Online Education as a New Paradigm for Teaching and Learning Higher Education in Nepal: Issues and Challenges

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Abstract: This article mainly concerns with the present context of online education and its major issues and challenges in higher education in Nepal. This study has been adopted an exploratory research design to reveal the basic information regarding present context its issues and challenges of online education. The study basically has adopted the observation, survey and review of the different literatures to collect the necessary information so far. The prevailing condition of running online education at higher education in the different university and institutions regularly are found very low. However, M Phil class and other training programs conducted by the different institutions and organizations were found running regularly and effectively. The classes of bachelors program of different universities are also found running very low and irregular. The overview issues and challenges that occur during the delivery of online courses were identified by exploring from the different concern students, teacher and the parents. Some of the issues and the challenges were found by the critical analysis of the previous literature. In this course, three issues related to students, teachers and the curriculum were identified. Similarly, seven challenges as: technology, students’ guidance and support, equity, pedagogy, access, time and attitude were identified. To address these issues and challenges of implementing online education, the government, universities and the concern institutions should focus for infrastructural development, technical and other support for student and teacher, make provision to access of electronic equipment and digital resources as soon as possible.

Keywords: Online Education, Online Learning, E-learning, Higher Education, Learning Platforms,

I. INTRODUCTION

The education through online teaching and learning is termed as online education. The term online education is frequently used in distance education. Online learning always involves an internet connection and can include virtual face-to-face interactions such as: webinar, online lecture, virtual meeting etc. and uses online tools for learning. As cited by Hubackova (2015), development of e-learning was begun in the late eighties and the nineties of the last century when the first form of electronic education Computer Based Training (CBT) was born. Online learning has included many distinct and overlapping terms such as e-learning, online learning, virtual learning, blended learning etc. It is consistently discuss about the ambiguity of such terms while interpreting the concept of online learning. The concept of online education takes place over the internet, distance and technology. It is an umbrella term for any type of online courses and learning that takes place across distance education and not in a traditional classroom (Singh &Thurman, 2019). The concept of online learning relating to technology is a crucial part of the definition. It is defined as learning experiences in synchronous or asynchronous environments using different devices with internet access. In these environments, students can be anywhere to learn and interact with instructors and other students (Singh and Thurman, 2019).

A. Present Context of Online Education in Nepal

Many educational institutions have started switching from traditional classroom teaching to online teaching to cope with the adverse situation after the beginning of the lockdown due to Covid-19 outbreak. Distance education was existed long before in Tribhuvan University (TU), the largest university in Nepal but was not introduced the provision of online learning system due to the very little enthusiasm regarding past. However, now they are coming up with certain directives to adopt it. Recently, TU has officially endorsed the online class model along with a guideline and circulated a notice among its constituent and affiliated institutions. In the same way, the Ministry of Education, Science and Technology have appealed to stakeholders to start classes using through available alternative. Local government, various news media and relevant stakeholders have argued for the need for promoting
such classes and also working as a partner for delivering education. Nepal Open University (NOU) has been running its all programs in online mode despite of different barriers after the lockdown. In the same way, Kathmandu University (KU) has been also running some class in online mode. Likewise, other different universities and institutions have been running some classes in online mode at higher level after the lockdown.

However, there are some critical questions in the context of Nepal regarding online education. The questions related to the access of quality internet to attend the classes without disturbance for all the learners and the teachers in rural area, the teachers' preparation to run the online classes effectively, students' and parents' motivation and their preparedness to use this opportunity, the familiarity and access of the students about the resources and technology related to online learning. New technologies should not be imposed without enabling lecturers and students to understand these fundamental shifts (Odero, 2017). Operationally, many of the institutions do not have the capacity to synchronize student learning, databases, support systems, use innovative educational technologies, and university wide connectedness.

It is really difficult to switch from a traditional classroom to online class radically for the entire students and teachers. However, it is mandatory condition to shift from traditional face to face learning to distance learning mode via. using different e-learning platforms connecting to internet, television, radio and newspaper etc. Different institutions from basic level to higher education, are attempting to adopt the new way of class delivery approach either virtual class or distance mode through radio and television broadcast. This initiation is helping to all the stakeholders for planning, the class preparing and mastering the new technology, stimulating for discussions, to keeping in touch with the students and motivating them for learning.

B. Significance of the Study

The major issues of online education discussed earlier enlighten the educators as well as the concern authority to be addressed for improvement of the quality of online education. This study bridged the gap and described and outlined the major challenges of online teaching and learning found in the literature. The findings of the study are considered to be of great significance to different stakeholders for several reasons. In the present context, there is a small number of previous researches regarding online education that are trying to cope with keeping students engaged during this emergency period by the educational institutions. This study can help to reveal critical areas and contribute to local literature on the area, which in turn could be used by relevant authorities in improving their education initiatives. Different stakeholders may realize the present context of online education in Nepal, and its major issues and challenges for undertaking online learning. This study bring out the condition about the access of subordinate aspects for the online learning like physical, social, psychological and technological conditions. The finding of this study may also recover to the benefit for the higher education institutions by providing those significant insights into ICT incorporated teaching enabling them to support and prepare better their programs for the days to come.

