SUSTAINABLE ANALYSIS OF GLOBAL HIGHER EDUCATION VIA DIGITAL ENERGY TECHNOLOGIES DURING AND POST COVID-19 IN RURAL NEPAL

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Abstract
The pedagogical environments for students and teachers could not remain same after the post-COVID-19 epidemic as during pandemic, particularly in digital practice. The research paper based on qualitative technique. On June 13, 2022, a sustainable analysis of global higher education via digital energy technology was conducted as a part of gathering primary data in rural Nepal, from private, public, and government campuses. Focus groups and in-depth interviews were audio recorded, and the transcriptions were precise. Online semi-structured interviews with 15 participants, including five from private campuses, five from the public, and an additional five from the government campuses, were done to collect qualitative data. Some participants in the pandemic also received instruction in utilizing ICT tools and digital pedagogy, but the post COVID, they are unable to engage in online courses owing to the availability of conventional classes. This papers examines the pedagogy of higher education in during and the post epidemic. Examining how digital teaching and learning can be one of the best options for both teachers and students during and post the epidemic is the goal of this project. For students and educators, learning about online education and becoming digital humanists is a challenging job, which encourages self-reliability and improves hybrid ICT. The research discusses how professors and students in remote locations considered hybrid teaching and learning when there were limited ICT facilities, adequate electrical supplies, and sufficient familiarity with digital gadgets. Teachers are keen to boost digital skill due to relying on e-based education, inadequate ICT skill, and absence of access to digital technology. Countryside students would be accessible online classes for global higher education after the post COVID if the government of Nepal offered a subsidy, a modest ICT infrastructure, familiarity with electronic devices, and ICT-trained professors to aid them to recover digital learning. The majority of the students of higher class demanded online classes during pandemic due to their unavailability of time, grow digital knowledge, and grasp multiple opportunities.

Keywords: COVID-19 epidemic, gadgets, global, hybrid, ICT infrastructure
INTRODUCTION
Lockdowns were implemented in numerous nations in response to COVID-19 global pandemic that originated from Wuhan of China, in December 2019, in order to protect human lives, particularly that of students and instructors. After schools and universities around the world, including Nepal, were forced to close due to the global pandemic where millions of teachers and billions of students stayed at home. In March 2020, Nepal declared its first lockdown, closing all of its educational institutions for an undetermined period of time. Although a few specific metropolitan private boarding schools, campuses, community colleges, and some universities have tried to continue their traditional lessons through hybrid teaching and learning as online classrooms using multiple digital platforms like Messenger, Zoom, Skype, Meet, and Microsoft Teams. Zoom, a well-known electronic tool that Eric Yuan founded in America in April 2019 (Kimball et al., 2020), in particular, has played a key role in hybrid teaching and learning in Nepal during this pandemic. According to reports saw a spike in usage in the first few months of 2020 far rather than throughout the entire previous year (Singh & Awasthi, 2020).

Information and communication technology (ICT) regulations and procedures that concentrate on integrating using technology in the classroom pedagogy are necessary for colleges and schools to use ICT to promote hybrid teaching and learning (Reimers, Schleicher, Saavedra, & Tuominen, 2020). Economic activity has been negatively impacted by the COVID-19 outbreak, global educational systems, and the closure of almost all schools, colleges, and universities. Millions of teachers and billions of students have attempted online courses, seminars, and training sessions throughout the lockdown. Exams scheduled for high schools and universities now face a great deal of uncertainty because to the COVID-19 outbreak and the lockdown. Zoom, a free app, has been discovered to be an effective conferencing tool for teachers to instruct students and exchange their course materials. Atreya and Acharya (2020) numerous users film the entire session on their mobile devices, which they utilize to debate and use the on-screen whiteboard and functional chalkboard. But in contrast, numerous schools and students in Nepal during this crisis lack ICT infrastructure, have inadequate internet connectivity, and have a lack of digital knowledge teachers who are incapable to use such aspect of ICT devices to resume regular pedagogy (K. Rana, Greenwood, Fox-Turnbull, Wise, & ICT, 2018). Particularly in developing nations, it is evident that there is a lack of technological infrastructure, expensive internet costs, slow internet speeds, family financial stress, and mental stress on both students and teachers (Ramij & Sultana, 2020). But during the worldwide epidemic, some first-world nations transitioned from traditional to online learning environments.

