	7064	2775	64.7
2018-19*	3925	-3139	-44.44
2019-20*	2893	-1032	-26.3
2020-21**	3429	536	18.53
* Due to the delay in UGC (India) approval process; the number of enrollments was decreased. ** The admission process was affected by the COVID 19 global pandemic where offline enrollments (admission) were totally banned.			
Source: Data Collected Through Uttarakhand Open University SIS.			

It is obvious from Table 1 that in the beginning years (2013-14 to 2017-18), there is a significant increase in the enrollments of learners in various programmes of Yoga, offered by the department of Yoga. The major reason for the decline of enrollments in the year 2018-19 to 2020-21 is the delay in the UGC (India) approval process of offering programmes and the effect of global pandemic COVID 19 where offline enrollments (admission) were totally banned. There is a remarkable increase in the learners' enrollments in the year 2016-17 and 2017-18, It may be the effect of declaring international Yoga day (June 21, 2015) where the Yoga programme attracted people all over the globe.

Table 2: Programme-wise Status of Enrollment of Learners in Various Programmes Offered by the Department of Yoga.								
Programmes	No. of Enrolments in Different Academic Years							
	2013-14	2014-15	2015-16	2016-17	2017-18	2018-19	2019-20	2020-21
Master's Degree	362	553	1068	2346	4485	2444	1770	2318
Bachelor's Degree	191	281	378	568	732	395	666	783
Diploma	127	316	637	1341	1790	1039	406	256
Certificate	08	08	15	34	57	47	51	72
Source: Data Collected Through Uttarakhand Open University SIS.								

It is evident from Table 2 wherein the initial academic sessions, i.e., the Year 2013-14 to the Year 2017-18, there is a continuous increase in the enrollments of learners enrolled in all the programmes i.e., Certificate, Diploma, Bachelor's, and Master's programmes of the Department of Yoga. It may be possible due to expected job prospects or due to the popularity of Yoga as a career option. The increase in the number of enrollments in Certificate/Diploma programmes indicates that pan India people are becoming more conscious about Yoga, as well as about the fact that systematic study in yoga may prove to be a good career option.

Table 3: Academic Sessions wise Learners Enrollment in Various Programmes of Yoga

S. No.	State & Union Territory	Year (2013-14 to 2020-21)								TOTAL ENROLLMENTS
		2013-14	2014-15	2015-16	2016-17	2017-18	2018-19	2019-20	2020-21	
1	Uttarakhand	445	487	842	1677	3283	1330	1162	1218	10444
2	Uttar Pradesh	74	182	338	899	1798	1171	638	658	5758
3	Delhi	100	156	209	334	687	278	264	373	2401
4	Haryana	29	250	552	979	758	854	556	723	4701
5	Andhra Pradesh	-	-	-	1	2	1	-	1	5
6	Arunachal Pradesh	-	-	-	-	2	2	1	2	7
7	Assam	-	-	-	2	8	5	5	9	29
8	Bihar	3	13	24	75	143	63	39	50	410
9	Chandigarh	1	2	7	13	16	8	9	19	75
10	Chhattisgarh	-	2	6	13	36	27	6	8	98
11	Dadra & Nagar Haveli	-	-	-	-	-	-	1	1	2
12	Gujrat	8	22	9	5	9	13	3	17	86
13	Himachal Pradesh	-	2	6	23	35	19	27	43	155
14	Jammu & Kashmir	1	-	-	29	-	6	8	14	58
15	Jharkhand	3	1	2	29	50	31	38	61	215
16	Karnataka	-	-	-	1	1	-	5	6	13
17	Kerala	-	-	1	-	1	-	3	-	5
18	Lakshdweep	-	-	1	-	-	-	-	-	1
19	Madhya Pradesh	4	14	30	42	49	24	19	44	226
20	Maharashtra	2	3	7	12	22	11	16	29	102
21	Manipur	-	-	-	-	-	-	1	-	1
22	Meghalaya	-	-	-	-	-	-	-	1	1
23	Odisha	8	3	6	3	7	5	12	34	78
24	Punjab	3	5	30	63	54	21	35	42	253
25	Rajasthan	6	12	21	77	80	50	34	48	328
26	Tamilnadu	-	-	-	-	2	-	-	-	2
27	Telangana	-	-	-	-	1	2	1	3	7
28	Tripura	-	-	-	-	1	-	4	3	8
29	West Bengal	1	4	7	12	19	4	6	22	75
-	TOTAL ENROLLMENTS	688	1158	2098	4289	7064	3925	2893	3429	-

Source: Data Collected Through Uttarakhand Open University SIS.

Table 3 reveals that the major enrollments are registered from Uttarakhand followed by Uttar Pradesh state and Haryana and in the case of Union-Territories, Delhi holds top rank followed by Chandigarh. After analyzing Table 3 it may be concluded that due to Open and Distance Learning (ODL) with 10 days compulsory residential workshop for each semester/year followed by the department of Yoga, is one of the major cause to attract the prospective learners' across the country.

REVIEW OF LITERATURE

It's time to accept the key advantages and opportunities of ICT to enhancing the quality of education (Hrehova and Teplicka, 2020, p. 1). The information and utilization of ICT have become an extra necessity for getting employment in various sectors. The learners, and future employees, should be well equipped with ICT and utilization of 21st century innovative skills which are basics for becoming able to work-ready mass (Infante-Moro, et al., 2019, pp. 201-202). The use of ICT in the educational system is the demand for enhancing the quality of education and developing a competitive environment. New Internet based tools are exceptionally helpful for pedagogies, however several issues may be possible during the adoption of such tools and technology for teaching-learning (Ohei and Brink, 2019, p. 1).

For providing learning opportunities and information delivery to the students, the ICT is an amazing tool. In today's conditions, the ICT has enormous potential to help learners all over the globe and also able to access quality learning resources among the learners' community (Rehman, 2014, p. 162). ICT has made teaching-learning a fascinating task as well as aided in teaching a useful mind makeup among the students. This is the need to take attention to the uses of ICT for utilizing its potential for enhancing the level of ICT applications among the learners (Das and Bordoloi, 2012, p. 38). Quality e-learning resources are always in demand by the

educational Institutions in today's era of teaching-learning (Djouab and Bari, 2016, p. 370). To consolidate more prominent degrees of innovation into the design and delivery of educational resources have a significant impact on the increasing expectations from the institutions of higher education. The increasing use and availability of online teaching-learning resources have made a positive impact on students' academic performance and this is also reflected in the improved learning outcomes (Wong, 2013).

The use of ICT and social networking tools are the most important applications for the learners to enable them to contact with their peers and to share information over remote locations for learning purposes (Echenique, et al. (2015, p. 1). The people those are not well aware of advantages of ICT in teaching-learning requires practical skill set/ hands-on-training before to adapt the blended or online mode of teaching Sumande, et al., 2016, p. 175). The mixed mode of learning is a valuable way to deal with students to reduce costs and greater competence (Fan, 2019). But in a pandemic situation like COVID 19 where educators and learners have no other to accept online mode only.

Internet based learning is developing at an inconceivable rate across the world. The learners experiences about the online courses, i.e. MOOCs, etc. are unique in contrast to conventional courses. The advances in technology, including the internet reachability and speed, and delivery of online educational resources have made the popular choice of the student community (Kauffman, 2015). Online learning is urgently needed to keep up with the development of the world of education which is now fully supported by ICT. With online learning, the learning process can happen anywhere and anytime flexibly and learners can be benefitted out of it (Verawardina and et al., 2020). MOOCs have great potential to provide learning opportunities for people around the world (Gordan and Mora, 2016). There are five major barriers to the successful adoption of e-learning, i.e. lack of established framework; monitory limitations; lack of assistance; lack of technical knowledge, and unenthusiastic approach of teachers towards change. To resolve such barriers and make the use of e-learning resources by the student community requires an effective strategic approach (Kisanga and Ireson, 2015).

SIGNIFICANCE OF THE STUDY

A workshop is a comprehensive program that is short in duration (i.e., One hour or several days) and focuses on practical skills/hand-on-training. Workshop in ODL system of education covers practical knowledge of the concerned subjects where learners can achieve the practical skill-set. The importance of this study is to find out and analyze the effectiveness and challenges of the online workshop for ODL learners of the Yoga programme in special reference to Uttarakhand Open University, India. Because of the pandemic effect, we have no other option to continue teaching-learning rather than the online mode of education. In such circumstances, this study reveals of key importance to investigate the learners' perception about the effectiveness and hurdles of online education.

OBJECTIVES

The main objective of this paper is to explore the effectiveness of online workshops in higher education experimented in open and distance learning. The following specific objectives have been identified for this study:

- To examine the usage of online learning workshops in open and distance learning system of education.
- To identify the barriers of online learning workshops being faced by their learners.
- To suggest the viable measures to enhance the effectiveness of online workshops in higher education experimented in open and distance learning and to overcome the barriers which hinder the progress of online workshops in ODL.

RESEARCH METHODOLOGY

This study is descriptive research. It has been carried out to examine the effectiveness of online workshops in higher education experimented in open and distance learning. The requisite data for the study was gathered from primary as well as secondary sources. In the light of the objectives of the study, the information has been collected from the learners enrolled in various programmes of Yoga at Uttarakhand Open University; and from several other published reports related to ODL across India through websites of the key organizations, i.e. University Grants Commission (UGC), Ministry of Education (MoE), etc. According to the nature of this study, the data gathered from several sources have been examined using various statistical operations to get deep insights from the data.

Sample Size and Sample Design-

The questionnaire for this study was sent through e-mail, and WhatsApp to the learners of the Yoga programme who are enrolled in various degree, diploma, and certificate programmes of the Department of Yoga. A total of

410 complete responses were received and analyzed for further purposes. The selection of the respondents was based on the availability and access of their e-mail/WhatsApp contacts.

RESULTS AND DISCUSSION

This study has been carried out to examine the role of 10 days compulsory online workshops organized by the Department of Yoga of Uttarakhand Open University in creating new learning eco-systems in open and distance learning. In this paper, the role of open and distance learning in ensuring quality education in higher education and how to sustain this learning eco-system over the period of time has been studied.

Table 4 Demographic Profile of the Respondents (N=410).

S. No.	Indicators	Contribution (%)	S. No.	Indicators	Contribution (%)
1	Gender Wise Demography		4	Age Group Wise Demography	
	Male	51.7		15 to 20 Years	5.1
	Female	48.3		21 to 30 Years	47.8
2	Qualification Wise Demography			31 to 40 Years	35.1
	Diploma/Certificate	10.2		41 to 50 Years	8.5
	Under Graduate	27.3		51 Years or More	3.4
	Post Graduate	62.4	5	Occupation Wise Demography	
3	Region Wise Demography			Student	42.7
	Rural	47.8		Self Employed	20.0
	Semi-Rural	10.7		Private Employee	14.6
	Urban	41.5		Govt. Employee	13.2
-	-	-		Any Other	9.5

Source: Data Collected Through Questionnaire.

While studying the demographic background of the learners, it has been found that the majority of the respondents are in the age group of 21-30 and more than 51 percent are male respondents. It is a matter of special mention that the learners of different age groups attend these 10 days compulsory online workshops with great enthusiasm. As far as their educational qualification is concerned, the majority of the respondents who enrolled in various programmes of the Department of Yoga are post-graduates and more than 42 percent are whole-time students whereas 20 percent are employed. State-wise status of the respondents reveals that the majority of the learners are from Uttarakhand followed by Uttar Pradesh, Haryana, and Delhi. It shows that after attaining the age of 40, people are becoming aware of the importance of Yoga and the male learners are more interested in Yoga programmes as compared to female learners. It also appears that now the learners are accepting Yoga as a career-option and therefore the interest is continuously increasing.

Table 5 Gender Wise Effectiveness of Online Practical Session(s) Conducted for ODL Learners of Yoga Programme. (N=410)

Rating Scale Hints: (1) = Extremely Useful, (2) = Very Useful, (3) = Moderately Useful, (4) = Slightly Useful, and (5) = Not at all Useful.

Practical Session (Topics)	Rating Scale (Male)							Rating Scale (Female)						
	(1)	(2)	(3)	(4)	(5)	Mean	SD	(1)	(2)	(3)	(4)	(5)	Mean	SD
Aasana	116	19	27	28	22	2.2	2.1	99	27	22	35	15	2.2	2.1
Advance Aasana	73	44	28	51	16	2.5	2.4	74	40	33	34	17	2.4	2.3
Mudra Bandha	95	44	30	29	14	2.2	2.1	84	39	25	33	17	2.3	2.2
Pranayama	122	26	22	16	26	2	2.1	111	29	20	20	18	2	2.0
Surya Namaskar	116	39	15	15	27	2	2	99	40	21	19	19	2.1	2.0

Source: Data Collected Through Questionnaire.

Above Table 5 reveals that the online workshop concerning Assana, Pranayam and Surya Namaskaar are extremely useful for both male and female learners enrolled in various programmes of study offered by the Department of Yoga. These online workshops are also effective in the cases of Advance Assana and Mudra Bandha. The mean value of the respective practical session are also reveals that the majority of the responses are seems either extremely useful or useful. Therefore, it can be said that in pandemic like COVID-19 the option of online workshops can also be useful for the practical aspect of the respective discipline.

Table 6 Gender Wise Effectiveness of Online Theory Session(s) Conducted for ODL Learners Of Yoga Programme. (N=410)

Rating Scale Hints: (1) = Extremely Useful, (2) = Very Useful, (3) = Moderately Useful, (4) = Slightly Useful, and (5) = Not at all Useful.

Theory Session (Topics)	Rating Scale (Male)							Rating Scale (Female)						
	(1)	(2)	(3)	(4)	(5)	Mean	SD	(1)	(2)	(3)	(4)	(5)	Mean	SD
Anatomy	107	47	25	22	11	2.0	1.9	97	48	13	21	19	2.1	2.0
Hath-Yog	102	52	23	17	18	2.0	1.9	93	45	21	21	18	2.1	2.0
Fundamentals of Yoga	127	32	22	15	16	1.9	1.8	110	37	19	14	18	2.0	1.9
Yoga And Health	105	50	17	21	19	2.1	2.0	92	44	17	19	26	2.2	2.2
Alternative Therapy	93	50	30	22	17	2.2	2.0	67	58	31	20	22	2.4	2.2
Naturopathy	87	54	31	21	19	2.2	2.1	74	59	20	22	23	2.3	2.2
Yoga Therapy	101	53	17	22	19	2.1	2.0	80	56	18	24	20	2.2	2.1

Source: Data Collected Through Questionnaire.

While study the effectiveness of the online workshops concerning theory session of Yoga programmes of study, it has been found that majority of the male and female learners responded that these online sessions based on Anatomy, Hat-Yoga, Fundamentals of Yoga, Yoga and Health and Yoga Therapy are extremely useful for them. The mean value of the respective theoretical session are also reveals that majority of the responses are towards the very useful responses of the respondents. Therefore, awareness towards the online learning becomes the need of the hour during pandemic like COVID-19. This way the requirement of the learners regarding their practical as well as theoretical contents of their respective course can be fulfilled.

Table 7 Gender Wise Assessment Of Yoga Instructor To Conduct Effective And Valuable Online Workshop For ODL Learners Of Yoga Programme. (N=410)

Rating Scale Hints: (1) = Extremely Useful, (2) = Very Useful, (3) = Moderately Useful, (4) = Slightly Useful, and (5) = Not at all Useful.

Assessment Parameter	Rating Scale (Male)							Rating Scale (Female)						
	(1)	(2)	(3)	(4)	(5)	Mean	SD	(1)	(2)	(3)	(4)	(5)	Mean	SD
Expert in Subject Knowledge.	102	58	12	25	15	2.0	1.9	94	49	7	31	17	2.1	2.1
Encourage Participation.	101	58	22	19	12	2.0	1.8	97	56	8	24	13	2.0	1.9
Resolve Learner's Question Instantly.	94	74	21	12	11	1.9	1.7	82	84	13	12	7	1.9	1.6
Use Appropriate Examples during Lectures.	85	63	21	24	19	2.2	2.1	88	53	15	22	20	2.2	2.1
Encourage to Learn.	85	67	21	26	13	2.1	2.0	80	69	9	27	13	2.1	2.0
Effective Teaching style to connect with the audience.	93	64	21	24	10	2.0	1.9	99	61	5	20	13	1.9	1.8

Source: Data Collected Through Questionnaire.

Table 7 reveals that majority of the male and female learners are satisfied with the expertise of the Yoga Instructors in the subjects, their quality of encouraging the wider participation of the learners in the discussion, instantly resolving learners' queries and also with their effective teaching style. The mean value of the respective assessment parameters are also reveals that majority of the responses are towards the very useful responses of the respondents except in the cases of instantly resolving learners' queries. To make these online workshops there is need to train the trainer as well as the instructors of the respective discipline. So that they can deliver the content of the respective courses effectively and learners can benefit by it at their own places.

Table 8 Barriers Faced by the Learners During Online Workshop Conducted For The ODL Learners Of Yoga Programme. (N=410)

Rating Scale Hints: (0) = Not a Barrier, (1) denotes Highest Barrier where (5) denotes Lowest Barrier.

Barriers Faced During Online Workshop	Rating Scale						Cumulative Sum of Barriers	Mean	Barrier(s) Ranking
	(0)	(1)	(2)	(3)	(4)	(5)			

Lack of Internet Access & Speed Issue.	107	98	62	37	48	58	815	2.7	1
Lack of Dedicated Time.	127	92	47	39	35	70	793	2.8	2
Lack of Sufficient Prior Academic Knowledge.	128	88	41	50	44	59	791	2.8	3
Lack of Preferred Language.	137	80	46	44	34	69	785	2.9	4
Lack of Internet Enabled Device.	94	141	36	48	30	61	782	2.5	5
Lack of Significant Support from Home/Work Place.	130	102	39	29	45	65	772	2.8	6
Lack of Interaction with Instructor.	130	95	43	44	33	65	770	2.8	7
Lack of Familiarity with Online Technical Tools.	121	101	50	43	40	55	765	2.6	8
Lack of Instant Support.	126	100	46	39	39	60	765	2.7	9
Lack of Understanding of Instructions.	127	97	52	38	40	56	755	2.7	10
Any Other.	168	76	35	29	39	63	704	2.9	11
Source: Data Collected Through Questionnaire.									

While study the barriers faced by the learners during online workshops conducted for them by the concerned department, it has been revealed that majority of the male and female learners faced the issue of internet enabled device, significant support from home/work place, instant support, internet access & speed and dedicated time. On the other hand, ranking of these barriers exhibits that lack of internet access & speed issue ranked first followed by lack of dedicated time, lack of sufficient prior academic knowledge and lack of preferred language. The mean score of these barriers also indicate that majority of the learners faced the above-mentioned issues related with internet access & speed, dedicated time and preferred language. To make these online workshops more effective and benefitted the learners' at large scale there is urgent need to resolve these issues immediately and with permanent solution. So, that during pandemic likes COVID-19 the learning of its stakeholders to be continued.

CONCLUSION AND RECOMMENDATIONS

Distance learning is a way for all of them; those do not have a chance of accessing face-to-face system of learning. Open and Distance Learning system has the tremendous potential of inclusive growth of education because of its distinctive nature of being a user-friendly system. We (Uttarakhand Open University) as an institution of Open and Distance Learning offering a chance for all aspirants those are inadequate to join face-to-face system of education because of several reasons. The study reveals that the new learning eco-system created by the Department of Yoga of Uttarakhand University in the form of online workshop has had a positive impact on the learning of distance learners enrolled in various programmes of Yoga. The respondents also appreciated this new learning eco-system, i.e., 10 days, compulsory online workshops and practical followed. The participation of different age-groups in these 10 days compulsory online workshops showed that this new learning eco-system is becoming popular amongst its distance learners. Perhaps this feature is the basis of the quality of these programmes. There is no doubt that the use of these workshops by the Department of Yoga has created a new learning eco-system in open and distance learning. This experiment definitely increases the popularity of the Department of Yoga amongst its stakeholders. But here the big question arises that how to sustain this new learning eco-system over the period of time. Some of the key submissions are here to make Open and Distance Learning system of education more efficient for the aspirants-

- To make its wider reach, these workshops should be organized at regular interval for the learners enrolled across the nation.
- To ensure the practical exposure of the learners through online workshop, the duration of the workshop should be increased to 15 days in place of 10 days.
- To make these workshops more result oriented, there should be more engagement of yoga therapists, instructors and experts.
- It is suggested that the learning material of the respective programmes should also be available in both the languages i.e., Hindi and English.
- It is also suggested that to sustain this new learning eco-system, feedback survey of its learners enrolled in Master's Degree, Bachelor's Degree, Diploma and Certificate programmes should be conducted to assimilate the views of their learners and to to get the better of the deficiencies of these programmes, if any to make these programmes more popular amongst its prospective stakeholders.

REFERENCES

Das, P., & Bordoloi, R. (2012). Effectiveness of Open and Distance Education and the Relevance of ICT: A North-East Indian Perspective. Information and Knowledge Management, 2(1), 38-45.

Dhawan, S. (2020). Online Learning: A Panacea in the Time of COVID-19 Crisis. Journal of Educational Technology Systems, 49(1), 5–22, DOI: 10.1177/0047239520934018.

Djouab, R. & Bari, M. (2016). An ISO 9126 Based Quality Model for the e-Learning Systems. International Journal of Information and Education Technology, 6(5), 370-375.

Echenique, E. G., Molias, L. M. & Bullen, M. (2015). Students in higher education: Social and academic uses of digital technology. Universities and Knowledge Society Journal, 12(1), 1-13.

FAN, Mei-ying (2019). Analysis of Learning Opportunities for Online Forms in Blended Learning, 4th International Conference on Education and Social Development (ICESD 2019). ISBN: 978-1-60595-621-3.

Gordan, S. S. and Mora, S. L. (2016). How Could MOOCs Become Accessible? The Case of edX and the Future of Inclusive Online Learning. Journal of Universal Computer Science, 22(1), 55-81.

Gulati, S. (2008). Technology-Enhanced Learning in Developing Nations: A review. International Review of Research in Open and Distance Learning. 9(1).

Hrehova, D. & Teplicka, K. (2020). The Information communication technology is a tool of global education-web of Conferences 74, Globalization and its Socio-Economic Consequences, published by EDP Sciences (2020).

Imran, S. M. (2012). Trends and Issues of E-Learning in LIS-Education in India: A Pragmatic Perspective. Brazilian Journal of information Science (BJIS), 6(2), 26-45, Available at: http://www2.marilia.Unesp.br/revistas/index.php/bjis/index.

Infante-Moro, A., Infante-Moro, J. & Gallardo-Perez, J. (2019). The Importance of ICTs for Students as a Competence for their Future Professional Performance: The Case of the Faculty of Business Studies and Tourism of the University of Huelva. Journal of New Approaches in Educational Research. 8(2), 201-213.

Kauffman, (2015). A review of predictive factors of student success in and satisfaction with online learning. Research in Learning Technology. 23, Communication Sciences and Disorders, Temple University, Philadelphia, PA, USA.

Kisanga, D. and Ireson, G. (2015). Barriers and strategies on adoption of e-learning in Tanzanian higher learning institutions: Lessons for adopters. International Journal of Education and Development using Information and Communication Technology (IJEDICT), 11(2), 126-137.

Ohei, N. K. & Brink, R. (2019). A framework development for the adoption of information and communication technology web technologies in higher education systems. South African Journal of Information Management. 21(1), 1-12.

