

The Impact of Force Paradigm Shift in Teaching and Learning Higher Education in Nepal: A Study on Behavior Perspective

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ABSTRACT

The spread of the Corona virus compelled each education institution to shift from face-to-face mode to online mode at a faster rate. This forceful paradigm shift to the online mode of instruction was felt as a sudden change mostly for the developing country like Nepal where the online mode of teaching and learning was novel practice for the people. This study mainly focuses on the impact of the paradigm shift to the online mode of teaching and learning in higher education institutions (HEIs) and explores the existing situation of implementing online education. It was based on descriptive analysis technique with the systematic review of the related literature, observations of the online activities on the related field and discussions to the different stakeholders of the HEIs about the implementation of online mode of teaching and learning and, the self-experience of online mode. In this study, the major impacts due to force paradigm shift to online mode are concluded as access to quality education, social inequalities, technology adaption, and emotional wellbeing; accelerate change, high dropout, and laboratory work and assessment. These all impacts are considered as the consequences of the inadequacy and inaccessibility of the physical and human resources, geo-sociological condition of the learner, low proficiency of technical knowledge, low motivation and technical difficulties regarding curriculum, etc. The response towards the implementation of online education was found mixed. The study recommends supporting the teachers and students for the effective implementation of online teaching and learning. Similarly, it recommends providing the best alternatives to access education for remote and disadvantaged learner and the curriculum should be reintroduced so as to feet for online learning pedagogy.

Keywords: Digital Technology, Force Paradigm Shift, Higher Education Institutions, Online Learning and Pedagogy

Published Online: March 11, 2022

ISSN: 2736-4534

DOI :10.24018/ejedu.2022.3.2.270

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I. INTRODUCTION

The teaching and learning system evolved from the beginning of human civilization. In the very beginning, the system of teaching was the Gurukula. In the Gurukula education system, the relation between students and teachers was very close and pleasant and the students used to learn from their teachers' role models, ethics and behaviors. At that time, the subject matters of teaching were limited. Spiritual and religious knowledge and real-life practice were mainly the areas of study (Paudel, 2021). From that time onward, different changes have been made in terms of subject matter, methods, materials and overall human life skills and lifestyle. In this modern time, the rate of change in everything has been accelerated by the use of modern technology in comparison to earlier civilizations. Thus, the

education system has also been changing dynamically as the need of the society. The rate of change is not uniform state some changes are gradual and some are radical.

The growing use of information communication technology (ICT) has transformed society from analogous to digital technology. It is also making a strong network to connect the world and leading to the transformation of entire systems (Schwab & Davis, 2018). Now, every people in the world are using digital tools and resources that are faster and easier (Deegan & Hayler, 2016). The embracing trend of digital technology has lead to the human life easier and more independent for most. The development of technology and digitalization has been stimulating to change everything in the world (Schwab & Davis, 2018) that also suggests that a paradigm shift is currently an ongoing process. The digital revolution not only transformed the world we live in but also created new ways to organize networks within it (Hilbert, 2020). However, this easier, faster and independent digital life

or the digital world has also been detaching the people from the real world and also making the people more instrumental or mechanical. So, all forms of social attachment like face to face or physical conversation, engagement and other living style have also been transforming into the virtual world.

The spread of COVID-19 as a pandemic compelled to close the physical class or face-to-face class in the educational institutions globally. The first wave of spreading the pandemic has drawn out the attention of the people to shift from face-to-face mode to virtual mode of teaching and learning. Most of the developed countries with familiar with the technological system, knowledge and infrastructural development offer e-learning for the students in all the educational institution. The developing and underdeveloped countries faced a significant hurdle to convert the challenges into opportunities due to the pandemic in different aspects (Farooq *et al.*, 2020).