One of the various strategies many nations have online teaching and learning activities at schools and universities in Nepal have a number of online platforms: Zoom, Microsoft Teams, Google Meet, Skype, Messenger, WhatsApp, Hangout, WeChat, YouTube, Lark, and Ding Talk. In the context of China, a virtual group video platform like "Hangout" can assistant teachers and students with their educational goals by facilitating a group discourse in a harmless atmosphere (Duke, Grossman, Novack, & Rosenzweig, 2015). Due of their functionality, affordability, and audio and video quality, various cinematic conferencing devices including Skype, Elluminate, Adobe Connect, and iVisit can facilitate virtual pedagogy (Karabulut & Correia, 2008). Several free applications can be used to pros and cons with students, encourage cluster discusssions, segment educational resources, comment on students' work, and evaluate educational activities in the midst of the global pandemic epidemic (Barbouni, 2015).

In China, various educational institutions have utilised online resources including Lark, Ding Talk, radio, television, and mobile devices for hybrid teaching and learning activities throughout this crisis (Sood & Quantity, 2021). The educational institutions in Nepal would resume their learning activities throughout epidemic in the same way as industrialized nations did if the government of Nepal gave them access to ICT tools and trained instructors and staff in digital literacy and skills. On the one hand, despite the fact that the National Curriculum Framework for School Education 2005, Nepal acknowledged digital devidics to instruct various subjects, the government of Nepal used non-governmental organizations (NGOs) to carry out the educational plan in place of assigning adequate funding (K. Rana, Greenwood, Fox-Turnbull, & Wise, 2019). The COVID-19 epidemic has posed further encounters for the universal advanced schooling communal, but it has also improving opportunities to study hybrid pedagogical innovations made by additional colleges for improve group retorts both here and now and in the near future (Starr et al., 2020).

Research questions
The COVID-19 global pandemic has raised the following questions:
• How do educators and students view on COVID-19 pandemic?
• What are the impacts of during and the post global epidemic on digital learning?
• How did campuses manage global higher education during and post pandemic?

Literature review
Following the global COVID-19 outbreak and the ensuing lockdown, some study was conducted on digital pedagogy in higher education around the glob. It gives an overview of a number of studies and resources for remote teaching and learning, such as emergency remote and hybrid instruction adaptation, the psychological health, and well-being of faculty and graduate scholars, the opportunities and difficulties that faculty face in their professional lives, equity, diversity, inclusiveness, and community building in online classrooms, as well as its methodological analysis.

Hybrid class during pandemic
Due to pandemic, almost teaching and non-teaching staffs and other in-person skill-based training sessions were substituted with virtual model. In the past, a concept remained merely considered to be one of the ancillary elements of performing arts education. This online pedagogy was inevitably implemented starting in January 2020 to address the
difficulties brought on by the COVID-19 pandemic (Li, Li, Han, & Technologies, 2021). Around the world, a number of epidemiological models are being employed to forecast the COVID-19 outbreak's mortality rates and infected person count. To take the right measures, it is crucial to advance accurate prediction models (Pinter, Feldes, Mosavi, Ghamisi, & Glaoguen, 2020). According to a study report by (Thapa & Saeb, 2011), poor networks and inadequately ICT-equipped educational facilities caused gaps between urban and rural populations as a result of the lack of ICT in rural locales. Numerous research on COVID-19's effects on the labor market has had a national or metropolitan focus, despite the fact that the pandemic has had considerable negative consequences on economic results across the nation (Brooks, Mueller, & Thiede, 2021). Due to their lack of experience with e-based pedagogy, inadequate ICT knowledge and skills, and lack of digital tools, teachers were hesitant to accept the online method of learning. If the government and rural colleges had constructed the essential digital organizations, educated instructors to practice the amenities, and providing the manditory support to the graduate scholars, rural students would have accessed digital classes throughout the catastrophe (Magar & Rana, 2022).