Furthermore the study helps the concern authority to address the prevailing issues and challenges for the better installation of the online learning program in the future and also help to prepare more for the concern stakeholders. Especially, the findings may be of great value to the teacher as they are in constant touch with the students and may able to understand better their behavior and can manage online issues kindly. In the same way, it may also provide important information to the education authorities on the benefits of ICT incorporated learning enabling them to include as pedagogical reforms in education. So that, they may revisit the curriculum to introduce more ICT integrated pedagogy at higher education institutions. It also helps to develop the varied knowledge and skills related to ICT to the teacher as well as the learner make them engage and interactive to learn new skills.

II. METHODOLOGY

In this study, an exploratory research design is used considering to be the most appropriate design to reveal the salient features associated with online learning especially in the emergency period due to COVID-19. Using this design, the baseline information of different aspects related to online learning in higher education was explored. The design uses rigorous qualitative methods and synthesizes existing qualitative studies to construct better meaning through an interpretative process. In this study both primary and secondary sources of data were used to explore the present context of implementing online education and its emerging issues and challenges in higher education. Observation, survey as well as review of various publications, reports, periodicals, books, journals and newspaper etc. were used as the source to collect the information for the study.

III. RESULTS AND DISCUSSION

A. Online Education as a New Paradigm in Higher Education

As knowledge regarding ICT development and learning has grown at a rapid pace, the opportunity to shape more effective educational practices has also increased. Shifting to the online mode of teaching from traditional teaching has different measurable issues and challenges to the teachers as well as students. However, there are no any other options for delivering educations in such condition till this date. The students, particularly at the undergraduate level, are found unwilling to study online due to the different barriers. In the same way, lack of digital literacy of the teachers found as the main reasons for the reluctance of many teachers to utilize the technologies effectively in their teaching. COVID-19 emerged as the "Digital Year 2020" implementing online mode of teaching and learning at higher education throughout the world. The crisis rebels the people to adopt the way to better preparation for the future. This event enforced online education as a paradigm shift in higher education. This emergency has educated people to interconnect globally and navigate across boundaries to work in a collaborative way. It redefined the notion of the teacher as the knowledge holder who imparts wisdom to their pupil. Online teacher or educator may be referred as a facilitator, online teacher, e-moderator, e-tutor, online tutor, online instructor, online trainer, distance education tutor or teaching assistant (Adnan, 2018). Similarly,
the role of online learning is expected not only for delivering contents to massive learners anywhere and anytime but also for promoting successful learning for the learners (Temdee, 2020). It is also learned the lesson of life skills in the ever-changing global environment for the better adaptability by this pandemic. It has also compelled the educational institutions across the world to adapt the available technological tools suddenly creating content and its delivery. Thus, each educator and learner across the world is getting familiarized to new experiences, possibilities to do things differently and with greater flexibility to ensure in accessibility to education.

In our context, it is vital that most of the university teachers are being provided the training opportunities for online teaching as almost all of them have not done the job before. A large number of teachers in higher education institutions like, TU, KU, NOU and their different affiliated college have already conducted the teacher training about online teaching and learning and remaining universities and their affiliated institutions are also on the way to provide training for their academic and administrative staff. This initiation is working as a sensitizer to shift the paradigm from traditional class to digitalized class through assimilating to the all stakeholders, trigger students to participate in online classes, make teachers to shift for new teaching alternatives, keep the students engaged in this critical period. However, making an immediate shift to online classes is extremely difficult due to some issues and challenges. Most of the universities have no (or little) experience of conducting online classes except NOU (Dawadi, Giri & Simkhada, 2020). Similarly, most of the teachers do not seem to have adequate skills to run online classes as they have neither been trained to do the job nor have been involved in online teaching before this pandemic. The act of online delivery in the real sense is also difficult due to the unreliable access of internet and electricity. Nevertheless, after the pandemic, education system has been changed dramatically, with the distinctive rise of e-learning whereby teaching and learning is undertaken remotely and on digital platforms (Dawadi, Giri & Simkhada, 2020).

### B. Major Issues Related to Online Education at Higher Level

Issues generally denote a protocol for addressing the challenge in small pieces, so that it can be addressed on the basis of priority. The rapid development of ICT and growing rate of internet user especially in the young generation also impact on online learning at higher education. Ali (2018) concluded that the students tend to have a strong attachment with ICT. The children of these days are exposed to technological gadgets such as mobile phones and tablet from very tender ages the world over (Shava, Chinyamurindi & Somdyala, 2016). Similarly, there exists some paradoxes and misconceptions concerning with new generation that needs to be considered as the belief that they know all about ICT is a fatal misconception (Ali, 2020). O’Sullivan (2018) states that most of the young people, who are the so-called digital natives, even have shown limitations in their use of technology. The teachers have been forced into online teaching although they are not well prepared. As a result, we are far from using best practices for online learning and are scrambling for emergency online homeschooling (OECD, 2020). In our context, applying online teaching and learning in higher education has some issues that are needed to address for the successful online education.

Students need to be more discipline as well as skillful to succeed online course. Similarly, the physical facilities like internet, electricity and personal computer or smart phone for each student should be available. It’s also difficult to those students who belong to remote areas to take online classes due to the internet and electricity access. Learning should not be halted due to these factors and it should be equally accessed by everyone regardless of their background. The major categories of issues related to teaching online courses are related to the students, teachers, and curriculum.

