
**COVID-19 Pandemic:
Challenges and Responses
towards Online Teaching-
Learning in Higher Education:
Indian Perspective**

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Abstract

The year 2020 has witnessed what it takes to live in a world of a massively hit pandemic. The Corona Virus has drastically hit all countries worldwide irrespective of their developments in the public and health sectors. In India, educational institutions were the first to shut down completely once the lockdown was declared leaving millions of students and faculty getting affected. The nationwide lockdown has simply made the faculties from various departments adhere to the technical requirements and proactively learn how to use the online platforms as quickly as possible. The institutes of national importance, central, state, and private universities all over the country have incorporated changes quite immediately, from traditional teaching methods to online teaching for all undergraduate, postgraduate and research students. Though the objective of continuing the teaching-learning process is met through online teaching, the real challenges of the implementation of the process is hardly discussed. This study identifies such challenges in the implementation of online teaching-learning by students and teachers and suggests strategies to improve the effectiveness in online teaching.

Keywords: *Online Education, Higher Education, COVID-19, Pandemic, Teaching, Learning*

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BACKGROUND

The Coronavirus disease-2019 (COVID-19) originated from China and then became a Global Pandemic. Worldwide citizens have been confined indoors and these measures have posed new challenges to social interactions, industrial and interpersonal relations. As per the UNESCO (2020) report, “Governments in 61 countries have announced or implemented the closure of educational institutions in an attempt to stop the spreading of the disease. Over 39 countries have closed schools, colleges, universities, and all private coaching institutes which impact over 420 million children and adults”. UNESCO recommended technology-based solutions as an alternative to traditional teaching.

REVIEW OF LITERATURE

Crawford J et. al (2020) provides an overview of the pedagogical developments taken up by various universities worldwide during the coronavirus pandemic. China cancelled all examinations including GRE, GMAT, IELTS, TOEFL, etc. Due to the rapid spread of the virus by the month of February almost all Universities shifted to the online mode of teaching. Universities that did not have sufficient resources and capabilities for the online transition delayed their spring semester by almost a month. The pandemic has paved the way for innovations in education which would have taken years to get introduced due to the academic and administrative regulations. (Strielkowski, W., 2020). Ortiz, P. A. (2020) mentions that designing a pedagogy for online teaching is a translational process rather than a transcriptional process wherein not only the medium but also the tools of teaching had to be designed. Reassuring students with respect to their educational apprehensions should be the first response and teachers should adopt asynchronous teaching which would work well in digital environments. (Daniel, S. J., 2020). Moorhouse, B. L. (2020) in his study based on Postgraduate students in Hongkong mentions that less than ten students turn up for synchronous mode of online classes, respond less and prefer to use the chat option rather than talking to the tutor. The researcher describes the pedagogy as teacher-centric and emphasized the need for special skills to conduct online classes. Zayapragassarazan Z. (2020) discussed that the COVID -19 outbreak has forced the teaching community in India to continue the teaching-learning process through alternative platforms. It is important to pursue a learner-centered approach to ensure that there is maximum engagement of students. The study had suggested a few strategies like teaching through video conferencing applications such as Zoom, conducting assessments and quizzes through applications and software such as Voxvote, Testmoz, Canvas, and Google Classroom.

Lall, S., & Singh, N. (2020) revealed that students from Dehradun prefer online classes due to flexibility and comfort it holds but experience the lack of extracurricular and co-curricular activities. Vijayaraghavan, P., & Singhal, D. (2020) indicate that there is a significant relationship between the outbreak of such pandemics and the mental health of the people in the country. Individuals succumb to health anxieties, general distress, and depressive disorders. The student community is the most common group that gets affected with no proper coping mechanisms to deal with the apprehensions regarding their careers. Universities in India have created committees to offer mental support through counselors and mental health specialists who would reach out to students and hostellers via online tools. The previous studies done by researchers reflect the strategies and the initiatives taken by different Universities during the Covid-19. The research gap is found in addressing the challenges and the responses in the implementation of these strategies during the pandemic.

OBJECTIVES OF THE STUDY

- To identify the challenges and responses towards Online teaching and learning during the pandemic.
- To suggest specific measures to meet the challenges faced in the online teaching-learning process.