Palvia, S., Aeron, P., Gupta, P., Mahapatra, D., Parida, R., Rosner, R. and Sindhi, S. (2018), "Online Education: Worldwide Status, Challenges, Trends, and Implications", Journal of Global Information Technology Management, 21 (4), 233–241, Doi: https://doi.org/10.1080/1097198X.2018.1542262.

Rahman, H. (2014). The Role if ICT in Open and Distance Education. Turkish Online Journal of Distance Education-TOJDE. 15(4), 162-169.

Sarkar, S. (2012). The Role of Information and Communication Technology (ICT) in Higher Education for the 21st Century. The Science Probe. 1(1), 30-40.

Sumande, C. T., Castolo, C. L. & Comendador, B. E. V. (2016). The ICT Level of Confidence of Course Specialists in Distance Education: The Polytechnic University of The Philippines Experience. Turkish Online Journal of Distance Education-TOJDE. 17(4), 175-189.

Verawardina, et al. (2020). Reviewing Online Learning Facing the Covid-19 Outbreak. Talent Development & Excellence 385, 12(3), 385-392.

Wong, Lily (2013). Student Engagement with Online Resources and Its Impact on Learning Outcomes. Journal of Information Technology Education. Vol. 12.

Zeren, S. G., Erus, S. M., Amanvermez, Y., Buyruk Genc, A., Yilmaz, M. B., & Duy, B. (2020). The Effectiveness of Online Counseling for University Students in Turkey: A Non-Randomized Controlled Trial.European Journal of Educational Research. 9(2), 825-834, DOI https://doi.org/10.12973/eu-jer.9.2.825.

Zulfikara, A. F., Muhidinb, A., Pranotob, Supartaa, W., Trisetyarsoa, A., Abbasa, B. S. and Kanga, C H. (2019), "The Effectiveness of Online Learning with Facilitation Method", in the Fifth Information Systems International Conference 2019, Published by Elsevier B.V., Procedia Computer Science, Vol. 161, 32–40.

IMPACT OF COVID-19 ON EDUCATION SYSTEM IN INDIA: CHALLENGES, OPPORTUNITIES AND TASK AHEAD

Anurupa Mukherjee
Ph.D Scholar, Department of Economics, The University of Burdwan
Email - anurupa.mukherjee777@gmail.com

Dr. Pravat Kumar Kuri
Professor, Department of Economics, The University of Burdwan
Email - pkkuri.bu@gmail.com

ABSTRACT
Country's education system has not been escaped anywise from the incidence of COVID-19 crisis. Problems such as region and gender specific digital divide came to our notice when all educational institutions were ordered to close and there was a terrible reliance on digital education. On the other hand, the increasing emphasis on online education system gives rise to second best alternative way out to combat the stagnancy of entire education system of India. In spite of continuous efforts by both the central and state governments in expanding the system, 100 percent of the student population could not be covered under e-learning. In the absence of classroom learning, learning gap has been developed because of economic hardship, patriarchal societal structure, inequality in having digital device and carrying its usage costs, incognizance about the e-learning concept, digital illiteracy among smart phone users etc. Needless to say, the appropriate integration of classroom teaching in collaboration with e-learning will serve a new dimension to the entire education system through the expansion of inclusive education system in the near future.
Keywords: COVID-19, learning gap, digital divide, e-learning, blended learning, India

INTRODUCTION

A Novel Corona virus (ncov) which was first identified in the Wuhan city of China has plunged the entire world into a deep crisis. It is an unknown danger to the whole world in the sense of its nature, gruesomeness and remedies. In terms of its severity of human to human transmission rate it is far more deadly than previous virus outbreaks. The outbreak was declared as a pandemic by World Health Organization (WHO) on 11th March, 2020 when cases continued to rise outside China. In mid-March, 2020 more than a million people in 114 countries were reported to have been affected and several countries had to choose the path of lockdown ignoring the financial losses as there was no definite remedy. In those sectors where the far-reaching evil effects of the pandemic have been densely realized, the field of education is one of them. Education sector has been severely affected as all the educational institutions are physically closed which affects almost 157 crore students across 191 countries (UNESCO). The impact has been felt a little more in those countries where there is low resilience to shocks, the learning outcome is already low and the dropout rate is also high.

Since this pandemic has created an unbridgeable distance among people worldwide, therefore it has inevitably disrupted the exploration and connections of international education. Nearly 1.8 billion students around the world had to face an unimaginable uncertainty and fear about their syllabus completion, exam schedule, internship and qualitative face to face interviews, paid student jobs, conference participation, finalization of thesis and much more due to closure of schools and higher education institutions. International students who could not return home, had to spend days being isolated and stranded in their student home. Even they have had to face financial problems to pay their bills.

Institutions which are highly dependent upon international students on the financial front have been affected severely because of the restrictions imposed on cross border movement. In 2018-19 US, Canada and Australia have collected $8.13 billion dollars revenue for Indian students alone (Suvarna 2020). In 2019, about 588728 students left India and went abroad for studies and in this case US, Canada, Australia and China are quite famous destinations. India is the second largest international student body after China.

It has been reported in a longitudinal survey that over the past months students' appetites show a decreasing trend especially during the period of lockdown (Schulmann 2020).

A survey that has been conducted considering 583 students across six continents (Africa, Asia, Oceania, Europe, North America, and South America) has shown the fact that although most international students feel that this pandemic has done extreme breakdown to their academic work, on the other hand despite the fear and loneliness

created by the crisis, 83.8% students want to return to their current educational institutions in order to pursue their studies (Amoah and Mok 2020).

Moreover it seems to be a struggle period for all students and teachers around the world to get accustomed readily towards the new ways of exchanging education beyond the boundaries of traditional education system. Although the technology based education plans were started long before the corona crisis in many countries but after the virus outbreak it has become an emergency. For instance in America, in 2018 compared to 2011, the use of smart phones and tablets among eight years old children has increased close to 60%. Countries around the world, both developed and developing have taken the initiatives to implement virtual schooling effectively based on their resource base.

In India nationwide lockdown was announced by Prime Minister on 25th March, 2020 which leads to close all levels of educational institutions. Usually every year at this time entrance tests of various universities and colleges, competitive examinations, board exams and of course school admissions are done. More than 32 crore students in Indian schools and colleges have been the victims of the situation in an anxious and unimaginable way (UNESCO). If only the focus is on school level estimates, there are total 1467680 recognized schools with a break up of 1072836 Government schools and 349412 private schools in the country (DISE 2016-17). Students from classes 9 to 12 who are going to sit for the board exam have been severely affected and their number is more than 13 crore (Kumar, 2020). If we talk about the number of institutions in higher education, India had 900 universities and 40000 colleges (Economic Times, 2019). The total enrolment at the higher education level has been estimated to be 3.74 crore (Mint 2019). Due to nationwide lockdown and various restrictions all academic activities of higher education institutions are suspended, which affects a large chunk of students. A survey during 7-30th June 2020, across 15 states with 7235 households conducted by an NGO revealed the fact that children from 62% households are being affected by this crisis. The closure of schools, colleges and universities appear to be a huge loss in student fundamentals, human capital formation as well as economic opportunities in the long run.

Under this backdrop, this paper attempts to examine the impact of COVID 19 on the education system in India and the Government policy initiatives to cope up with the new normal situation in Imparting education. The overnight transformation of traditional classroom education into online learning without any prior plan threw away the Indian education sector in the face of some questions. This new mode of learning has some opportunities as well as some risks. For convenience this paper is divided into five sections. Section I examine the impact of COVID 19 on School Education, Section II highlights the impact of COVID 19 on Higher Education. Section III explores the Government policy initiatives in combating COVID threat in education including the role of media. Section IV sheds lights on the Emerging challenges of e-learning and how to mitigate these challenges. The conclusion appears in Section V.

SECTION - I

After the announcement of the lockdown on 25th March, 2020, when all types of educational institutions were closed indefinitely, there was no other option but to start online classes immediately.

There are 1467680 schools in India, of which there are 1072836 government schools and 349412 private schools. About 2.01 million children are in government schools from class I to VIII and 3.8 million children are in classes IX to X. 29% of India's population are children and there are 19.29% children belongs to the age group of 6-14 years (DISE 2016-17).

All schools in the country have been closed since March 2020. Many examinations have had to be cancelled across the country. Even secondary and higher secondary examinations have been cancelled keeping in mind the enormity of this danger. Starting from pre primary children to 12th graders all have been suffered due to this.

If started with very young children who have barely set foot in school or about to do so are the most vulnerable ones. Early childhood education is as useful as critical to a child's overall development. According to global research 85% of brain development in children occurs at young age. This is the age when an association is formed between a child, their parents and teachers. At this crucial age children learn their own habits, emotional skills and social interactions. It turns out that this level of learning can contribute around 1.3 to 3.5 percent of their total income in their adulthood. So it can be called a kind of emergency to keep up early childhood education in an uninterrupted manner even during lockdown (Pant 2020). There is also evidence of an increase in child abuse cases during the lockdown.

A telephonic survey has been conducted on May, 2020 by Centre for Budget and Policy Studies over 733 odd students (253 boys, 480 girls) in classes VII and VIII selected from ten Government schools in Patna and Muzaffarpur districts in Bihar in order to understand how children are facing this tough time and how much they are benefitting from online education. The survey found that 28% children (202) have no phone, 21% children (154) could not be reached as their phone numbers were not active, 38% children (277) have smart phones and 16% children (114) have other phones. A notable feature pointed out by the survey is that, boys (36%) are more likely to use smart phones than girls (28%) and the family with no phones had a greater representation of girls. 95% of 277 cases, who have a smart phone, is mostly owned by a male member. Half of those who have a smart phone do not have the means to buy an internet package. 13 students (10 girls and 3 boys) could not be found because the adult parent who picked up the call refused to hand over the phone to the child. In some cases it has also happened that the male members of the household wanted to participate in the survey themselves instead of their daughter. In case of girls it has been observed that when they are not going to school or the school is closed, they ended up doing plentiful household chores. The role of girls in watching educational programs on TV is also limited in some cases. The Bihar government telecasts an hour-long daily educational program through a free channel between 9 am to 10 am, and at that time most of the girls and in some cases boys are busy with household chores. Even in UP there is evidence of increasing marital pressure on girl child from their parents. The survey found that about 28 % of fathers and 40% of mothers had no educational qualifications and no parents were found to have crossed college boundaries. About a quarter of 733 students live in a small kutcha or semi pucca one-room houses with no toilets and no space for keeping books or other stuffs. At least one member from one third of families has seen to migrate outside for work. Some parents have said that they have to use the money transferred to the children's account for books, scholarships and other schooling purposes to survive in this tough time (Jha and Ghatak, 2020).

Annual State of Education Report (ASER) survey which was conducted in the month of September 2020, pointed out that during school closures children in different states of India have been suffered from non availability of textbooks. In Andhra Pradesh the percentage of text book availability is the lowest (< 35%), in Rajasthan it is 60% and in West Bengal, Nagaland and Assam it is above 98%. Variation also exists among children belonging to different states in terms of gaining study materials or activity tasks given by schools. In Bihar it is less than 8%, in West Bengal, Rajasthan and Uttar Pradesh it is 20% and in Himachal Pradesh, Punjab, Kerala, Gujarat it is above 80%. However, only 11% of those who studied at least a little had access to live online classes, while 21% of them had access to recorded class videos. Only 60% children studied through text books and only 20% children studied through television. In terms of learning during school closure Kerala remain in the top position and Andhra Pradesh remains at bottom. The weeklong survey has revealed the fact that the reason is not always about technology because despite having smart phone some children still did not receive any study material. This nationwide survey was carried out via phone calls this year over 52227 rural households having school age children across 30 states and union territories. Compared to 2018, non enrollment percentages (5.3%) of 6-10 year olds and enrolment percentages of 15-16 year olds are on the rise this year and also government schools are more preferred than private ones in this regard. In comparison to 2018, Smartphone access is also increased this year and during lockdown 11% families have availed this access. WhatsApp is used by majority of students for getting learning materials. The survey also identified the relationship between parental education level and learning activity during school closures. It has been observed that the propensity to receive study material was growing from 20% to 46% respectively for parents with educational level less than five years to parents with education level beyond class IX. The number of children who did not receive any kind of learning materials and have not been able to study at all is much higher in low education households (40%) than higher education households (17%) (The Hindu 2020).

A discriminatory effect has been seen about online learning between public and private schools resulting from schooling infrastructure and parent's economic inequalities. Most government schools in different states do not have safe drinking water, toilets, hand washing facility, cramped classrooms, electricity services and most schools are more than 1 km far away, which are all basic prerequisites for reopening schools. On the other hand again about 9.12 crore Indian public school students have been deprived of cooked mid day meal for a long time. It turned out that malnutrition may be one of the reasons for dropping out of school for many children in the coming days. The matter of virtual learning is just an easy task for English medium students and teachers due to ready availability of tools and content but it's really a difficult task for students studying in vernacular language schools. On the other hand private schools are facing losses as they are not getting school fees from parents due to school closure.

In some Indian states the pandemic has led to economic hardship for lower income families who are dropping their children out of private schools. In Ernakulam, around one third children (10355) out of total enrolment (31137) in the new academic year in public schools from classes 2 to 10 have been migrated from unaided

schools. Data collected from 15 block resource centers under Samagra Shiksha Kerala, reveals the fact that the maximum migration has happened in class 5 (Krishnakumar 2020).

According to Punjab Education Department, 1.65 lakhs new admissions have been made in total 19175 government schools this year, which is a record. As a result student strength has increased from 23,52,112 to 25,17,866. Pre primary section has been seen to have the most new admissions. There are also discrimination exists in schooling cost between public and private schools so apparently this could lead to migration. Annual charges per student in classes 11 and 12 in government schools lie within 900 to 1500, whereas in private schools it is lie between 20000 to more than 1 lakh (Jagga 2020).

The significant reasons that have been highlighted are parent's satisfaction with government's move and fee free training of their children amidst the financial crisis, teaching learning process, teacher's communication abilities and teacher's selection process. The parents are also pleased with the ease of admission of their kiddies to public schools migrated from unaided ones.

SECTION - II

Like school, college and university students are also facing uncertainty about final semester or final year exams and admission for the upcoming academic years. All academic activities in the college universities have been suspended. Students in the department of science, medicine and technology have been in extreme crisis due to closure of workshops and laboratory practice (Chakraborty 2020). Many important entrance exams including JEE, KCET, GUJCET, MHTCET etc. have been postponed. While higher education institutions in developed countries have taken advantage of online media to advance their learning, research and teaching; the stagnation has been exacerbated by the fact that educational institutions in developing countries are increasingly dependent only on classroom based teaching systems. Starting from the authorities of higher education institutions to scholars, the battle of syllabus versus time is now under great pressure on both sides.

Besides this, starting from foreign universities to native ones all are facing financial pressure due to low fees collection, uncertainty over exam cycle, internships and placement slowdown and also for restrictions imposed upon cross border movement of students.

On the flipside since India is the second largest international student source in the world, lakhs of Indian students are flocking abroad for pursuing higher education and as travel was restricted therefore it means the amount of resources and money of our country that could have been spent on foreign education could possibly be retained within the country. Therefore it is one of the opportunities for India to strengthen its way towards effective quality education (The Blog 2020).

Further, as universities and colleges have been facing decreasing number of students they tried to re-organize admission procedures.

Paucity in recruitment has shrunken the employment opportunities and has a quality and excellence issues. According to Centre for Monitoring Indian Economy (CMIE), unemployment has risen in India abnormally from 8.4% in March 2020 to 23% in April, 2020.

A survey conducted by All India Institute of Hygiene and Public Health during 15th to 31st May, 2020 through online mode over 2088 students across five colleges namely Moulana Azad College, St.Pauls College, Womens Christan College, Banipur Mohila Mahavidyalaya of North 24 Parganas, Bijoykrishna Girls college of Howrah has revealed the fact that the biggest problem in case of online learning is the lack of high speed internet connection even in Kolkata and its adjoining Howrah, Hooghly and North 24 Parganas. Major findings of the study are -

78% of students do not have fast internet connection, 14% students do not have money to buy internet data cards, 9% of students do not feel the urge to study online, 8% of students can't read properly on the internet, 6% of students do not have digital literacy, Smart phones are the only reliance of 94% of students for online learning, 52% of students are not happy to study online, 74% of students are very worried about whether the course or syllabus will end within stipulated time, 11% of students do not have much to worry about, 60% of students with bad family financial condition are worried about finishing the course. Those with good family financial condition are less worried. One third of the total urban and suburban students surveyed, live on regular salaries, 45% families have businesses, 12% families are laborers; among them 64.4% have problems with their earnings, 87% proletariat is in trouble due to loss of income, 81% family whose earning is less than or equal to 7500 rupees are in trouble, 42% household that depend on business at this time have no income, 18% household earns a little bit, 10% of the regular paid families have lost their jobs, 90% among them are belonging to lower middle class families, 13% families are in their job but not getting their salaries, 17% families are in their jobs but

getting fewer salaries, 26% families are facing financial problems, 19% of such families are not getting three meals a day.

Some Indian universities are offering various courses based on Artificial Intelligence (AI) enabled learning for medical, engineering students and law enthusiasts in the form of interactive sessions, online moot sessions, mentors playing videos etc. Further in this difficult scenario, virtual internships have been emerged as a significant opportunity for students to gather practical knowledge about their curriculum. Students have been encouraged to self directed activity towards digitalizing their fields after observing and realizing the current situation. At this difficult time students have been supported with emotional help from the university lecturers and online support groups to cope up with their anxiety, fear and stress (Kumar 2020).

SECTION - III

Among international initiatives, zero rated educational websites in Jamaica, Argentina, South Africa; distribution of learning kits to those who do not have access to internet; renunciation of internet charges to students in Rwanda and Kenya; provision of additional data to students in Bhutan and Kyrgyz Republic; provision of internet bandwidth to rural and remote communities and for improvement of network coverage by introducing Google's Loon Balloons in Kenya, creation of free Wi-Fi hotspots in Dominican Republic, sharing learning materials through audio format in Ecuador, providing personal gadgets to students along with seamless internet hotspots are important (Kaur and Jain 2020).

In India in order to solve the problem of digital divide, the governments of different states are conducting studies through television, radio as well as community radio since the penetration of these medium is higher than online mode.

In Kerala, where around 3 lakhs out of total 43 lakhs school students who don't have TV with cable connection, telephones, or computer system with internet, virtual classes have been launched through KTE victors channel under the First Bell scheme on 29th May, 2020. Along with this channel free provision of classes has been available simultaneously on website, mobile app and social media. Classes are also available for English medium as well as Tamil and Kannada medium students. Another scheme called 'Ayalpakka Padhanakendrangal' has been launched by Kerala Government for provision of laptops to students at subsidized rates. The significant role played by student organizations, private individuals, NGOs, local self government institutions for free distribution of smart phones, television sets and setting up of small digital classrooms for the sake underprivileged students is immeasurable (Anupama 2020).

Bharat Net has taken a positive step in this regard to connect the remote areas of every state with a high speed broadband network and Wi-Fi hotspots. Central Government scheme called 'PM E-Vidya' - one nation one platform for strengthening online education is also significant enough in this regard. According to them DIKSHA would be the digital platform for nationwide education. There will be one channel for each class (I to XII).

Another scheme called 'Monodarpan' has been started shortly for mentally disturbed students, teachers and parents. The present crisis has changed the boundaries of learning in such a way that the children minds have difficulty adapting to it. Almost 12 crore children in our country has been engulfed by loneliness and sadness. The students in the upper class have been suffering from constant house arrest. Starting from World Health Organization to the ICMR, NCRB it has been clear from all of their survey that children's mental health is deteriorating and even suicidal thoughts are on the rise. (Ananda Bazar Potrika 2020)

Other e–learning platforms like e-pathshala, Swayam, STEM based game etc have been launched by the government for the sake of online learning. The role of social media can be large in case of online learning. WhatsApp is always easily accessible than a website or a portal. Students can form their groups; learning can be done through pictures, audio and video clips.

Incorporating 5000 villages, NGO Pratham has been attempted to distribute tablets by creating a small neibourhood group through the app called Anganshala to facilitate self learning among students during school closures. The organization also suggested for engaging community volunteers in this teacher excluded learning process.

West Bengal Education Department is now attempting to conduct training for teachers through video conference by creating district based resource person. The training module is designed to cover about 20,400 teachers a month. A toll free number will be provided to the students, which they use for asking questions about the

subject. There are different panel for different subjects. Empanelled teachers will give answers. Side by side, there is another plan to list the whatsApp numbers of the subject teachers in the Bangla Siksha Portal.

The collaboration with telecom companies can raise the possibility of increasing bandwidth of the network, provision to electronic devices and reimbursement of internet packages to students and an early introduction of 5G networks as an impetus to online education. Notably, the Delhi Government took the idea of providing data packages to class X and XII students and restricted the use of internet to specific applications only.

To increase awareness against cyber crime, West Bengal Education Department has organised a training called 'Cyber Hygiene' for the teachers. Students will get cyber security lessons through them. The department of IT will provide this special training to teachers and professors in government schools, colleges and universities. It is known that the first phrase of this four day training programme is eight hours long. The whole training session will telecast live on YouTube. If there is any question, the teachers can ask it in the chat box of YouTube live and experts will answer them. It is being done in association with Cyber security Centre of Excellence, C-DAC Hyderabad under information and technology department and Webel.

Attempt has been taken by some states to provide dry rations or cash to families instead of mid day meal. In West Bengal, keeping in mind the problem of mid day meal in government schools, parents are being given dry rations on a monthly basis. Along with rice and potato, pulses, chickpeas and much more nutritious food are being given by the Government in order to boost their nutrition level. Even sanitizers (50 ml), soap and masks have been handed over to parents in order to maintain hygiene. Usually the monthly per capita expenditure of Government for the provision of cooked mid day meal behind primary and upper primary students is 114 rupees and 171 rupees respectively. By adding 250 gram pulses along with rice and potato, the per student expenditure stands at 67 rupees, so Government is still saving 47 rupees for primary classes and 104 rupees for upper primary classes due to this transformation from cooked meal to dry ration.

It has been observed that significant steps have been taken several times by various Indian state governments in the matter of private school fees collection. Karnataka Government has been advised to postpone the issue of fee collection until further orders or to make it voluntary. Also it has been ordered to strictly follow the digital transaction in this case and provide instalment facilities to parents. Moreover, Delhi, Tamil Nadu, Telangana, West Bengal and Maharashtra state governments have followed the same path and also instructed to discontinue the hike in fees and charge only tution fees (Nagavalli et al 2020).

SECTION - IV

The biggest risk lies in the matter of nationwide digital divide, both as region specific and gender specific. All in all 23.8% of Indian households have internet connection among which only 14.9% of rural households and 42% of urban households have access to internet. On the other hand 16% of women compared to 36% of men have internet connection and 12.5% of students among Indian households have access to internet (National Sample Survey, 2017-18). More than 50% of those who have fixed broadband, internet connection are very weak (Quacquarelli Symonds 2020). A survey conducted by Calcutta University Teachers' Association (CUTA) cleared the fact that only 15% of students benefit from online classes. It is not possible to conduct practical classes in online mode. Poor internet connection significantly reduces attendance rates in most cases, evidence can be given of various government schools, colleges, universities in different states and even IITs. The worst situation is for those who live in remote areas and are characterized by underprivileged sections of the society.

Although in India, adaptation to e-learning has been gaining importance before the grip of the virus, at this point some existing Ed-tech platforms have seen a spike in enrolment in their offering courses.

Furthermore continuous use of electronic device can raise anxiety, stress and reduce attention level of students. Longer screen time can also raise the possibility of device hacking and can raise the possibility of child abduction according to teachers and researchers by manipulating information.