#### 1. Issues Related to Students

- **Learners’ Participation:** The nature of learners’ participation and engagement in online settings depends on its success or failure. The independent and active learner can take part in online listening, observing and discussion even in a complex phenomenon. Online listening or observing is a form of active learning, as it consists of engagement with the content, thought, and reflection (Hrastinski, 2009). Similarly, the learners’ participation in online discussions can be enhanced by mixing audio or video discussion with online text discussions (Ching & Hsu, 2015). Audio or video components enhance communication and connection with peers, encourage learners to participate in the discussions, and support learners to elaborate on their responses, as it facilitates less time consuming communication as compared with text discussion (Ching & Hsu, 2015). Thus learner’s participation is essential for online learning effectively.

- **Learners’ Expectations:** The development of ICT and digital technology enforce to shift traditional teaching and learning into online learning system. However, most of the learners and teachers have years of experience in the face-to-
face classroom teaching and learning, and very low have experience about online learning. Thus the teacher as well as the learner may have varied expectations regarding the online learning. For the successful online learning, the students should feel comfortable as well as familiar with it. The expectations and needs of the learner should be addressed after removing their barriers to success for online learning (Powell, 2003).

c) Learners' Readiness: Learners' readiness to attend online courses is one of the major issues (Hung, Chou, Chen & Own, 2010). The self-motivated and self-directed learner can achieve more in online learning (Kebritchi, Lipschuetz & Santiago, 2017). The learners may have low readiness for online learning due to the lack of technical skills related to computers and internet (Peng, Tsai & Wu, 2006) and lack of digital equipments and negative attitude towards online learning. As suggested by Hung et al. (2010), self-directed learning, motivation for learning, computer and internet self-efficacy, online communication self-efficacy, and learner control makes the learner readiness for online learning. Thus the learner who are not ready or no willingness to learn through online learning should support, motivate and inspire to participate actively in the learning process.

d) Learners' Identity: Learners' identity is also the important issue of online learning. In online learning the learner may feel isolated and disconnected in online courses (McInnery & Roberts, 2004), that may affect to learn. Identity is a fluid construct, one that is negotiated both with our interaction partners and within the context in which it is being performed (Seargeant & Tagg, 2014). We construct our identities through the stories that we tell (Deumert, 2014). The teacher should develop the sense of community and belonging for the better facilitation and interactive learning that may seek to reduce the barriers often felt by isolated students. This may help to encourage the students' intrinsic motivation to participate in the learning process and make meaningful contributions to the online learning and among other learners. A strong sense of identity along with belonging to the knowledge community as a valued member plays a critical role in effective knowledge building (Goodyear & Zeniost, 2007).

2. Issues Related to Curriculum: The curriculum of any online program must be carefully considered and developed in order to be successful. Online curriculum should be developed to meet the needs of the online teaching and learning process. It offers technology-based instruction that expand learning opportunities through a variety of formats and modalities. The issues related to curriculum consist of delivery of content that also comprises pedagogical content knowledge epically in teaching online courses. The pedagogical content knowledge comprises the two knowledge dimensions for teaching in an integrated form as content and pedagogy (Kunwar, 2019). Online education can be successful when the curriculum, teacher, technology and the students are balanced to take full advantage of the strengths of this format. The teacher should divide the content into several small modules with each lasting approximately 20–25 minutes to ensure the successful online class delivery (Bao, 2020). The issues related to the curriculum can be considered as the role of teacher in content development, integration of ICT for content delivery, use of instructional strategies, and other considerations like assignment, assessment, study environment and feedback system as shown in Figure 1.

a) Role of Teacher in Content Development: The role of the teacher in content development of the online curriculum seems necessary. While delivering the content, the teachers face the issue of lack of empowerment (Evrim, Correia & Thompson, 2011). In such situations, the role of instructors in creating, shaping, and integrating their own experiences into the content of the courses has been downplayed (Rennert-Ariev, 2008). Thus the online instructors are encouraged to engage in designing the content and adopting an autonomous and active role through constantly criticizing their assumptions toward online teaching (Evrim et al., 2011). Martin et al. (2019) consider that there are three components in effective online courses: design; assessment and evaluation; and facilitation. If the teacher gets the chance of content selection and development then they can be more responsible for planning and preparing the materials, and conducting for online courses.

b) Integration of ICT in Content Delivery: The design and delivery process of online learning may be influenced by the learners' attitude, knowledge and skills, learning context and access to technology. The effective implementation of online education depends on the skillful and interactive operation of ICT services that provide the learner an access to information, tools and resources to support educational delivery and management. The content can be delivered in a best way integrating multimedia to enhance the learning experience using constructivist theory (Almala, 2005). ICT integration in education generally means technology-based teaching and learning process that closely relates to the utilization of learning technologies and the integration is to improve and increase the quality, accessibility and cost-efficiency of the delivery of instruction to students (Ghavifekr & Rosdy, 2015). Thus the integration of ICT in content delivery makes the learner engage, interesting and effective online learning.