In the emergence of the COVID-19 pandemic, Nepal faced a considerable struck to face the challenges to carry on online education in terms of infrastructure, resources, and pedagogical perspective (Kunwar *et al.*, 2020). Similarly, the second wave of the COVID-19 pandemic again spread within the period of one year, Nepal is facing the same problem that was faced before one year. However, some attempts are being made to overcome this gap (KC, 2020). Some changes can be found such as preparation of legal provision, some short of alertness, pedagogic preparedness, resource management and mobilization, installation of high-speed internet and familiarization with virtual classes especially in a higher education institution. These emergences enforced the concerned authority to implement the alternative approach of teaching and learning in Nepal. The repeated onset of the COVID-19 pandemic enforced the HEIs, teachers, students and parents to adapt the online teaching and learning forcefully and has become an emerging practice in Nepalese higher education. As a result, the conventional face-to-face tutorials in HEIs have shifted to online teaching and learning in major urban cities (Devkota, 2021). However, the inaccessible efforts and weak institutional, as well as individual student background, made challenging to educate through virtual or e-learning class especially in the remote part of the country (KC, 2020; Kunwar *et al.*, 2020). Accordingly, the students who live in urban areas and have better access to digital resources and internet facility have more benefitted comparatively than their rural peers and such activity has been creating a matter of concerns in terms of equality, quality, uniformity and validity (Devkota, 2021).

II. PRESENT CONTEXT OF HIGHER EDUCATION INSTITUTIONS IN NEPAL

Higher education in Nepal is imparted after the higher secondary level or Proficiency Certificate Level. At present, there are eleven universities however only 10 universities have been launching their academic program and four autonomous academic institutions as equivalent to deem universities out of six are offering higher education programs in Nepal. According to the Annual Report of UGC Nepal 2018/2019, 441,819 students enrolled in different academic

programs in higher education. In the academic year 2019/2020, a total 441,819 students were enrolled in higher education in Nepal (EMIS, 2020). Out of the students, 335,543 (75.95%) students were enrolled in Tribhuvan University. Similarly, 30,542 (6.91%) students were enrolled in Pokhara University, PU has 27,527 (6.23%) students enrolled in Purbanchal University, 18,356 (4.15%) students were enrolled in Kathmandu University and the rest of the students were enrolled in other universities and autonomous institutions. Most of the students (76.97%) were enrolled in general stream or programs and 23.03% were enrolled in technical streams (EMIS, 2020).

There are three types of Higher Education Institutions (HEIs); constituent campuses, community colleges, and private colleges in Nepal (EMIS, 2020). All the universities have been adapting their annual programs into the semester system gradually. Nepal Open University (NOU) which used to have an online mode of teaching and learning from its establishment has significantly promoted its technological competencies and running its regular program. Tribhuvan University (TU) and Kathmandu University (KU) had already established their own ODL programs and offered a few programs for Bachelor's and Master's degrees in Education and Social Sciences (Pangeni, 2016). However, the aforesaid universities were in fact only delivering their service to a limited number of students for those people who cannot attend conventional classes in face-to-face mode due to geographical, temporal, work-related, cultural and/or other constraints (Devkota, 2021). Thus they have already set up some fundamental assets necessary for conducting online classes as compared to other universities and institutions. However, the policy regarding ODL was made by the government of Nepal in 2006 to enhance learning in a remote area by the use of visual devices. Similarly, ICT in Education Master Plan 2013-2017 was also prepared to develop skills on ICT to both students and teachers to improve classroom delivery, increase access to learning materials and improve effective, efficient and globally competent manpower (MoE, 2013).

Academic institutions in Nepal have begun an online mode of teaching to make it possible for alternative methods for traditional teaching and learning methods (Paudyal, 2020). Now the emergence and viability of different resources and ICT tools and learning platforms such as Zoom, Teams, Meet, Skype, Messenger, Viber, WhatsApp, etc. make the teaching and learning process faster, easier, and more interactive. The sudden closure of schools and colleges has forced and also compelled HEIs to think, manage and established the alternative way of delivering education and reforming the pedagogy (Pokhrel, & Chhetri, 2021). Similarly, such incidence also impacted the education policymakers, school principals and teachers to search for alternatives to face-to-face instruction in order to guarantee children's right to education and forced them to move rapidly on online mode of instruction (OECD, 2020). In this context, most of the HEIs in Nepal have forcefully shifted to the online mode of teaching and learning as new experiences and practices for many of the teachers and students (Paudel, 2021).