A team of researcher from The University of Texus, Dalas of America has created an application to protect online privacy of children. The survey (2020) conducted by the team under the leadership of Kanad Basu, revealed the fact that children's online safety was being severely compromised. Among 100 apps for kids, 72 are collecting and distributing personal data, stealthily of the user.

Another section who has been the victims of digital divide along with Government and rural students is EWS quota students. These students attempted to enroll themselves in a prestigious private school availing quota facility. Though they are availing the benefit regarding school fees and uniform from school, there are some

expenses that they have to bear which they are unable to do. In this hard time it is also impossible for their parents to provide all the technological aids to their children needed to study online (Jebaraj 2020).

Apart from the students, another class who has been the victims of this situation is the teachers. In classroom teaching, a teacher always builds a bond with every children by observing their body languages and interacting with them using their own teaching style over a period of time. Suddenly it has been really a challenging task for the teachers to replace board work and assess the students without eye contact. The new way of teaching is a little difficult for some teachers to adopt overnight, because on the one hand some teachers are not that much of technology savvy and on the other there was no proper plan beforehand. Moreover, the curriculum is not designed that way and there is also absence of affordable online platform specifically designed for online learning. A dire financial crisis also has been emerged among teachers and other staffs at various private educational institutions and in this case we know that the number of teachers employed in private unaided schools (28 lakh) is almost three times more than the number of teachers in government aided schools (8.3 lakh) (DISE 2016-17).

It has been realized that in a developing country like India, there are multiple problems associated with e-learning but there are also many good aspects entangled with it. Attempts have been taken here to highlight some of them. Firstly it helps to ensure equitable access to education by eliminating geographical barriers; it is quick, easily accessible, and convenient. The biggest advantage of e-learning lies in the fact that it is flexible. A student can adjust the timeframe as per their convenience depending on their own pace of learning. This flexible timescale is largely helpful in putting down the pressure on them. With this flexibility a student can learn from anywhere in the world by sitting at the corners of their rooms and have a chance to communicate with educators and other students belonging to the same course. One of the major problems attached with classroom teaching is lack of individual attention due to large class size. E-learning can solve this issue efficiently by providing customized or personalized learning experience to every student. As classroom has disappeared, with that the first bench is gone. Students who are able to attend classes are treated in a similar way. The teacher is now thinking about the performance of that particular student who had been neglected in the classroom to take lessons. An unprecedented closeness is being established between teachers and students.

Moreover, blended learning i.e., mainstream face to face learning along with an online model has become a new norm in most educational institutions with the hands of trained and technically efficient teachers. This pandemic has open up the opportunity of collaborative teaching and learning across the nation. Another advantage that attracts attention this time is self directed learning, which helps to develop self confidence and perseverance, prioritizing independence, critical thinking ability and productivity.

Although classroom learning can never be a substitute for online learning, but still activism is needed to strengthen e-learning in all types of educational institutions, keep in mind its good side and future uncertainties that may happen again. Now what is needed is to continue studies through radio, podcasts, supply of customized content for differently able and providing learning materials to the parents in offline mode.

According to Union human resource development minister, National Council for Educational Research and Training (NCERT) would cover measures like spaced out sitting arrangements, classes in shifts with a fewer number of students (not more than 30% in one day) and online weekend classes etc in order to maintain learning in the new normal, when classes will resume.

If the social distancing norms are to be followed well then it needs to put more resources into the system. But there are a lot of deficiencies in the Indian education system. In India, there are 53,533 single classroom schools, student classroom ratio in 19% schools is 35 and above, in 8.3% schools it is more than 50 and there is also multi grade teaching in many schools. Also there are 108017 single teacher schools; pupil teacher ratio in 17% schools is more than 40. Many schools also have single staff room for all teaching and non teaching faculty. There are 8.1 lakh non teaching staff members in the school education system (DISE 2016-17).

Also when classes are divided into different shifts then additional teaching time is required, which also need extra teaching staff or overtime by the existing ones. The vacancy for government teachers is 17.6% and 15.7% in elementary and secondary level respectively (AWP & B and PAB Minutes 2017-18).

After reopening of schools students' hygiene measures have to be strictly followed like providing them safe drinking water, sanitizing their hands and shoes when they are entering into school premises, keep an eye on their movement, eating and outdoor activities outside the classroom etc. But in India, 45% schools do not have any hand washing facility (DISE 2016-17). After successful implementation of Swachh Vidyalaya Abhiyan, now

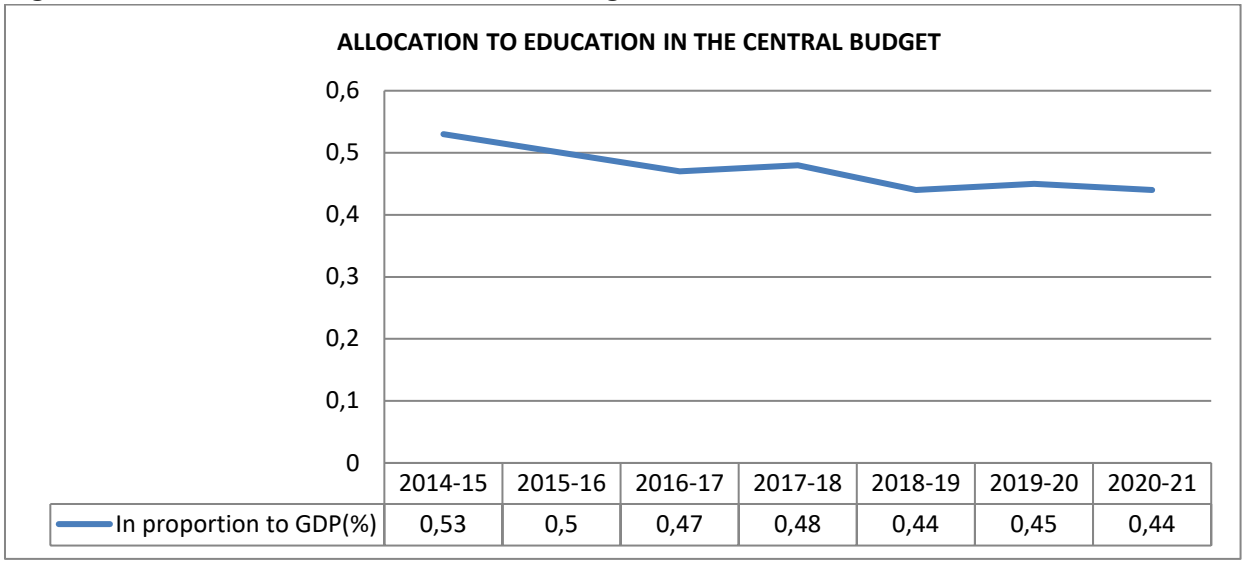
93% schools have separate toilet facilities for boys and girls and 87% schools have functioning drinking water facilities in India. Only 52% schools in India have all three facilities altogether.

WaterAid has been undertaken a survey of 453 schools in 2020 (37.8% primary, 39.5% middle and 22.7% higher secondary) in 34 districts across nine states (Andhra Pradesh, Bihar, Chhattisgarh, Jharkhand, Karnataka, Madhya Pradesh, Odisha, Telangana and Uttar Pradesh) which states that 84.1% of schools have always safe drinking water facility in school and hand pump is the main source of water including drinking water in most of the schools. 28% schools in states like Telangana, Odisha, Karnataka have own separate toilet facility for teachers. The survey revealed the fact that there are 43.5% of schools where teachers have their training on hygiene and sanitation (Kundu 2020).

So it has been realized that appropriate infrastructure, recruitment of teaching and non teaching staff, arrangements of teachers training is very much needed at this moment.

Experts have the opinion that expenditure on education should be increased without creating a situation where education is completely handed over to the private sector. India currently spends 2.8 percent of GDP on school education which is the lowest among BRICS nations. The allocation for education in the Union Budget, which was 0.53% in FY 2014-15 has declined to 0.44% in 2020-21 (Jha and Rao 2020). At present the target for all State and Central education allocations in India is about 6 percent of GDP. According to some experts, the economy of India and the world over the years has not only been labour intensive but has also become knowledge based. To keep pace with it, many developed and even developing countries have increased their allocations to education. Neighbouring country China has multiplied the allocation for research and development. According to statistics most of the allocations for education are spent on fixed costs like salaries and pensions. The allotment to build new classrooms, schools, colleges and other infrastructure is nominal. In 2019-20, the combined budget allocation of all the states and union territories for education was 35.15%, but among these the allocation was 1.32% for initiating new infrastructure.

Figure 1: **Allocation to Education in the Central Budget**



Source: Union Budget and Reserve Bank

Also children who return to school after a long period of time will need an emotional and psychological support to return to the familiar rhythm of learning as many of them have experienced many bitter experiences during this hard time.

Measures have to taken immediately to tackle the digital divide by improving the internet connectivity and e-learning ecosystem. Major initiatives that have to be emphasized at this point of time are strengthening of open source digital learning solutions, learning management software, DIKSHA platform across all states etc. Schools will have to put more resources into building online classrooms. They can use online platforms like Google classroom by uploading instructional videos and assignments with a deadline in spite of using any random applications. Flexible learning process like flipped classroom or deployment of MOOCs is the need of the hour (Arakal 2020). It is very much necessary to train the educators across the rural urban spectrum on the emerging technologies. It is important to include the subject of teachers training required for e-learning into teachers training curriculum. Above all unified and inclusive learning system has to be developed by reconsidering

current delivery and pedagogical methods in schools and higher education institutions through integration of classroom learning with e-learning models.

SECTION – V

The effects of pandemic are more or less reflected everywhere and in every sphere of the world. The far reaching impact of this universal crisis in India with a special reference to education sector has already been discussed here. Students are the worst sufferers due to the indefinite closure of all educational institutions. In addition, every entity associated with the field of education has had to suffer the consequences. Accepting the etiquette of technology based education in a short period of time turned out to be a challenging struggle for the entire education community. In this article some unfavourable truths have come up while looking at section specific impact of entire education system in India. Boys are getting more access to technology as well as more opportunity for online learning compared to girls. In fact girls have had to face considerable obstacles in watching educational programmes on television as they are heavily burdened with household responsibilities in these days. Sometimes, the lack of technology is not the only reason of concern because despite having smart phones many students haven't received any learning material or haven't got the opportunity to join live online classes and have even been deprived of watching recorded class videos. Therefore it has been observed that, lack of awareness, financial instability, occupational uncertainty, low educational qualification of parents etc have been identified as significant factors of digital divide. Also it has been witnessed incidents like extra parental satisfaction towards Government schools. In case of higher education some disappointing information has also come up like the lack of high speed internet connection has become an obstacle for online learning even in Kolkata and some adjoining districts. Furthermore, considerable reluctance towards online learning and panic of syllabus completion has seen especially among students from economically weaker families. Although keeping in mind the need to solve the problem of digital divide, various timely policies of the Government like encouraging learning through radio, television and social media, free provision of digital device, reimbursement of internet packages, launching e-learning platforms, arrangement of teacher training etc reflects a well thought out attitude of the Government. In this regard, the contribution of NGOs, student organizations, private individuals, local self govt institutions, telecom companies is undeniable. In the aggregate, deplorably the scope of e-learning has been limited to a small number of students. However as time has passed, several positive aspects of it like flexible timescale, experimental learning experience, collaborative learning, self directed learning etc have come to our notice. Moreover two teaching methods can be complemented by making appropriate adjustments on the basis of proper planning. Finally it has been suggested that more alacrity is needed in expanding e-learning in line with classroom teaching keeping in mind its considerable requirements in modern times. All that is needed now is to strengthen its foundation and attempting to make it inclusive and affordable so that the stagnation of education system can be prevented from any kind of sudden disaster in future times.

REFERENCES

Amoah, P.A and Mok, K.H (2020): "The COVID-19 Pandemic and internationalisation of higher education: International students' knowledge, experiences and wellbeing", Emerald Publishing, December 7

Anupama, A.R and Sreekala, M.V (2020): "How the Kerala Model of Bringing Classrooms Home Works", *The Wire,* July 7

Arakal, J.J (2020): 'Covid-19 lockdown: Here's why flexible learning is the need of the hour', *India Today;* New Delhi, June 18

Babu, S and Ram (2020): "New Directions in Higher Education in India after COVID-19", *Indian Academy of Sciences*

Bansal, N (2020): 'Importance of Online Education during Corona virus Crisis', *BWEDUCATION*, April 30

Bose, P.R (2020): 'The Covid Challenge to Indian School Education: Reform or Perish', *Business Line (The HINDU)*, May 10

Chakraborty, M (2020): "Living with COVID-19: Impact on Higher Education and way ahead", *Times of India*, June 20

Chatterji, S (2020): "Covid-19: Education system's big shift from classrooms to computers", *India Today*, April 17

Choudhary, R (2020): 'COVID-19 Pandemic: Impact and Strategies for Education Sector in India', *ET Government.com*, April 16

Dhawan, B (2020): 'COVID-19: How smart classrooms are transforming India's education system', *Financial Express*, May 5

Dhotre, S (2020): 'The school must enable children to be resilient and adaptable in uncertain times', *The Indian Express*, June 25

Jagannathan, K.T (2020): 'In Tamil Nadu, there are no easy answers for the private school fee dilemma', *The Wire*, June 29

Jagga, R (2020): 'Coronavirus pandemic forces dropouts from Punjab private schools', *The Indian Express*, June 5
Jain, D (2020): 'Breaking Down Pros and Cons of Online Learning', *BW EDUCATION*, May 14
Jha, J and Ghatak N (2020): 'What a survey of children in Bihar revealed about online schooling', *The Wire*, May 25
Kanodia, P (2020): "Decoding COVID-19 Impact on Indian Education", *BW EDUCATION*, June 5
Kaur, S and Jain, A (2020): "Global ideas that can reduce digital divide in India amid Coronavirus crisis", *India today Web Desk,* June 13
Krishnakumar, G (2020): "Students switch to public schools in reverse migration", *The Hindu*, June 28
Kumar, DNS (2020): "Impact of COVID-19 on Higher Education", *Higher Education Digest*, April 29
Kumar, R (2020): "Lockdown Is Disrupting a Generation's Education. What Can Be Done?", *The Wire*, April 24
Kundu, P (2020): "Is social distancing feasible for a majority of schools in India?", *The Wire,* May 29
Mahanand, S (2020): "The impact of COVID-19 on Education and Education Sectors, Know Here", *EducationAsia.in*, September 25
Maslen, G (2020): "Coronavirus: Impacts of school and university lockdowns", *University World News*, August 13
Misra, K (2020): "COVID-19:4 negative impacts and 4 opportunities created for education", *India Today*, May 12
Moravec, J (2020): "International education in the era of COVID-19", *Social Education, vol. 8, issue 1, pp 38-42*, April 15
Nagavalli, G et al (2020): "COVID-19 Impact: Responses by State Education Regulators", *India Corporate Law - A Cyril Amarchand Mangaldas Blog*, May 12
Pant, S (2020): "Why early childhood education is critical, even during lockdown", *India Today*, June 22
Parikh, R (2020): "Preparedness, learning and adapting: Three essential elements to learn during COVID-19", *India Today*, June 22
Parth M.N et al (2020): "Schools in India have been closed since March. The costs to children are mounting", *The Washington Post*, December 30
Pinto, M.G (2020): "Post-COVID Future of K12 Education in India", *BWEDUCATON*, June 15
Prabhat, V (2020): "COVID-19 Lockdown: Here's why learning at home should be more self-directed and less structured", *India Today*, June 14
Ramachandran, V (2020): "Here's how we can Gear up to Open Schools after the Lockdown", *The Wire*, June 8
Sahni, U (2020): "COVID-19 in India: Education disrupted and lessons learned", *www.brookings.edu*, May 14
Saini, S (2020): "How will COVID-19 Impact Higher Education in India?", *CollegeDekho.com*, March 23
Schulmann, P (2020): "Perfect Storm: The Impact of the Coronavirus Crisis on International Student Mobility to the United States", *World Education News Reviews*, May 26
Shah, R and Madan, B (2020): "Covid-19 – A booster for the EdTech Industry in India", *Corporate Law, Education*, June 29
Sharma, A (2020): "COVID-19 Lockdown Lessons and the Need to Reconsider Draft New Education Policy", *The Wire*, June 10
Suvarna, P (2020): "International students put their plans on hold during the lockdown", *DECAN HERALD (deccanherald.com)*, May 24
Thomas, A (2020): "How COVID-19 has redefined education in India", *Indian Academy of Sciences*
Vijay, N (2020): "Global pandemic COVID-19: Influence and planning for Indian Education System", *Higher Education Digest*, September 29

OTHER IMPORTANT SOURCES

Ananda Bazar Potrika, from April 2020 to July 2020
Ananda Bazar Potrika, 22nd July, 2020
Mediawire (2020): "How COVID-19 could permanently change the education sector and global learning habits", *Times of India,* May 14
Special Correspondent (2020): "Nearly 20% of rural school children had no textbooks due to COVID-19 impact, finds ASER survey", *The Hindu,* October 29
India Legal (2020): "COVID-19 and its Impact on Education System in India", October 27

ONLINE EVALUATION: A VIABLE ALTERNATIVE FOR CONTEMPORARY TIMES

Prof. Manjulika Srivastava
Director, Centre for Internal Quality Assurance, and Professor, Indira Gandhi National Open University, New Delhi.
manjulika@ignou.ac.in

Dr. P. Vijayakumar
Associate Professor, School of Agriculture, Indira Gandhi National Open University New Delhi.

Dr.Bijayalaxmi Mishra
Director, Research Unit at the Indira Gandhi National Open University IGNOU

Dr. Navita Abrol
Assistant Director, at the Centre for Internal Quality Assurance, Indira Gandhi National Open University (IGNOU), New Delhi
navita@ignou.ac.in.

Dr. ShekharSuman
Assistant Director,at the Centre for Internal Quality Assurance,Indira Gandhi National Open University (IGNOU), New Delhi
shekhar@ignou.ac.in

ABSTRACT
The immediate adoption of online methods of teaching, learning, and evaluation is imperative for survival in the Digital Age. An attempt has been made to highlight the need for the shift to online methods of evaluation and suggest appropriate model based on existing practices in different countries. The existing online examination models have been identified and reviewed doing a SWOC (Strengths, Weaknesses, Opportunities and Challenges) analysis. Based on which, an Online Student Evaluation Model has been developed suitable for Open and Distance Learning (ODL) institutions that cater to the educational requirements of an abnormally large number of learners who are geographically dispersed and heterogeneous; and include disadvantaged and marginalized sections.
Keywords: Online Evaluation, Assessment Tools, Formative, Summative, Assessment Models

Introduction

The winds of socio-economic change have ushered in a new era representing innovation and change through the introduction of online learning and digitalization of operations to provide lifelong learning opportunities and services to all. Rising unemployment, requirements of skilled manpower, upskilling/reskilling of the workforce, shifts in societal expectations and the enormous capabilities of ICT are pushing institutions of higher learning to go online. Thus, the digital transformation of the teaching-learning process in the Digital Age, presents a dramatic shift in the educational paradigm from a teacher-centred to a learner-centred approach of open and flexible learning. Low-cost mobile computing devices; cloud-based computing; Open Educational Resources (OER); Massive Open Online Courses (MOOCs); virtual reality and virtual worlds (Second Life; augmented reality; virtual labs; robotics; artificial intelligence; machine learning; etc.) are some of the key trends which have emerged across global higher education sector.

While a lot of people attribute formal assessments and examinations to Henry Fischel, an American businessman and philanthropist, however the standardized tests first were introduced in China. The need for a standardized examination system originated in ancient China centuries ago (by the Sui Dynasty in 605AD), which implemented a standardized examination called “Imperial Examination” for the purpose of selecting suitable candidates for specific governmental positions. Interestingly, the imperial examination was abolished by the Qing Dynasty 1300 years later in 1905. Similarly, England adopted this examination system in 1806 to select specific candidates for positions in Her Majesty’s Civil Service. This examination system was later applied to Education and it started to influence other parts of the world as it became a prominent standard (e.g. regulations to prevent the markers from knowing the identity of candidates) of delivering standardized tests (Prince & Bukie, 2018). These standardized tests were gradually adopted by different countries mainly for recruiting people to federal jobs. In an attempt to bring objectivity to the system, online standardized tests were adopted in many countries to avoid human error in the evaluation system.

Online standardized tests were conducted for admission to undergraduate professional degree programmes in engineering and architecture in 2002, formerly known as All India Engineering Entrance Examination (AIEEE), which was renamed in 2013 as the Joint Entrance Examination - Main and Advanced (JEE Main, JEE Advanced); Common Law Admission Test (CLAT) for Law degree programmes; and National Eligibility cum Entrance Test (NEET) for medical/Dental degree programmes. The Government of India established the National Testing Agency (NTA) in 2017 for conducting national level common entrance tests for professional and non-professional programmes of study. According to a 2017 report of Google and KPMG, e-learning in India is set to grow to $1.96 billion business and the user base will reach 1.9 million by 2021 (KPMG & Google, 2017).

Need for Online Evaluation

Evaluation is an important aspect of any educational system. A foolproof evaluation system which is not only quantitative but also qualitative in nature can project the actual picture of learning outcomes of any educational institution. Evaluation process should be based on all three domains of learning *viz.* cognitive, affective and psychomotor, but the present evaluation system only focuses on the cognitive domain. In India, the system of education including evaluation has not changed since ages. Evaluation system in India is still practicing the primitive strategies and old techniques which may be successful during certain periods, but in the Digital Age with the availability of several technological options, a shift in paradigm is not just a need but demand of the millennial society. There are a number of indicators that are clearly pointing to the need for reform in the evaluation system which have been detailed below:

a) **Infrastructure constraints:** Being the second largest country in the world population-wise and the youngest nation, the biggest constraint is to cater such a huge population with limited resources. There are very few Higher Education Institutions (HEIs) in the country generally located in the major cities, so aspirants residing in rural areas or far-flung areas have to migrate from their native place to these cities. Since it is not feasible for everyone, some of them just drop-out from the system. There is an option of Open and Distance Learning (ODL) for such candidates but for examinations, they have to visit the exam centre which may be far away from their place. On the other hand, there are some specific target groups, such as employed persons, defence and paramilitary personnel, PwDs etc. who may find it difficult to attend examinations held at exam centres. The online examination is the only answer to overcome such hurdles.

b) **Financial burden on HEIs:** To conduct examinations either annually or biannually dedicated department is required. The department is responsible for exam-related activities like Question paper setting, moderation, printing; conduct of examination; maintaining the sanctity of examination; evaluation of answer scripts; compilation and declaration of result and organizing convocation annually in some institutes. To perform all such activities, there is a requirement of huge manpower, which needs a handsome amount of budget in the total expenditure of HEI. Online examinations can reduce the budget by limiting the operational expenditure towards manpower, eliminating the costs of printing question papers and answer scripts and the costs involved in sending and collecting them from examination centres, manual evaluation, etc.

c) **Issues related to conduct of examinations:** Conducting examinations under the present scenario not only put financial burden on HEI but there are many other constraints that are difficult to control like transportation and security of question papers and answer scripts, misprinting or error in printing of question paper, natural calamities/disasters/ epidemics/pandemics etc.; leading to either rescheduling/cancellation of examination or providing grace/extra marks to learners. Since paper setting, moderation, printing of question papers and answer scripts, dispatch to exam centers and other exam related activities are interrelated and time bound, delay even in one activity leads to delay in the whole process. Therefore, utmost care is required to adhere to the timeline, which is a tedious job in itself.

d) **Malpractices and security issues:** The country is encountering leakage of question papers which is a big challenge to our examination system. From the setting of the question paper till it reaches the examinee, it moves through a number of channels. Hence, there are chances of leakage of question paper at any point during this process. Further, malpractices in examination like copying from study material and fellow examinee; use of technology for copying and sometimes mass copying; tempering with admit card; impersonation; tempering with answer script which also raise questions on integrity of examination centre. Malpractices are not only restricted to exam centres but sometimes also found in the examination department of HEI like replacing the original answer script with duplicate or making corrections in the answers scripts before evaluation and tempering the marks or grades after evaluation, issuance or creation of fake degree certificates etc. All such malpractices not only threaten the sanctity of the examination process but also injustice to meritorious and deserving learners who work hard the whole year for the examinations.

e) **Cancellation of Exams:** Sometimes, HEI has to cancel the exam of a particular subject/course due to leakage of papers or other unavoidable reasons like, natural calamity, riots etc. The cancellation of examinations not only puts extra financial and manpower burden on HEI, but also affects the learners adversely. Sharma (2014) also stated that “cancelation of exams adversely affects the students in many ways

like increased stress, anxiety, loss of time & money, etc. Further, due to delay in exams, students pursuing higher studies or jobs or other career opportunities may be adversely affected."

f) **Limited trained staff:** To perform exam related activities, well-trained professional and technical staff is required like data entry operators, computer operators, software and hardware professionals, system analysts, etc. But, usually the HEIs are understaffed and hence not able to place sufficient staff in the examination department. Therefore, availability of limited staff results in increased workload on the existing staff which further affects the quality of the examination process.

g) **Non-availability of adequate number of evaluators**: To maintain the database of evaluators is one of the major tasks of any examination department. But, identifying course-wise evaluators is one of the biggest challenges for HEIs now-a-days. Further, in case of OUs where enrolment is very high and the number of evaluators is comparatively less and the task is voluminous and to be completed within a stipulated time frame, non-availability of adequate number of evaluators is one of the major factors in delay of evaluation process.

h) **Delay in declaration of result:** Delay in the processing and assessment of answer scripts leads to delay in result declaration. The factors leading to delay in declaration of result are time exhausted in transporting of answer scripts from exam centre to HEI, from HEI to evaluator and back to HEI, misplacement/loss of answer script during transit, time required for manually cross-verifying the award sheet with answer scripts, followed by data entry in computers etc. Delay in declaration of results affects learners adversely like delay in further admissions, missed employment opportunity etc.