c) Use of Instructional Strategies: In online learning, the learners discuss each other, collaborate, listen to others, reflect, appraise peers and internalize the learning experience with the help of different collaborative learning platforms such as MS Teams, Google Hangouts, Zoom, Google Docs, Google Drive etc. The best practices recommended for developing content in an online course are a combination of collaborative activities, reflective activities, clear assessment criteria, and integration of technology (Niess & Gillow-Wiles, 2013). The online courses successfully integrate technology and applied technology friendly instructional strategies (Spiceland, Spiceland & Schaeffer, 2015). Online education can use learning strategies based on the perspective of cognitivism to enable learners to process information efficiently (Dwivedi, 2016). Thus the mode of delivery and the pacing of the delivery of information should all be considered accordingly. As mentioned by Ally (2008), number of relevant strategies can be used to promote attention and perception for online education. As stated by Miller (2014) the six principles for effective instruction can be used as: peer-to-peer interaction, active student engagement in learning, emphasis on practice and student effort, personalization to the individual student, variety, and emphasis on higher thought processes. Thus, the appropriate instructional strategies are necessary to implement the effective online class delivery.
d) Other Considerations: The successful online learning consists of other considerations like assignment, assessment, study environment and feedback system. Such aspects should be laid out clearly for the students, and content should be presented in meaningful sections throughout the course (Allen, Kiser & Owens, 2013). The assignment for the learner is necessary to improve student understanding along with additional time for students to complete online collaborative learning activities (Allen et al., 2013; Miller, 2014). It is also important in online course (Miller, 2014). Assessment is also the most significant part of the education which gives an accurate picture of the students' performance. It performs as a catalyst and positive reinforcement to the learners by encouraging them for better performance. The proper study environment is also a critical component to success online learning. The study environment is considered more likely to peace and quiet, good lighting and comfortable seating for online learning. Similarly feedback system is an important intervention for the online educator because it is an opportunity to develop the instructor-learner relationship, improve academic performance, and enhance learning (Leibold & Schwarz, 2015). Student feedback could assist them in adjusting course assignments and learning may be another way to address the issues instructors and students face in the online classroom (Anderson et al., 2011). Effective feedback is constructive, which means to improve performance by correcting errors (Zohar & Smith, 2009) using a positive, future-focused, helpful manner.

3. Issues Related to Teacher: The successful teacher in real classroom instruction may not always be successful in online instruction. Teaching online is different in the roles, competencies and professional development approaches required to equip online educators to teach effectively in the online higher education environment (Ni She et al., 2019). The teacher or the facilitators should be properly trained and skillful in online delivery and methodologies as well as skilled in use of ICT to be a successful teacher for the online program. Online learning program will be weakened if the teachers are not adequately prepared to administer the virtual class. They must be able to compensate for lack of physical presence by creating a supportive environment in the virtual class where all students feel comfortable for participating. The issues related to teacher about online learning can be considered as the change of teacher's role (switching from face-to-face to online) teachers' interest and preparation, managing time and teaching styles and barrier in communication as shown in Figure 1.

   a) Change of Teacher's Role: Change of teacher role in online education is a paradigm shift from traditional face-to-face teaching to online teaching. It is the traditional teacher centered role to student centered with digital technology. As stated by Berge (2013) the roles of the online instructors are identified as: social, pedagogical, managerial, and technical responsibilities. Pedagogical roles concern to teaching methods; social role refers to the ways of establishing social relationships with the students; managerial role concerns to administrative and organizational tasks; and technical responsibilities are the technical support that the teacher provides for students. The central role of teacher in online teaching is considered as the content facilitator, metacognition facilitator, technologist, process facilitator, assessor, advisor and resource provider and the peripheral roles are as manager/administrator, designer, co-learner, and researcher (Metc & Bezuidenhout, 2018). The teacher needs the professional development to use online pedagogies (Bezuidenhout, 2018). The use of ICT in online teaching changes both the nature of the teaching and learning processes as well as the need to develop ICT and other pedagogical skills (Carril et al., 2013). It is a paradigm shift in perceptions of instructional time and space, virtual management techniques, and ways of engaging students Chang et al. (2014).

   b) Teachers' Interest and Preparation: The teacher interest and preparation for delivering online class is also an important issue in online education. The instructor who have long experiences of teaching face-to-face, do not feel comfortable switching to the online format (Kebritchi, Lipschuetz & Santiague, 2017). It may be due to the lack of preparation both in content and pedagogy. The ability of the teacher to facilitate and develop student higher-order thinking skills is equally important in both online and face-to-face delivery modes particularly when seeking to engage students in group activities (Gillett-Swan, 2017). The little attention paid to the crucial role of teachers in online settings results in a restricted and moderate adaptation of the technologies in higher education so far (Guri-Rosenblit, 2018). Thus the interest of the teacher teaching online class is important for the best content delivery.

   c) Managing Time and Teaching Styles: The time management is an important issue in online teaching and learning. The poor time management is one of the biggest issues that impacts online learners. Lack of fixed schedule, lack of designated work space, too many distractions and multitasking can lead to poor time management. This may create the students' trouble to maintain the flexible schedule for online class. Similarly the online learners may suffer from the distractions like problems of their computers, slow internet, power supply and other technical problems while participating in online learning. Sometimes online discussion forums, social media and other viral posts and issues also distract the learner. In the same way, the lack of proper work space also hampers the online learners.

