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Online Education: Challenges and Strategies During and After COVID-19 in Higher Education of India

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Abstract:

The development and advancement of information technology provide a technical platform for education reform and opportunities for innovation in education. The global COVID-19 pandemic has created a new normal that further springboards such opportunities to large scale implementation of online education. Because online education has the advantages of flexibility, information accessibility, global reach, equity, innovation, and efficiency, a growing number of educational institutions are offering degree-granting distance and hybrid education programs. However, online education also has its shortcomings, which include technological constraints, the lack of a sense of belonging and connectedness, the presence of distractions, and a lack of engagement. Learners who have basic technical skills and access to technology (i.e., hardware and software), and are self-motivated in learning as well as self-disciplined in time management can succeed in online education. Online education in the post-COVID-19 pandemic, which is the next normal, will continue to play an important role. By incorporating artificial intelligence and mobile education, online education will coexist with traditional education to provide more education options, promote education equity, and enhance education innovation.

Keywords*: Benefits, Challenges, Online education, strategies, Higher education, Technical Skill & Constraints*

Introduction:

The pandemic COVID-19 has forcefully shifted the mode of teaching and learning from only face to face to online in the higher education of India, which is new experiences and practices for many of the teachers and students. In this context, this study investigated teachers' and learners'

perspectives on online education in relation to its benefits, challenges and strategies during and after COVID-19 in higher education of India. To achieve this objective, online survey research design was employed. Survey questionnaire were used in the study to determine the perspectives of 280 teachers and students from five universities of India. The results showed that the participants experienced online education beneficial primarily for promoting online research, connecting the practitioners to the global community and getting huge and authentic resource of knowledge though they have found time-management skills, more freedom to the teachers and learners, and reliable internet at workplace as the extreme challenges. The research also revealed time management skills, technological prepared and computer literate are the basic qualities for the practitioners who want to have online education. The participants suggested that ICT policy should be clear and courses should be developed accordingly. Only online mode of teaching and learning in the context of India cannot be effective so the participants preferred blended learning. The findings of the research indicated that online education can be an alternative means of traditional education. Thus, if blended approach is implemented, the education process would be more effective and successful in the contexts like India.

Information Technology (IT) and the Internet have changed people's way of life and their access to education (Siau, 2018). Online education is a type of educational instruction that is delivered via the Internet to students via their computers, smartphones, or mobile devices. Online education has undergone high growth and adoption even before the COVID-19 pandemic. Learners can choose from a variety of online education services to acquire new knowledge or enhance existing knowledge. Examples include language apps to learn a second language and virtual tutoring apps that reinforce or expand on a particular subject taught in the regular classroom. Webinars can be delivered by using video conferencing tools to broadcast an online synchronous class, seminar, or event anywhere in the world.

Online education can be delivered in many ways, such as using one or a mix of the following instruction methods.

(1) 100% Online Education (or Distance Education): From registration to graduation, all steps and learning activities are carried out online, with no required visits to colleges or university campuses.

(2) Blended Education: A combination of online and on-campus activities that capitalize on the advantages of both modalities to optimize learning efficiency.

(3) Individual Online Courses: While these courses are offered via the Internet and may be part of a degree program, they can be taken at one's own pace to master a certain subject or acquire a specific skill.

Massive Open Online Courses (MOOCs): Online courses that offer unlimited participation and open access via the Internet.

The pandemic spread of Novel Corona Virus (COVID-19) has created fear, anxiety and several concerns among the people around the world. It has disrupted every aspect of human life including education throughout the world. The pace of its spread made educational institution closure as one of the best preventive measure against it. UNO (2020, August) report shows that the COVID-19 pandemic has created the largest disruption of education systems in history, affecting nearly 1.6 billion learners in more than 190 countries and all continents. Closures of schools and other learning spaces have impacted 94 per cent of the world's student population, up to 99 per cent in low and lower-middle income countries around the world. COVID-19 has absconded no segment in whichever country in the planet untouched, and its impacts will be known for years to come. However, when vast impacts were being used to alter and advance elevated education in the world, there is a threat that COVID- 19 will threaten the segment, with severe penalty.