Keeping in view these constraints, there is a dire need to make a paradigm shift from the existing traditional examination system to an online examination system which allows a large number of learners to take exams at their locality/doorstep, overcome the financial and operational constraints, eliminating the human error in the examination process, control the malpractices, automated evaluation within the time-frame and faster processing and handling of data resulting in timely declaration of result. Konde *et al.* (2019) also admit that online examination has many advantages like faster handling of data, automatic and error free report generation, and reduced efforts on manual record keeping, which saves a lot of time.

We know that society changes gradually and many a time very silently, we also have facts on records of civilization that unexpected and unforeseen events like COVID-19 lead to overall social, economical and environmental change. Transformation in almost every aspect of human life is very much visible. Measures are being taken by the nation and worldwide to do damage control and salvage the existing systems during this crisis. Shifting to adoption of online technologies is the panacea in today's times. The present pandemic has triggered experiments globally with regard to online learning and evaluation. If it succeeds, it will revolutionize the whole education system. Much has been discussed on various platforms about the new age technology and its integration in the education system but the new normal brought by the COVID-19 will intensify the digital spirit of the society.

Review of Literature

Indian Government is well aware of the paradigm shift from traditional practices to incorporation of the latest digital learning in our educational system. A beginning was made by the Ministry of Human Resource Development (MHRD), Government of India issuing the Regulations regarding Massive Open Online Courses (MOOCs) in 2016 and providing an e-platform: 'SWAYAM' (Study Webs of Active Learning for Young Aspiring Minds) to all Higher Educational Institutions (HEIs) to host their online courses on it without any cost. To maintain the parameters specified in the SWAYAM Regulations and to ensure the quality in production and delivery of courses, nine National Coordinators have been appointed across the country. The online courses delivered through SWAYAM are offered free of cost to the learners and in case they require certification; they are required to register and pay a fee inorder to appear in a proctored examination. Although as per the Regulations (2016), online assessment and evaluation will be the preferred mode throughout the length and breadth of the course and even for the conduct of the final examination; but it is left to the HEIs to take a decision on the matter. HEIs are also recognizing these certificates and are providing transfer of the credits earned to the certified learners pursuing higher education at a HEI. Presently, only 20 percent of the courses are allowed to be completed through this method (Government of India, 2016).

Recently, the University Grants Commission (UGC) of India has provided a legal framework for the implementation of Online Education in the country by issuing the UGC (Online Courses or Programmes) Regulations, 2018 vide Gazette Notification No.252 on 4th July, 2018. This is a major step taken undoubtedly to bind the system and infuse quality by laying down minimum standards of instruction for the grant of degrees, diplomas and certificates through online mode (Government of India, 2018). Regarding assessment and evaluation, the Regulations (2018) state the following under Sub-regulation 7 (3) (ix): "Availability of

assessment mechanism - each course in the Online Course or Programme shall have a precise assessment mechanism for the identified learning outcomes at each level for both continuous formative and summative assessments. (x) Identified technological interface and interoperability - the Online Course or Programme shall be able to utilize a variety of technology tools, shall have a user-friendly interface and meet accessibility standards for interoperability and access for learners with special needs". Early this year, the Central Government approved the beginning of online degree courses only to open access to as many prospective learners as possible. Accessibility is a key feature of online education.

The future can be gauged from the MHRD, Government of India's draft new National Education Policy framed to meet the requirements of the changing demographic and cultural changes in the country and with the aim of making India a "Knowledge Superpower" (Government of India, 2019). In its agenda to usher in a new India, the policy recommends the use of ICT to disrupt the existing educational system in the context of improving teaching learning and evaluation processes. It recommends that "assessments can be partly online multiple-choice examinations combined with projects and other hands-on work that is evaluated separately by teachers. Some app-based multiple-choice examination systems are already available now that make it very easy for faculty to conduct quizzes". (Government of India, 2019, 19.4, p.350)

In a nutshell, at national level, there is major thrust to popularize online learning but the current status of online assessment and evaluation is still at the nascent stage. In fact, because of the introduction of MOOCs and online courses/programmes by HEIs, it is imperative for them to adopt an online evaluation system in compliance with the UGC Regulations of 2016 and 2018. HEIs are also conducting entrance examinations through the adoption of an Online Examination System (OES) themselves or outsourcing the same to professional agencies/ companies. In order to perform quick evaluation of answer sheets, the system of onscreen marking is also being adopted by many HEIs. Formative assessment through online quizzes and assignments, online discussions and debates, e-projects, e-portfolio, self-assessment exercises, etc. is also being promoted. Many HEIs including examining bodies are issuing digital certificates and transcripts to the learners. Provision is being made for storage of the certificates in digital lockers that can be used by the employers or HEIs for online verification. Similarly, Open Badges are being issued for learners on getting certificates through completion of MOOCs and other online courses.

The COVID-19 pandemic has propelled the University Grants Commission (UGC) of India to issue directives to all Higher Education Institutions to rethink their operations and shift to online methods of teaching-learning and evaluation (UGC, 2020). For example, University of Delhi (Delhi University, 2020) and YCMOU, Nasik (Jain, 2020) have adopted Open-book examination as a summative evaluation method for their learners. IK Gujral Punjab Technical University has adopted online examination using MCQ as a method of summative evaluation (Kaur, 2020).

Models of Online Evaluation

HEIs are adopting the online evaluation strategy for the entire programme or for a particular course. Even within the course, learners are being assessed online for one component (Formative or Summative). For the success of Online Evaluation, use of latest technologies is indispensable. For seamless conduct of examination, an efficient and updated Online Examination Management System is of paramount importance. Examination can be conducted using Assessment Tools in the Learning Management System (LMS) or using Online Examination Management Software independently or integrated into the LMS. Some of the assessment tools and models are depicted (Fig. 1) and discussed below:

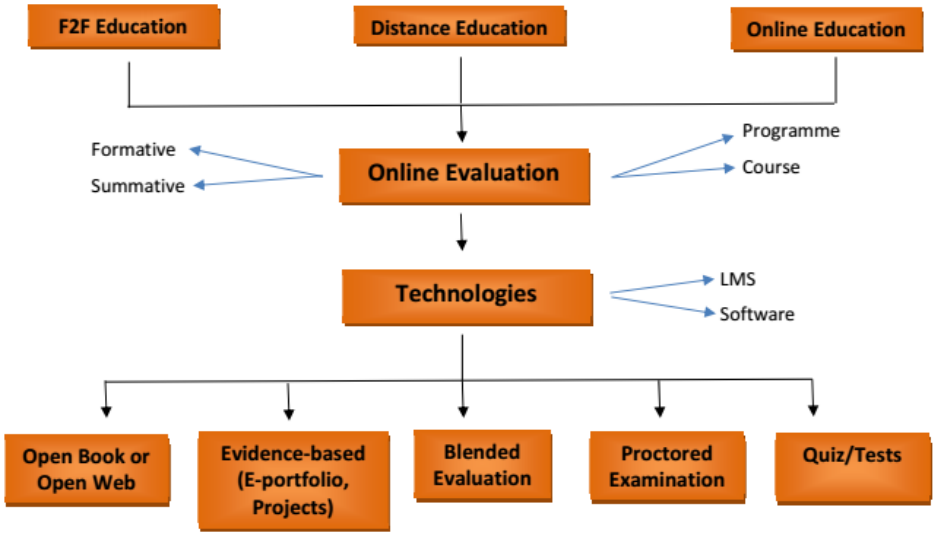


Figure 1: Assessment Tools and Models of Online Evaluation

a) **Open Book or Open Web Examination:** Open book or Open web examinations are more prevalent in the developed world. However, since many universities worldwide are becoming Dual Mode Universities, the Open Book or Open-web Examination is slowly creeping into the distance learning sector. For example, the Open University under the University of Helsinki conducts different types of examinations which include end-of-course examination, book examination and take-home examination. The Open University administers both traditional paper examinations and online examinations. A research study conducted by Myyry and Joutsenvirta (2015) at University of Helsinki on the university students' experiences of open-book, open-web online examinations revealed that "over half of the students who participated in the study reported using more time for responding and changed their learning strategies from surface learning to deep learning while preparing for an online examination when compared to a faculty examination".

b) **Evidence-based Evaluation:** Assessment of a learner's knowledge and competency can also be carried out based on the evidence submitted. For example, assessment tools like e-portfolios, project reports, Journals, Digital Badges, Group works, learning analytics etc. can demonstrate the competency of the learners in a particular subject area/topic. "Within educational institutions, portfolios have increased in popularity on many fronts. Many programs in universities have introduced portfolios as a means of assessing learners' aggregated work over the course term. Some graduate programs at Athabasca University, an open and distance University in Canada, have replaced comprehensive exams with portfolios" (Conrad and Openo, 2018).

c) **Blended Evaluation:** In order to bring in flexibility into the evaluation system, blended approaches in evaluation have been adopted by many HEIs. Blended evaluation can be viewed in terms of the types of assessment tools used or based on the component of course study. Within a programme, different evaluation strategy may be adopted. For example, continuous formative assessment may be based on online evaluation and the summative assessment may be based on traditional pen-and paper examination. On the other hand, different assessment tools may be blended into the evaluation criteria like e-portfolio for continuous assessment and proctored examination for summative assessment. Tamil Virtual Academy (Erstwhile Tamil Virtual University) conducts both Online and Offline examinations for a particular programme with different weightages assigned to Online and Offline examinations (25:75).

d) **Proctored Examination:** In order to maintain the authenticity of the online examination, proctored examinations are carried out by various Open Universities and Assessment/Testing Agencies. One of the major concerns in the online examination is the issue of cheating and impersonation. This can be easily overcome by deploying AI-based proctoring monitors, Auto Proctoring and live proctoring Softwares or conducting in a controlled environment. University of South Australia (UniSA) conducts proctored online examination using Moodle quiz integrated within the LMS, in conjunction with Remote Proctoring software that will be used for online invigilation during the exam (UniSA, 2020). In India, the National Testing Agency (NTA) conducts proctored examinations for the MOOCs courses under SWAYAM initiative.

e) **Quiz/Tests:** Evaluation of learners particularly in the short-term courses offered by Open Universities (OUs) or Directorates of Distance Education (DDE) functioning under Dual Mode Universities (DMUs) mostly depend on the online evaluation techniques using online quizzes/tests. These quizzes and tests which are inbuilt in the LMS assess the knowledge of the learners through Objective type Multiple Choice Questions (MCQs). But, one of the major drawbacks of this evaluation method is the issue of learner's

Academic Honesty as such quizzes/tests are not-proctored. e-Assessment via MCQs has become an integral and increasing form of assessment, particularly with large learner bodies and growing faculty workloads at higher-education institutions (Singh and de Villiers, 2017).

Methodology

The study is based on the secondary data obtained from research publications, websites/blogs, books/book chapters, Open Educational Resources (OERs), case studies and personal interviews. The information regarding the different assessment tools used and models employed were collated and presented in the form of a flow diagram. Based on the analysis made during the study from the literatures collected, considering the strengths, weaknesses, opportunities and challenges (SWOC) of online evaluation system, and keeping in view the future trends in evaluation system appropriate for the Higher Education Institutions (HEIs); a suitable model which can cater to the needs of all the stakeholders is proposed particularly for the Open Universities (OUs) and Dual Mode Universities (DMUs) offering programmes through ODL and online modes.

The researchers based on their work experience at an OU and deeper understanding of the operations, have developed a Model suitable for the ODL system keeping in mind the large number of geographically dispersed learners and the heterogeneity of these learners who are a mix of "digital natives, digital immigrants" and even digital illiterates, who need to be converted into digital literates; imperative for survival in the times ahead.

Rationale of the Study

- To justify the need of online evaluation;
- To study the different assessment tools and models of online evaluation;
- To analyze the strengths and weaknesses of such systems; and
- To develop and propose a suitable Model for ODL institutions.

Findings and Discussions

A review of the existing practices of online evaluation has necessitated the undertaking a SWOC Analysis which will help to decide the suitable assessment tools and framework keeping in view the different stakeholders. The SWOC Analysis of online evaluation system is presented in Box 1 below:

Box 1: SWOC Analysis of Online Examination System

STRENGTHS	WEAKNESSES
• Easy to use, fast and accurate • Instant results, saves time • Less expensive, Low operational Cost • Reduction in staff workload • Possibility of on-demand examination • Students spent less time as compared to traditional method • Effective method of gathering constructive feedback	• Lack of awareness about online examination system • Limited access to computers, uninterrupted internet services and power supply • Lower learner response rates • Security concern, possibility of hacking/intrusion • Impersonation and cheating
OPPORTUNITIES	**CHALLENGES**
• Best utilized where the learners appearing are large in number • Easy integration into the current educational/examination system • Easily scalable with less cost escalation • Development and offering of innovative educational programmes in emerging areas • Emergence and integration of Artificial Intelligence (AI) technologies • Advancements in online examination system software and LMS particularly security features and proctoring. • Flexibility in scheduling the examination, less dependence on examination centres	• Ensuring anonymity and confidentiality • Learners' computer capabilities and access • Software compatibility issues (Anderson and Cain, 2005) • Poor acceptability, reputation and recognition • Motivating the faculty, learners and administrators for adopting the new technologies

Proposed Model for ODL Institutions

Though the ODL system claims to be an innovative and dynamic system but as far as its evaluation of learners is concerned, it has preferred to safely perch itself on the conventional turf by following the age old practice of

mainly evaluating its learners through conduct of pen and paper based proctored examinations (which carries 70 percent weightage in the overall assessment), for the sake of parity. Evaluation through term end examinations is an outdated method designed mainly to test the power to memorize concepts and a highly subjective method of assessment and evaluation. Evaluation strategies should be primarily focused on assessing the competency instead of the mere knowledge. This has led to popularity of the concept of Authentic Assessment in recent times. According to Mueller (2018), Authentic Assessment is "A form of assessment in which students are asked to perform real-world tasks that demonstrate meaningful application of essential knowledge and skills". Therefore, Authentic Assessments should be an integral part of the assessment and evaluation Model that is being proposed for the assessment and evaluation of distance learners.

In the Digital Age, all activities depend heavily on the use of technology. All learners irrespective of their age and status of employment are required to use digital skills in day-to-day transactions to cope with the new environment in which they are living. Therefore, digital skills or digital literacy need to be embedded within the educational activity. HEIs are also expected to develop skills of knowledge management or processing information; critical and analytical thinking skills or problem-solving skills; innovation or out of the box thinking; multimedia communication skills in their learners to be workforce ready. As Bates (2019), has very succinctly summarized the issue: "The key shift is towards greater emphasis on skills, particularly knowledge management, and less on memorizing content. We need design models for teaching and learning that lead to the development of the skills needed in a digital age". Online Collaborative Learning (OCL), experiential learning and agile design are best suited for the Digital Age (Bates, 2019, Chapter 4). OCL is the new theory / approach to online learning which is an advanced version of computer mediated communication (CMC) in which the learners are "encouraged and supported to work together to create knowledge: to invent, to explore ways to innovate, and, by so doing, to seek the conceptual knowledge needed to solve problems rather than recite what they think is the right answer.……In the OCL theory, the teacher plays a key role not as a fellow-learner, but as the link to the knowledge community, or state of the art in that discipline" (Harasim, 2017, p.90). The idea is to develop learning communities so that the learners can interact with each other. Student learning takes place through knowledge construction through the social discourse; which is guided and facilitated by the teacher. The teacher is expected to provide appropriate resources and links to resources as well as design activities for generating learner interactivity. The teacher is also expected to prepare a schedule of activities that bring participants together on a regular basis, for sharing of experiences and crowdsourcing new ideas based on their self-learning. Evaluation methods need to integrate and support these components so that learners can earn grades/ marks for their active participation in such activities. Also, all learners possess some foundational knowledge based on their experience. Therefore, assessment tools should draw upon their experiential learning. Today, the learners are exposed to new technologies, new apps so frequently, that digital literacy is simply not confined to possessing basic IT skills but the ability to adapt to the constantly changing environment through using the new technologies and applying them to solve real world problems (Bates, 2019)

The Model proposed for ODL institutions namely: OUs and DDE functioning under DMUs is a Hybrid one, with a focus on mainly online methods of assessment and evaluation. It is a hybrid model in so far as the learners will have the choice to submit their work done for formative assessment online or offline. But the summative assessment will be conducted through online examination to evaluate the learners through an automated system. ODL institutions are expected to adopt flexible approaches to facilitate their geographically dispersed learners and the convenience of taking the examination from any location convenient to them by using the internet. The advantages are many as the institution will save a lot of time; effort; and resources, both fiscal and human through the conduct of web-based online examination. The declaration of results will also be done timely and speedily without any scope of delay and also accurately and perfectly error-free results with calculation of marks and award of grades instantly and simultaneously storage and updating of results in the database.

The tools to be used for formative assessment will be designed and developed incorporating the aforementioned concept of Authentic Assessment, which will engage the learners in real learning and its application in real life situations and thereby inculcate the development of competencies and skills as per the Programme Specific Outcomes (PSOs) and Course Specific Outcomes (CSOs). The formative assessment tools will be available to the learners online which they have to access from the website just like admissions/ registration and payment of fees (as on date). But since the ODL institutions cater to the educational needs of huge number of heterogeneous learners, who may or may not have the ease of access to technology or adeptness to use it either, they will have the option of submitting their work on the formative tools of assessment either in soft form or as a hard copy to the institution. The tools of formative assessment will be more rigorous, engaging and comprehensive with the course content, focusing on the acquisition of the competencies and skills required by the learners living in the Digital Age as outlined above.

Thus, there is a proposed definite shift towards the adoption of online methods of testing and evaluation through the introduction of e-assessment tools and online examinations; a necessity today to harness technology to bring about the stated paradigm shift. Since the formative assessment will be all encompassing, innovative outcome-based and diagnostic, its weightage in the overall assessment of the learner could be in the range of 50-70 percent; and summative assessment will be 30-50 percent, depending on the nature and requirements of the programme.

A bouquet of assessment tools can be used for assessment of learners. While conceptualizing, planning and development of the programme, particularly while designing the evaluation strategy based on Learning Outcomes-based Curriculum Framework (LOCF), a teacher can choose a blend of tools from the bouquet of assessment tools depending upon the subject-requirement, type of programme and assessment (formative/summative), level of programme, suitability, availability of infrastructure/resources etc. The proposed model portraying the different assessment tools and the level of programmes in which it can be integrated are depicted below (Fig. 2):

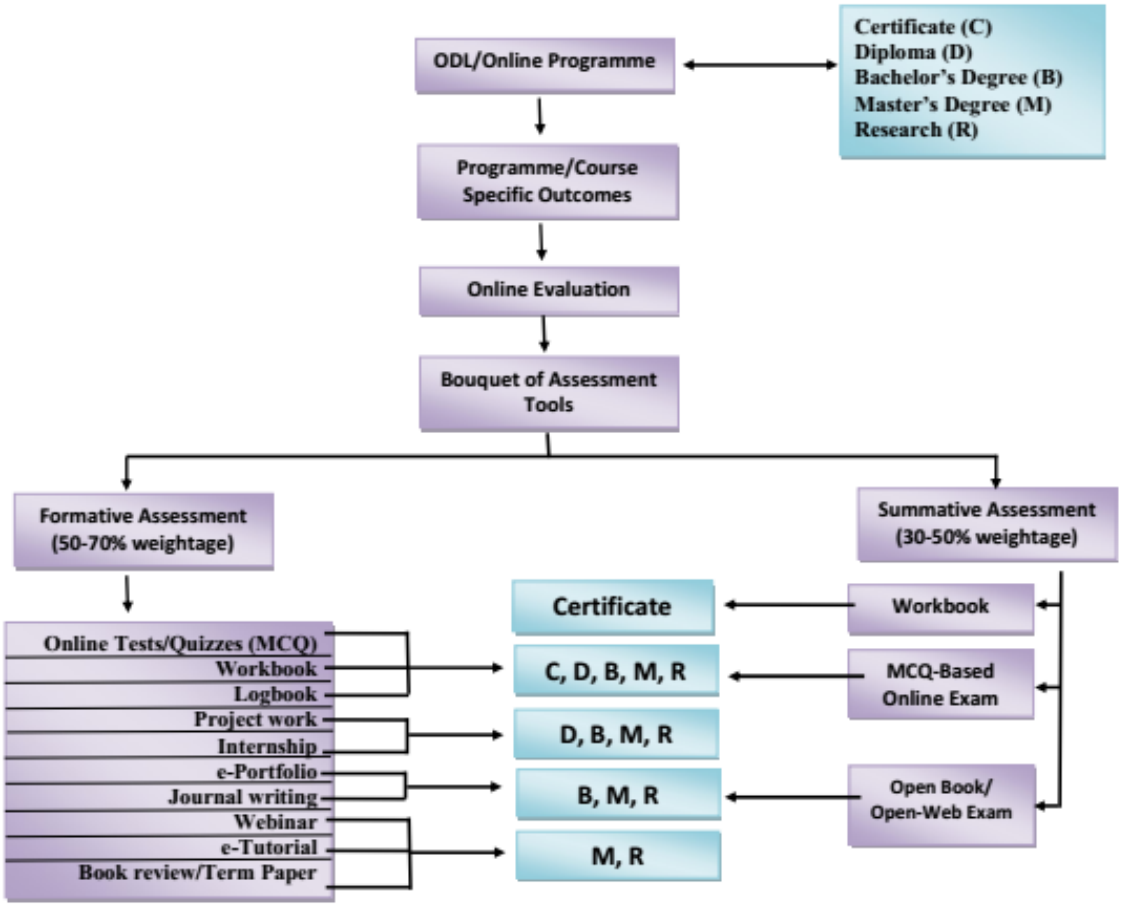


Figure 2: Online Student Evaluation Model for ODL Institutions

The marking/ grading scheme will be as per the approved methodology and notified in the programme guide available on the website. All the assessment tools will be uploaded at a designated place generally known as the Student Zone in the LMS of the institution's website. Instructions will be detailed out regarding method and date of submission, weightage in the overall assessment, turnaround time for getting the feedback, provision for re-evaluation (if any) declaration of grades/ marks, etc.