Teachers were hesitant to accept the digital form of knowledge due to their lack of expertise with digital learning, inadequate ICT skills, and absence of online services. Remote graduate scholars would have been able to provide digital classes amid the calamities to the rural schools where constructed least ICT infrastructure, skilled instructors to practice virtual access, and given required funding to students (Magar & Rana, 2022). The majority of students on the epidemic's effects on the labor market has had a national or metropolitan focus, despite the fact that COVID-19 has had considerable negative consequences on economic results across the nation (Brooks et al., 2021). According to Brooks et al. (2021) the absence of reliable internet, electricity, and supporting ICT infrastructure posed significant obstacles to the use of hybrid teaching and learning in Nepal's outlying schools. Top universities around the world are embracing "MOOCs" (Massive Open Online Courses), new educational delivery methods that are not only piqued the interest of professors and pupils in advanced teaching but also of undergraduates and tutors in K–12 settings, homeschooling, or outside of the classroom in general (Brahimi & Sarirete, 2015).

**Opportunities and encounter challenges**

Allen and Seaman (2013) investigated the possibility of delivering the majority of course material online rather than in person, allowing for more debate and participation. Online classes, in the opinion of Wang et al. (2020) traditional lessons can be supported, especially during epidemic periods like the immediately following an earthquake whereas COVID-19 is a global pandemic that is hitting more than 200 countries globally. It specifically sought to pinpoint difficulties faced by instructors and students as well as how these difficulties are addressed. It presents difficulties for the educational system in terms of the financial, technological, and emotional limitations that administrators, teachers, and students must contend with. In the instance of Russia, additional official academic assignments wasswift into digital services following a normal tragedy to overcome these encounters, which they handled with use of new mass media with innovative learning methodologies, according to (Meskill & Anthony, 2018). Online learning has proven to be the most successful option for students who are in trouble with conventional teaching and learning methods, according to Nash, Dalziel, and Fitzgerald (2015), despite its drawbacks. In Japanese context, Mehran, Alizadeh, Koguchi, and Takemura (2017) prefer online or hybrid learning to in-person instruction for their collaborative learning. (Seo, Oh, Kil, & Technology, 2022). According to Piccardo, North, and Maldina (2019), adaptation and novelty edification necessitate ICT skills that promotes preparation of hybrid schooling, and assessment, which led to the advancement of digital learning in a sister project of the European Centre for Modern Languages (ECML). C. B. Hodges, Moore, Lockee, Trust, and Bond (2020) investigate how the availability of hybrid learning opportunities made an online course seem crisis-prompted during critical times like the COVID-19 epidemic and natural tragedies. T. S. Hodges, Kerch, and Fowler (2020) looked into the potential that allowing students to continue their academic work at home while temporarily discontinuing all physical learning pedagogies and online classrooms could aid in the prevention of the pandemic. Hybrid education can, however, go catastrophically wrong when teaching and learning activities are not adequately managed, such as when there is a lack of ICT infrastructure and a qualified workforce, according to (Gacs, Goertler, & Spasova, 2020). Rapanta et al. (2020) evaluated how the epidemic significantly hindered digital activities and motivated university teachers to address these challenges by utilizing online learning for their students in their most recent study.

**Online teaching environment**

Nsiah and Oti-Boadi (2015) provided strategic recommendations to college instructors in the American context who were considering utilizing online and virtual learning to supplement their students' regular classroom instruction. By fusing information technology and multicultural literature with a reading and writing curriculum, author Moore-Hart (2004) hopes to improve students' literacy learning. Most graduate degree programs today must include online courses. The program is more competitive, practical, and appealing when students have the option of completing degree prerequisites online (Cicco, 2011). Haberstroh, Duffey, Evans, Gee, and Trepal (2007) noted that as technology becomes more commonplace, it is important to focus on teaching different skills and providing suggestions for assisting students in creating and maintaining therapeutic interactions through digital learning. According to Zsohar and Smith (2008) asynchronous digital classes can be difficult to plan and teach, especially for new educators. According to Voyant et al. (2017) reported that digital and amalgam courses have become an indispensable portion of teacher and their pedagogic activities for both preservice and in-service training. The writers suggested certain planning policies, such as digital classes, ICT4D, and e-education, to expand their virtual learning activities and boost the efficacy of their online courses. Conceição and Lehman (2016) referred to digital lessons as an alluring ICT skills for students, teachers, along with administrators due to the availability of audio and visual learning tools. In Russia, official academic coursework has
moved online, as evidenced by Lehman and Conceição (2013), particularly to synchronous, multimodal sessions that ensure and direct students’ attention, particularly in a difficult situation when professors reported instructional techniques. Crawford-Ferre and Wiest (2012) advice conducting research in India to assess the efficiency of digital pedagogy based on students’ perceptions and involvement to arrange teaching and learning activities with the correct tactical development. As Chinese study, public administration programs increased their digital classes to make up for academic loss caused by the outbreak of COVID-19 (Ni, 2013). The authors of Acton, Chipman, Lunden, and Schmitz (2015) gave an example of how online instruction enabled students to develop their own simulators that challenged their cognitive and psychomotor skills and provided enough practice with helpful critique. The study by Kebritchi, Lipschuetz, and Santiague (2017) found that challenges with content practice acted as an introduction to the area and that digital learning reformed every aspect of situation in higher education. The typical lecture-based teaching approach is turned on its head in the hybrid teaching and learning to advance the effectiveness with the productivity of digital learning process (Kurt & Society, 2017).