III. FORCE PARADIGM SHIFT IN EDUCATIONAL PEDAGOGY

A paradigm shift is a radical change in the concepts; meaning, activities and practices of any given discipline or field. It is a kind of tremendous change or adaptation of a total system that may happen quickly or may take a long time. The concept of paradigm shift has originated by Kuhn (1996) from the seminal work "The Structure of Scientific Revolution 1962". Now it is used to describe some sort of fundamental changes in any discipline or field. A paradigm shift causes the entire domain to think and act in new ways. A paradigm shift can be described in a simple way. It is one kind of transformation from one another form or character such as it may be in teaching skills (explaining to demonstrating), teaching methods (lecture to problem-solving), teaching strategies (teacher-centered to student-centered), or teaching model (Behaviorist to cognitive), etc. Therefore, the paradigm shift is a fundamental change in assumptions, approaches, methodology and overall practice. It is also a kind of pattern of change in doing, accepting, or way of doing things differently. In another word, it is the transformation from one another stage, method, system, perspective, or dimension. In this study, the paradigm shift in pedagogy is caused by the Corona virus and it was not by the development of technology, growing trained of the people, and accessibility of resources in the context of Nepal and other counties like Nepal in terms of their development and use of technology. Thus, in this study, it has been termed as a force paradigm shift.

Paradigm shifts may be the result of new knowledge being introduced into the domain through new evidence or as a result of new ways of conceptualizing or thinking about a problem or as a result of fundamental changes occurring in society (Robb, 2016). It could be also described as a change in one way of thinking to another way about the problem or issue (Nash *et al.*, 2013). In this study, the paradigm shift is mainly concerned with the pedagogy that distinguishes the teaching and learning process from a different perspective as we observe before. In this study, pedagogy is not only the approach to teaching but as the overarching concept that refers broadly to the deliberate process of cultivating development within a given culture and society (National Research Council, 2001). It consists of three basic components: curriculum, methodology and techniques for successful functioning in a society that education is designed to promote.

IV. SIGNIFICANCE OF THE STUDY

The force paradigm shift in teaching and learning enforces to establish an effective learning environment and strengthen the quality of shifting online education at a faster rate. This study also helps to bring into light the major challenges for teachers, students and parents while shifting to online teaching and learning (Kunwar *et al.*, 2020). Similarly, the major effects that are considered in the study will be of great significance to address timely for delivering quality education. This study can help to reveal and address the critical areas while implementing online learning and also helps to manage the useful resources and take necessary initiatives. This study can be helpful to provide the real

context of the online teaching and learning situation in Nepal. It also energizes the teacher and administrator for implementing ICT integrated pedagogy at a higher education institution. It provides us a golden opportunity to pave the way for introducing digital learning (Dhawan, 2020). Overall, this study may also contribute to the HEIs by providing significant insights into shifting online learning systems and the effective use of ICT to support online learning and beyond for the days to come.

V. OBJECTIVES OF THE STUDY

- a) To investigate the impact of a force paradigm shift in the online mode of teaching and learning HEIs.
- b) To explore the existing situation of implementing an online mode of teaching and learning in HEIs.

VI. METHODS AND MATERIALS

The study was based on descriptive analysis using reviews and observations in the related field. The impact of the force paradigm shift in the online mode of teaching and learning HEIs were identified being based on the review of previous studies and the author's own experience of teaching and learning in the online mode. This study is based on the systematic review of the related journals, reports, research papers, books and other academic publications. While investigating the impact of the force paradigm shift, the results of related research articles and the authors' own experiences were compared before deducing the impact. Similarly, the existing situation of implementing an online mode of teaching and learning in HEIs was explored by reviewing the different documents, reports, notices, newspapers and social media too. Besides these reviewing methods, observations and discussion techniques on the diverse online activities including online classrooms, university and campus-level policy dialogue meetings, online seminars and online workshops through different learning platforms such as Zoom, Google Meet, Microsoft Teams, etc. were used. Such opportunities of self engagement, self-interaction and observation with the diverse community of different universities students, teachers, and policymakers also helped to experience, make sense and explore the ideas about the impact of the force paradigm shift in teaching and learning HEIs. The discussions were held with the own campus staff and with other teaching faculty of the related subject in the other institutions located in different geographical regions.