A) Tools for Formative Evaluation

Assessment tools/ instruments are directly linked to student learning and design of appropriate assessment tools lead to enhancement of student learning. Various tools which can be used for assessing the progress of the learner (continuous formative assessment) are as follows:

i)**Online Tests/Quizzes (MCQ):** This is the most commonly used method of formative assessment adopted by most of the educational institutions for assessing the progress of learners online. It is one of the best self-assessment methods which help the learner to assess his/her progress. It also helps the teacher to assess the teaching-learning process which can help in modifying the strategy. In this method, after each major section/topic, learners participate in an online Multiple Choice Question (MCQ) based self- assessment

test/quiz which gives immediate results. The process includes: a) preparation of question-banks with answer keys on every subject/topic by the teacher/instructor/expert group; b) Creating the Quizzes/Tests in the LMS using inbuilt Assessment Authoring Tool or using external quiz builder tool/software and integrating it in the LMS, c) Creating assessment schedule and informing the learners, d) Monitoring the assessment process. There are many commercial as well as open-source software/tools available which can be effectively used and integrated into the LMS. Advantages of online assessment particularly MCQ based Quizzes/Tests include automated scoring and storing of learners' responses, which can lead to enhanced efficiency, quicker turnaround time, and reduced potential for human error; and pedagogical benefits of providing immediate automated feedback (Hewson, 2007). Further, the Online Quizzes/Tests should be designed in such a way that it assesses the knowledge of learners covering various aspects like understanding of subject, problem-solving, creativity etc. with time-restriction. Cohen and Sasson (2016) envisaged that, "the design approach of online quiz/test should not be like conventional method usually used as online homework with due date, without time restriction and therefore should be designed with time and attempt restriction which motivates the learners to prepare for the quiz, cover the relevant topics, and do exercises before attempting to take the quiz".

ii) **Workbook:** A Workbook is a structured practice book prepared by the teacher that contains worksheets setting tasks, problem solving exercises and activities to be performed by the learner. A Workbook needs to be designed in such a way that it covers the curriculum presented in the Self Learning Material (SLM) covering the important concepts and developing the required competencies and skills through problem-based exercises and activities to be performed by the learners in the real life situations. This helps in developing the cognitive, affective and psychomotor skills of a learner, as they make a learner think, write and do. The purpose of the workbook is to guide independent learning; reinforce learning by ensuring that the learner interacts with the content given in the SLM and achieves the expected programme specific outcomes (PSOs) and course specific outcomes (CSOs); enable the learner to construct knowledge and reflect on the existing practices either independently or in groups by forming learning communities; encourage the learner to reflect through sharing of experiences and crowdsourcing new ideas; based on their self-learning apply the knowledge gained to solve real world problems; and also facilitate the institution to track the learner, monitor the progress made and provide feedback for further improvement.

    It is a more comprehensive tool than assignments and therefore can replace assignments as a tool for formative assessment. In certificate programmes, it can also be used for both formative and summative assessment of a learner. The Workbook should be made available to the learner along with the SLM in the LMS on the institution's website. The learner would be asked to download it and after completing the worksheets given in the Workbook as per the schedule, submit it to the tutors for evaluation and feedback either through email or by submitting a hard copy. Today, there is the option of e-Workbook which contains multimedia files embedded with text, animation, images, audio and video clips in which the learner can read, listen to, watch, and interact with learning materials and record their responses online.

iii) **Logbook:** Logbook is a record which a learner maintains reflecting the activities performed during the study. It is a tool which can be effectively used particularly in subjects which require learners to perform set activities which needs to be evaluated for both knowledge and skill/competency and used for formative assessment. Tools/Softwares are available using which a learner can record the data/information on real time basis in the app or software and the same can be assessed by the teacher/instructor and feedback can be given instantly for improvement or rectification. For each course, the teacher prepares the activities to be performed by the learner in the form of a manual which contains detailed instructions on how to perform the activities and recording the parameters. Learners need to perform each and every step mentioned in the manual and record the observations/results in the logbook which may be hard/soft copy or using mobile app/software depending on the resource/infrastructure availability. Depending upon the type used, the logbook needs to be submitted periodically as per the schedule prescribed by the teacher/instructor for evaluation and feedback. Based on the activities performed and the skills exhibited by the learner, the teacher will evaluate and grade the learner's performance. In case, access to such commercial software/tools is not available in an Institution, then, the LMS may have provision for submission of logbook in the form of document online which can be assessed and feedback can be sent back to the learners.

iv) **Project Work:** Project work is an application-oriented academic activity and aims to sharpen theoretical and quantitative skills through their application in the light of theoretical knowledge gained while pursuing a programme. It is an independent investigative work. To ensure that the learners understand the content, they are given some task which involves both understanding and skill to transform the learning into outcome. What the learner has understood is more important than what they have learned. This allows opportunities for productive practice through review of existing literature/ resources. Much of formative assessment occurs through application of knowledge gained in real life situations. The Projects undertaken may be field-based study, laboratory-based experiments or analysis of some secondary data. Projects should not be stereotypic rather they should be based on real life experiences based on one's circumstances. Project work can be

assigned individually or to groups of learners. As per the guidelines of UGC issued recently, the universities may consider to assign review-based/ secondary data-based projects or software-driven projects to facilitate the learners in these unprecedented times. A Project manual could be provided to the learner which should be made user friendly. The projects assigned should be time bound.

v) **e-Portfolio:** e-Portfolio is an electronic version of a portfolio which is generally used to showcase the progress of learners' learning, achievements and indicating what a learner can do. In this, the learner's academic work like essay type answers, blogs, interviews, graphics, demonstrations etc. can be documented. A teacher can monitor and examine the learners' achievements and also evaluate effectiveness of the programme in terms of its learner outcomes. The teacher needs to assign the task to learners for preparing the e-portfolio which the learner can submit online or as a hard copy offline. The feedback can be provided to the learner in the form of tutor comments, voice recording, rubric etc.

vi) **Journal Writing:** Journal writing is basically a form of reflective writing by the learner: recording thoughts, feelings, experiences, insights and reflections on the course content provided in the SLM and sometimes even beyond the territory of the course. It is not a structured tool like a Workbook, but an important tool for formative assessment. Journaling or journal writing has the potential to ignite deeper understanding, awaken exploratory skills, develop critical thinking and improve writing skills. It is a good tool to be used for active participation of the learner in the learning process and also for developing higher order learning skills in the learner. The teacher proposing to use this tool for formative assessment should prepare a brief note on what the expectation is from the assigned task in order to provide the focus; specify the word limit and time allotted to complete the task. This tool can be submitted online or offline.

vii) **Webinar:** A webinar is a web-based seminar, particularly learner-led and teacher-directed, is an effective assessment tool to test a learner's comprehension of a subject which facilitates case-based discussions in an online format. In such an assessment process, the learners take ownership for their learning and current level of achievement relative to the standard. It provides a platform where learners can be a part of a social learning community, allowing synchronous (real-time) interactions without the limitations of physical space and geographic distance. The webinar can have other stakeholders in the discussion as pre-decided by the teacher and learners as per the need of the discussion. The role of the teacher is significant as he/she sets the parameter for good performance and discussion. Normally, the topics for discussion should be framed to allow further deliberations. Webinar makes learners responsible and accountable for their participatory approach. This enhances their self-esteem and motivates them to improvise. Webinar as a tool can be effectively used in case of professional and skill-based programmes particularly with a responsible and controlled group. The teacher makes an overall assessment of each learner based on individual performance as well as learners' reports. For this tool to be used extensively for assessment there is a need to develop a baseline survey instrument to collect demographic data of participants, prior teaching perceptions of previous online teaching experiences, comfort levels with technical and communication aspects and also to collect the post-webinar feedback.

viii) **e-Tutorials**: Tutorial is an age-old method of direct interaction between the learner and the teacher. It is an effective interface for transferring knowledge and is used as a part of the learning process. It is probably the most commonly used formative assessment tool which is applicable preferably for smaller groups. It is more interactive and specific than a classroom lecture. Tutorials are heavily example ridden which help the learners to comprehend better. e-Tutorials have replaced the tutorials conducted in face-to-face mode. Advantages of tutorial-based assessment include, evaluation based on prolonged and intense interactions between learners, peers, and teachers (tutors) to assess knowledge and competence domain, communication skills, and scientific curiosity. There should be a time table for conducting e-tutorials.

ix) **Book Review:** Book review is an effective higher order formative assessment tool. While assigning Book Review, the teacher may ask the learners to choose a book of their choice or assign a particular book to many for getting comparative reviews. The learners should evaluate what the book is about, details of the author, whether the book is path breaking in the particular area, methodology adopted by the author, appropriateness of chapterization in the Book, illustrations, the audience it targets at and most importantly the Bibliographies. Book Review should be made a mandatory tool for assessment particularly in Post Graduate and Research degree programmes as it allows the learner to apply original thinking and develops critical analytical ability. There should be a Book Review Manual for the standard operating procedure to be followed uniformly by the learners.

x) **Term Paper:** Term paper is a research paper used as a tool for formative assessment to ascertain the achievement of the expected learning outcomes by the learner required at the end of a particular course. It involves analytical and critical understanding of the course. Preparation of the term paper requires a lot of research and technical writing expertise on the part of the learner. Term papers provide an avenue to the learners to apply actively the subject matter of a course to an individual endeavour. The teacher shall be responsible for preparing the list of Term papers relevant to the course or alternatively ask the learners to

choose the topic of their interest preferably related to the course. Term Papers are evaluated using an equally weighted combination of three factors: 1) Style and Format; 2) Research Effort; 3) Analysis and Argument.

B) Tools for Summative Evaluation

The summative evaluation is done at the end of the course to assess the extent to which the learner has accomplished the objectives set in the form of learning outcomes. The assessment tools which are proposed to be used for summative assessment in the online evaluation are:

i) Online Examination: The online examination for summative assessment is the most accessible method nowadays. It is generally Computer Based Testing (CBT) and Optical Mark Recognition (OMR) based question types. Generally, objective-type questions like Multiple-Choice Questions (MCQs); True or False; Fill in the blanks; and short answer questions are preferred and therefore the assessment is fully automated, reliable and accurate. The HEI can organize the summative online examination through its own Learning Management System or using open-source/third-party software integrated into the LMS. The process includes: creation of an account; development of Question Bank with answer keys by subject experts covering the entire course; creating assessment schedule and sharing of the link with the learners on the day of examination. To avoid any malpractice, two examination delivery solutions are used *viz*. Digital Evaluation Platform and Just-in-Time Question Paper (JIT-QP) wherein encrypted question papers are delivered just before the examination. These solutions are very helpful to ensure secure examination delivery and evaluation.

Learners can take these exams anywhere using any device like Desktop/laptop, tablet, mobile phone etc. with uninterrupted internet connectivity by just clicking on the shared link. Then s/he has to enter her/his enrolment details and attempt the exam. Each learner can be provided with a specific set of questions drawn from the question bank randomly and thereby minimize the probability of copying and leakage of questions. Since, the answer key is already fed in the system, the responses are auto-evaluated immediately and the learner can get the results/feedback on her/his performance by the click of the button. Further, softwares are also available for calculating the score according to weightage, preparing a rank list and also generating the e-grade cards. The main advantage of this system is that it can be operational with very few resources and easy to access. It also reduces the expenditure on conducting examinations as there is no requirement of printed question papers, answer scripts, examination halls, invigilators, examiners, evaluators etc.

ii) Open Book/Open-Web Examination: Open Book Examination (OBE) is an exam where the learners are allowed to use and refer to certain resources like the Self-Learning Materials, Books, Notes etc. In Open-web examination, the learners can access the learning resources available on the internet. They are broadly of two types: 1) restricted-approved list of resources and 2) unrestricted-any material that may support the examinee. Both the types of OBE have one thing in common i.e, the OBE makes it obligatory for a learner to have a sound understanding of the syllabus, content and concept of the course. Mapping concepts or theories, charts, diagrams, equations, data in mind is pre-requisite and advisable so that while attempting the OBE, the examinee can systematically put up the thoughts quickly avoiding the time constraint which may occur in searching for the answer from the resources. Unlike closed book examination, where it is a common practice by the examinee that they memorize the answer, the OBE demands three types of skills i.e. synthesization, analyzation, and application of the concepts and thoughts. For conducting a successful open book or open-web examination, proper training and planning to and by the examinee and examiner is highly required. A mock test prior to conduct of the examination will be a good idea as this will give an opportunity to both examinee and examiner to understand the expectations from each other. “Open-book, open-web online examinations reduce test anxiety, enhance learning and make the students to be more aware of their studying and learning strategies and supported professional-like performance” (Myyry and Joutsenvirta, 2015).

OBE can be conducted in two ways either sitting in a specified closed room with or without the online tools and another way is to plan an OBE as take-home exam.

It is not that the open book exam will change only the evaluation method, if implemented, it will surely impact both the learning and teaching strategies. Questions have to be designed which can evaluate the problem-solving skills, creativity, and in-depth knowledge of the concept.

Quality Assurance

Quality Assurance is the process of maintaining the desired level of quality devoid of errors/issues in the services provided by following the standard operating procedures at every stage of the process. Effectiveness of online exams can be achieved by designing them to be valid, reliable, secure and flexible, with the purpose of promoting learning and ensuring alignment with LOs (Shraim, 2019). The two major concerns pondering around the Online Evaluation System are the Quality and Accountability. Though, these two are essential even in the traditional evaluation system, they are mostly insisted upon only in Online Evaluation. These two factors can be easily tackled if the Institutions put in place a dedicated Online Evaluation Cell under the Evaluation Department. The Cell should be strengthened with the adequate staff ranging from academic (software

professionals, Teachers/academicians, technocrats etc.) and administrative (Deputy/Assistant Registrar) and support staff (data entry operators, Multi-tasking staff etc.). Adequate state-of-art infrastructure, resources (like computers, software, internet, servers, power-back up etc.) and financial support should also be ensured for smooth functioning of the cell. Periodic evaluation, feedback from stakeholders and review can lead to accountability and improved quality. Periodic capacity building activities and training of all stakeholders involved in conduct of online examination is a must for improving the quality. Learner support and grievance redressal systems should be available round-the-clock for swift resolution of queries. Tight security and restricted access should be strictly adhered to.

Cyber security, hacking of sensitive data and websites, and leakage of virtual private networks are the biggest challenges for online evaluation. Universities have to be ready with "Plan B" to tackle any type of emergencies while conducting online evaluation. Many times, situations arise that due to technical glitch, examination gets interrupted in between or even does not go online. Such situations and many others are very common while conducting exams. A pool of question banks will serve best in such types of situations.

Conclusion and Suggestions

The shift to online teaching, learning and evaluation leads to the design and development of new models that are based on the new technologies. In this paper, the researchers have outlined a new Model for Student Evaluation, based on a SWOC analysis of the existing models of online evaluation and available online assessment tools; suitable for learners enrolled in ODL institutions. The proposed Model addresses the changing skill requirements for the Digital Age and also offers a solution to the teachers working at ODL institutions grappling with the challenges posed by COVID-19 to integrate and adopt online methods in their teaching, learning and evaluation systems. The expectations from the OUs at this juncture is to pave the way for adopting technology-based evaluation methods both formative and summative and to unshackle the rigidity of conducting only pen and paper-based examination. The HEIs should mould themselves to cater to the needs and aspirations of the 21stcentury learners and give more weightage to formative assessment in order to develop skills and competencies required of a knowledge society rather than promote rote learning.

References

Anderson, H. & Cain, J. (2005).Reviews: Online Student Course Evaluations: Review of Literature and a Pilot Study. *American Journal of Pharmaceutical Education*. 69. 10.5688/aj690105, Retrieved on 13 May 2020 from: https://www.ncbi.nlm.nih.gov/pmc/journals/383/

Bates, A.W. (2019). *Teaching in a Digital Age* – Second Edition. Vancouver, B.C.: Tony Bates Associates Ltd. Retrieved on 19th May 2020 from: https://pressbooks.bccampus.ca/teachinginadigitalagev2/

Cohen, D. & Sasson, I. (2016).Online quizzes in a virtual learning environment as a tool for formative assessment. *Journal of Technology and Science Education*, 6(3):188-208, Available at: <http://www.jotse.org/index.php/jotse/article/view/217/225>. Date accessed: 18 May 2020. doi:http://dx.doi.org/10.3926/jotse.217.

Conrad, D. & Openo, J. (2018).*Assessment Strategies for Online Learning: Engagement and Authenticity*, Edmonton: AU Press, Athabasca University, pp. 73.

Harasim, L. (2017) *Learning Theory and Online Technologies* Second Edition New York/London: Taylor and Francis.pp.90.

Hewson, C. (2007). Web-MCQ: A set of methods and freely available open source code for administering online multiple choice question assessments. *Behavior Research Methods* 39: 471–481. Retrieved on 13th May 2020 from: https://doi.org/10.3758/BF03193016

Government of India. (2016). University Grants Commission (Credit Framework for Online Learning Courses through SWAYAM) Regulation, 2016. (19th July) *Gazette of India*: Extraordinary, Part III, Section -4. Retrieved on 12th May 2020 from:https://www.ugc.ac.in/pdfnews/4064990_UGC-(Credit-Framework-for-Online-Learning-Courses-through-SWAYAM)-Regulation,-2016.pdf

Government of India. (2018). University Grants Commission (Online Courses or Programmes) Regulations, 2018. (4th July) *Gazette of India*: Extraordinary, Part III, Section -4. Retrieved on 12th April 2020 from: https://www.ugc.ac.in/pdfnews/7553683_Online-Courses-or-ProgrammesRegulations_2018.pdf

Government of India. (2019). *Draft New Education Policy*, New Delhi: Ministry of Human Resource Development, Retrieved on 23rd April, 2020 from: https://mhrd.gov.in/sites/upload_files/mhrd/files/Draft_NEP_2019_EN_Revised.pdf

Jain, P. (2020). YCMOU to conduct Open Book exams, *The Times of India*, 17th May 2020, Aurangabad edition.

Kaur, D. (2020). IKGPTU to conduct online exams for 1 lakh students from July 1, *The Tribune*, 16th May 2020, Jalandhar edition.

Konde, S., Divekar, M., Sonar, P. & Kakade, P. (2019).Survey on Online Examination System using Django Framework. *International Journal on Future Revolution in Computer Science & Communication Engineering*. Special Issue. Retrieved on 12th May 2020, from: http://www.ijfrcsce.org/download/conferences/NCCIDL_19/NCCIDL_19_Track/1550648728_20-02-2019.pdf

KPMG & Google. (2017).*Online Education in India: 2021*, New Delhi: KPMG, Retrieved on 17th May 2020 from: https://home.kpmg/in/en/home/insights/2017/05/internet-online-education-india.html

Mueller, J. (2018). *Authentic Assessment Toolbox*. Retrieved on 15th May 2020 from: http://jfmueller.faculty.noctrl.edu/toolbox/whatisit.htm

Myyry, L. & Joutsenvirta, T. (2015). Open-book, open-web online examinations: Developing examination practices to support university students' learning and self-efficacy. *Active Learning in Higher Education*, 16(2), 119–132. Retrieved on 16th May 2020 from: https://doi.org/10.1177/1469787415574053

Prince, A. & Bukie, P.T. (2018*). Design and Implementation of Online Examination Administration System for Universities*, Calabar Nigeria: Department of Computer Science, Cross River University of Technology, Retrieved on 17th May from: https://www.researchgate.net/publication/327075106_DESIGN_AND_IMPLEMENTATION_OF_ONLINE_EXAMINATION_ADMINSTERATION_SYSTEM_FOR_UNIVERSITIES

Sharma, S.K. (2014). Reforms in Examination and Education System: "India has examination system, not education system". *International Journal of Research* (IJR). Vol-1(5): 100-111. Retrieved on 12th May 2020, from: https://www.academia.edu/8300022/Reforms_in_Examination_and_Education_System_India_has_examination_system_not_education_system_

Shraim, K. (2019). Online Examination Practices in Higher Education Institutions: Learners' Perspectives. *Turkish Online Journal of Distance Education*. 20(4): pp. 185-196.

Singh, U. G. & de Villiers, M. R. (2017).An Evaluation Framework and Instrument for Evaluating e-Assessment Tools. *The International Review of Research in Open and Distributed Learning*, 18(6),Retrieved on 15th May 2020 from: https://doi.org/10.19173/irrodl.v18i6.2804

UGC. (2020). UGC guidelines on examination and academic calendar for the Universities in view of COVID-19 pandemic and subsequent lockdown, New Delhi *University Grants Commission*, 29th April, 2020.

University of Delhi. (2020). "Notification: Conduct of Examinations for Final Semester/ Term/ Year for the Academic Session 2019-20 in view of COVID-19", Ref. No. Dean (Exams)/02/2019-20/dated 14thMay 2020, *University of Delhi*, New Delhi: University of Delhi.

University of South Australia (UniSA). (2020). *Invigilated Online Exams*, Retrieved on 15thMay 2020 from: https://i.unisa.edu.au/campus-central/Exams_R/online-exams/

PEDAGOGICAL AND TECHNICAL PROBLEMS ENCOUNTERED BY THE PRE-SERVICE TEACHERS DURING THE VIRTUAL INTERNSHIP

Thiyagu, K
Assistant Professor,
Department of Education,
Central University of Kerala,
Kasaragod District, Kerala, India
thiyagusuri@gmail.com

ABSTRACT
The paper is intended to measure the level of the problem encountered by the pre-service teachers during virtual Internship. Therefore, the investigator adopted a normative survey to collect the data in this study of Pre-service teachers' problems towards virtual Internships in the Kasaragod district. Using the normative survey method, the investigator gathered information regarding Pre-service teacher's problems during virtual Internships. In this study, all the pre-service teachers studying in the Bachelor of Education Programme in Kasaragod have been taken as the population for the study. Two hundred forty pre-service teachers were selected as a sample of the study in a simple Random sampling method. The investigator prepared the tool to measure the problems of pedagogical aspects and technical issues encountered during the virtual internship. The findings of the study were: 40 (16.7%) of the sample have low level, 160 (66.7%) of the sample have moderate level, and 40(16.7%) of sample have a high level of problems encountered during virtual Internship. The pre-service students faced pedagogical challenges during the virtual internship. Similarly, most of the pre-service trainees were faced technical issues during the virtual internship.
Keywords: Virtual internship, Pedagogical and Techical Problems COVID-19 Pandemic, Pre-service teachers

INTRODUCTION

Problems are how people organize and interpret their sensory input, what they see and hear, and call it a reality. A pandemic is upon the world. The hunt for several pandemics continues, and now it is COVID -19. It knocked down different sectors of the world. The socio-economic conditions of the people were affected erroneously. The education sector also faced a downturn. But the phenomenal growth and penetration of the internet shifted education to online platforms. India has the second internet users after China. The unprecedented situation has made many thinks critically. Apart from online classes, E-internship is also getting popular among students. E-internship represents learning experiences that are often fully computer-mediated with supervisors, interns, and their colleagues located in different locations (Pearson, 2003). Internships must be a part of the curriculum because education aims to enrich the students with the knowledge and equip them with practical experiences (Cervetti et al., 2006). Acquisition of knowledge should not have an end. Knowledge acquired through Internship must be purposeful. It helps to gain experience in one's preference and is a steppingstone to one who is looking for a job. Since hands-on Internship or traditional Internship is in use now, many colleges are beginning with online internships, also known as virtual Internship or E-internship. E-internship, as an innovation of curriculum, has changed one's view of the work (Darling, 2010). As per the UGC guidelines, they recommend different universities of our country to encourage students to take up an 'online internship' to be performed digitally from home. The pandemic has forged an understanding that technologies provide multiple opportunities to embark life during the time of lockdown.