In Japan, Chen (2022) investigated how cooperative knowledge and e-based digital activities improved the standard of teaching and services that made it convenient for students to attend class on a regular basis. Similar to this, Sempowski, Saunders, Acharya, Wiehe, and Haynes (2020) pointed that the global epidemic had an impression on all facets of humanoid lifespan, including education that directed to the return of digital classes in Nepal using a variety of digital platforms like Zoom, Skype, Messenger, MS Teams, and Google Meet. During the (Gacs et al., 2020) looked into whether digital instruction remained equally benefitted in-person instruction. In response to the worst situation brought on by digital activities managing in the setting of Bangladesh where a private university student (age 22) and his mother (age 47) committed suicide together by taking toxic gas tablets in a jungle adjacent to where they stayed (Mamun, Chandrima, Griffiths, & Addiction, 2020).

Parents’ perspectives on higher education

According to (Pettyjohn, 2012), Georgian stakeholders saw the ICT classes as both a chance as well as a problem for college students. Insufficient skilled labor, expensive and unreliable internet access, low digital literacy in remote societies, high lands, limited access to electricity, insufficient solar energy, and scarcity of ICT infrastructures are among factors that Dawadi, Shikya, and Paudyal (2016) claim hinder online learning for students. Online education is adjustable, adaptive, and facilitates communication tasks in addition to multilingual learning, as stated by (Huber & Spiliopoulou, 2019). Access to genuine materials is another benefit. Despite the fact that both students and instructors were aware of the benefits and downsides of online teaching and learning, Meng et al. (2022) researched how many schools in the United States provided online courses to suit students’ academic needs. In a similar spirit, Currey et al. study’s from 2020 showed that digital Team-Based Learning (TBL) offers a chance to create learning autonomy and is practical, efficient, interesting, and well-accepted by commercial stakeholders. Online learning was viewed by higher education stakeholders as the best option for the worst-case circumstances, such as the Demuyakor and Technologies (2020) findings. According to Wadhwa and Khatak (2020), inadequate training, and inconsistent government system evaluation make it challenging for the majority of instructors and pupils to use ICT skills in virtual classes. Similar to this, Forneris, Camiré, Trudel, and Psychology (2012) examined the difficulties district decision-makers and school administrators encountered when considering a range of solutions to support at-risk students under a danger of not graduating through online learning. In his study, Pettyjohn (2012) showed when an access to digital classes were still impacted by economic disparity, it provided more flexibility and a chance for students to be in charge of their learning, which boosted academic achievement and broadened viewpoints. Bagilhole and White (2011) conducted an investigation into the growing concern among college stakeholders such as educators, students, and parents over the academic success of children who use digital devices. Choudhury, Pattnaik, and Education (2020) argued both ICT using stakeholders and non-stakeholders had an impact on the globe of e-based skill in remaining separation in order to keep up with the shifting tendencies in online and the connected e-learning environment. According to the Wagner, Hassanein, Head, and Society (2008) study, a critical element in the successful application of ICT4D was the degree to stakeholders who were accustomed to addressing and debating the requirements concerning with group of various stakeholder.