To mitigate the direct impact of virus and prevent the students from psychological depressed, educational institutions have initiated the momentum of educating the students through different means and modalities based on both human and material resources available in the context. In this context, Anifowoshe et al.(2020) state that the virulent disease has made students to be at home which has led a numerous institutions to organize a variety of e-learning stages (even though with confronts) to assist and make sure that the academic schedule runs to closing stages. Technology based teaching especially online education has become the most appropriate alternative to keep educational activities functional in many parts of the world during the pandemic period. The educational institutions in countries which were technologically advanced like UK, Japan, USA, Turkey etc. promote their technological competencies and those which were technologically poor like educational institutions in India and higher region have initiated using it in teaching and learning process. Showing the obligation of implementing online education in the educational institutions throughout the world Rieley (2020) state that to deal with the two major challenges pertaining with detaining or stopping social contacts and keeping learning going, educational institutions in each level of their education have started online teaching g and learning. Online education has become an effective means to run educational activities functional and prevent the possible loss of academic session created due to lock down in the most parts of world. However, The research on online education shows that students displayed a wide range of responses, with most expressing anxiety toward online learning, disappointment regarding graduation ceremony, and online learning being different than standard in-class learning (Unger & Meiran, 2020).

The closure of schools and universities for a considerable period of time has made the institutions and the policy makers including government oblige to plan and implement alternative ways of face to face mode of teaching and learning for keeping educational activities functional. As a consequence, education system has been dramatically changed and shifted into e-learning basically online education in higher education, and teaching and learning through traditional e-learning devices radio and television at school education. Use of fully online based teaching and learning is a new experience for all educators, teachers and learners in Indian education system. Though Bacos and Grove's (2014) study affirms online education over traditional classes help in promoting quality education and open awareness of more opportunities, there are many challenges around equitable access to e-learning for all the teachers and students in the country. In this connection, Shrestha (2018) raises question on the teachers' confidence, knowledge and motivation in information and communication technology in the context of India. It implies for further research whether the policies of schools and universities of implementing online education for keeping educational activities functional during the pandemic are really implemented. Further, it is important to recognize the benefits of online learning over traditional face to face learning. Moreover, it is also significant to identify obstacles/challenges faced by beneficiaries, and their plans or strategies for making this dramatic shift in delivery mode of teaching and learning more effective even after pandemic period. In this rationale, this study is an attempt to investigate benefits, challenges and strategies during and after COVID-19 from teachers' and learners' perspectives specifically in higher education of India.

Need of online Education:

Online education enriches the traditional way of education (Erickson and Siau, 2003). The explosion of learning possibilities in online education is an outcome of the application of modern and advanced science and technology in the field of education. Motivated students can thrive in online education. Teachers and instructors can adapt their teaching styles and methods to their students' needs. Online education is an approach that allows students to adapt their daily life and work schedules to advance education, maximizing both resources and productivity. Online education continues to grow in popularity because of the following advantages.

1. Flexibility
2. Information Accessibility
3. Global Reach
4. Equity
5. Innovation
6. Efficiency

In summary, online education has many advantages. These advantages include more flexible choices of learning that are not constrained by time and place, accessibility of course and related materials anytime and anywhere, availability of a variety of course and degree-granting program offerings from around the world, equity in the accessibility of education, greater innovation in education, and more efficiency associated with teaching and instruction. Online education can utilize data-driven learning strategies, a variety of open- source online learning tools, and the knowledge capital of a community of learners to enhance education through innovation. Online education provides flexibility to meet the needs of individual learners and can continue without disruption even during the COVID-19 pandemic.

Teachers' Influence in Online Education:

The shift of teaching and learning to an online delivery mode obliged by the Pandemic COVID-19, has become an integral part of education system in the world. However, the levels and methods of using them with the aim of achieving quality education are varied and depended upon the various factors associated with Information and Communication Technology (ICT) policy and their practices in education even before the closure of schools and universities as preventive measure against COVID-19 pandemic. In this context, study claims that in order to achieve positive results in incorporation of teaching technology, it is necessary to understand the types of interaction among the teachers, students and technologies. The use of ICT has brought a paradigm shift in the relationship between teachers and students. In order to integrated ICTS in classroom teaching and learning successfully and effectively, teachers' perspectives on teaching, their ICT knowledge and skills, and their teaching methodologies paly an influential role. In this backdrop, Erstad (2010b) from his study in Norway emphasizes on the role of teacher as being more advisor, critical dialogue partner of the students and leader for specific subject domains. This means to state that teacher is promoting greater independence of learning. Teachers use ICT to change the way that they interact with the students. In this vein, Scardamalia (2002) states that the teachers' role in using ICT in language teaching should be for promoting learning outcomes of the learners. In this sense, teachers use ICT to enhance their personal work, professional development and for developing and creating new strategies, thinking, reflecting on practice and engaging the students in several meaningful activities and tasks for better learning outcomes.