It can be claimed that the virtual internships are not really helpful helpful during the current lockdown due to COVID-19 Pandemic. Even after this emergency situation is over and the case returns to normal, many companies will still offer online internships. They will still be an important way to help you enhance your employability and career prospects. The main benefit of Virtual Internships is the flexibility they offer. You can intern remotely during your busy school or work schedule, and you don't have to adhere to the traditional office internship schedule (Theelen et al., 2019). The work can typically be done at any time of day, as long as you can meet the set deadlines. Some will find a virtual internship difficult because it does not have the structure an office-based training will provide. Overall, the success of an internship will depend on the interns. Intern will indeed have to be self-motivated and independent (Jen et al., 2020). Don't let this frighten, use an internship to develop self and learn from industry experts how to succeed in the chosen field.

It must be found out whether virtual internship contributes to better practice at higher education institutions. The problem is that much research has been done exploring the perceptions of teachers, instructors, and experts regarding eLearning. Still, when it comes to virtual Internships, there are many assumptions about student teachers' opinions, but relatively little research into what teacher educators think about virtual Internships

(Keefe, 2020). Therefore, this research aims to obtain first-hand information on pre-service teachers' problems encountered during virtual Internship. In this context, attempting the study on problem encountered during virtual Internship among the pre-service teachers is worthy. Therefore, the investigator will plan to do a research work on problem encountered during virtual internship among the pre-service teachers of Kasaragod district. The researcher conducted this survey among participating students, which revealed their general perception, concerns, technical obstacles regarding virtual Internships by giving a response to the statements provided.

PURPOSE AND RESEARCH QUESTIONS

This study intends to determine the level of the problems encountered during virtual internships among pre-service teachers of Kasaragod District in India. More precisely the answers of the following research questions were sought:

1. What is the sample in terms of their experience in using the internet?
2. How many hours, the respondents spending the time on the internet for virtual internships?
3. What are the pedagogical problems encountered by the pre-service teachers during the virtual internship?
4. What are the technical difficulties faced by the pre-service teachers during the virtual internship?
5. What is the level of the problem encountered by the pre-service teachers during the virtual internship?

METHOD

The investigator is intended to determine the level of the problem encountered during virtual Internships among pre-service teachers of Kasaragod District. Therefore, the investigator adopted a normative survey to collect the data in this study of Pre-service teachers' problems towards virtual Internships in Kasaragod district. Using the normative survey method, the investigator gathered information regarding Pre-service teacher's problems during virtual Internships.

In this study, all the pre-service teachers studying in Bachelor of Education Program in Kasaragod have been taken as the population for the study. The pre-service teachers had taken as the population, particularly in the Kasaragod district. Two hundred forty pre-service teachers were selected as a sample of the study in a simple Random sampling method.

Here the researcher prepared a 3-point perception of the virtual internship program rating scale. It is a three-point scale ranging from the value 0 to 2. The tool was prepared based on the two components, such as pedagogical problems and technological problems encountered during the virtual Internship. The investigator employed Cronbach's alpha (0.81) and split-half method (0.65) for reliability of the tools. Content validity was established as part of the standardization procedure of the tools.

FINDINGS

Reporting of the findings is organized according to the research questions.

Experience in Using the Internet

The Table 1 presents the sample's distribution in terms of their experience in using the internet. As seen from the above, 7.9 percent of the sample had two years of experience in internet usage. 32.5 percent of the sample had 2 to 5 years of experience in internet usage remaining 59.6 percent had above five years of experience in internet usage. It seems most of the samples have above five years of experience in using the internet.

Table 1

Analysis of the sample in terms of their experience in using the internet

Years of experience	No. of Pre-service teachers	Percentage (%)
2 Years	19	7.9
2-5 year	78	32.5
Above 5year	143	59.6

Time Spent on the Internet for Virtual Internships

The Table 2 presents the distribution of the sample in terms of the amount of time in spending on the internet per day. As seen from the above table, 45 percent of the sample accessing internet 5-10 hours per day38.8 percent of sample accessing internet 10 to 20 hours per day7.5 percent accessing 20-30 hours per day and the remaining 8.8 percent accessing internet more than 30 hours per day. The above table shows that most of the Pre-service teachers spend on the internet during virtual Internship 5-10 hours per day.

Table 2

Analysis of the Sample based on the duration of time spent in the internet per day

Time is taken to spend in internet use	No. of Pre-service teachers	Percentage (%)
5-10 hours	108	45.0
10-20 hours	93	38.8
20-30 hours	18	7.5
More than 30 hours	21	8.8

Pedagogical Problems Encountered

The Table 3 reveals the analysis of the problems encountered by pre-service teachers during the virtual internship. As can be observed from the table among 240 pre-service teachers, 137 samples were agreed, 86 were not sure with the statement of "*Issues are faced in planning a methodology for the virtual Internship"* 17 disagree with this statement. It is happened due not to receive the proper pedagogical training for online teaching. Regarding the statement, *"Has a negative effect on student management in the virtual platform",* 119 respondents were agreed, 83 were not sure with the statement and 38 disagree with this statement. Classroom management is not easy in the case of online classes. In addition, the pre-service teacher is not getting enough high-level training to maintain the online class discipline.

Among 240 pre-service teachers, 168 respondents agreed, 58 were not sure with the statement, "*Real classroom teaching experience was not perceived during the Virtual Internship"* and 14 disagreed with this statement. The pre-service teacher not perceived the actual classroom teaching experience in the virtual Internship. In Virtual teaching, the real-time face-to-face student and teacher interaction was lacking compared to the actual face-to-face classes. The virtual classroom provides only the artificial teaching experiences.

On the other hand, 139 respondents were agreed, 72 were undecided with the statement, "*Virtual mode instruction is not at all possible for the entire discipline subject"* and 29 disagree with this statement. The teacher may use a lot of teaching strategies while teaching the scientific concept to the students. However, in virtual teaching, the pre-service teacher cannot incorporate all the teaching methods or techniques for the entire subject. Especially for the science subject, the teacher may explain the concept in the face-to-face classes using some laboratory instruments or with demonstration mode. Still, in the virtual Internship, the pre-service teacher cannot use different teaching methods based on the subjects. More respondents (153) were agreed, 63 were undecided with the statement, "*Has limitation in developing teaching ability in individuals during VI"* and 24 disagree with this statement. The pre-service teacher was not able to receive immediate feedback during the virtual Internship. Virtual Internship may more comfortable to those who are expertise in the ICT skills compare to those who have good teaching aptitude, reasoning aptitude, etc. Virtual Internship provides a few scopes to developing the teaching ability of an individual.

Similarly, 169 respondents agreed, 55 were undecided with the statement, "*Not able to analyze the extra-curricular activities of students during the Virtual Internship"* and 16 disagreed. The virtual Internship does not provide enough space to observe the extracurricular actives of the students. Each student is unique in his/her caliber. However, in the online mode, the pre-service teacher cannot measure the students' extra-curricular activities correctly in various domains. Regarding the statement "*The virtual Internship does not integrate theory with practical"*, 149 respondents agreed, 73 were undecided with the statement, and 27 disagreed with this statement. Most of the course contents describe the normal face-to-face classroom transaction and its management procedure as pre-service teachers. However, during the virtual Internship, the practical teaching is not at all matched with the theoretical input gained during the course time.

Furthermore, 144 respondents agreed, 82 were undecided, and 14 disagreed with the statement, "*Creates problems in the evaluation of the achievement of the learners in the Virtual Internship"*. Virtual Internship is not provided a space to evaluate or measure the students' achievement. Organizing the Proctored examination is costly. Due to that, the training teacher could not incorporate the proper mechanism to measure the leaner's performance. And, concerning the statement "*Case study record preparation/counselling and guidance practices are very difficult during the Virtual Internship"*, 156 responders were agreed, 67 were undecided with the statement, and 18 disagree with this statement. The case study can be done in an intensive mode. The main objectives of the case study are to find out the learners' problems and give the proper remedies. In the virtual mode, we could not connect the problematic students, lacking personalized touches between the teacher and student.

Moreover, among 240 pre-service teachers, 158 respondents agreed, 52 were undecided with the statement, "*Explaining the concept with Different methods and techniques are not possible in the VI"* and 30 disagree with this statement. Incorporating the different pedagogical methods and techniques in the virtual mode is very much difficult. Even some of the face-to-face pedagogical methods not able to incorporate into the virtual model.

Table 3

Pedagogical problems encountered by the pre-service teachers during the Virtual Internship

Statements	Agree with the problem	Undecided with problem	Disagree with the problem
Issues are faced in planning a methodology for the virtual Internship	137 (57.1%)	86 (35.8%)	17 (7.1%)
Has a negative effect on student management in the virtual platform	119 (49.6%)	83 (34.6%)	38 (15.8%)
Real classroom teaching experience was not perceived during the Virtual Internship	168 (70%)	58 (24.2%)	14 (5.8%)
Virtual mode instruction is not at all possible for the entire discipline subject.	139 (57.9%)	72 (30%)	29 (12.1%)
Has limitation in developing teaching ability in individuals during Virtual Internship	153 (63.8%)	63 (26.3%)	24 (10%)
Not able to analyse the extra-curricular activities of students during the Virtual Internship	169 (70.4%)	55 (22.9%)	16 (6.7%)
The virtual Internship does not integrate theory with practical	149 58.3%)	73 (30.4%)	27 (11.3%)
Creates problems in the evaluation of the achievement of the learners in the Virtual Internship	144 (60%)	82 (34.2%)	14 (5.8%)
Case study record preparation / Counselling and guidance practices are very difficulty during the Virtual Internship	156 (64.6%)	67 (27.9%)	18 (7.5%)
Explaining the concept with Different methods and techniques are not possible in the Virtual Internship	158 (65.8%)	52 (21.7%)	30 (12.5%)

Technical Problems Encountered

The Table 4 presents the technical problems encountered by the pre-service teachers during the virtual Internship. According to the table, among 240 pre-service teachers, 114 respondents were agreed, 77 were undecided with the statement, "*Share the screen in the virtual conferencing tool such as google meet and zoom is also highly complicated"* and 49 disagree with this statement. The pre-service teachers are not provided with adequate training for effectively handling the virtual conferencing tools such as google meet, zoom etc. Even some of the pre-service teachers not having the proper devices to use these virtual conferencing tools. Even more respondents (159) were agreed, 56 were undecided with the statement, "*Not create a friendly atmosphere with students in the digital platform during the virtual internship"* and 25 disagree with this statement. The pre-service teacher not able to make the friendly virtual classroom atmosphere due to the lack of proficiency to handle the online tools. The pre-service teachers do not get the proper training because of the sudden practices of incorporating the online mode internship.

In terms of the statement **"***Video editing and video making may be the more complicated task in the VI"* a total of 139 respondents were agreed, 75 were undecided with the statement, while 26 were disagree. The main components of virtual Internship are video and audio content. However, the trainee teacher did not gain proper training on editing the video and preparing their video contents. Due to that, most of the trainers may feel more

difficulties editing and making the video content. Almost the same amount of respondents (131) agreed, 93 were undecided, and 16 disagreed with this statement "*A lot of technical problem arises during Virtual Internship"*. The main barriers of online teaching are technological issues such as bandwidth, configuration, cross platforms, electricity etc. Therefore, as pre-service teachers, they could not know how to resolve any technical glitches from their end or their student's end. It was also happened due to the inadequate training of ICT Skills.

Regarding the statement of **"***Finding or creating the quality-based audio/video / text materials are very much complicated during the VI",* among 240 pre-service teachers, 151 respondents agreed, 66 were undecided, and 23 disagreed with this statement. The pre-service teacher cannot find a way to search or create the audio or video or text materials online due to the inadequate training of ICT skills. The pre-service teachers are not aware of the OER or creative commons licenses. It is the main reasons they could not be able to search the proper and ethical contents from the net source. Additionally, 162 respondents were agreed, 65 were undecided and 13 disagree with this statement *"Not able to implement the various teaching methods / strategies/ techniques during the Virtual Internship"*. Even the teacher trainees, those in good in ICT skills, could not effectively implement the various teaching methods and techniques during the virtual Internship because they could not know how to blend the pedagogy and technology. Finally, 140 respondents were agreed with the statement of "*Problems to convert the average paper-based records work into digital-based recording system during the VI"*, while 75 were undecided and 25 disagree. The pre-service teacher cannot find the mechanism of converting the paper-based record work into the digital-based recording system due to the lack of a digital teaching training program.

Table 4

Technical problems encountered by the pre-service teachers during the virtual internship

Statements	Agree with the problem	Undecided with problem	Disagree with the problem
Share the screen in the virtual conferencing tool such as google meet and zoom is also highly complicated	114 (47.5%)	77 (32.1%)	49 (20.4%)
Not create a friendly atmosphere with students in the digital platform during the Virtual Internship.	159 (66.3%)	56 (23.3%)	25 (10.4%)
Video editing and video making may be the more complicated task in the Virtual Internship	139 (57.9%)	75 (31.3%)	26 (10.8%)
A lot of technical problem arises during Virtual Internship	131 (54.6%)	93 (38.8%)	16 (6.7%)
Finding or creating the quality-based audio/video / text materials are very much complicated during the Virtual Internship	151 (62.9%)	66 (27.5%)	23 (9.6%)
Not able to implement the various teaching methods / strategies/ techniques during the Virtual Internship	162 (67.5%)	65 (27.1%)	13 (5.4%)
Problems to convert the average paper-based records work into digital-based recording system during the Virtual Internship	140 (58.3%)	75 (31.3%)	25 (10.4%)

The Level of the Problems Encountered

The Table 5 presents the analysis of the sample in terms of Level of pre-service teachers' problems towards virtual Internship. As seen from the above table, 40 (16.7%) of the sample have low level, 160 (66.7%) of the sample have moderate level and 40(16.7%) of sample have a high level of perception towards virtual Internship.

Table 5

Level of the problem encountered by the pre-service teachers during the virtual Internship

Level of perception towards virtual Internship	No. of Pre-service teachers	Percentage (%)
Low	40	16.7
Moderate	160	66.7
High	40	16.7

CONCLUSIONS

This study attempted to find the problems of pre-service teachers towards virtual Internship. This study intended to examine how students felt while taking an internship online and to answer research questions on stress, concentration, difficulties, student convenience etc. in appearing online Internship. As educational systems are adopting new and innovative methods, it is important to know pre-service teachers' problems on virtual internship (Bilsland et al., 2020). It is crucial to know how they perceive the different features of virtual Internship (Kennedy et al., 2013). The traditional face-to-face interaction is gradually giving way to online, which can occur anywhere, anytime and at the comfort and pace of the people (Stapleton et al., 2017). These in turn bring about global integration and standardization in the educational processes. It can be concluded that necessary steps must be taken to solve concerned problems related to internship program. Relevant strategies must be prepared and student teachers must be educated to cope up with these problems.

COVID-19 makes a lot of impact on the teacher education program. Mainly in the internship training program. The pandemic has caused students to put their best foot forward to do virtual Internships. The educational implications of the study were:

1. Virtual Internship promote the globalization of education and exchange of knowledge resource
2. Virtual Internship provides more space for self-assessment, leading to immediate self-correction and improvement in teaching and learning.
3. Virtual Internship widens the reach of education by providing an opportunity for rural and remote area students to participate in education.
4. Through virtual Internship, the student can improve their competency in using a computer for other educational purposes.
5. Online internship projects will develop the value of cooperation, mutual acceptance, and sharing tendency in students.
6. A set of written guidelines about internship program from the concerned department should be given to the concerned student-teachers and principals of the concerned schools to act according to the rules and regulations as mention in the document and conduct activities in a structured way.

Based on the findings of this study, as well as the disparity of empirical studies related to the pre-service teacher's perception towards virtual Internship, the following are suggestions for research:

- Organizing the orientation program related to TPACK to student teachers.
- Conducting the digital micro-teaching practices for exploring the technological pedagogical skills to the student's teachers.
- Prepare the proper model for implanting the virtual internship program to the teacher education institutions.
- Adequate planning and strategies to design successful internship programme by teacher education institutions for eliminating obstacles.
- Prepare proper guidelines for monitoring the virtual internship programme.
- Implementation of remedial instruction to student teachers facing problems during Internship.
- Developing model digital school for strengthening the digital pedagogical skills to the trainee teachers.
- The principals of collaborative schools and student teachers should be briefed before the internship program so that all activities could be conducted smoothly.

REFERENCES

Bilsland, C., Nagy, H., & Smith, P. (2020). Virtual internships and work-integrated learning in hospitality and tourism in a post-COVID-19 world. *International Journal of Work-Integrated Learning, 21*(4), 425-437.

Cervetti, G., Damico, J., & Pearson, P. D. (2006). Multiple literacies, new literacies, and teacher education. *Theory into practice, 45*(4), 378-386.

Darling-Hammond, L. (2010). Teacher education and the American future. *Journal of teacher education, 61*(1-2), 35-47.

Jen, T., Morales, C., Greenwald, E., Montgomery, R., Loper, S., & Barber, J. (2020). Enacting ambitious engineering curriculum in science classrooms: examining teachers' implementation of Virtual Engineering Internships. *International Journal of Science Education, 42*(12), 2055-2074.

Keefe, E. S. (2020). Learning to practice digitally: Advancing pre-service teachers' preparation via virtual teaching and coaching. *Journal of Technology and Teacher Education, 28*(2), 223-232.

Kennedy, K., Cavanaugh, C., & Dawson, K. (2013). Pre-service teachers' experience in a virtual school. *American Journal of Distance Education, 27*(1), 56-67.

Pearson, J. (2003). Information and communications technologies and teacher education in Australia. *Technology, Pedagogy and Education, 12(*1), 39-58.

Stapleton, J., Tschida, C., & Cuthrell, K. (2017). Partnering principal and teacher candidates: Exploring a virtual coaching model in teacher education. *Journal of Technology and Teacher Education, 25*(4), 495-519.

Theelen, H., Van den Beemt, A., & den Brok, P. (2019). Using 360-degree videos in teacher education to improve pre-service teachers' professional interpersonal vision. *Journal of Computer Assisted Learning, 35*(5), 582-594.

Thiyagu, K., & Muthuchamy, I. (2012). Effectiveness of e-content in learning mathematics among secondary teacher trainees. *Research and Reflection of Education, 10*(04), 9-12.

TEACHERS' ATTITUDES TOWARDS VIRTUAL TEACHING DURING COVID-19 PANDEMIC

Sankar Kar
Assistant Teacher,
Chandpara Bani Vidya Bithi (H.S), 24 PGS (N), WB, India
shiksha.sankar@gmail.com

ABSTRACT
To control the spread of Corona virus outbreak in India, a nationwide lockdown had been started in India since 25th March 2020. All educational institutes have been closed since March 16 in West Bengal. The 2020 academic year is a period of darkness in the lives of students due to the Covid-19 epidemic lockdown. West Bengal Education Minister urges stakeholders to consider alternative plans to complete the syllabus after a long shutdown. Therefore, many schools started resuming their sessions through e-learning portals. As a result, e-learning strategies have gained momentum as well as become an important contemporary trend in education during the lockdown. In the lockdown period, both the students & teachers have to access knowledge via ICT (Information Communication Technology) to keep pace in the current information society. ICT reduces the barrier of social distancing as well as the impact of shut down on the education sector with the help of digital transformation in the Indian education system. During lockdown being a digital transformation of education does not mean teachers are willing and natural digital teachers. It is important to know from teachers during lockdown what their knowledge, their skills, their expectations and their perception of e-learning. The main aim of this study is to explore the attitude of secondary school teachers' towards virtual teaching during lockdown at Gaighata Block of North 24 Parganas in West Bengal. A descriptive cross-sectional study was conducted to know the attitude of teachers'. A convenient sampling technique was used to select the participants for the study. Data has been collected with the help of Likert type attitude scale using Google Form during the Covid-19 pandemic lockdown. During the lockdown, the result of this study indicates that the attitude towards virtual teaching is not satisfactory. Moreover, male teachers develop a more favourable attitude toward online teaching than female teachers. This study also proved that more experienced teachers show less interest in virtual teaching-learning than less experienced teachers.
Keywords: Attitude, Covid-19, ICT, Lockdown & Virtual Teaching-Learning.

INTRODUCTION

The Coronavirus first emerged at the district of Wuhan in China. So lockdown was first announced in China to prevent the spread of the virus. To control the spread of the Corona virus outbreak in India, nationwide lockdown had been started in India since 25th March 2020 [Wikipedia]. All educational institutes have been closed since March 16 in West Bengal. The West Bengal government had decided to postpone the ongoing Higher Secondary Board examinations and class XI examination to reduce the viral effect. But seeing that the effects of the infection were not diminishing, the government was eventually forced to cancel both the examination. West Bengal Chief Minister Mamata Banerjee further announced all institutions will remain closed till August 31 as COVID-19 pandemic shows no sign of stopping. West Bengal Education Minister urges stakeholders to consider alternative plans to complete the syllabus after a long shutdown. Therefore, many schools started resuming their sessions through e-learning portals. The West Bengal School Education Department (WBSED) has started the "Online Banglar Shiksha Classroom" for secondary school students on its Banglar Shiksha portal 2020. The tag line of Banglar Shiksha Classroom is "To keep Corona at bay School is at your doorstep today." (https://banglarshiksha.gov.in/). Syllabus oriented activity tasks, e-learning videos, and television programs are being included in "Online Banglar Shiksha Classroom".

Keller and Cernerud (2002) have identified variables such as age, gender, previous experience of computers, technology acceptance and individual learning styles as major predictive factors when discussing acceptance of technology by students. Usually, teachers use their smart phone for executing teaching-learning activities. It has become also affordable to students due to the reduction in the cost of both hardware and high-speed internet connection. Students have wanted learning materials that are accessible through online mode in mobile phones and computers (Radha et al., 2020). But before lockdown, this technology is not used in that way in our education system. The nationwide lockdown has given a scope to the school teachers to maximize the utilization of virtual platforms. For maintaining the new norm of social distancing because of Covid-19, the e-learning platform has emerged as the only available way of teaching. E-learning has become quite popular among students across the world particularly, the lockdown period due to the COVID-19 pandemic (Radha et al., 2020).

The word 'Lockdown' has been familiarized all over the world due to Covid-19 pandemic outbreak. The 2020 academic year is a period of darkness in the lives of students due to the Covid-19 epidemic lockdown. A fair

assessment of students' perception of e-learning may grant a good precedent in the implementation of fully online learning due to physical isolation caused by the COVID-19 pandemic (Krishnapatria, K. 2020). The entire education system has come to stagnant as the lockdown has been tightened to prevent the spread of the virus. In this case, educational institutions across the country had to close immediately, even at a time when academic sessions were held quite effectively. To minimize the lockdown effect, the teacher began to think of new ways to communicate with the students. The educational institutions took the necessary steps to continue the teaching process from home. As a result, e-learning strategies have gained momentum as well as become an important contemporary trend in education during the lockdown.