Methodology

This paper is concerned with qualitative study, to obtain a variety of knowledge and information (Xerrir & Ideas, 2018) 15 participants were particularly chosen to have their opinions on digital learning during and post COVID-19 in accordance with the suggestions offered by (Denzin & Lincoln, 1995) (see Table 1 below). They were all chosen to satisfy this requirement based on their involvement. The individuals’ real names were altered to pseudonyms to protect their privacy. Finlayson (1995) reviewed, the interview-based data underwent a thematic analysis.
Table 1: Involved contributors in this paper

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<th>Institutions</th>
<th>Contributors</th>
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<td>Male</td>
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<td>&quot; &quot; &quot; &quot; Lila</td>
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Data collection procedure
Semi-structured online interviews with the participants were done in order to understand more about their perspectives on online learning amid the pandemic crisis (Salmi, Kaasinen, & Suomela, 2016). After providing their informed consent, participants were repeatedly questioned via the Smart phone's built-in camera with video, and audio. The interviews were recorded on a cell phone. The archived versions of books, journals, articles, theses, websites, public documents, and newspapers were contrasted with the original data.

Data analysis
The interviews' audio recordings were transcribed, categorized into different themes, and critically examined with the analysis of the data gathered during interviews. Interpretive phenomenological analysis (IPA), a technique for evaluating qualitative data, was made available (Liguori & Spanierman, 2021; Smith & Fieldsend, 2021).

Findings
Here, a few findings from the entire study are shown. These contain ICT-related findings from various stakeholders such as parents, teachers, students, and well-wishers as well as their perceptions that led to numerous alternative learning methods throughout the epidemic and a knowledge of their use of digital gadgets.

Digital learning
It was discovered that how many digital learning resources such as Zoom, Messenger, Gmail, YouTube, Viber, and WhatsApp are applied in place of traditional conventional courses through interviews with research participants. In order to continue instructive happenings throughout COVID-19, when instructive facilities are closed to stop the spread of the disease, the participants emphasized the need for an alternative teaching and learning strategy. For instance, Kamala Multiple Campus' Campus Chief -Diksha stated:

Students accomplished their study using free online resources like Zoom, Viber, WhatsApp, YouTube, and other messaging programs. The great majority of college students who took online classes did it successfully using an Android smartphone. They would be able to regularly attend their classes if the sessions went well.

According to her response, maximum number of students had access to ICT devices to accomplish the online courses due to COVID-19 epidemic. If the students were attended regular digital classes, they would easily be completed their courses. The online classes occasionally worked well when the majority of the students were taken their classes properly. The majority of the students had a similar understanding of academic activities, believing that a lack of ICT infrastructures and an unstable internet connection hindered students' regular learning. Tilak, bachelor student of Saraswati Campus had the following ideas:

The epidemic typically harmed the educational instutions of less developed countries rather than industrialized ones. Most importantly, economic crises and diverse regional configurations were the main causes of their class barrier. In this situation, online learning and instruction seemed to be more impossible. In the rural regions, we were unable to recommence the virtual course as usual where only the Terrain region did entertainment.

His response implies that the geographical structure of the Himalayan and Mountain region were adverse for online classes. Additionally, economic crises also played the barrier role to resume the classes. Home-based instruction, mobile community-based instruction, and smaller group instruction must be used by teachers for the students' courses.

Teaching strategies
Online teaching and learning was less effective than traditional classroom for a number of reasons such as difficult geographical structure, limited internet connectivity, fluctuation of regular electricity, and insufficient collaboration systems. Children would be able to relate to other elements of safety and health, such as keeping a distance from others.
physically and socially (staying at least 6 feet apart). Chamuna, a master's student of the Saraswati Campus, had the following opinion:

*If the Nepal government had an implicit online system and amenities properly, students would surely be promoted and not to waste their priceless time. Nearly every student in Saraswati Campus would benefit from distance learning if our student’s ideas were implemented. Otherwise futures of students assuredly would be at danger.*

In her speech, she made it clear that students would be benefitted via online education if it were properly implemented. Again she added that if online class ran properly during COVID-19, it would be good and they would learn vigorously digital pedagogies. In between this epidemic, they gained various aspect of digital knowledge and operational skill as well as their class accomplishment. Lecturer of Saraswati Campus, Diwas, forwarded his following viewpoints: *Yes. Campus students got chance to resume their classes regularly as well as gaining ICT knowledge. Henceforth, the students of campus got good opportunities in pandemic time. Digital classes were ineffective for the students who didn't have smart phones, lack of internet, irregularity of electricity, and could not attend the regular classes. But lately, the college students also took their delayed exams when the classes went via online. The alternative method of learning could be used for higher students rather than junior ones. The physical classes would be easier for the university students because they could able to interact with their teachers in Q and & A session maintaining with all aspect of safety-health as well as keeping their distance.*

His comment made ut abundantly obvious that he believed online class would be resume because the students were getting experience on it. During pandemic, students could be able to take their delayed exams and also accomplished their remaining classes.

