



CHALLENGES IN IMPLEMENTING BLENDED LEARNING IN THE POST-GRADUATION CLASSROOM IN NEPAL: UNIVERSITY TEACHERS' EXPERIENCES

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ABSTRACT:

Context of the study: With the advent of the digital age, traditional didactic teaching and online learning have been modified and gradually replaced by BL. One of the most effective patterns of modern University Education is blended learning (BL) that combine traditional classroom activities with elements of e-learning, and makes a wide use of modern information and communication technology. Thus, it calls for further detailed study of issues and challenges of BL.

Objective of the study: The major objective of this article is to find out the issues and challenges in the implementation of BL in the Post-graduation classroom.

Research Design: This study is based on qualitative research tradition. Narrative inquiry methods have been utilized in the present study. For in-depth interview, three university teachers of ED. 511 were selected on the basis of purposive sampling. The data have been analyzed by transcribing, coding, categorizing and thematizing and conclusion was drawn.

Results: Results of the present study indicated that issues and challenges related to BL can be divided into four categories such as universities, teachers, students and technical aspects. Among these issues, institutional culture is one of the most prominent challenge. Similarly, the teachers have to deal with several other issues like increased workload, increased time devotion, lack of skills to conduct BL and difficulty in finding the right blend for their curriculum. Students are not skilled in ICT technology and they had divers background. Technological barriers are also creating problem in BL.

Suggestions: The present study lead to the conclusion that BL could be used in the post-graduation classrooms. But there should be clear vision, policy and plan on BL. Accordingly, training should be provided to the teachers and students on various aspects of Information, communication and technology. At the same time, there urgent need of cheapest internet service for students and teachers.

KEYWORDS:

BLENDED LEARNING, TRADITIONAL APPROACH, ONLINE LEARNING, E-LEARNING, FACE-TO-FACE MODES, TEACHERS, STUDENTS.

INTRODUCTION

One of the primary methods applicable to large class teaching is didactic teaching. The main problem, however, is that it fails to allow close supervision of tutorials and reduces interactive learning opportunities. To address this problem, a new teaching method called blended learning (BL) be used. Traditional classroom teaching and an e-learning model are merged in the BL model (Zou, 2005). A teacher may teach the first couple of sessions in a classroom in this model. They can then proceed to online learning and interaction after the students have developed a general idea of the course. Ideally, in a hybrid model, the learning results would be improved and expanded if we can incorporate the benefits of classroom teaching and e-learning. Teachers will be able to teach particular students who experience learning challenges in the classroom, while other students would be able to focus on material that involves basic thinking and memory independently. Students may accomplish the objective of

the analysis only by individually examining, speculating, and discussing problems to obtain alternatives or alternate answers to questions. Teachers should direct students to advance steadily through this new teaching method or BL, since self-study and the attitude of freedom are central to the drive for learning and innovation. Many digital teaching tools, such as Microsoft Team, Google Meet, Zoom, Moodle, have been in use due to the rapid growth of network techniques in recent years. In today's schools, BL has become the latest educational programme to make an impact. It is being used to bring the digital world and in-class teaching together, from schools to universities.

Traditional in-class teaching methods include explanation, demonstration of teaching materials, and arrangement of learning activities such as observation, experiments, outdoor activities, group discussion, practice, presentations, and classroom questioning and answering. These activities emphasize in-class interactions, student participation in cooperative learning, and formative assessments such as quizzes and tests, practice and school

work exercises, and assignment correction. After-school activities include project reports, documentary research, and remedial classes (**Chen & Lai, 2005**). In challenging courses such as Foundation of Education (ED. 511, Third Semester, M. ED.) students often become frustrated and despondent. Classes taught using the conventional approach move all students through the program at the same pace, regardless of mastery. The classroom teacher often has little time to assist individual students, and students often have no one at home to turn to for assistance. The end result is student frustration, leading to incomplete homework assignments and subsequent poor performances on assessments. Such repeated experiences often result in low academic self-efficacy and loss of interest and effort (**Bandura, 1977**). Thus, *BL* could be an alternative delivery model in prevailing situation.