RESEARCH METHODOLOGY

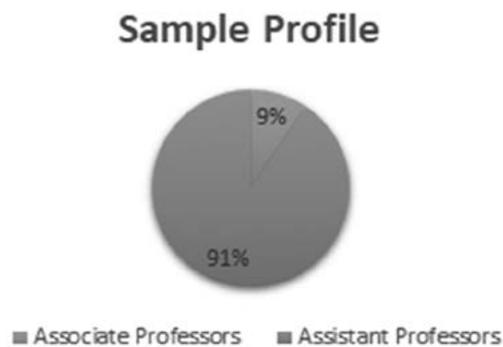
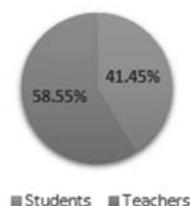


Figure 1: Sample Profile

Use of Online Tools before Pandemic



Student Attendance in Online Classes

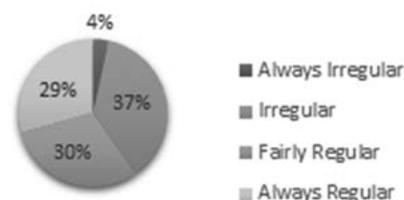


Figure 2: Use of Online Tools before pandemic Figure 3: Attendance in Online classes during the pandemic

A descriptive survey method was adopted to conduct the research. Primary data was collected through a self-administered questionnaire and secondary data from websites of World health organization (WHO), Swayam, IIT BombayX, NPTEL, journals, reports, and government publications. The sample of study includes Undergraduate students and teaching staff from Kalindi College, University of Delhi. Stratified non-random sampling technique was adopted. A total of 328 responses were collected through mail survey. 296 student responses and 32 faculty responses were collected. Majority of the teacher responses were from Assistant Professors.

ANALYSIS & FINDINGS

The responses indicate that very few have used online tools for teaching-learning and conducting/submitting curriculum based assessments before the coronavirus pandemic (Ref. Figure 2). The pandemic has created a sense of urgency to adopt towards online learning methods. The tools used by the teachers for teaching and conducting assessments during the pandemic include Zoom Video Conferencing application, Google Classroom, Google Meet, Open Broadcaster Software (OBS), WebEx, Google Hangouts, Microsoft Office Teams, WhatsApp, Telegram, E-Mail, Google groups, Moodle, Pre-recorded videos, reading materials, PowerPoint presentations, mobile board, short movies and other multimedia resources.

It can be observed from figure (3) that majority of the students were irregular in attending all the online classes conducted during the pandemic. Only 29% of the students were able to attend all the classes and access all the reading materials during the pandemic. However, the data indicates that 60.8% of the student respondents managed to always submit online assignments within the deadline.

On analyzing the difficulty level in accommodating to online teaching-learning processes during the pandemic it is found that majority of respondents have claimed the process has been neither difficult nor easy. 23.3% student responses and 18.8% teacher responses indicate that accommodating to online learning has been moderately difficult and 8.8% of students and 3.1% of teachers reported the process was extremely difficult to accommodate. However, 21.6% and 25% of students and teachers respectively found the process to be moderately easy and 4.7% of students and 6.3% of teachers found accommodating to online teaching-learning extremely easy.

In the traditional teaching-learning process, the interaction between students and the teacher has been the key in connecting with the students. On analyzing the level of engagement and interactions between the teachers and students through online teaching-learning tools, majority have responded neutrally indicating that the online medium has been neither interactive nor not interactive. Majority of the respondents consider online teaching tools somewhat not interactive and engaging. 11.8% of students find the medium not at all interactive. However, 15.2% to 15.6% of students and teachers find the teaching and learning through online tools somewhat interactive and 3.1% to 3.4% of students and teachers find the process extremely interactive.

Using the lockdown as an opportunity, 90.6% of the teachers have participated in online workshops, conferences, webinars and 34.4% of the teachers have presented/worked on research articles and projects during this time. 19.9% of students have enrolled themselves in virtual/work from home internships during the pandemic and 14.2% of students have enrolled in Online courses offered by the Government and private organizations. Some of the courses mentioned by the students include: Course on Industry 4.0 by Tata Steel and StartUp India, Government of India, C Programming, French Language Course, Career edge-knockdown the lockdown course by TCS iON, Satellite Photogrammetry and its Application, Application of Geoinformatics in Ecological Studies by IIRS outreach programme. Online certification courses like Financial Stock markets, Photoshop, Business Communication, Business writing, Social Media and Digital Marketing, Graphic designing, Human Resources management, Python, Web designing and development through mediums like Unacademy, Unschool, MyCaptain, Google Certifications, Internshala. Greek mythology from University of Pennsylvania, Social psychology, HTML, by Coursera and course on R by Swayam.