The interaction between teacher and students plays a major role in the success of online learning. It establishes a relationship between the students and the teacher and also assures the students and helps them to feel as a part of the class. Such relationship between students and the teacher helps to motivate the students to continue their learning and makes actively engage. Active learning consists of the number of related learning modes, methods, and movements that covers group activities, pair discussions, hands-on learning activities, and limited use of traditional lectures (Huang, et al., 2020). Similarly, online learning can make interactive and successful by the effective use of technology and providing immediate feedback to the students on their weakness. Timely responses by educators in all aspects of the teaching and learning process lead to better outcomes (Martin, Ritzaup, Kumar & Budhrani, 2019). According to Coker (2018) student engagement and interaction needs to be supported to ensure effective facilitation of online courses.

   d) Barrier in Communication: Communication barrier is the main issues of effective online class delivery. Communication to each other like, forwarding or receiving the
messages that others use to convey their information, ideas and thoughts are the important aspect in online learning. The teacher communication barrier includes language barrier (Sherry, 1996), technological barrier (Limperos et al., 2015) and social barrier (Berge, 2013). Lack of access to communication to each learner, it is difficult to understand the interest and feeling of the students on learning. Technological barrier refers to the access to technology or technological competency among the learners and the teacher. Online teacher needs to be comfortable with the technology and how to use it to be successful (Kebritchi, Lipschuetz & Santiago, 2017). The social barrier refers to the degree of perceived differences in class and socio-economic status. It is associated with affinity, closeness, or support related to the learner. Thus, the teacher should be capable to operate the current technology as well convenience behaviors to the learner efficiently.

C. Major Challenges for Implementing Online Teaching and Learning at Higher Education

Online learning in higher education supports to provide quality open educational resources and helps to utilize a variety of pedagogical and collaborative tools to engage the learners for reflective and critical thinking. It saves instructional delivery time, assists in exploratory learning, and supplements core physical interactions in a blended learning environment. In this learning students can learn autonomously without unnecessary pressure to learn; rather, they can learn under flexible conditions and self-pace their learning experiences. Online technology must be able to increase opportunities for students to access higher education, increase retention rates, and increase learning quality, and to result in good outcomes for students (Mahlangu, 2018). However, student maturity level and their digital preference, digital competency and digital ability impact in online learning. Therefore, regardless of the demographic of the cohort, assumptions around technological preference and capacities should be sidelined at least until the necessary social and peer support mechanisms are in place (Gillett-Swan, 2017). Adapting to the online environment can be a challenge for both facilitators and students alike (Kirkwood & Price, 2014).

Nevertheless, the potential benefits, most of the higher education institutions in Nepal are facing different challenges due to inadequate physical, legislative and operational capacities to accommodate online learning and the use of educational technologies. In the real sense, to adopt the online learning in higher education, a long term strategy for the processes of instructional reforms and established the bases for digital learning system as well as its implementation should be developed. The major challenges that are related to implementing online learning are presented in the Figure 2.

Figure 2: Major challenges for online teaching and learning at higher education.

1. Technological Challenges: The emerging technology related to online teaching and learning or e-learning with regard to operating different learning platforms, creating materials, sharing, designing, developing, communicating to others etc arises the issues. As stated by Orlando and Attard (2015) teaching with technology is not a one size fits all approach as it depends on the types of technology in use at the time and also the curriculum content being taught. This shows that the integration of ICT in teaching provides extra concern in terms of teaching pedagogy and construction of learning experiences. Even with this, it is often taken for granted that technologies can enhance learning (Kirkwood & Price, 2014). Technological knowledge supports the isolated student by way of technological proficiency and competence, social support, interactions, and skill development (Gillett-Swan, 2017). Technology is defined as the making, modifying, using, and knowing of tools, machines, techniques, crafts, systems, and methods of organizing them in order to solving a problem, improving a pre-existing solution to a problem, achieving a goal, handling an applied input/output relation or perform a specific function (Patil, 2014; Aithal & Aithal, 2015). Technological knowledge refers to the capabilities related to operating technology related resources and digitalized instructional technology that will enable academics to learn the online learning features and functions correctly and use them effectively. In online mode of teaching, quality of virtual classrooms also depends on the students’ and teachers’ familiarity with the new technologies as well as on the technical equipment and support provided by the university (Sanchez-Serrano, et al., 2020). While delivering class through online mode, the teacher may face the difficulties related to the issues. The skilled users even in certain situations face limitations due to the equipment and tools used at the moment and connections break during sessions with synchronous two-way communications, students cannot upload files of big dimensions, students need a scanner to upload their assignments. The instructor must have the ability to motivate students, show empathy, resolve emergency problems and respond to emails rapidly (Gillett-Swan, 2017). Thus in this modern context, the proper knowledge of utilizing technology not only in education but in the global context is most essential and challenging for teacher as well as the learner.
Hence the online learning or e-learning cannot be possible without the proper knowledge of ICT.

2. Students Guidance and Support: Students' guidance and support ensures the student as being equipped with knowledge and skills that are significant, favorable and enable them to reveal best practice in their own future activities. Students' guidance refers to the assistance given to the students. It is primarily concerned with the student’s success in his educational career, adjustment to the institution and fulfills the needs, and interests of the students. As stated by (Everitt, Neary, Delgardo, and Clark, 2018) students’ personal guidance impact on the students' individual effectiveness such as self-awareness and self-esteem; career readiness such as career plans and decision making; and improved attendance and attainment. Thus, the students can support by timely feedback, monitoring student progress regularly, managing especially time, managing learning environment, providing content knowledge as per the need of the students and being responsiveness for the students' wellbeing.