Because of recent advances in technology, traditional didactic teaching and online learning have been modified and gradually replaced by *BL*. The concept of *BL*, which unites multiple teaching models, has recently received much attention. **Marsh and Drexler (2001)** and **Willett (2002)** claimed that *BL* represents all teaching models that are integrated with technology, such as e-mails, streaming media, and the internet, and can be combined with traditional teaching methods. It include: face-to-face teaching; discussion groups; lectures; group break outs in and around the classroom; supervised online learning; in classroom computer lessons; and remote learning. Nowadays, *BL* has been applied by some professors to traditional face-to-face instruction by replacing one or two lessons of the weekly curriculum with e-learning courses (**Zou, 2005**). According to published research, major academic progress has been made when traditional teaching is combined with computer-assisted teaching (**Dalton & Hannafin, 1988**). Therefore, as conventional teaching complements computer-assisted teaching methods, it can be used in higher education. Instead of fully adopting computer-assisted teaching methods in class, teachers could incorporate certain elements to improve traditional didactic teaching, which emphasizes teacher-centered lectures. *BL* uses technology to combine in-class and out-of-class learning, maximising the educational impact for students as a result. While retaining the traditional student-teacher format, *BL* breaks the one-size-fits-all model by taking education beyond the physical classroom and allowing students to learn anytime, anywhere. *BL* redefines the role of the teacher, offering them more flexible delivery options, depending on the content, subject, and capabilities of the students. This trend means educators can focus on student understanding, rather than the delivery method itself.

DEFINITION OF BLENDED LEARNING

Blended learning (BL) is a notion that incorporates the benefits of both conventional classroom teaching and ICT-supported learning, for both offline and online learning. It has the opportunities for collaborative learning, constructive learning and computer-aided

learning. BL needs rigorous efforts, right attitude, handsome budget and highly motivated teachers and students for its successful implementation. As it incorporates various kinds, it is complicated and it is a difficult job to coordinate. In that sense, on at least two accounts, **Graham's (2006)** definition of BL as a combination of face-to-face (FTF) and computer-mediated instruction falls short. First, within BL settings, it fails to account for the great variety. For example, a course may have five weekly contact hours, two of which are performed online, or an instructor may decide that students will meet online and alternate FTF weeks to take advantage of the different affordances offered by the two environments. Other classes, however, can mainly be conducted online and include only one or two FTF meetings during a semester in which students perform group work and presentations. **Oliver and Trigwell (2005)** claim that what is called BL is frequently not about learning but more about teaching. Instead, they believe that the true meaning of the term is best captured by blended pedagogy, blended teaching and learning with blended pedagogy. **Garrison and Kanuka (2004)** also point out that attempting to describe BL raises concerns about implementation, design, and context:

The simplest BL is the thoughtful combination of face-to-face classroom learning experiences with on-line learning experiences. At the same time, with the challenge of virtually limitless design possibilities and applicability to so many contexts, there is considerable complexity in its implementation. (p. 96)

Laster, Otte, Picciano and Sorg (2005) & Picciano and Dziuban (2007) defined BL as courses that combine online with conventional face-to-face class activities in a planned, pedagogically useful way; and where a portion (institutionally described) of face-to-face time is replaced by online interaction. Blended model comprises of *face to face* and *online learning* mode. *Face to face* model includes discussion, feedback, workshop, and computer assisted instruction. Accordingly, there are two types of *online learning*: asynchronous and synchronous. E-mail, discussion, forum, and Facebook are known as Asynchronous and synchronous includes chat, video, audio conference live. Thus, blended learning is the combination of discussion, feedback, workshop, and computer assisted instruction, E-mail, discussion, forum, Facebook, chat, video, audio conference live. Basically described as “the learning which combines face-to-face with virtual teaching” (**Coaten, 2003, & Marsh, 2002**). Blended Learning emerges as one of the most common teaching methods currently used in the field of education, mostly by universities and higher education institutions. According to **Valiathan (2002)**, the term blended learning is used to describe a solution that integrates a variety of different delivery mechanisms, such as communication tools, web-based courses and knowledge management practices. According to this author, BL is also used to describe

learning that incorporates various event-based practices, including face-to-face classrooms, live e-learning and self-learning.