Universities and colleges are places where people meet, discuss, and engage to expand knowledge. Both teachers and students interact to nurture ideas, thoughts, integrate with multiple disciplines like art, culture, sports, theatre, etc. From the responses collected,

it has been found that these engagements and interactions are difficult in the virtual or online learning processes. 31.4% of the students were mostly able to connect with their faculty and classmates beyond curriculum and 21.6% of the students were always able to connect. However, 4.7% of the students were never able to connect, 13.9% were able to rarely connect and 28.4% could connect sometimes with the faculty and classmates beyond the curriculum and academics. On the contrary, 71.9% of the teachers responded that they were able to connect with their students beyond the course curriculum through online tools.

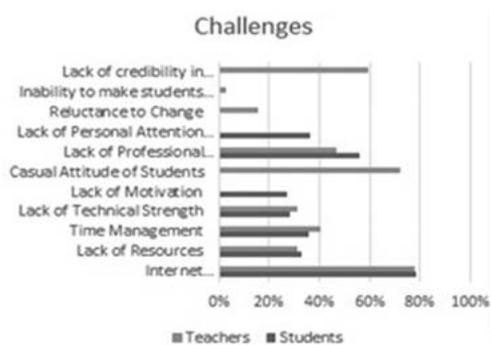


Figure 4: Challenges faced in Online Teaching-Learning

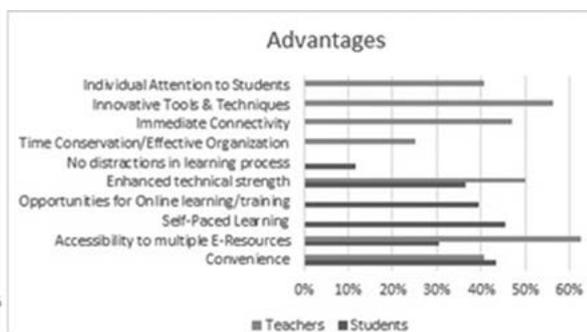


Figure 5: Advantages reflected in Online Teaching-Learning

The figure (4) and (5) shows the challenges faced by teachers and students and the advantages reflected in the online teaching-learning process during the pandemic. It is found that the major challenge faced most by teachers and students were internet connectivity and network issues and lack of professional environment. Casual attitude from the students was another major challenge faced by the teachers while teaching online during the pandemic. Few of the other challenges include: Non-availability of resources, lack of support from the institutions and other teaching fraternity, lack of technical strength of some teachers, ensuring all students turn up for online lectures and assessments, ensuring the delivery model to be interesting and engaging, planning the teaching pedagogy keeping in mind the student stress and apprehensions, lack of credibility and authenticity in conducting online assessments, lack of student involvement, extended working hours to prepare course contents through videos, difficulty for the teacher to know whether the student understood, agrees, disagrees or even if he/she is listening to the course delivered, difficulty in developing the interpersonal and employable skills in the students and most importantly the associated privacy and cybersecurity concerns.

Convenience, accessibility to multiple e-resources, opportunities for learning and training were some of the common advantages reflected both by teachers and students during

the pandemic. In addition, teachers consider this time as

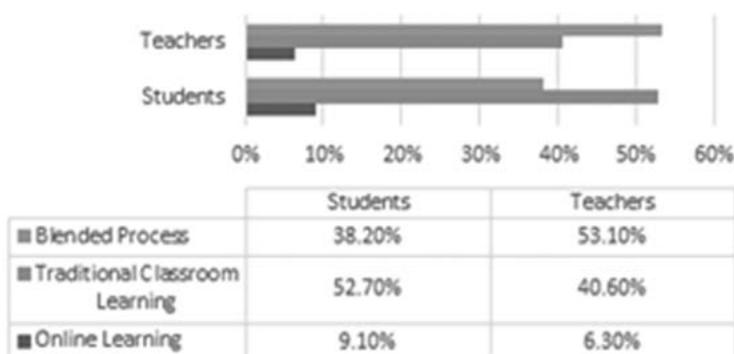


Figure 6: Method of Preference to Continue Teaching-Learning

an option to apply innovative tools and techniques in teaching and enhance their technical strength. Students consider self-paced learning as one of the major advantages of online learning.