VII. RESULTS AND DISCUSSION

A. Impact of Paradigm Shift in Higher Education

The paradigm as a framework is generally related to the field of knowledge in any discipline. From an educational perspective, a paradigm represents mainly the knowledge regarding varied areas of studying contents or subject matter, ways of delivering contents, strategies, educational practices and its applications within the field. Thus a paradigm is ultimately a worldview that comprises a particular way of interacting, understanding and interpreting the knowledge concerning the related field. So the shift of paradigm creates

patterns of change for the people to do things differently (McBeath, 1994). Impact denotes the changes in people's lives. This might include changes in knowledge, skills, attitude and behavior. Such changes may be positive or negative and develop by the particular intervention. In this study, some major impacts of the force paradigm shift in teaching and learning with the accelerated adoption of digital technology due to the Corona virus pandemic have been discussed.

B. Access to Quality Education

Quality education is the foundation for development and equity that enables people to develop their knowledge, skills and attitude toward the diverse field. Teaching and learning are considered as the main aspects of achieving quality education. The force paradigm shift due to the Corona virus directly impacts teaching and learning higher education. The weak infrastructure, poor online teaching skills of the faculty, limited exposure of the faculty to online teaching and non-conducive environment for learning at home can impact to achieve academic excellence in higher education (Pokhrel & Chhetri, 2021). The teachers' digital pedagogical competency also helps to employ suitable and interactive strategies in online teaching and learning. So, they can make learning more interactive and provide essential feedback whenever the learner feels necessary. The effectiveness of implementing online learning also depends on the expertise and exposure to ICT for both educators and learners (Kunwar *et al.*, 2020). In the Nepalese context, the prevailing condition is also the same. Online learning is in the transitioning phase for both teacher and student which they are compelled to adopt the system. The fixed mindset of the teacher and students also make it difficult to adapt and adjust quickly. Similarly, the basic infrastructure for online teaching and learning such as access to high-speed internet and stable electricity also caused to adapt online teaching and learning effectively. Online learning also allows students more freedom to participate in virtual learning due to physical distance and requiring limited movement (Basilaia & Kvavadze, 2020). Such freedom has also caused the effectiveness of online learning. So such weak foundations regarding ICT, technical difficulties in handling devices, self-motivation and self-confidence of the teacher and students have been hindering to deliver and get the quality education.

C. Social Inequalities

Social inequality of the people is generally measured by the distribution of income, education, employment, social status and burdens in the society. In this study, social inequalities of the people due to educational opportunity and their income have been discussed. Access to quality education has also been affected by accessibility, affordability, flexibility, learning pedagogy, life-long learning and educational policy (Murgatrottd, 2020). The access to reliable internet connection, electricity and access to digital devices also depends on the income of the people. The economically backward children are unable to afford online learning devices particularly in many developing countries (Devkota, 2021). The inaccessibility and inadequacy of the resources to the students has been

increasing the gap in education. The inaccessibility is directly related to the income of the family or affordability. Thus online learning has been widening the difference between privileged and underprivileged students (Ferri *et al.*, 2020). That is directly creating social inequalities. Accordingly, the students from remote areas or rural areas who have limited or no access to digital devices and internet facilities are also far from access to online education (Pokhrel & Chhetri, 2021). They also have been losing their right to education due to staying in the rural areas or deprived parts of the country. The students who live in urban spaces and have better access to the internet and digital equipment are benefitted from their rural peers (Devkota, 2021). Such disparity has been producing social inequality. In our country, a huge number of students have been studying higher education from remote areas. Some may have from the marginalized community; others may have out of reach of electricity, telephone and electricity too. Such groups of students are getting deprivation of educational opportunity. Therefore, it has still a question regarding the attempts on online teaching and learning of colleges and universities about uniformity, quality, equality and validity (Devkota, 2021).