In the very initial stages of lockdown, many academic institutions were unwilling to change their traditional pedagogical approach but there was no substitute for changing educational perspectives in the fully online curriculum. During lockdown being a digital transformation of education does not mean teachers are willing and natural digital teachers. It is important to know from teachers during lockdown what their knowledge, their skills, their expectations and their perception of virtual teaching & learning. The review of related literature indicates numerous studies have been done to know the perception of the students towards e-learning. But, very few studies have been conducted to assess the perception of school teachers towards virtual teaching and learning during the lockdown. Surprisingly, no such survey has been found so far in the North 24 Parganas district of West Bengal.

On the other hand, there is a bunch of similar studies conducted before the pandemic and in other countries. For instance, Maajoon and Alenezi (2012) tried to investigate faculty members' attitudes toward e-learning in higher education in the Kingdom of Saudi Arabia and the factors influencing their attitudes. A survey questionnaire was used. The study proved that the perceptions by females being more positive than that of males. The results also showed that faculty members who had less teaching experience had a stronger perception than those who had been teaching for more than 10 years.

Abbasi et al. (2020) wanted to determine the perceptions of students towards e-learning during the lockdown at Liaquat College of Medicine and Dentistry. For this purpose, a self-administered questionnaire was employed and a total of 382 responses were received. The study manifests overall, 77% of students have negative perceptions towards e-learning. The findings of the study are students did not prefer e-teaching over face-to-face teaching during the lockdown situation. In another study in health sciences, Agarwal and Kaushik (2020) collected feedback related to student's perception of online learning from 87% of medical post-graduate students. After 12 days of online teaching session during the pandemic situation obtained data reflects that majority of the participants perceived that the sessions were tailored to their level of learning [n = 76 (99%)] and found the sessions to be interesting and enjoyable [n = 72 (95%)].

Krishnapatria (2020) conducted a study on "From 'lockdown' to letdown: Students' perception of e-learning amid the covid-19 outbreak". Analysis shows that 100% of students participated in e-learning, and 96.4% have accessibility to online learning. However, only 56% expressed satisfaction with the implementation of e-learning. Finally, the study claimed that students' perceptions of e-learning are somewhat fruitful.

Similarly, Sapkota and Narayangarh (2020) also focused on students and surveyed on "Determining Factors of the Use of E-learning during COVID-19 Lockdown among the college students of Nepal: A Cross-Sectional Study". A convenient sampling method through social media and Google form was used to collect 385 data from college students of Nepal during the COVID-19 Pandemic lockdown. The study found that gender, marital status, training on the use of E-learning, the experience of E-learning before pandemic were statistically significant with the future use of E-learning.

On the other hand, Sahoo (2020) focused on student teachers and published the study as "E-Readiness and Perception of Student Teachers' Towards Online Learning in the Midst of COVID-19 Pandemic". An online survey method was adopted to gather the responses from 318 numbers of student-teachers of different teacher education programs from different states of India by using a self-developed questionnaire. A purposive sampling technique was adopted. Only 35% of student teachers are found to be proficient in digital skills and the majority feel that online classes are lacking proper teacher-student and student-student interaction. A significant percentage of student teachers are found to feel stressed isolated and poor confidence in the online platform of learning and are not agreeing that curriculum can be effectively transacted through online mode.

The review of the previous study has shown several studies have been conducted to identify and assess the attitude of e-learners and e-teachers towards e-learning in a normal situation. Before the Covid situation, teaching through the virtual platform gained popularity in the field of distance education & higher education. But in school education, virtual teaching platforms were not used too much before the Covid situation. Now, the Covid situation

made us realized the need for virtual interaction between students and teachers to complete the course in time. So, curiosity has arisen in the mind of the investigator to study the attitude of secondary school teachers towards virtual teaching during Covid 19 lockdown. The present investigator does not found a single study on attitudes of school teachers towards virtual teaching during the Covid-19 pandemic situation at the North Twenty Four Pargana district in West Bengal.

PURPOSE AND HYPOTHESES

This study intended to reveal the attitudes of secondary school teachers towards virtual teaching during the lockdown in West Bengal and examine the interactions between their attitudes and their gender, teaching experience as well as academic qualifications. In the light of the previous studies th following hypotheses were identified to be tested:

1. (H_1) There is no significant difference of attitudes between male and female secondary school teachers towards virtual teaching
2. (H_2) There is no significant difference of attitudes between virtual teaching and teaching experience of secondary school teachers towards virtual teaching
3. (H_3) There is no significant difference of attitudes between virtual teaching and academic qualification of secondary school teachers towards virtual teaching

METHOD

A descriptive cross-sectional study was conducted regarding teacher's attitudes towards e-learning during lockdown at Gaighata Block of North 24 Parganas in West Bengal. A convenient sampling technique was used to select the participants from seven secondary schools for the study. A self-report attitude scale was used to collect data. It consisted of 16 items except for demographic questions. 7 of the 16 items were negatively worded and were reversely scored.

Since with social distancing keep in mind, face-to-face data collection is not possible, data has been collected with the help of Likert–type attitude scale using Google Form during Covid-19 pandemic lockdown. The scale was based on a 5-point Likert scale ranging from 1=strongly disagree, 2=disagree, 3=Somewhat agree, 4=agree to 5=strongly agree. The period of study is the month of September 2020. After validation of content from the prominent educational experts and experts in the virtual platform, a pilot test was run on forty-five secondary school teachers before the final administration of the instrument. As a result of the reliability of analysis of the instrument, the Cronbach's alpha was found as 82.39. The norm of the scale is also determined using percentile. Those who scored more than 62 and above were considered to have a high positive attitude and those who scored between 36 to 61 were considered moderate attitude and finally, those who scored less than 36 were considered negative attitudes towards e-learning during the lockdown. Independent T-test and ANOVA were applied for determining the perceptions of school teachers towards e-learning.

RESULTS

Table 1 reveals that the mean attitude of the school teachers' towards online teaching to be 46.37 which indicates a moderate level attitude towards e-learning *(M= 46.37, N= 126)* during the lockdown.

Table 1

Attitude Level of School Teachers towards Online Teaching

	N	Mean	Std. Deviation	Status
Level of Attitude	126	46.37	17.830	Moderate

On the other hand, as can be observed from the Table 2, **gender** of the teachers surveyed has no effect on the attitudes. Namely, statistically no significant difference was observed between the secondary school male (M = 48.59, SD = 16.87) and female (M = 43.78, SD = 18.70) teachers' attitudes towards online teaching (t = 1.518, p = 0.132, α. = 0.05). However, the mean score for males and females indicates that male teachers developed more favourable attitudes towards virtual teaching than female teachers during the lockdown.

Table 2
Difference between male and female teachers' attitudes

Gender	N	Mean	Std. Deviation	Std. Error Mean	t value	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference
Male	68	48.59	16.87	2.04	1.518	124	.132	4.812	3.170
Female	58	43.78	18.70	2.45					

In terms of **teaching experience**, initial descriptive statistics from the Table 3 shows that differences exist among the three categories of teaching experience. Less experienced teachers' have shown a greater positive attitude towards e-learning than more experienced teachers. F value also shows that the differences are statistically significant as a whole as the p-value is less than .05 (F=6.86, p<.05). The Tukey post hoc test has been further employed to ascertain which two categories out of three categories of teaching experience differ significantly. The Table 4 presents that there is a statistically significant difference between the attitude of within 5 years experienced teachers' and above ten years experienced teachers' (p =.001). However, there are no differences between the attitude of within five years experience teachers & between five to ten years experience teachers, (p = 0.139), as well as between above ten years experienced teacher and five to ten years experienced teachers' (p= 0.192).

Table 3
Differences in attitudes of the teachers based-on their teaching experiences

Teaching Experience	Descriptive			ANOVA					
	N	Mean	Std. Deviation	Groups	Sum of Squares	df	Mean Square	F	Sig. (2-tailed)
Within 5 Years	35	54.37	17.54	Between Group	3988.81	2	1994.40	6.862	.001
5-10 Years	40	46.83	16.51						
Above 10 Years	51	40.53	17.11	Within Group	35750.65	123	290.65		
Total	126	46.37	17.83	Total	39739.46	125			

Table 4
Tukey post hoc test for multiple comparisons among the teaching experience categories

(I) Teaching Experience	(J) Teaching Experience	Mean Difference (I-J)	Std. Error	Sig.	95% Confidence Interval	
					Lower Bound	Upper Bound
Within 5 Years	5-10 Years	7.546	3.946	.139	-1.82	16.91
	Above 10 Years	13.842*	3.742	.001	4.96	22.72
5-10 Years	Within 5 Years	-7.546	3.946	.139	-16.91	1.82
	Above 10 Years	6.296	3.601	.192	-2.25	14.84
Above 10 Years	Within 5 Years	-13.842*	3.742	.001	-22.72	-4.96
	5-10 Years	-6.296	3.601	.192	-14.84	2.25

*The mean difference is significant at the 0.05 level.

In terms of **academic qualification and attitudes**, initial descriptive statistics from above table 5 show that the attitude of both honours graduate and master degree scale holding teachers' are greater attitude than the pass graduate scale holding teachers'. However, honours graduate and master degree scale holding teachers have shown equal interest in online teaching. But, the F value does not show any statistically significant differences among the categories (F=0.992, p>.05).

Table 5
Differences of between attitudes of teacher and their academic qualifications

Qualification	Descriptive			ANOVA					
	N	Mean	Std. Deviation	Groups	Sum of Squares	df	Mean Square	F	Sig. (2-tailed)
Pass Graduate	48	43.52	18.67	Between Group	630.77	2	315.38	.992	.374
Honours Graduate	32	48.13	17.94						
Masters	46	48.13	16.82	Within Group	39108.69	123	317.95		
Total	*126*	*46.37*	*17.83*	*Total*	*39739.46*	*125*			

CONCLUSION

After critical analysis of collected data from secondary school teachers, it can be concluded that the attitude towards online teaching during COVID-19 Pandemic is not satisfactory at all. The cause behind the moderate attitude of school teachers is about their e-learning skills. Having no prior experience about online teaching and feeling uncomfortable with ICT could also be reasons behind the moderate level of attitudes towards online teaching. The study found that gender, teaching experience were statistically significant with the future use of e-learning. As the paradigm shifts from traditional teaching methods to technology-enabled learning, instructors must be well prepared to utilize new technologies to meet the needs of all students (Marzilli et al., 2014).

The result of this study indicated that male teachers developed more favourable attitudes towards online teaching than female teachers during the lockdown. This finding is varrying from the finding of some previous studies. For example, Alenezi (2012) reported more positive perceptions towards the e-learning among females than males. On the other hand, the finding of this study is similar to the finding of Alenezi's study which proved that the faculty members who had less teaching experience had a stronger perception than those who had been teaching for more than 10 years. This study also revealed that there was no significant difference in the attitude of secondary school teachers towards online teaching in terms of academic qualification during the lockdown. A similar view expressed by Alenezi (2012), who found no significant relationship between a faculty member's academic degree and his or her perception of e-learning. According to a survey by Al-Sarani (2010), the level of education seemed to have some effect on faculty members' perceptions of e-learning, but to a lesser extent.

REFERENCES

Abbasi, S., Ayoob, T., Malik, A., & Memon, S. I. (2020). Perceptions of students regarding e-learning during Covid-19 at a private medical college. *Pakistan Journal of Medical Sciences*, *36*(COVID19-S4), 57.

Agarwal, S., & Kaushik, J. S. (2020). Student's perception of online learning during COVID pandemic. *The Indian Journal of Pediatrics*, *87*, 554-554.

Alenezi, A. M. (May 2012). *Faculty Members' Perception of E-learning in Higher Education in the Kingdom of Saudi Arabia (KSA).* (Doctoral Dissertation, Graduate Faculty of Texas Tech University, Saudi Arabia). Retrieved from https://ttu-ir.tdl.org/bitstream/handle/2346/45399/ALENEZI-DISSERTATION.pdf?sequence=3

Al-Sarrani N. (2010). *Concerns and professional development needs of science faculty at Taibah university in adopting blended learning* (Doctoral dissertation). Kansas State University. Retrieved from: http://krex.kstate.edu/dspace/bitstream/2097/3887/1/NauafAl-Sarrani2010

Keller, C & Cernerud, L. (2002). Students' perception of e-learning in university education. *Journal of Educational Media*, 27, 1-2, 55-65.

Krishnapatria, K. (2020). From 'lockdown' to letdown: Students' perception of e-learning amid the covid-19 outbreak. *ELT in Focus*, *3*(1), 1-8. DOI: 10.35706/eltinfc.v3i1.3694

Marzilli, C., Delello, J., & Marmion, S. (2014). Faculty Attitudes Towards Integrating Technology and Innovation. *International Journal on Integrating Technology in Education*, *3*(1), 1–20. https://doi.org/10.5121/ijite.2014.3101

Radha, R., Mahalakshmi, K., Kumar, D. V. S., & Saravanakumar, D. A. (2020). E-Learning during Lockdown of Covid-19 Pandemic: A Global Perspective. *International Journal of Control and Automation*, *13*(4), 13.

Sahoo, S. (2020). E-Readiness and Perception of Student Teachers' Towards Online Learning in the Midst of COVID-19 Pandemic. *Available at SSRN 3666914*.

Sapkota, P. P. (July, 2020). *Determining Factors of the Use of E-learning during COVID-19 Lockdown among the college students of Nepal: A Cross-Sectional Study*. (A Mini Research Report, Balkumari College, Narayangarh, Chitwan, Nepal). Retrieved from https://www.ncbi.nlm.nih.gov/pmc/articles/PMC7306963/

THE FORMS AND ANTECEDENTS OF INCOVOLITY IN ONLINE CLASSROOM: AN ANALYSIS IN INDIAN CONTEXT

Aditi Gupta,
Ashiska Sharma
Patiraj Kumari
Gurukul Kangri Vishwavidyalaya, Haridwar, Uttarahand, India
aditi0613@gmail.com

ABSTRACT
The current situation of COVID 19 not only involves global health crisis but also economic and social crises. It has brought about a change in the system of education by conducting all academic activities online. Acc. to ILO, a world of universal distance education (as nearly 94% of learners have faced school closures) is created. Online education is a new concept for most Indians, creates room for incivility. Incivility is defined as a lack of manners, courteousness, and respect which deteriorates the decorum leading to disturbance in teaching and learning of the class. This study is focused on incivility in online teaching and learning. A total of 70 college students from around the country were asked to fill an open-ended online questionnaire to know their views on incivility in the online classroom. The overall thematic analysis resulted in the identification of three themes i.e. reported incidents, possible causes, and measures to reduce incivility in the online classrooms. In the time of pandemic where almost all the dissemination of education is done online to minimize the effect of the pandemic on the education system, incivility is a stumbling block. Therefore, it is important to bring incivility in online education in limelight as tackling incivility is the need of the hour.
Keywords: COVID 19, Incivility, Online Teaching, Empathy, qualitative analysis

INTRODUCTION

COVID 19 has changed everything, be it the living style, working style, or the style of education delivery. Ever since the campuses closed after the outbreak of COVID 19, face-to-face education has come to standstill. From kinder garden to higher education, all have shifted to technology-driven online academic activities. Online teaching and learning is a new concept for Indians, unlike western countries. Unlike earlier times where only a hand full of global schools offered periodic virtual lectures, today everyone is on a virtual platform to learn. Government, authorities, teachers, students, all are trying their best to incorporate this new normal of the education system. All types of training programs like massive open online courses (MOOCs) for students and teachers are offered to get hands-on knowledge of the technology to incorporate in education system. According to the reports of world economic forum, COVID 19 has accelerated the digital transformation of higher education. But what is weakening this transformation is the incivility in online classes. In the words of Berger (2000), incivility is any speech or action that is disrespectful or rude.

According to Feldman (2001) incivility is any act that hampers a harmonious and shared-learning atmosphere. Clark (2008) defined and inferred incivility in different ways. He defined incivility as an action that is disregard and insolence for others, causing an atmosphere of disrespect, conflict, and stress. Various definitions emphasize only on the student, while some others take teacher into the consideration. Galbraith (2008) points out that incivility takes place when students and teachers fail to follow the norms of conduct. Clark expands the definition by suggesting that when norms of mutual respect are broken by students and/or faculty, feelings such as anxiety, irritation, rage, unfriendliness, and hatred may develop between the person concerned. Morrissette (2001) explains incivility as the intentional behavior of students to upset the class environment and disturb the teaching and learning of others. Finding a concrete and clear definition of incivility seems like a difficult task as very few defined incivilities from an online teaching perspective. A clear picture can be drawn after examining the acts of incivility.

Students these days do not have the same values, feelings, norms as they were in earlier times (Nilson,2003). Cultural diversity and unaccountability are the major antecedents of incivility in the online classrooms. Also, online environments can hide identity and increase self-misrepresentation. People when not communicating face to face i.e. in virtual interactions contribute to online rudeness because of the Anonymity involved (Suler, 2004). Some people who otherwise would not get involved in incivility do so as online anonymity provides them armor to protect themselves from being pointed out (Rainie et al., 2013). Although online classroom requires participants to disclose their names, still their distinguishing invisibility leads to acts of incivility (Wright, 2013). The lack of restriction, self-awareness, and reduced self-discipline in online settings may result in toxic online disinhibition (Lapidot et al., 2012). Secrecy strengthens the chances of online incivility when abusers take extra efforts to hide their identity before involving in incivility (Santana, 2014). Students face setbacks like lack of self-discipline, good learning environments when they are self-isolated at home (Bao, 2020).

Incivility in online classrooms impedes learners' development and wellbeing (Campbell et al., 2020). Therefore, it is important to study the issue of incivility in the online classrooms. In line with this, different acts of incivility are looked upon by researchers and practices have been suggested to reduce them. This is the first study highlighting the bibliometric and thematic analysis in the Indian educational context.

The manuscript consists of firstly the structured overview of the existing literature related to the online classroom incivility various definition and terminology used by various research, and then, the research outlines the bibliometric analysis using R-Studio. The bibliometric section highlights the analysis of 173 papers. The analysis shows the articles' yearly production, most relevant sources based on the number of publications and impact factors, and the countries' scientific output. The results show that in India, there are only six studies that have been done related to this field. To fill this gap, the particular research further presents the different themes from 70 college students to find out various forms and reasons for online incivility in the classes. The thematic analysis revealed four themes using NVivo. The research also presents the thematic map and evolution of the 173 articles.

PURPOSE

The aim of the study is to explore incivility in online education that students have been experiencing or witnessing. The purpose of the survey with open-ended questions from students of higher education is to gain knowledge about the different acts of incivility articulated by the participants. The study aims to add knowledge about difficulties in the form of incivility in the online classrooms, and to suggest the authorities of higher education for developing online education culture in the hard times of pandemic. Figure 1 provides a graphical representation of the framework. Section two and three present the bibliometric and thematic analysis in the context of customer misbehavior. The proposed research tries to fill the research gaps and accomplishes bibliometric analysis objectives on existing literature.

The answers of the following research questions were sought via bibliometric and thematic analyses.

1. What are the antecedents (variables that describe possible causes) of incivility in the online classrooms?
2. What are the incidents of incivility in online classrooms?
3. What are the measures to reduce incivility in online classrooms?

METHOD

The bibliometric analysis:

The selection of the articles for the bibliometric analysis is depicted in Figure 1. The following keywords were used: "online classroom misbehavior," "online classroom incivility" in order to identify the articles. The Scopus database was used because it contains both Scopus indexed and ISI papers (Oakleaf 2009). The total number of articles retrieved was 238 from 2007 to 2020. However, the researcher distilled down to 173 articles based on language subject area and documents. The open-source statistical application called R-Studio has been adopted for the bibliometric analysis.

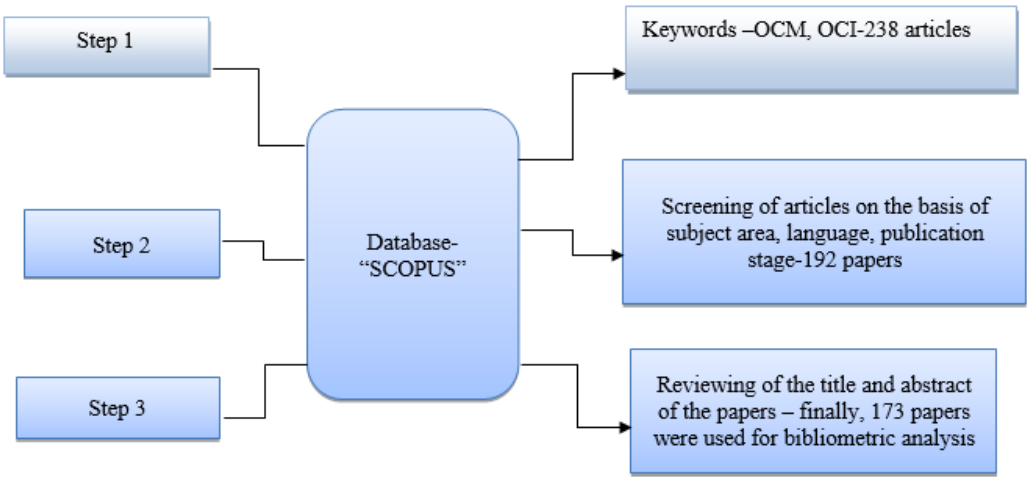


Fig 1: Bibliometric procedure (OCM=Online Classroom Misbehavior; OCI=Online Classroom Incivility)

The thematic analysis:

70 college students from around the country participated in a study concerning incivility in the online classroom.

Purposive sampling was used for selecting the participants of this study. According to Elo et al. (2014), it is ok to use purposive sampling for qualitative studies where the researcher wants to know the information from the people who have the best knowledge about the concerned research topic. Also, there is no commonly accepted sample size for qualitative studies because the optimal sample depends on the purpose of the study, research questions, and richness of the data.

An online questionnaire with open-ended to know the acts of incivility that participants had either faced or witnessed. Information about uncivil behaviors in the online classroom was collected by an open-ended response format question that could reveal the viewpoints of the respondents about incivility in the online classroom. This question was "What do think about incivility in the online classroom?".

Respondents were encouraged to quote some of the incidents that they have either experienced or witnessed. There was no word limit for the answers.

The online survey link was sent to the target group via emails and messages. The weekly reminders were also used as the time progressed. The survey hardly took 15 minutes to complete**.** Participants were informed about the purpose of the study. So that they could share their stories wholeheartedly without holding anything back. Confidentiality of the data was maintained. Also disclosing their identity was totally optional.

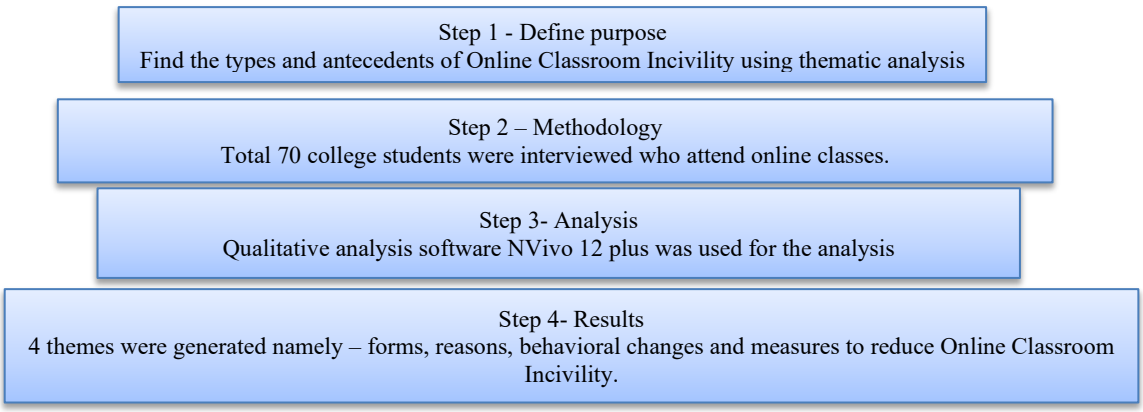


Fig 2: Thematic procedure

Qualitative analysis was done on the data collected via the open-ended survey questionnaire. The researcher used the computer software program NVivo12 plus to conduct a thematic analysis. The responses were entered into the software which was then coded into themes by the NVivo12 plus and analyzed thereafter.