Teachers are the keys to transfer the teacher centred approach into learner friendly learning through technology based teaching. Duraku and Hoxha (2020) state that teachers' perspectives on teaching methodology has been proven to influence the level of technology integration in the classroom and are also expected to play significant role on successful implementation of online learning. Online teaching and learning should try to support the learners' needs and expectation

rather than delivering the subject matter only from teachers' perspective even if the courses are not ICT friendly and are not designed in such a way in the context of India.

Moreover, Palmer et al.(2009) suggest security, level of self-satisfaction, the time and dedication of both teachers and students needed to implement the changes as the major factors that determine the quality of online education (as cited in Ibrahim et al., 2013). Changes in education system occurred due to either as the preventive strategies against pandemic COVID or implemented as a part of regular educational improvement may not be easily accepted by the concerned stakeholders in the sense that such changes may create something unusual than that of normal or regular practiced. In this vein, Ibrahim et al. (2013) concede that changes in the educational patterns may create resistant among or within the group of people who lack interest in change and wish to maintain their usual status quo. Moreover, institution, institutions'' culture and their policy and support both for teachers and students are also key factors that determine the quality of online or distance education (Per & Kitson, 2014). Online education may have only good aspects but it may have drawbacks according to the context and course. Hebebci, Bertiz, & Alan (2020) find that teachers and students had both positive and negative attitudes towards distance education whereas Serhan (2020) finds that students had a negative attitude toward the use of Zoom.

All these literatures imply that the success of online education and change in educational management system depend upon teachers' dedication, motivation, time, support and technological knowledge and skills.

Theoretical aspect of the Study:

This study employed constructivist approach as its theoretical framework to explore the teachers' and students' perspectives on online education in terms of its benefits, challenges and the possible strategies to be adopted during and after the pandemic COVID-19 in the higher education of India. Online education is to be interactive enough for effective and successful teaching and learning. Lou (2005) notes that the rapid growth and development of ICTs in teaching and learning has given birth to several methods like problem based learning, interactivity, case based learning, task based learning that are based on constructivist theory. Constructivist theory based methodologies and approaches are more student centered, promote group works, pair works and project works that can promote communicative ability, and they are process based focusing on inferring meaning, forming opinions and developing critical thoughts.

Results:

Since the present study was an online survey aimed to investigate teachers' and learners' perception to online education in term of benefits, challenges and strategies during and after pandemic COVID in the higher education of India, the data were collected through three sets of

closed ended questionnaire and one set of open ended questionnaire. Thus, the analysis and interpretation was made on the four parameters based on the questionnaire.

Methodology:

This study aims to investigate teachers' and students' perspectives on benefits and challenges in teaching and learning through online mode of delivery shifting from traditional face to face mode during and even after the pandemic COVID-19 in higher education of India. Moreover, this study intends to get suggestions from both the practitioners to be adopted as possible strategies in online education of India. For achieving the objectives, online survey under quantitative inquiry was employed. Online survey is a set of structured and unstructured questions on a particular issue that the respondents complete over the internet, generally filling out a form (Bhat, 2019). It is a natural way of reaching out to the respondents consuming less time. The study employed both the primary and secondary sources of data because only one type of data alone could not fulfill the total requirement of the research. The primary data were collected by using online survey questionnaire to teachers and students from higher education of India, who have been engaging in online education during pandemic period. The secondary data were collected from references, textbooks, journals, and other archive resources. The data and methodology have been triangulated to ensure validity and reliability of the findings.

Involving all teachers and students in this study was not possible due to constraints like time and scope of the study. In this context, it was essential to ensure that the study is representative. Thus, 150 teachers and 150 students from five universities of India ; Tribhuvan University, Kathmandu University, Mid-western University and Far-western University and Pokhara University of India were randomly selected as sample of the study. The selected participants were sent survey questionnaire (Appendix A) that includes both closed and open ended questions prepared in Google form through email and sending link in Facebook messenger. However, only 280 participants responded the questions. Thus the actual sample size of the study was 280 that include 160 teachers and 120 students. The data in this research is gathered and stored in database Google form, which the researcher evaluated and analyzed after receiving responses from all the respondents. After all the responses were collected, the data was analyzed using simple statistical tool percentage followed by a descriptive analysis, and then the results were interpreted in the discussion.