The students support refers directly in their academic life to foster, promote, and increase interpersonal competencies and academic achievement (Shaterloo & Mohammadyari, 2011). Students support includes the social, intellectual, emotional, and physical aspects of students’ lives. In our context, the student support like, providing internet data pack and other related equipments with a huge student discount for online learning. Similarly government should provide a soft loan for purchasing the learning material and equipment related to online learning for the poor and educationally disadvantaged students. Such initiation can help to reduce educational disparity in higher education. It is necessary to establish the online learning culture through providing necessary support and resources to the students and the teacher, and motivational orientation should also provide to all the stakeholders. Furthermore, it is necessary to create a suitable culture, and familiarize teachers and learners by developing and using the e-learning system (Shahmoradi et al., 2018).

3. Equity: Equity in education is a vague term. It requires autonomous system that ensures for every child an equal chance for success. As defined by OECD (2008) equity in education consists of two dimensions. The first is fairness, which basically means ensuring that personal and social conditions do not prevent students from achieving their educational potential. The second is inclusion, which means setting a basic minimum standard for education that is shared by all students despite of background, personal characteristics or location. Equity in education includes focusing particularly on children excluded on the basis of gender, children with disabilities, the poorest, ethnic and linguistic minorities, and children affected by emergencies, minority and marginalized groups (Bista, Sharma & Raby 2020). It cannot be achieved by providing equal chances thus it requires some sort of individual support including necessary resources.

The Constitution of Nepal (2015) and government policy have provisions for equitable access for women, the Dalit community, people with disabilities and poor families. However there is no any remarkable provision to priority support or academic support for minority and marginalized students to overcome structural inequities in higher education (Olson-Strom & Rao, 2020).Inequity in access for female and disadvantaged social groups, the lack of access in remote area and disparities between rural and urban areas are among the key issues in Nepali higher education (ADB, 2015). Thus, equity of education is considerably lower in Nepal and education participation across social groups remains unequal (Educate Nepal, 2016). So, to expand the access to higher education financial support for higher education would be the most effective and efficient way to promote equity in education (ADB, 2015). For this, adequate scholarships, grants, and different types of loans could be effective ways of equalizing opportunity for higher education (Marginson, 2002). Besides these factors, the unavailability or the resources like, high-speed internet, regular electricity at home, culture, parents' views, lack of essential knowledge of ICT, low motivation and poor family background for purchasing internet pack and other electronic devices necessary for the online class are also creating challenges to maintain the equity in education.

4. Pedagogical Challenges: Pedagogy is concerned with enabling the best way to achieve learning. Successful pedagogy requires the teacher to understand how students learn then design and deliver course materials, and mentor students appropriately, so that knowledge and skills are passed on (Morley, 2010). It requires a different approach to teaching especially in the areas such as individual and group interaction and online assessment. It is a challenge how to make students motivated and keep them active. Successful pedagogy requires the teacher to understand how students learn, then design and deliver course materials and mentor students appropriately, so that knowledge and skills are passed on (Sanchez-Serrano et al., 2020). They further suggest that the teacher requires careful planning and design of teaching scenario, respecting pedagogical and didactical concerns.

In the present context, online education is shifting from traditional learning globally in a faster rate, however the academicians who are not well equipped technically to handle developments of materials and delivering online modules are hampering progress, and they require extensive skills development. However, the technical skills are not only the problems but also appropriate designing of contents. In order for academics to effectively make the transition to become online teachers they need to do more than just develop new ICT skills; it should be pedagogy based (Morley, 2010). The online learning pedagogy requires higher-order technical skills as well as critical thinking and the ability to learn more independently, as well as in larger groups, both in person and online. The online learning pedagogy should be treated in a comfortable way to help students to learn, and to access, share, and create useful information and gain better fluency in a subject. It should be implemented by using different technology to enhance course materials and further support their pedagogies providing different digital resources like videos, lecture notes, quizzes, and further readings.

The appropriate pedagogy for online teaching consists of the approaches as to match the technology; organize and promote different tutorial modalities; organize and facilitate student participation; link the subject with scientific, social and cultural phenomena; validation of student knowledge acquired; use a virtual classroom to facilitate learning; apply aspects of collaborative, active, constructive, reflective and authentic learning (Ni She et al., 2019). Pedagogy is an important and serious consideration for learning, it is not about dumping information on a website and hoping students
will learn it, but a process to be followed to enable pedagogy in the e-learning tools, which institutions should show utmost importance (Ferguson et al., 2019). Thus the pedagogy must be suitable to the learners, and focus on helping students to develop technological skills an understanding of the content beyond basic memorization and surface knowledge. Pedagogy supports to transmission of knowledge in a conducive and collaborative approach and provides a number of scaffolding strategies that online educators can use to better facilitate online teaching (Feng et al., 2017). Adopting online learning is not only a technical issue but it is a pedagogical as well as instructional challenge (Ali, 2020). It is the means for delivery and requires a close cross-collaboration between content, instruction and technology. The teachers need additional information about how to efficiently use and reuse the open educational resources, with a regular opportunity for peer to peer sharing of good practices and advice (Sanchez-Serrano et al., 2020).