D. Technology Adaptation

Technology adoption is a process of adapting or accepting new innovations or technology. In this study, technology adaptation denotes the process of adjusting ICT that is used in the field of teaching and learning. The rule of social distancing due to the Corona virus pandemic compelled to adopt the new technology related to online or e-teaching and learning. Gradually, all the HEIs, teachers and students started to get literate about online learning technology individually and institutionally. In this way, the teacher and students became familiar to use online learning platforms such as Google Classroom, Hangouts, Zoom, MS Teams, etc., and social media such as Messenger, WhatsApp, Viber, WeChat, etc. by using in online classroom teaching and other formal and informal meetings. Additionally, the use of such online learning platform and social media also motivate and encourage them to learn further program for preparing materials such as power point, word documents, downloading YouTube videos, Excel sheet, audio and many more.

As expressed by Doucet *et al.* (2020), there are remarkable opportunities for cooperation, creative solutions and willingness to learn from others and try new tools as educators, parents and students share similar experiences. The curious, creative and collaborative teachers and students developed a variety of skills and knowledge related to ICT, pedagogical knowledge related to online teaching and learning and the virtual world too. The knowledge and skills regarding virtual classes and other ICT-related tasks can also be used in the classroom and beyond after the pandemic. Additionally, the gained skill and knowledge about ICT can be used to implement the face-to-face class effectively.

E. Emotional Wellbeing

Emotional wellbeing is a necessary condition for the teacher as well as the learner. It means that each and every teacher and student should be in happy mode, have positive feelings and attitude towards learning. The force paradigm shift due to the Corona virus pandemic forced to lockdown all over the world. The nationwide closure of the educational institutions impacted millions of students and their families, particularly those from

underprivileged communities (UNESCO, 2020). The pandemic shock the people on one hand and the other hand make them emotionally disturbed due to staying a long time without work at home. In that situation online learning, virtual class and other means of collaborative interaction through different learning platforms and social media support as a panacea to relief from the negative feeling, emotion and social isolation. The opportunity of interacting with friends, teachers, family members and different tasks related to the different subject course work make busy and emotional wellbeing. It helped the students from being behavioral disorder, anxiety and depression and also helps to avoid loneliness and fear.

F. Accelerate to Change

The force paradigm shift in education impacts the different aspects related to teaching and learning force to change quickly or make it more energetic to change. The forced paradigm shift or the sudden digital transformation in education has been created different problems within the system. It has been pushing the educators to consider and review the existing curriculum for effective implementation or make it for best fit to the digital model. The digital transformation in education has been enforcing or accelerating to change the whole education system to make technology-friendly education and working environment as well (OECD, 2016). It means it is necessary to change or reform to make technology-friendly pedagogy. So those, the education system can achieve the need and interest of the learner and the society. Therefore, the whole curriculum structure-subject matter, methodology, content delivery approaches, tools and techniques, and assessment procedures should be changed. The subject matter or content should be flexible and efficient in terms of exposure and cost-effectiveness and incorporating modern and relevant technologies into education. So the technological literacy gap can be fulfilled and can be developed the competitive digital experts for the job market.

G. High Dropout

In a developing country like Nepal, there are different challenges related to the ICT infrastructure, the nature of the course, contextual factors, instructors' competencies, e-readiness, etc. that universities and colleges encounter while implementing online teaching and learning (Aung & Khaing, 2016). Similarly, the poor internet facilities and unstable electricity, teachers' competency and teaching mode, etc. affect the implementation of distance learning (Palvia *et al.*, 2018). These factors often play a vital role in shaping the challenges of online and distance learning in tertiary education in developing nations like Nepal (Devkota, 2021). The HEIs have shifted to online teaching and learning in major urban cities and the students who live in the urban areas are connected to online learning platforms and benefited. However, the students from remote and rural areas who are disadvantaged, suffering from poverty and not benefited by the access to the internet and stable electricity are unable to get online education and they are spoiling from the mainstream of the online learning group (Devkota, 2021). Therefore, online teaching and learning or the use of ICT in teaching and learning has been creating serious drawbacks for the remote and disadvantaged students that violating the right to education and are being compelled to drop out.