Participants' Preferences on Online Education:

With the aim of examining the benefits of online education in higher education of India, the participants were asked a question with fifteen alternatives in which they were allowed to choose more than one items. Figure 1 presents the participants' responses towards benefits of online education at higher education of India. Figure 1 demonstrates that online mode of education was

believed to be beneficial to promote online research and resources as reported by 84.6% of the informants, and connect people to global village as reported by 84.4%.

Similarly, 76.9% of the informants expressed that online courses increase independency in learning. Likewise, online education was helpful for the learners to work in their own pace and make them self-disciplined as expressed by 69.2%. Further, the results exhibit that the equal number of the participants (61.5%) believed that online courses provide flexibility in their modes and modalities, provide huge resource of knowledge, participants can learn the knowledge of the at their home and they provide updated and authentic information.

Moreover, the results in Figure1 show that 46.2% of the participants expressed that online course are advantageous for them because they are more convenient, offer individual attention towards learning and promote lifelong learning. Only few participants believed that online courses did have financial benefits (38.5%), help to meet interesting people (30.8%) and provide them real world skills. The results show that large number of participants found online learning beneficial even if it was their first experience having fully online courses teaching and learning situation created due to pandemic COVID-19.

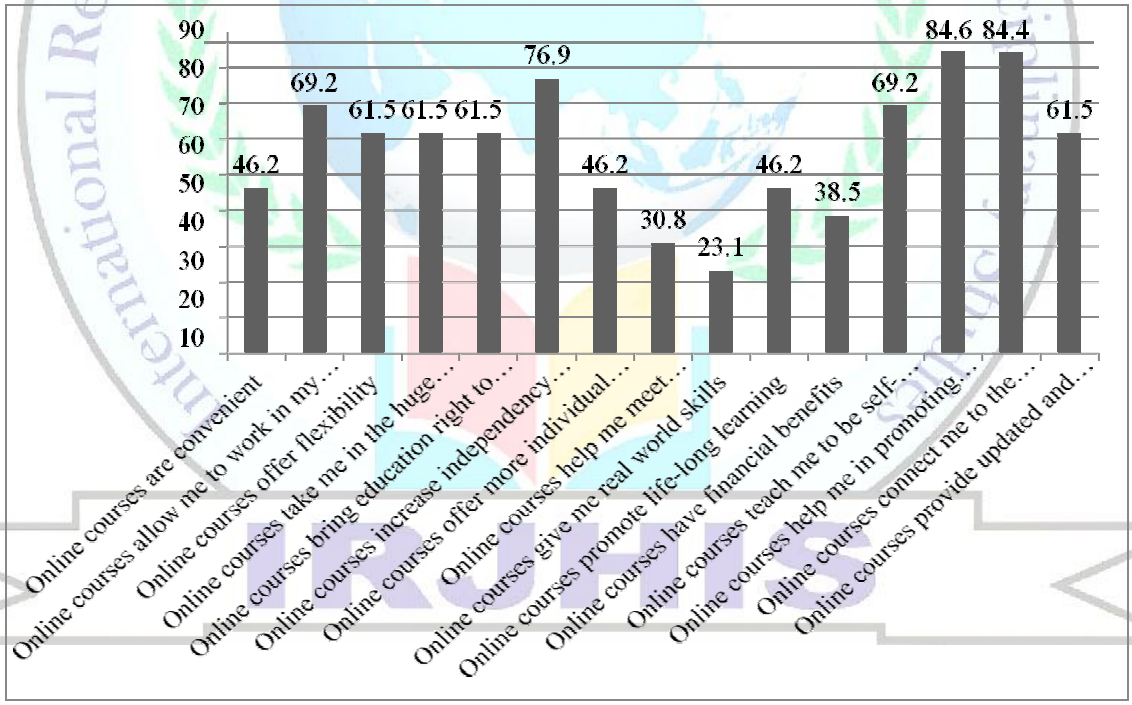

Figure 1. Participants' Perspectives on Benefits of Online Education

Faced Challenges in Online Education:

This set of questionnaire included one question consisting fifteen alternatives where the participants were free to choose more than one options to determine the participants experience towards the challenges that they have been facing in online teaching and learning. Figure 2 presents the participants' experiences towards the challenges in teaching and learning online courses at higher

education of India.