5. Access: Online learning system automatically demands the digital operating skills in students and teacher, access of technology, electronic devices, and regular power supply and quality of the connectivity. The low-income students, who have not the connection resources and facilities for online learning, cannot take part in online education. This may cause due to the low income to purchase internet data or data packs and purchase the laptops and smart phones. The few education systems, even the high performing, may not be that well equipped to offer online learning for all students at such a large scale (World Bank, 2020). It is also necessary to establish the infrastructure, ICT system and tools as well as hardware and software support system for delivering effective online learning. There is no doubt that the integration of the ICT as an instructional device in academic courses has escalated at a rapid rate (World Bank, 2020). The relevant literatures disclose that in recent years, there has been an increasing interest in the development and use of multimedia-enhanced content through the use of ICT to enhance the quality of teaching and learning (Smith & Judd, 2020; UNESCO, 2020; World Bank, 2020). In some areas, the unavailability of electricity and network also creates problem in online learning. The low speed internet and fluctuation speed of the internet and some sort of disturbance of electricity may also cause problem in online learning. In some rural areas, the people are still facing this issue but the situation is much better compared to that in the past.

The National ICT Policy 2015, was aimed at providing access to the internet to the entire population of Nepal by 2020. However, only 72% of the population seems to have access to the internet so far (Sharma, 2020) of which most of the population are from urban areas. Among them an awesome number rely on mobile data to access the internet. Only around 12 percent of the people have broadband internet connection. On the other hand, getting access to internet or technology is very costly for many parents. The available internet connection is also with very low speed that cannot be properly utilized in the different learning platforms. Only access to the internet and devices alone is not adequate to run online classes. The technologically capable teachers to deliver effective classes are also needed. It should also consider that students might have similar problems making the transition to digital learning as well. Most important thing to grow up is to establish a reliable connection with the establishment of better infrastructure. For this, Nepal government and Nepal Telecommunications authority should aware and take strong decision and action ahead. The unequal access of high-speed internet service, many students who are not connected by the internet, mostly in rural areas, are failing to participate in online classes, and their absence is depriving them of learning. Such disparity makes the learner disempowering and hopeless and also may increase education inequality.

Besides the gap due to internet accessibility, another significant challenge to online education is inadequate technological competency. Technological competency in both teachers and students is a precondition for successful online education and in the absence of such competence, imparting online education is a challenge for many educators and students. Similarly the power supply especially in rural areas also are not reliable due to the lack of well managed electricity supply. Thus, to meet the challenges related to access for online learning, mature digital learning ecosystems, sufficient digital infrastructure, digital library, digital open sources, digital learning portals, ICT training for students and teacher, adequate social interaction, internet facilities and other necessary supports should be introduced.

6. Time Management: The academician who uses online learning systems faces difficulties in managing their time. The prerequisite needed to be an effective online instructor is that academics must visit the discussion page at least once a day to see if there is a posting by students (Burd & Buchman 2004). A viable question is that visiting the discussion board once a day may not be seen as adequate according to cyber culture values (Islam, Beer & Slack, 2015). Some researchers have declared that academics should always maintain a strong presence on online discussion boards so they control discussion, provide answers and feedback that helps the students to engage effectively. Time management is a difficult for online learner in their online courses that requires a lot of time and intensive work.

The time factor in online education is mainly considered in terms of delivering the contents, responding the questions asked by the learners and developing materials for online courses. Especially developing some digital materials for online learning may be time consuming and that institutions need to support this process both in the allocation of scheduled time and provision of professional development (Baran & Correia, 2014). The online and other digital technology is changing at a faster rate. This requires developing special knowledge and skills to the teacher as well as the students to adopt new technology, system and resources. Bezuidenhout (2018) refer to the lack of time as the ‘silent barrier’ and suggests that educators and their institutions have to manage time efficiently. While preparing and conducting online learning activities it may occurs difficulties in managing their time with regard to prepare new materials, promptly answering the students’ questions via learning platforms or e-mails and managing other curriculum related work take a significant part of their working time. The teacher should usually engage for almost of these activities regularly when preparing the course, producing teaching materials, preparing quizzes, creating/uploading videos, uploading links to external materials, checking students’ queries, assignments etc. These activities are important as well as essential in online learning which makes learning effective.
Another problem is to make live communication with students via different learning platforms. To save valuable teachers' time for other important tasks, good quality open educational resources should be used whenever appropriate, as it will not be possible to produce novel educational materials for all the courses in a reasonable amount of time with existing resources. Sometimes organizational tricks and tips known to some teachers should be shared with the others in order to optimize the efficiency and users' satisfaction, leaving them more time and energy to concentrate on how to ensure learning outcomes to be achieved (Sanchez-Serrano, et al., 2020). Online class takes quite a bit of time to prepare, plan, and teach an online class (Humphries, 2010). It takes faculty two times as long to prepare and teach online than face-to-face, thus spending more time per student to facilitate the class (Cavanaugh, 2005). Thus, the main challenge of online teaching is to manage the time factor.