On responding to whether online teaching-learning has been effective overall during the pandemic, majority of students and teachers have indicated that online learning is neither effective nor ineffective, 20.6% students and 15.6% teachers were dissatisfied and 8.1% students and 6.3% teachers were extremely dissatisfied with respect to the effectiveness of online teaching-learning during the pandemic. However, 22.6% students and 18.8% teachers were satisfied and only 7.8% and 6.3% of students and teachers respectively were extremely satisfied found the online teaching-learning process extremely effective.

It can be found from figure (6) that despite the advantages and effectiveness of online teaching-learning, students prefer to continue their learning process through traditional classroom methods and teachers prefer to continue their teaching through a combination of both traditional and online methods called a blended process. Approximately only 9.1% of the students and 6.3% of teachers would prefer to continue their teaching-learning processes online.

DISCUSSION

Teaching is a social process relying on the relationship between students and teachers. It is found that establishing and maintaining such a relationship while facilitating the teaching process online is difficult especially during a crisis. In a virtual classroom environment, students are asked to remain muted to facilitate the teaching process. Interaction is limited

to a certain extent only. The chat box options do not connect every participant at the same time as not all participants read or respond to messages. This contradicts the entire idea of the learner-centric process. Options like discussion forums, sharing podcasts, whiteboard illustrations, virtual games, online simulations, conducting surveys, or polls in real-time may help in increasing the engagement level of the students. This is the right time to engage with the students beyond their prescribed syllabus. The students should contribute to the learning process by collaborating with the teachers by creating content, presenting certain topics and contributing to discussions. It has been only 3 months since the teaching-learning community has shifted to online learning completely. It can be observed that majority of the respondents have responded neutrally with respect to difficulty level in accommodating, interactions and engagements between teachers and students. Since the entire semester was not covered through the online medium and not all students were able to attend online classes regularly it is still early to predict the effectiveness of online learning. The data suggests that blended methods be adopted to continue the teaching-learning process. A lot of institutional support is required to the teachers both morally and technically to implement such a blended process. In the “new normal” with which we have to continue our lives, all students and teachers will need access to personal laptops or desktops, proper bandwidth of internet, and regular power supply which is a huge challenge in a developing country like India with varied socio-economic backgrounds. Many students come from places where internet shutdowns are frequent, places with poor network, or no network at all. The government should step in to ensure that the students are not deprived of their right to education and also give special attention to students from marginalized and disable communities.

The implementation challenges of the online teaching process raises many apprehensions with respect to the feasibility of online learning for skill based courses, evaluating the students completely relying on trust, and most importantly training the students online, to become employable with the right interpersonal and communication skills the industry requires. In order to make the online teaching process effective faculty and student involvement, identification of the most appropriate digital platform and designing the right teaching pedagogy should be ensured. The associated security concerns, maintaining discipline, and respecting our faculties and students during online learning must be well stressed.

RECOMMENDATIONS TO IMPROVE THE QUALITY OF ONLINE TEACHING AND LEARNING

➤ *Recommendations for Teachers:*

1. ***Make the class more interactive:*** Virtual classrooms should focus on two way interaction, which makes the class more engaging. Keeping the interaction limited to chat box options does not engage every student. Options like discussion forums, sharing podcasts, whiteboard illustrations, virtual games, online simulations, conducting surveys, or polls in real-time may help in increasing the engagement level of the students.
 2. ***Timely Feedback Mechanism:*** The best way to improve the online teaching-learning process is by inculcating an effective feedback mechanism. Feedback can be taken in 3 phases in the following manner:
 - (i) **Phase 1:** In the first week of the semester or initial stages of the course to get feedback on the basic understanding of language, speed of the delivery, mode of teaching or even simply collecting the realistic expectations of the students from the teachers and the subject.
 - (ii) **Phase 2:** Feedback regarding the teaching pedagogy, delivery manner and speed can be taken during the mid of the semester so that changes can be made as per reasonable feedback received.
 - (iii) **Phase 3:** Lastly, feedback can be taken at the end of the semester or after course completion to check the overall effectiveness of the teaching learning process