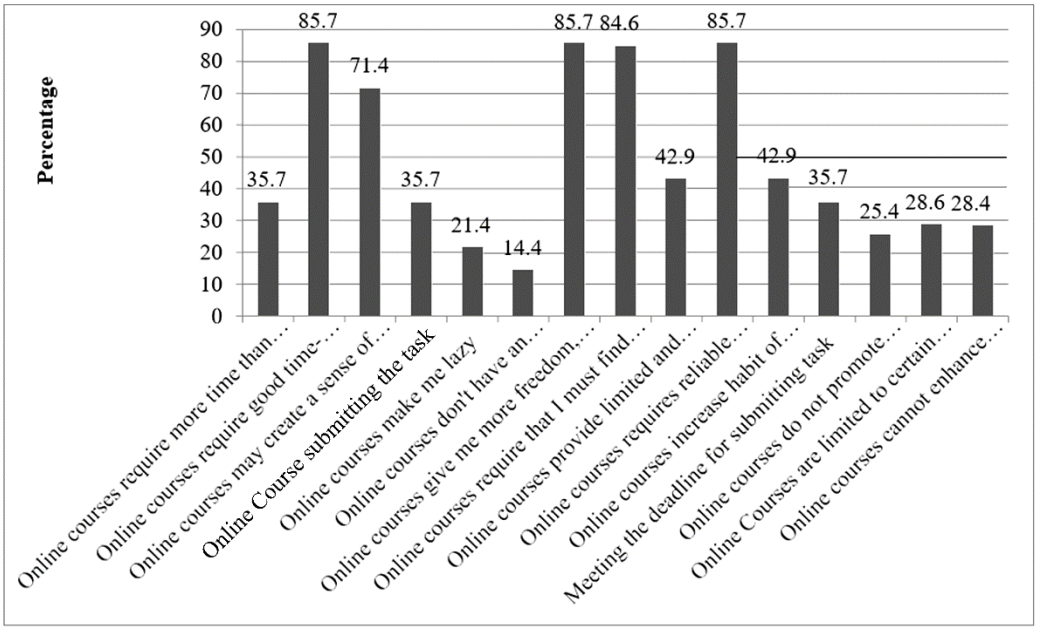

Figure 2. Challenges Faced on Online Learning

Figure 2 displays that time-management skills, more freedom to the teachers and learners, and reliable internet at home are the extreme challenges that majority of the participants (i.e.85.7%) experienced in online courses. Similarly, finding the path of own learning by the learners was taken as the challenge in online teaching and learning by 84.6% of the participants while 71.4% felt creation of social isolation as the challenge. Less than half percentage of the participants realized limited and delayed feedback (42.9%), create habit of plagiarism/cheating (42.9%), intend learners to be independent to the resources (35.7%), and meeting the deadline for submitting the tasks (35.7%) as the challenges in online courses.

Moreover, less than thirty percentage of the participants experienced that online courses make them lazy (21.4%), online courses do not promote practice-based learning (25.4%), online Courses are limited to certain discipline (28.6%),and online courses cannot enhance accreditation and quality in learning(28 .4%). Very few participants (i.e. 14.4%) took that online courses don't have an instructor hounding them to stay on task. The results exhibit that time management for online courses, access of reliable internet service and more freedom given to the participants are the accelerating challenges in online teaching and learning while instructor hounding them to stay on tasks is the less challengeable parameter in online courses.

Participants' Qualities Required for Online Education:

With the aim of exploring the characteristics required for effective online teaching and learning from teachers' and learners' perspectives, who have been practicing online courses, the participants were asked a question with ten alternatives allowing them to choose more than one

alternatives. Figure 3 presents the participants' responses towards the required characteristics on participants for online education at higher education ofIndia.