H. Laboratory Work and Assessment

Laboratory work is commonly related to the practical aspect of any discipline or subject area. Laboratory work always involves working with real objects mostly to achieve useful skills, knowledge and to be familiar with the different concepts, tools, models, structures, theories, etc. associated with the discipline. Transferring knowledge and skill related to laboratory work through online mode is a difficult task. Most of the knowledge component can be transferred through online mode effectively. However, the practical part of the curriculum that depends on the real engagement or practice of the student cannot be transferred through online mode. The delivery of lab-based or experimental courses through online mode is mostly impossible and not feasible as well. Hence, this issue is a major concern for the HEIs, teachers and educators that need to focus instant attention and decision too.

Student assessment is an integral part of teaching and learning. It guides the total educational process and also determines whether or not the program is going on track to meet the goals of education. An assessment provides the clue of instructional needs and improvement of curriculum for the advanced teaching and learning. The curriculum is the integration of the different study areas for the overall development of the people by providing the proper knowledge, skills and attitude. Students' level of knowledge and attitude can be measured by using different assessment tools virtually or physically however students' skills cannot be measured by using such tools. Students' assessment and timely feedback are the very crucial part of online learning (Doucet *et al.*, 2020). It is found to be more challenging for the teacher educators in teaching online mode in the large class size, lack of online teaching infrastructure, low professional development and non-participative nature of the students in an online class (Pokhrel & Chhetri, 2021). Now in Nepal, all the internal and external assessments and examinations including school level and university level board exams have been postponed. It shows that students' assessments and examinations are at risk. Students' skills can be measured only by physical observation. Thus, assessment of the students' skills through online mode is a major issue.

VIII. CONCLUSIONS

The forced shift of online education has also created some issues and challenges in the whole education system. This paradigm shift in education has brought changes not only in teaching and learning but also in administrative as well as technical parts such as admission process, entrance examination application, submission of exam forms and conducting other examinations. It has created different impacts within the educational institutions and the society as well. It also has some advantages as it forced to use technology in education in a very short time. On the other side, it has disturbed the children to continue their education and has been creating educational disparity. In the same way, from the students' and teachers' perspective, there are varied difficulties in education switching from face-to-face mode to online mode of teaching and learning due to low level of basic requirements either physical resources or human resources for conducting online mode of teaching and learning at HEIs. However, the HEIs have responded positively and adopted various strategies to face the crisis during the

pandemic. University Grants Commission (UGC) Nepal offered some grants for the encouragement of implementing an online mode of teaching and learning in HEIs. The universities also made different legal and other provisions for implementing virtual classes and they also conducted different virtual seminars, workshops and training regarding the virtual pedagogy for a university teacher. However, the poor internet access, irregular electricity supply, and inadequate institutional support dispute their internal conditions and expectations. In the same way, with the sudden closure of the HEIs and weak ICT background and availability of resources, most of the higher education institutions could not provide the essential support to run online education (Kunwar *et al.*, 2020).

This study has concluded some impacts that have been caused by the force paradigm shift in education due to the pandemic. It has also been affected by the weak background of physical resources, human resources and some geo-sociological condition such as inequality to access, inadequacy of online teaching, weak and unequal internet facility, low level of technical knowledge regarding ICT, motivation, technical difficulties regarding curriculum, immediate feedback, student assessment, etc. The adaptation of the online mode of teaching is not found fully unquestionable in terms of regularity, student participation, quality of teaching, nature of course structure and disturbance in connection to internet problems and unstable electricity. However, some good practices of the virtual world have been seen as it sheds light on HEIs such as national/international workshops, conferences, meetings, seminars with easy access and minimum cost. HEIs faculty are being habitual for using email, internet and operating other necessary software, using different learning platforms and social media, etc. Thus it can be highlighted that the force paradigm shift has been gradually shifting to pedagogy and beyond.

Accordingly, to address the impacts caused by the force paradigm shift, the study recommends the concerned authority to provide special support and motivation to the teachers for utilizing effective online teaching. Likewise, it is recommended to introduce the special provision to education for a disadvantaged learner for reducing the inequality caused by placing a remote region, and social and income disparities. The curriculum should also be redesigned so as to fit for online learning pedagogy and establish the necessary infrastructure regarding the use of ICT in education.

CONFLICT OF INTEREST

The authors declare no potential conflicts of interest with respect to the publication of this article.

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