RESULTS

The reporting of the results is organized into two sections based-on the analyses conducted during the study: bibliometric and thematic analyses.

The Bibliometric Analyses and the Results

The Table 1 provides the main statistics about the data: types of documents, time span, publications, sources, citations, authors, etc. Here, it can be comprehended that they were articles published between 2007-2021. The total 173 documents were used for the current study in which 169 were the articles and 4 review and it can be seen that these articles were written in 113 sources. The keywords noted in the articles were 1011. It is identified from the articles that totaled 381 number of authors were with 29 single- authored documents and 352 with multiple authors documents and the collaboration index was found to be 2.55.

Table 1
Main Information of the articles

Description	Results
MAIN INFORMATION ABOUT DATA	
Timespan	2007:2021
Sources (Journals, Books, etc)	113
Documents	173
Average years from publication	3.66

Average citations per documents	15.4
Average citations per year per doc	2.74
References	9493
DOCUMENT TYPES	
Article	169
Review	4
DOCUMENT CONTENTS	
Keywords Plus (ID)	490
Author's Keywords (DE)	541
AUTHORS	
Authors	381
Author Appearances	460
Authors of single-authored documents	29
Authors of multi-authored documents	352
AUTHORS COLLABORATION	
Single-authored documents	35
Documents per Author	0.454
Authors per Document	2.2
Co-Authors per Documents	2.66
Collaboration Index	2.55

The Figure 3 shows the annual scientific journal published in online classroom incivility from 2007-2020. Trend shows that there is slow and gradual increase in the number of articles every year except a small glitch in 2017. In January 2021, 4 articles are already published showing that the interest of the researchers is growing in this field.

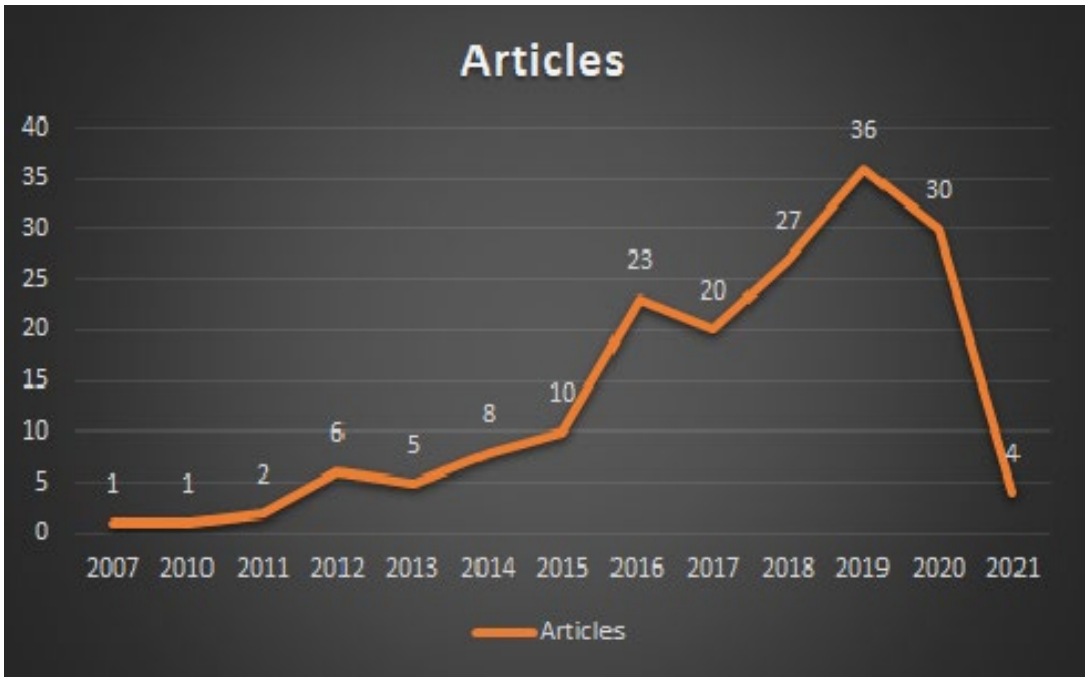


Fig 3: Average production over years

The Table 2 reveals the top 20 journals contributing to this area. It can be recognized that the 'Computers in Human Behavior' is at the top in this domain, consisting of 15 papers followed by 'Communication Research' with 8 articles. On the other hand, the Table 3 talks about the publication of research papers within different countries. From the table, it can be inferred that the USA has the highest number of publications (254), followed by Germany with 51 publications, Canada (23) and Australia (75), and so on. India stands at 10th position in terms of the production of articles with only 6 publications. This shows that there is a great scope and need for researches when it comes to online classroom incivility in India.

Table 2
Top 20 journals in terms of publications, impact factor and citation

Source	H_Index	G_Index	M_Index	Tc	Np	Py_Start
Computers in Human Behavior	8	13	1.33	172	15	2016
Communication Research	6	8	0.75	168	8	2014
Nurse Educator	5	5	0.5	91	5	2012
Equality, Diversity and Inclusion	2	3	0.66	12	4	2019
Social Media and Society	3	4	0.5	52	4	2016
Information Communication and Society	3	3	0.375	185	3	2014
Journalism Studies	3	3	0.5	83	3	2016
New Media and Society	2	3	0.5	34	3	2018
Communication and The Public	1	1	0.25	2	2	2018
Communication Education	2	2	0.25	49	2	2014

Table 3
Top 10 country in terms of production of articles

Region	Frequency
USA	254
GERMANY	51
CANADA	23
AUSTRALIA	16
UK	13
SINGAPORE	12
CHINA	11
SOUTH KOREA	10
SWEDEN	10
INDIA	6

The Thematic Analyses and the Results

This section explores the primary forms and antecedents of Online Classroom Incivility. The analysis of the responses revealed four themes. These themes were the different incidents of Online Classroom misbehavior, reasons for such behavior and ways to reduce such behavior. Below, firstly these themes were elaborated and later results of the thematic analyses of the keywords, map and evaluation of the publications were provided.

Theme 1: *Reported incidents of incivility in online classroom*

The first theme that emerged was the students reported the hard times they had faced while attending online classes. These were scribbling on virtual board, intentionally unmuting the microphones, presenting screens, etc. participants feel that these acts of incivility hamper the smooth flow of information and negatively effects the successful completion of the class. It not only disturbs the teacher but also other students who are genuinely willing to study. One of the participants wrote: "When I was attending my online class, while the class was going on few students who have entered with a fake ID started to scribble on the screen this caused a problem for the other students also such intolerant acts makes the teachers feel disrespected"

Another participant experienced incivility and wrote: “the teacher was explaining and the student was cross-questioning the teacher which resulted in a harsh argument with the teacher by the student”.

Some other participants commented as the following:

“participants don't mute their mic. And sometimes ask irrelevant questions” “someone sent me a personal nasty message in chat”

“one participant had created a continuous disturbance to all our audience, he used the vulgar language in the chat box and created a very disturbance to others”

“I usually face this during online classes people use annotations over the graphs and slides and cover it with their mess that results in distraction as well as irritation. Some use whistling and play songs in their native languages. I remember an incident when there was an eminent speaker on the board and some disturbing elements using their mics on and shouting some non-sense slogans.”

“It was during the webinar where 2 or 3 participants started sharing their screen and started writing irrelevant things on it, thereby upsetting the whole classroom environment”

Theme 2: *Reported possible causes of incivility in online classroom*
Another theme that came out was the possible causes that made the students indulge in uncivil behavior in the online classrooms. participants feel that virtual platform provides anonymity and makes it easy to hide the identity. thus, providing a room to show uncivil behavior. the students who are not interested in the lecture or just want to have fun by disturbing the class get involved in incivility. Also, some students don’t want to accept the change in the system of education. A student stated that: “In my opinion, few students take all of this educational process for granted, they have lost the fear of being caught even after such mischievous acts.”

Some others quoted as:

“There are many reasons, some are for fun and some are those who themselves get frustrated when they don’t understand the topic properly.”

“Ethics and morality, some people over show and show negligence, indiscipline. I feel like out of 10 still there are minimum 3 students who have evil thoughts and don't want to accept changes from offline to online mode.”

“Think that it will give rubbish enjoyment to them. They must have thought that those uncivil behaviors will create fun for them.”

“Since people are stuck at their homes for many months, both students and teachers lack physical and live interaction which affects the civility of students in a greater magnitude.”

“Lack of personal touch or physical distance could be the reason”

“Lesser focus and enthusiasm in comparison to a physical classroom, and non-uniformity in teacher-student interaction. Also, the lack of a proper channel of inspection in online mode.”

“For students, there is always a tendency to show this kind of behavior even in the offline classrooms but this behavior has become more prevalent in online classrooms because now there is no one to supervise them directly.”

“This is very new for all of us and we don’t know how to present ourselves on an online platform”

Theme 3: *Measures to reduce incivility in the online classroom*
Participants stated that there should be a pre-described set of rules before entering an online classroom. One participant wrote “provide a handbook of the rules of the online classes” Some participants quoted as:

“I think we all have to obey the soft board discipline rules to control the incivility.”

“Host of the online class must circulate strict rules and regulations for the lecture so that this incivility must reduce”

The need for civility and moral science classes was echoed by the participants "The moral science class should be made mandatory for the students"

"First of all, it has to self-concern of everyone, especially in the academic field. There should be strict rules and actions against incivility. During faculty development programs and student development programs, one lecture should be devoted to moral ethics and manners in online classes. Parents and siblings should teach their children that don't react to such practices"

"Help them to get in their habit"

Participants emphasized having transparency in the online platform where the identity of all is completely disclosed. this will create fear of being caught and getting insulted.

"Some steps to increase the transparency should be taken. The students must have the fear of getting caught for their bad behavior. Civility classes must be conducted"

"Be patient, clear the do's and don'ts or expectations in the beginning only, if students don't follow after handling patiently then take some strict actions so that they don't repeat the same and other students don't do it."

"There must be some applications which help out in retrieving IP address and real or actual user name. Because usually in online classrooms participants make a fake profile and show incivility. take strict actions against those students who show uncivil behavior so that they have some fear of getting punished"

"Online platform should ask for some id proof before joining the class to reveal their true identity"
One of the most important suggestions from the participants was to take some steps to keep all students motivated. Participants commented:

"Give more priority to interaction among students where they as both individually or as a group, get involved with each other, and develop social skills. Also, importance can be given on personality, career, attitude developments, soft skills which will reduce the burden on students drastically and make them involve in this process joyfully and enthusiastically with innovative solutions."

"Make a motivational and interactive lecture."

"Effective communication should be a place, reducing the feeling of detachment, assessing the underlying causes of incivility"

"A proper platform where students could feel lively just like a classroom. There must be involvement of both teachers and students. And coordination between faculties is necessary so that there could be a proper time gap between two classes."

"Motivation for teachers and feedback from teachers about the classes. By bringing interesting and knowledgeable content that will help students to increase their cognitive and analytical skill"

"Learning process must be interactive and interesting so that students can be more focused"

Keywords, Map and Evolution
The keyword cloud presented below in the Figure 4 shows the keywords analysis and the length and count of the word for all 70 interviewed students, revealing different themes of the keywords.

Fig. 4: Keywords

The researcher has detected some of the themes for the interpretation of the results. The thematic map of the current study is constructed using the existing literature from 2007-2020. The keywords used were 200, and the items in the clusters are set to be the minimum frequency of 3. The biblioshiny software was adopted for this analysis.
Fig 5 shows the thematic mapping based on the density, i.e., y-axis, and centrality, i.e., x-axis. Their thickness and importance by centrality measure the development of the themes. The figure is divided into four quarters. The first quarter, i.e., the upper right, represents the themes that are high in density and centrality. These are called motor themes, which are essential and developed. If we see the fig service classroom incivility comes under this quarter, it is somewhat advanced and crucial. In the second quarter, lower rights talk about primary and transversal themes, represent low density but high centrality, which means much research has been done on these themes but in the fig this quarter is empty i.e. it is not much researched earlier by other researchers. The third part, which is lower left, shows the themes which emerging or declining. Lastly, the upper left quadrant represents high density and low centrality themes. These themes are isolated but developed. Most of the existing literature focuses on the student incivility in nursing education.

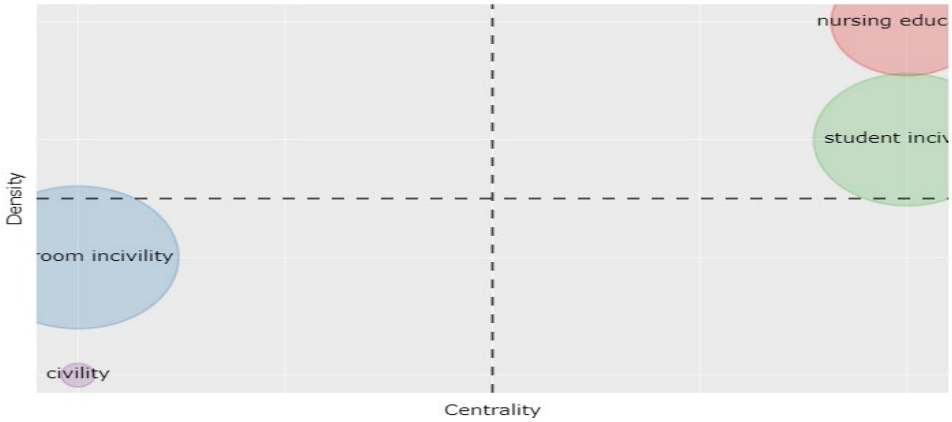


Fig. 5: Thematic map

Also, the thematic map shows thematic evolution, or the literature development on incivility in online classroom. Using the author's keywords, the thematic evolution shows the themes' history, and these are evolved. The first segment about computer mediated communication evolved from 2007 to 2016. Secondly, about incivility in nursing education were introduced during 2017-2019.There were no researches on incivility in online classroom in 2020.Currently, the researcher focuses on the negative outcomes of incivility in online classroom that how such behavior results in negative emotions and affects learning of students.

CONCLUSION

Online incivility is common but very problematic, especially in the education sector. The results of the study offered several important implications. The research spans the various areas of online incivility.

Bibliometric analysis done on 169 documents published from 2007-2021 there is slow and gradual increase in the number of articles every year except a small glitch in 2017. The trend of last three years i.e. 2018-2020 shows that online classroom incivility is becoming a hot button issue.

Moreover, Many Journals with high impact factors have published articles on online classroom incivility and Computers in Human Behavior is leading with highest number of articles i.e. 15 articles. While analyzing the Geographic origin of the articles, researchers found that USA is highest contributing country in online classroom incivility with 254 articles followed by Germany with 51 articles. There are only two Asian countries i.e. China and India in the list of top 10 contributing countries. Also, in more than 13 years from the time first research on online classroom incivility was conducted, India has only 6 articles in this domain.

The thematic evolution also shows the scarcity of researches on incivility in online classrooms especially in India and Asian countries. Moreover, it is clear from thematic mapping that this topic needs more researches.

The study has implications for the practitioners by examining uncivil behavior's myopic nature. The research helps the educational institutes to understand these different forms of uncivil behavior by the students and the reasons behind them.

Past researches show that online teaching was not so rigorous especially in India before the pandemic, therefore, researchers rarely paid attention to online incivility. But now when the learning is done online for nearly a year and has become a prominent mode of learning the problems that hinder the learning should be addressed.

COVID 19 and lockdown have brought a halt in all spheres of life. Everyone has suffered a great loss due to this pandemic and education is no different. Having said that the education system in India has minimized its negative impact on them by taking it online. Be it regular classes, seminars, workshops, conferences, or training program, everything these days are done through a virtual platform. Therefore, there is a need to develop a healthy online education culture. As we are not very into the culture of online education, we don't have a set of prescribed rules of how to present ourselves in online classrooms. As a result of which online incivility is at its peak. Thus, there is a need to point out the problem of online classroom incivility. Students will always be either in the position of speaker or audience and in any which case instilling civility and making them understand the consequences of incivility at the early stages of their academics is must. For this, a set rule or code of conduct must be made as mandatory as any other policy. Also, like other training programs that are organized these days to increase the competencies in the field of virtual education, civility programs should also be organized.

Incivility in the online classroom not only decreases the standard of teaching, wastes time and resources but also deteriorates the mental health of other people. And already, due to COVID-19 majority of people are suffering from mental illness, this adds to it. Therefore, tackling incivility is the need of the hour.

Bibliometric analysis shows that there is lack of researches in the field of online classroom incivility specially when it comes to India. With teaching-learning process during the COVID-19 Pandemic in India and all around the world has gone online. Therefore, it is essential for all to develop an environment of respect and dignity in the teaching-learning process. It is of utmost importance to address the topic of incivility and to bring about a code of conduct in online classroom teaching. A clear set of rules on the part of teachers should be floated amongst students before entering an online classroom. Like other institution policies that act as contracts between student and teacher, civility policy should also be included.

Compulsory workshops on manners and civility should be organized. Teachers with more experience of how they handled the uncivil situations can share with others which will help other teachers to tackle the same situation when encountered. In addition to the policies, guidelines, and workshops, the management of student's emotions is also a must. Everyone in these pandemic times is frustrated and anxious which sometimes comes out as in the form of uncivil activities. Therefore, it is important to counsel students from time to time. Also, the individuality of each student should be considered by acknowledging their presence.

REFERENCES

Alexander-Snow, M. (2004). Dynamics of gender, ethnicity, and race in understanding classroom incivility. *New Directions for Teaching and Learning*, *2004*(99), 21-31.

AlKandari, N. (2011). The level of student incivility: The need of a policy to regulate college student civility. *College Student Journal*, *45*(2).

Anderson, A. A., Brossard, D., Scheufele, D. A., Xenos, M. A., & Ladwig, P. (2014). The "nasty effect:" Online incivility and risk perceptions of emerging technologies. *Journal of Computer-Mediated Communication*, *19*(3), 373-387.

Andersson, L. M., & Pearson, C. M. (1999). Tit for tat? The spiraling effect of incivility in the workplace. *Academy of management review*, *24*(3), 452-471.

Antoci, A., Delfino, A., Paglieri, F., Panebianco, F., & Sabatini, F. (2016). Civility vs. incivility in online social interactions: An evolutionary approach. *PloS one*, *11*(11), e0164286.

Bao, W. (2020). COVID-19 and online teaching in higher education: A case study of Peking University. *Human Behavior and Emerging Technologies*, *2*(2), 113-115.

Bray, N. J., & Del Favero, M. (2004). Sociological Explanations for Faculty and Student Classroom Incivilities. *New directions for teaching and learning*, *99*, 9-19.

Campbell, L. O., Tinstman Jones, J., & Lambie, G. W. (2020). Online Academic Incivility Among Adult Learners. *Adult Learning*, *31*(3), 109-119.

Castile, H., & Harris, S. (2014). Cyberbullying: An Exploration of Secondary School Administrators' Experiences with Cyberbullying Incidents in Louisiana. *Education Leadership Review*, *15*(1), 52-66.

Clark, C. (2008). The dance of incivility in nursing education as described by nursing faculty and students. *Advances in Nursing Science*, *31*(4), E37-E54.

Clark, C. M., Werth, L., & Ahten, S. (2012). Cyber-bullying and incivility in the online learning environment, Part 1: Addressing faculty and student perceptions. *Nurse educator*, *37*(4), 150-156.

Coe, K., Kenski, K., & Rains, S. A. (2014). Online and uncivil? Patterns and determinants of incivility in newspaper website comments. *Journal of Communication*, *64*(4), 658-679.

Dentith, A. M., Wright, R. R., & Coryell, J. (2015). Those mean girls and their friends: Bullying and mob rule in the academy. *Adult Learning*, *26*(1), 28-34.

Feldmann, L. J. (2001). Classroom civility is another of our instructor responsibilities. *College Teaching*, *49*(4), 137-140.

Galbraith, M. W. (2008). *College teaching: Developing perspective through dialogue*. Krieger Publishing Company.

Holm, K., Torkelson, E., & Bäckström, M. (2015). Models of workplace incivility: The relationships to instigated incivility and negative outcomes. *BioMed research international*, *2015*.

Knepp, K. A. F. (2012). Understanding Student and Faculty Incivility in Higher Education. *Journal of Effective Teaching*, *12*(1), 33-46.

Lapidot-Lefler, N., & Barak, A. (2012). Effects of anonymity, invisibility, and lack of eye-contact on toxic online disinhibition. *Computers in human behavior*, *28*(2), 434-443.

Lasiter, S., Marchiondo, L., & Marchiondo, K. (2012). Student narratives of faculty incivility. *Nursing outlook*, *60*(3), 121-126.

Liu, P., Xiao, C., He, J., Wang, X., & Li, A. (2020). Experienced workplace incivility, anger, guilt, and family satisfaction: The double-edged effect of narcissism. *Personality and individual differences*, *154*, 109642.

Morrissette, P. J. (2001). Reducing incivility in the university/college classroom, 5 (4). *IEJLL: International electronic journal for leadership in learning*, *5*.

Nilson, L. B. (2003). Improving student peer feedback. *College teaching*, *51*(1), 34-38.

Nordstrom, C. R., Bartels, L. K., & Bucy, J. (2009). Predicting and curbing classroom incivility in higher education. *College Student Journal*, *43*(1), 74-86.

Oakleaf, M. (2009). Using rubrics to assess information literacy: An examination of methodology and interrater reliability. *Journal of the American Society for Information Science and Technology*, *60*(5), 969-983.

Palumbo, R. (2018). Incivility in nursing education: An intervention. *Nurse education today*, *66*, 143-148.

Rainie, L., Kiesler, S., Kang, R., Madden, M., Duggan, M., Brown, S., & Dabbish, L. (2013). Anonymity, privacy, and security online. *Pew Research Center*, *5*.

Ribble, M., & Miller, T. N. (2013). Educational leadership in an online world: Connecting students to technology responsibly, safely, and ethically. *Journal of asynchronous learning networks*, *17*(1), 137-145.

Rieck, S., & Crouch, L. (2007). Connectiveness and civility in online learning. *Nurse Education in Practice*, *7*(6), 425-432.

Royce, A. (2000). A survey on academic incivility at Indiana University: Preliminary report. *Bloomington: Center for Survey Research, Indiana University*.

Santana, A. D. (2014). Virtuous or vitriolic: The effect of anonymity on civility in online newspaper reader comment boards. *Journalism practice*, *8*(1), 18-33

Suler, J. (2004). The online disinhibition effect. Cyberpsychology & behavior, 7(3), 321-326.
Wang, M. Y., & Silva, D. E. (2018). A slap or a jab: An experiment on viewing uncivil political discussions on Facebook. Computers in Human Behavior, 81, 73-83.
Wright, M., & Hill, L. H. (2015). Academic incivility among health sciences faculty. Adult Learning, 26(1),14-20.