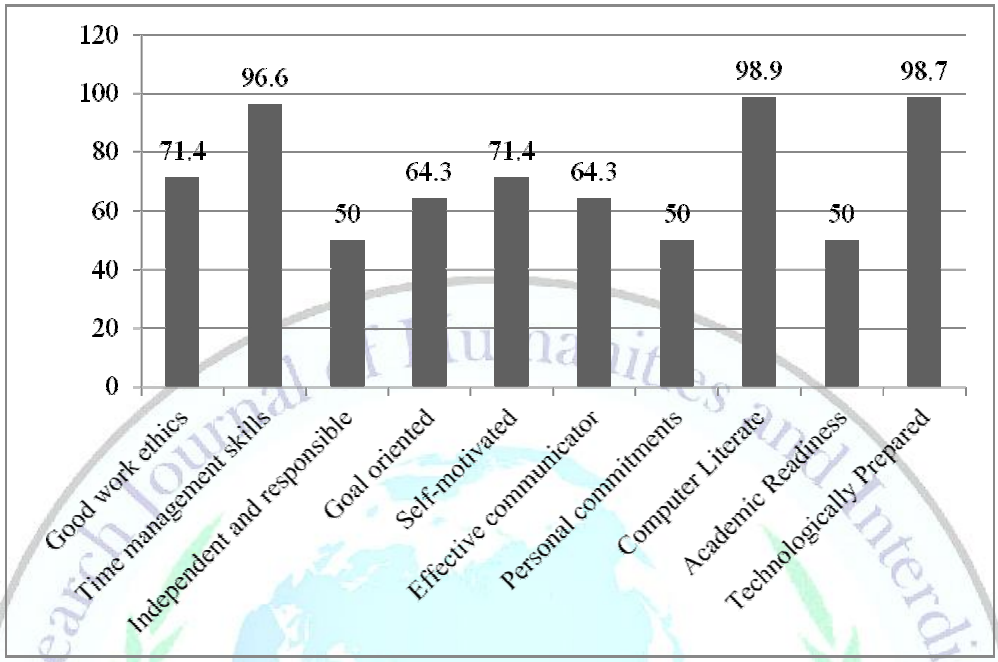

Figure 3. Qualities Required for Online Education

Figure 3 exhibits that almost all the participants (i.e. 98.9%) participants realized that computer literate is the mostly required characteristic for the learners who have been engaging or want to engage in online education and about equal percentage (98.7%) of the participants expressed technologically prepared as the required characteristics while 96.6% of the participants believed time management skill as the quality required for online education. Similarly, more than half of the participants felt that good work ethics (71.4%), self- motivated (71.4%), effective communicator (64.3%), and goal oriented (64.3%) are the features required in an individual for effective online education. Only half of the informants (i.e. 50%) expressed that independent and responsible, personal commitments and academic readiness are the qualities required for online course teachers and learners. The results exhibit that computer literate, technological preparedness and time management skill are the most required characteristics on an individual for effective and successful online education.

Future Strategies and Recommendations:

With the aim of finding out the participants viewpoints on their future strategies and the recommendation for effective online education, they were asked five open ended questions. In response to the first question whether they would like to take more online courses in the future, all the participants (i.e.100%) responded that they are eager and ready to take online courses in future but the reasons behind this phenomenon are different. Around 60% of the participants wanted to remain up to date with new information, get authentic information and resources through online

courses. Similarly, 55% of the participants reported that they wished to have more online courses because they found them flexible in terms of time and place, provide opportunities of sharpening themselves professionally and they wanted lifelong learning through online education. One of the participants wrote, "I want to educate through online mode because it provides me more opportunities of getting new knowledge, skills and change my attitude and professional capability". Around 30% of the participants thought them as techno friendly and want to learn and teach online courses as they believed online education is the cry of the day.

Concerning to the second question under the parameters about the suitable age for online education 75% of the participants believed that online education can be effective for the learners who are above 16 years of age. However, 20% of then expressed that the suitable age for online education is the age of higher education which in the context of India is tentatively 18 years. Very few of the participants (i.e. 1.5%) wrote that the learners above the age of 7 years can be engaged in online education, and 3.5% of the respondents did not reply this question. The results exhibits that majority of the participants are in favour of online education in higher education rather than school education.

Similarly, the third question intended to explore the participants' advice to the instructors/ students who are planning on setting up and instructing an online course, all the participants (100%) advised more than one suggestions. The common advises that all the respondents expressed were that online courses should focus on need and interest of both the instructors and learners and the participants should be well prepared and always seek result, sensitive on the course that is assessable to most, self e-disciplined encouraging themselves, punctual and try to be inclusive and mostly should be capable for time management and they should be digitally literate. One of the informants stated, "Start simply and do not hurried in panic, repeat the content to be taught and learned time and again and manage time and access well". In the same issue, 60% of the participants suggested that both the instructors and learners should have self- learning motivation; cooperation with each other's and should follow ethics of technology. Likewise, 56% of the participants reported that online teaching should not be the replication of traditional teacher centered lecture method rather more focus should be paved to engage individual learners as per their abilities.