7. Attitudes: The factors related to students' characteristics have a direct impact on their attitude towards e-learning and affect the adopting of e-learning, such factors as self-motivation, patience, self-discipline, time management, computer software experience, communication and organizing skills (Sabah, 2013). Attitude and behavior has a strong connection. Student who has a positive attitude creates willingness to learn the subject and help in developing positive learning behaviors on the subject (Ben, 1972). Similarly, students with positive attitude show a greater probability of accepting e-learning system (Sabah, 2013). The attitude of the teacher also affects the teaching and learning process of their students (Nilsson, 2018). The teachers with a positive attitude are more likely to use technology efficiently in their teaching (Yang & Kwok, 2017). Abdullah et al. (2006) state that if teachers have more positive affective, cognitive and behavioral attitudes about technology such as virtual learning platforms, then they would have a greater intention to integrate this technology in the teaching and learning process with students. Attitudes can become major challenges for e-learning if not addressed openly (Gammill & Newman, 2005). Teachers that are motivated and have an encouraging attitude towards the e-learning technology will enable a positive learning outcome (Gillett-Swan, 2017).

Semerci and Aydin (2018), attitude can be defined as an element that guides the behavior of an individual in coherence with their feelings and thoughts. Moreover, attitude has come to be considered as the level of positive or negative effect associated with a particular object or belief (Kumar & Ratnakar, 2016). Cai, Fan & Du, (2017) affirm that attitude towards ICT can be considered as a multifaceted construct composed of different elements, such as the anxiety, motivation, beliefs or the self-efficacy of teachers on the use of them. It is also needed to bust up the attitude and feeling of the learners, teachers and parents about the use of technology, its relevancies and legal ground for effective implementation of online education. Thus, the student's and teacher's role towards online learning is very crucial for effective online education.

IV. CONCLUSIONS

The development of new technologies has been changing the teaching and learning in higher education moving from the traditional face to face classroom to online learning (Ni She. et al., 2019). The way of shifting online education system is rapidly evolving each day throughout the world. In the present situation, online education may not be for all due to limited or no internet and access to digital devices. It is difficult to settle everyone in the online learning environments at the prevailing context. However, no one can stay alone from the digital technology in the global world. Technology can help learning move beyond the classroom and take advantage of learning opportunities available in museums, libraries, and other out-of-school settings (Darling-Hammond et al., 2020). Online education especially in higher education has been established worldwide as a radical departure from traditional styles of teaching due to the unexpected emergency. Switching over the online mode of teaching has a huge challenge for teachers, students as well as extension of physical infrastructure.

The article reveals the present context of online education at higher level, its importance and some major issues and challenges for online learning in Nepal. Observing the present context of online education at higher education in Nepal, very low numbers of institutions are providing their online classes regularly in the higher level especially at Masters and Mphil level. In some institutions, especially in technical subject very few teachers are attending online classes regularly. In this course, the numbers of absent students found in the increasing rate day by day due to ineffective class delivery and disturbance of internet, electricity and other barriers related to personal computer, smart phone or others. To sustain the online learning, the implication of ICT and educational technology in online education should be used properly.

The students at higher education are expected to manage their time effectively and can develop communication and technological skills themselves. Due to their maturity, they can be self-motivated, can exhibit commitment and accept the flexibility that goes with online engagements. However, the poor internet access, irregular supply of electricity, and inadequate institutional support, dispute their internal conditions and expectations. Similarly, in the present context, most of our higher education institutions do not have enough preparedness for the support services with regard to students towards online pedagogy, online resources, digital library, and learning requirements and competencies. Due to the nature of the teacher centered curriculum design and instructional delivery based on lecturing from school level to higher education levels, students are also conditioned as a passive recipients of knowledge. But for the time being, these uneasiness and difficulties may overcome and feel comfort physically and psychologically. Some of the faculty members lack the online pedagogical competencies to support innovative teaching in higher education.

V. RECOMMENDATIONS

It is recommended to the government and the concern authority to take initiatives for the sincere establishment and management of some considerations to adopt online education effectively. Professional training for the teachers, adequate support in technical issues and installation of electronic equipments as well as the infrastructure development is essential for the enhancement of quality online education at higher education. Similarly, more affordable electronic devices for online learning should be provided and offline digital learning resources for learners, especially in those remote areas should be developed. This helps to provide an
effective approach to accessibility, functional diversity and e-inclusion in educational settings.

The priority should be given to ensure a reliable network infrastructure so that online class as well as watching videos, downloading, and uploading interactive media resources can be done effectively. The establishment of an online helpdesk is needed to address the queries related to online education to the concern students, parents and teachers. Similarly, the government should manage or establish national learning platforms for interactive virtual class as well as synchronous and asynchronous communication to exchange the educational resources. The single nationwide learning platform makes it easy to join each individual students and teacher whenever they need, and a single training be sufficient to use such online platform appropriately. It is also easier to guide the students, teacher and parents on how to use digital tools and platforms for an effective online learning experience uniformly. Nepali traditional culture of education is dominated by on-campus teacher centric teaching and learning model so it takes time for assimilating the learners as well as the teachers for the digital pedagogy. Thus, finally it is recommended that flexible learning that cover course content, instructional approach, class times, use of technology, learning resources and location the requirements for entry and communication medium can be used as the best alternative for the face to face class.

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