**Hinders the COVID-19 classes**
The majority of students concurred that taking lessons online in the midst of a catastrophe like COVID-19 was the finest and most efficient alternative learning option available to those with reliable access to broadband internet. During the pandemic, online education for pupils had the potential to accelerate a distinct learning process. Tejita, bachelor student of Kamala Multiple Campus, provided the examples below to support her points:

*Taking zoom class is recommended for an easy online pedagogy if all students have had equal access to the internet. We believe that the current economic crisis and the lack of strong internet connectivity hinder our classes who are enrolling online courses. Only rich and involved students were permitted to attend their regular online classes, not individuals from lower socioeconomic positions. One of the best solutions to learn education is staying at home with isolation and be regular at class.*

Her claim implies that because of limited ICT infrastructure, financial difficulties, and a lack of sufficient resources, not all students have had equal access to online courses. There is successful to change students' digital knowledge utilizing the substitutional mode of learning to battle the COVID-19 epidemic if all students had access to the essential ICT resources. Students in their study talked about utilizing a variety of free online programs since they have lack of access to the necessary ICT infrastructures and its requirements. Not all the parents can use of TV, radio, FM, the internet, and Android mobile services. Bhim, the parent of Kamala Multiple Campus, opined: *Yes. [...] because if government or municipality funded ICT-Hub in certain places where the gathering students could be met in majority would be benefitted for them. But in this regard, neither government or wards, or municipalities could speak on this fever. So, they were all in mute condition. Henceforth, we could unable to attend the regular classes for our children. However, most of the parents gave advice to hold off on phoning or assembling students on school property until the problem was fixed.*

**Teaching via loudspeaker**
Encounter of online class or digital learning, loudspeaker appeared to resume the students’ remaining classes in the context of northern India. It would be only fit for the junior school students not for the university students. So a smaller group with less than 15 students could be able to run junior classes in India but it wouldn't be apply in the context of Nepal, however, some of the school in rural Nepal was targeting to apply this but didn't entertain. Lila, campus chief of Saraswati Campus disclosed:

*Teachers in Indian classrooms used loudspeakers to deliver lecture to the junior students in smaller groups with maintaining a suitable social distance and safety-health. It would be far better if we used for higher classes but it seemed out of academic. Thence, it couldn't be applicable in our campus but our neighbouring country in India.*

His response reveals that, despite the fact that teachers might advocate for alternative learning strategies by using loudspeaker for junior school students would be useful in India but not the university students in Nepal. He again desired to apply in his campus for the university students but it postponed due to inappropriate for academic system. Teachers could disperse educational materials and change their teaching methods by traveling village to village for their students. Teachers also consider adopting techniques from other industrialized nations, like as instructing pupils over loudspeakers during the COVID-19 pandemic, as is done in India. They might discover a large choice of additional options and teaching methods that are suitable for their environment.
Post COVID class
The majority of those who took part in the interview gave their thoughts on how to use various teaching strategies to reach all of the students who were not connected via the online mode. When there is no internet access, community-based mobile instruction is one of the finest ways to keep students on track with their studies. Community-based mobile teaching—which took the place of traditional teaching—played a significant part in meeting the academic demands of the pupils. Sagar, the campus chief of Janajagriti Education Campus, shared the following ideas:

*Our campus could run regular class due to availability of subsidy for ICT class and understanding of the campus executive committee and the parents' team. Students also resumed their classes as well as getting online operating skill. But the post COVID, the students seemed passive, inactive, and irregular for their classes because they showed disinterest in the class due to lack of ICT class and cut off subsidy of internet. They learnt ICT skills and digital techniques as well as accomplishment of their regular classes. They could have adequate time for doing other job along with their university classes if online class was going on. After the COVID-19, teachers and students couldn't participate in effective online courses and interaction due to resumption of the conventional classes as previous one.*