In response to the question what suggestions the participants would like to provide to the policy makers, course designers regarding online education practices in education of India, all the respondents responded that in the context of India, the curricula and course should be ICT friendly which are not at present time even though the practices of online teaching learning have been taking place due to the situation created by the closure as preventive measure of COVID-19. Similarly, all

the respondents agreed that only online education cannot be effective in the context of India, rather they suggested the policy maker to encourage the blended mode of learning incorporation face to face and online modes in proper manner. Similarly, in the same issue, 71% of the participants advised that ICT policy should be clearly framed and its implementation should be made effective. Moreover, 60% of the respondents urged the government to make internet service accessible to all the learners throughout the country for making online education possible otherwise, traditional mode of teaching and learning cannot be replaced. All the respondents (i.e. 100%) reported that before implementing ICT in educational institutions, digital contents of all levels should be easily available where every institution should have good ICT infrastructures. All of them suggested that online education can be an alternative means but cannot and should not replace face to face mode of learning. Online courses need to be carefully designed considering the limitations and opportunities of virtual space for learning. This is not forceful practice of delivering traditional courses through online mode. Likewise, in response to the fifth question whether online education needs integration of face-to-face interaction for more effective implementation and results in the context of India, all the respondents had the same opinion that without an online education should go along with face to face interaction. If they go side by side, teaching learning will be more lively and effective during the time of pandemic COVID-19 and even after it. Online education has become a growing phenomenon throughout the world but when it is integrated with face to face mode it can compensate the loop holes fond in face to face and online education.

Conclusion and Implications:

This study tried to investigate teachers', and learners' perspectives on online education in terms of benefits, challenges and strategies during and after the pandemic COVID-19 in higher education of India. The research revealed that the participants found online education beneficial though it was their first experiences of having only online courses. They found that online education is highly beneficial promoting online research, connecting the practitioners to the global community, getting huge and authentic resources of knowledge required for professional and academic endeavor, and make them self -disciplined.

As to the shift of traditional mode of teaching and learning due to closure as preventive measure of pandemic COVID19 into online education, the participants experienced time management skill, reliable internet connection at workplace, learners' autonomy of finding the path of learning themselves and more freedom to the learners in terms of time and space, creation of social isolation, delayed feedback, case of plagiarism as the great challenges. Online education and its success lie in the participants and their qualities. The research reveals that time management skills, technological prepared and computer literate, good work ethics, effective communicators and

goal oriented learning, academic readiness, personal commitment and independent and responsibility are the major characteristics for the practitioners who want to have online courses.

The research also reveals the participants' eagerness towards online courses since it provides updated and authentic materials which they can learn in their own way. However, their doubt in the age for online learning creates the avenues for more research regarding the mode and modalities of online education in the context of India. The participants suggest that online courses should be as per the needs, levels and interest of the practitioners. This implies that the courses practiced currently are not ICT friendly so the policy makers should make appropriate ICT policy and course designers have to design ICT friendly curricula and courses, which can make online education more effective and result oriented.

The participants suggested online education as an alternative means and blended learning could be better in the context of India where there is no reliable internet connection in workplaces and the teachers and students are not fully techno friends. This implies blended learning can play a vital role in higher educational context of India if its implementation is made adequate to the learners' needs, levels, interests, and contexts addressing both cognitive and affective domains of learners. At the same time, the universities should take appropriate strategies to make the policy, classroom, curricula, teachers and students blended learning friendly so that the balance between online education and face to face mode of teaching and learning.

Though this study yielded a number of statistically significant results, some caution must be taken in the interpretation and generalization of the results. In fact, online learning can be differing from context to context in terms of particular technological and pedagogical strategies and phenomena. The next limit of this study is that it only reflected teachers' and learners' perspectives on online education, which does not indicate learners' performance in the corresponding areas. The finding of the succeeding research would be more revealing if learners' performance has been taken into account. Nonetheless, it is believed that the present study has brought wave of research in online education and the related phenomena in the context of India. Moreover, it provides feed back to the teachers and students to bear desirable qualities for online education and for the policy makers, curriculum designers and textbook writers to develop appropriate ICT policy, and ICT friendly curricula and courses suitable in the context of India even after the fear of pandemic COVID-19

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