It is important to not only collect feedback but also respond to it by addressing reasonable issues.
 3. ***Shorter Lectures and Lengthier Activities or Discussions:*** The duration of the lecture in which the teacher speaks can be reduced and the session can be opened for discussions or questions. Case study based learning and experiential learning can be adopted wherever possible to involve students to a greater extent in the learning process.
 4. ***Skill, Re-Skill and Upskill:*** Teachers are recommended not to hesitate while asking for help whenever required. It is also suggested that educational institutions should mandate training programs for the teaching community to improve the digital proficiency of teachers in accordance with the dynamic technological advancements. Interactive and innovative technical platforms
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can be used by sharpening the technical skills of teachers. Teachers can also discuss creative lesson plans and innovative pedagogies amongst their colleagues to improve the quality of online teaching.

5. ***Application based Assessments:*** Assessments can be planned in such a way that even if the student does not have the books or reading materials required to attempt tests, he/she can simply attempt the test and perform fairly well by applying the theoretical knowledge he/she has gained by just listening to the lectures. For example, quizzes can be based on the examples or cases discussed during class hours about a conceptual framework rather than simply asking the student to explain the framework.
6. ***Create an Experience:*** Though the effectiveness of online teaching requires a lot of time, effort and planning, the process creates a great learning experience to both students and teachers. Teachers can try to develop a sensory experience by incorporating videos, focusing on the pitch and tone of voice with respect to the contents. They can demonstrate concepts wherever required, practical simulations can be incorporated so that the students feel the need to participate actively and also enjoy the learning experience at the same time.
7. ***Show that you Care:*** It is important that teachers create content that is accessible to students from all economic backgrounds. The resources must be comprehensive to students even who are from different mediums of learning and also accessible in the more cost effective manner. Teachers should also aim to create a personalized learning experience through online mode by calling out the students' names, appreciate them for their participation. For example, they can click pictures of effective presentations of students, ask all students to unmute and applaud for their participation, they can use emojis and virtual rewards wherever possible to motivate students to participate.

➤ Recommendations for Students:

1. ***Active Participation in class:*** It is recommended that students should participate and engage in communicating in online lectures as much as possible. Online lectures give an opportunity to students who otherwise have a fear of public speaking to present their thoughts and gain confidence while speaking. This is the right opportunity for students to change their teachers'
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perceptions and to create a new impression for themselves. It is highly recommended that students contribute equally to the class discussions and not remain mute spectators.

2. ***Participate in discussions outside of class:*** It is highly recommended to students that they engage themselves in productive discussions about the economy, international relations, world economy, financial news at various levels to improve their understanding. Online platforms like google meet, zoom, etc provide a very simple solution for this. It is just a ‘click away’ that students can create their own discussion forums with their peer groups. This will lead to healthy discussions, knowledge enhancement beyond course curriculum, deep understanding about the economy that they live in, clarity of thoughts and improving their public speaking and debating skills. Students should not wait for any online competitions to be held for this, they could simply conduct such meetings online.
 3. ***Create a Workplace Environment:*** Students should create a conducive work environment which can help them concentrate while attending classes and submitting tests and assignments. This can be done even with minimal infrastructural facilities by just using creative DIY arrangements. An environment that is conducive to study and learn is the primary requirement to improve the effectiveness of online learning. An innovative and distraction free workplace just by establishing a corner in a room or area which the student can exclusively use to study and work will help the student to focus and remain motivated to dedicate a few hours religiously towards studies.
 4. ***Seek Help:*** Students should be encouraged to seek help from the facilitators with respect to technical difficulties. They can also ask for the recordings of the lectures to re-watch and clear doubts if any. Students who face network issues in a lot of classes can benefit with the help of pre-recorded resources or live recordings of the faculties.
 5. ***Embrace and Facilitate Change:*** It is recommended that students welcome the new learning methodology and embrace the change that is happening in the education sector. Rather than being reluctant and hoping to get back to the traditional learning environment, they should be adaptive and flexible with respect to the dynamics of the environment. This will not only improve the motivation level of the students but also help in the smooth transition
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towards online learning processes.