In his understanding, this shows that post COVID-19, students can't achieve advantage from the online classes because the students didn't have practice on ICT as regular as during pandemic. So, the majority of the students demanded ICT class again rather than face-to-face while pandemic due to unavailability of digital discourses. In some extent, COVID-19 also provided skill and knowledge of ICT which made them get job thereafter but now they are far beyond from these aspect of opportunities. Tulasi, the lecture of Kamala Multiple Campus viewed in his own way:

*Online class could not run since lack of high-bandwidth internet connection and accessibility of digital class. One of the best alternative classes is to tune radio, television, and FM programs in this field. Applying this sort of online devices is a kind of community-based mobile instruction. Our community's challenging physical organization and limited internet connectivity make online schooling appear to be an impractical option. Students can raise problems in community-based learning where teachers can respond to them a right away.*

His response makes the assumption that the teachers might instruct students using a suitable alternative methods, and learning activities might continue outside of traditional classroom settings. By visiting their homes or neighborhoods, the teachers can include their students in the learning process. There are no any pedagogical alternatives to community-based mobile teaching, in which instructors give their time voluntarily to help students who can't go to class with their problems.

Productive online classes
Online learning cannot be as effective as in-person learning in larger classrooms. But it would be productive classes if the smaller student groups form and run maintaining with safety and healthy distance followed by lockdown. Suman, the parent of Janajagriti Education Campus, thought:

*Community-based mobile teaching allows teachers to visit students at home at the scheduled time to give lessons in accordance with their lesson plans. They can discuss completing their coursework being safe and following good health. Students are encouraged to ask relevant questions to their professors if they don't get any ideas. He again added that having smaller group with less than 15 students would be better for the students as well as teachers to resume their regular online classes.*

In this study, he points out that community-based mobile teaching was another component of education during the pandemic that was intended to enhance student learning. Students might discuss their difficulties with their lecturers, who may provide them with educational tools to aid them in resolving their problems. Online education could be a crucial component in maintaining the class and assisting students in finishing their academic program, regardless of the pedagogies employed. One of the finest alternatives to traditional classroom instruction during the COVID-19 epidemic, according to the majority of students who participated in mobile teaching in smaller groups of pupils. Strong internet connections, collaborative learning, and diverse ICT infrastructures would all be advantageous for the students and teachers. One of the bachelor student of Janajagriti Education Campus, Sharada recalled the following:

*Online class which I get along with my classmates and teachers is productive when discussing our subjects. If we have any queries, we can ask them during the zoom class and we also can discuss and share our interactions, viewpoints, and experiences more importantly. We all learnt many things during COVID via digital system which resumed our remaining classes and took delayed exams thoroughly. As a result, communicating and connecting with friends and lecturers through online was very much fruitful as well as regular.*

Her comments are representative of those who made by students were studying and collaborating on assignments with friends while communicating with their teachers. Using digital system for teaching and learning was productive during pandemic. Semi-offline tools and programs like Messenger, YouTube, and SMS are also useful for the students without a network connection. She again added that none of the aforementioned conveniences are necessary for anyone to gain access and to be benefitted from this.

The Findings and Discussion
Prior to data collecting, expectations and outcomes were not the same. It was assumed that almost every participant would have some thoughts and comments on video conferencing Zoom for digital learning. During the time of interview, the majority of the educators were vigorously using Zoom for virtual instruction. Teachers who took part in the study did
notice that managing digital services was a challenge for many instructors. Numbers of the campus chief, lectures, students, and parents were among the stakeholders who had varying opinions on the online teaching-learning approach. The outcomes show that, despite its flaws, the zoom class has been fairly successful in immersing students in their academic objectives during the pandemic. When there were no in-person meetings, the students appreciated the teachers' decision to use zoom for online instruction because it allowed them to amble their lessons from home. However, they argued that they were unable to learn from their lecturers as much as they had planned. Similar to international stakeholder reports, this pandemic has significantly affected pupils' regular learning activities (Burgess & Sievertsen, 2020). The majority of participants stressed the value of online education in the times of the COVID-19 outbreak and other natural disasters. According to Mehran et al. (2017), the first stage in developing an online course is determining how prepared the students are for it. Countries, particularly their educational institutions, need to be equipped and ready for the impending catastrophe. However, it has been shown that the major obstacles to implementing online learning include a lack of ICT infrastructure, a poor internet connection, erratic electricity, unskilled teachers, and a lack of administrative preparedness, especially in rural schools in Nepal (K. J. U. d. d. U. o. C. Rana, 2018). Participants concur that the Nepal government lacks a clear strategy and funding for the adoption of web-based education (K. Rana, Greenwood, & Fox-Turnbull, 2020). In addition, developing countries have serious issues with inadequate ICT infrastructure, power outages, and a lack of high-quality internet (Bikas et al., 2021).