ONLINE TEACHING LEARNING: THE WAY FORWARD

Online teaching learning or hybrid learning to be precise is going to be the way forward in higher education institutions. There are certain characteristics of online teaching-learning that serve as a boon for students as well as teachers.

For Students:

1. ***Geographical limitations do not act as a barrier for online learning:*** Students from across the country and in fact across the world were able to connect to various opportunities of learning remotely. This expanded their horizons and their chances to listen to the world's most renowned leaders, economists and educationalists. For instance, Harvard University launched various free online courses ranging from game development to courses on Shakespeare during this pandemic period, which meant any student from across the world can have access to lectures of world class professors.
 2. ***E-resources and e-books were provided free of cost for limited time period:*** In order to continue education and learning, various well known publishing houses like Taylor and Francis, Pearson, Wiley, etc. provided free e-books, remote access to journals, and e-resources for a limited period. This helped students who rely completely on university's library databases to access books or journals.
 3. ***Boon of online internships:*** After the initial few phases of the pandemic, the country saw a boon period in various online internships. Students grabbed opportunities in the field of marketing , finance, content writing etc. This gave them exposure while still being able to attend their online lectures. Even online internships have enabled a lot of networking between academia and the industry.This is a boon because students can aim to get pre-placement offers and further career opportunities while still pursuing their courses.
 4. ***Gaining Confidence:*** There are certain students who always shy away while presenting their thoughts in front of others, as they somehow fear public speaking. This online learning phase has been a boon for such students as they are allowed to speak while others remain muted and listen and there are no hindrances from others. The option of switching off their cameras while speaking also gave them a sense
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of confidence in many situations. The nervousness while speaking at a podium is far higher as compared to speaking virtually. It has provided a platform for various students like these.

5. ***Virtual competitions:*** Various virtual competitions were organised across the country like quizzes, open mic competition, Business plan , stockvest competition. This remote teaching and learning was not able to stop fun activities also and various activities like treasure hunt, rangoli making competition, singing and dancing competitions etc. were organised successfully.

For teachers:

1. ***New networking opportunities that break the geographical barriers:*** Many new opportunities came up for the first time during this pandemic, that was not only a boon for students but also for teachers to enhance their knowledge.

For instance, many globally esteemed educational institutions have hosted virtual conferences, which serve as a platform to students, scholars, young professionals to gain insights on economic, political and global issues and get a chance to listen to world leaders. Earlier, participants had to visit the country in which it was being organised but now participants can enjoy as well as learn via virtual conferences sitting at the comfort of their homes.

2. ***Learning should never stop:*** Online faculty development programmes, workshops, webinars, moocs etc were tailor made for faculty teaching at various universities and colleges in the country. This led to removal of any break in the learning process of teachers as one knows that learning should never stop. Most of the workshops focused on helping the teachers in working in this unprecedented time. For example, learning about applications like google meet, Zoom, CISCO Webex, Goto meeting etc. This was required for smooth conducting of online lectures.
 3. ***Opportunities for Career Advancement:*** The online shift has also enabled the teaching community to develop a much stronger academic network. The online workshops, conferences and seminars were not only an opportunity to learn but also to participate and lead sessions as resource people. This is not only a chance to learn but also to give back to the community and progress one's career. Teachers were also trained to create their own MOOC courses on online platforms because of these training and workshops.
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4. ***Going beyond traditional teaching methods:*** The change towards online teaching has enabled the teaching community to extend their limits and experiment with creative and innovative teaching pedagogies and assessments methods. This is clearly an indication of improvement in the standards of teaching and learning.

CONCLUSION

The global pandemic has increased the importance of online education and learning which has brought a psychological shift in the mindsets of educators as well as learners. It has also created a great amount of chaos and deliberation towards the teaching and learning community. Switching to online teaching in the middle of a health crisis has created many challenges in implementation but has also led to opportunities for digital entrepreneurship like creation of applications and software, collaborating with online assessment agencies, building digital ecosystems, connect with globally renowned Universities and to create inclusive learning solutions for the most vulnerable and marginalized. To conclude, through online learning there is definite knowledge transfer but whether knowledge is generated or not, is the real question, which is why digital initiatives should be aimed to create an environment of holistic learning.

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