According to these data on Nepal, substantial funding from the government and educational institutions is required for the creation of a solid ICT infrastructure, the development of teachers' ICT skills, and online learning. However, Demuyakor and Technologies (2020) contend that poorly managed digital activities that may upsurge students' displeasure, parallel to how Ghanaian students at Chinese institutions felt throughout the COVID-19 epidemic when they were unable to control the overwhelming enrollment in online courses. Some participants enjoyed the opportunity to learn during disasters. Especially in remote locations without electricity, internet, or computer access, the health awareness camping model for communities (Kopelovich et al., 2021) may be a useful one for ongoing education. Using loudspeakers for community-based teaching and learning activities is done in rural India, is another alternative strategy for helping students study to their courses (Sharma, 2022). During this epidemic, some domestic and foreign universities provided online learning to meet the demands of the students (Burke et al., 2020). Nevertheless, the huge number of participants asserted that due of the distance between teachers and students, online classes are less effective than in-person ones. Routine tests were allegedly cancelled, delayed, or postponed as a consequence of the outbreak. The government's management of the overall educational system throughout this time has been unsuccessful in various aspects. The limited usage of online learning, as seen in foreign contexts, proved ineffective (Gacs et al., 2020); (Liu, Lee, Lee, & Management, 2020). They shared the same grievance as (Campos, Estrin, & Proto, 2010), who questioned whether or not the powerful have the planning and the foresight necessary to manage education at a time of crisis. Similar to this, a number of parents demanded governmental subsidy for their children's future. Some of the students, teachers, and parents proclaim that online class during pandemic was productive and useful because resuming their virtual classes where they learn it continuously (Magar & Rana, 2022). The findings imply that the new software and hardware (computer, laptop, and Android cell phone) integrated into the current infrastructure may provide teachers and students both advantages and disadvantages. If they receive the right instruction, they can eventually use such facilities. But if children don't get enough continuing help using and learning the technology, they can start to fear it.

Conclusion
The findings demonstrate that numerous digital techniques have been used to reduce the COVID-19 global epidemic. Schools have been seen to employ online learning extensively, particularly in locations with internet connectivity when teachers travel to communities to teach. Particularly in urban areas, online education is increasingly a serious rival to conventional teaching methods. Many pupils in rural locations who lacked access to computers and the internet relied on the teachers' community-based mobile instruction. The lack of ICT infrastructures, the poor teacher preparation in ICT, the instructor skill and knowledge gaps in ICT, and the lack of internet and computer access for pupils were all issues that the parents raised. Opportunities for educators and students would arise from the adoption of new technologies and their applications to the current infrastructure. However, it is challenging to design and implement e-based learning in remote schools due to insufficient ICT infrastructure, unstable electricity, lack of internet connectivity, and economic problems. Instruction via loudspeakers practices in isolated areas may be used as substitutes for traditional teaching and learning techniques for students during the epidemic. But using loudspeaker is inappropriate for the university students rather than junior school students. Online learning is believed to be less effective than traditional learning since there is less direct physical contact between teachers and students. But in contrast, some of the students, teachers, and parents claimed that digital learning was productive and gaining job opportunities during pandemic where maximum practices have been taken place. Routine tasks had to be put off, abandoned, or postponed because of the crisis, which prevented students from finishing their courses and exams. To recover educational standards both during the pandemic and in more regular times, several participants preferred online instruction. They don't have a comprehensive plan for online and distance learning. After the post COVID, there would be far better to resume the ICT classes because the university students got practice on digital teaching and learning. Had the campuses ran online classes, majority of the students would be skillfull on ICT classes. Not only the students learn the knowledge of online skill but they also get the good job opportunity. All students and teachers, especially those from underprivileged and marginalized groups, would have had sufficient access to online education if the Nepali government had built even a modest level of ICT infrastructure throughout the nation.
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