Definitions of BL vary from the extremely wide where nearly every learning environment that includes the use of ICTs counts, to those who rely on particular ratios of online content and face-to-face teaching. Most people believe that BL combines the face-to-face, web, and online learning methods of teaching and studying, and incorporates aspects of both wireless and wired online learning choices. The integration of emerging mobile devices and online media helps schools fulfill the demands of students in the 21st century, while meeting the needs of many students because of their limited resources. Not everyone is pleased with the word BL though. In their article 'Can blended learning be redeemed?' **Oliver and Tingwell (2003)** 'arguing the point that BL is ill-defined and misunderstood to characterize basic types of technological learning. They suggest that BL may be unnecessary and open, since conventional teaching approaches are common in combination with technology.

BL refers to the planned implementation of a learning model which integrates student-centered, traditional in-class learning with other flexible learning methodologies using online (particularly collaborative) mobile and web-based approaches to realize strategic advantages for the education system. The principle of BL is rooted in the notion that learning is an ongoing process, not just one-time event-learning. Blending presents many advantages over using any particular learning delivery tool alone" (**Singh, 2003**). **The Tasmanian Department of Education e-School (2011)** defines BL as "a variety of learning experiences, e.g. internet, face-to-face, society and home to create flexibility in the curriculum and foster interest among students." In 2003, **the Australian National Training Authority (ANTA)** described BL as "the blended fusion of formal learning with web-based online approaches." These simple, practical definitions are supported by eminent researchers who have defined BL as "essentially traditional in-class learning complemented by online activities and resources" (**Downes, 2008**), and "BL is currently conceived as a combination of technology and traditional face-to - face instruction" (**Stacey and Mackey, 2009**). In the US, **the International Association for K-12 Online Learning (2008)** follows a similar line with its definition: "Generally speaking, BL combines online delivery of educational content with the best features of classroom interaction and live learning to personalize learning, allow for thoughtful reflection and differentiate student-to - student instruction across a diverse group."

According to **Dziuban, Hartman and Moskal (2004)**, "BL can be seen as a pedagogical approach integrating the classroom's usefulness and socialization prospects with the online environments technologically improved active learning possibilities, rather than a ratio of delivery modalities." BL, or hybrid learning, is therefore a combination of learning modalities including face-to-face, web-based or online learning interaction,

teaching, and delivery. Proponents of BL argue that the incorporation of asynchronous Internet networking technologies into higher education courses helps to promote a parallel, autonomous and interactive learning environment (**Garrison & Kanuka, 2004**). **Robinson (2004)** defines BL as a method where a faculty member works face-to-face with their students for daily scheduled courses, while students fulfill the criteria of the course by consuming online instructional resources and engaging in internet class discussions on a safe website. In nutshell, in all cases, BL involves at least three components: traditional interaction between the participants of education process; interaction between the participants of education process, mediated by telecom technologies and internet-resources; and self-education component.

Blended face-to-face model is based in the classroom, although a significant amount of classroom time has been replaced by online activities. Classroom time is required for this model, while online activities are used to supplement the in-person classes; readings, quizzes or other assessments are done online at home. This model allows children and young people to share more high-value instructional time because class time is used for higher-order learning activities such as discussions and group projects. Therefore, the online driver model is often referred to as the blended online class, and this type of class is the opposite of the blended face-to - face class. The class is mainly conducted online, but some in-person events, such as lectures or laboratories, are required. *The flipped classroom* reverses the traditional class structure of listening in class and completing homework activities at home. Students in flipped classes watch a short video online and come into the classroom to complete activities such as group work, projects or other exercises. The flipped classroom model can be seen as a sub-model of the blended face-to-face or blended online class. A pedagogical approach in which direct instruction transfers from the group learning space to the individual learning space and the resulting group space is converted into a dynamic, collaborative learning environment in which the instructor directs students as they apply concepts and participate in the subject matter in a creative way.

In the rotation model, students in a course rotate between various types of learning. Different sub-models exist: rotation of stations, rotation of laboratories and individual rotation. While many of the blended learning models on this list are at the course level, *self-blending* is a programme-level model and is familiar already to many college students. Learners using this model take online courses in addition to their traditional face-to-face teaching. Another model, *the blended massive open online course* (MOOC) is a form of flipped classroom using in person class meetings to supplement a massive open online course. If the course is publicly available, students can access MOOC resources, maybe from another organization or teacher. Similarly, *flexible-mode courses* offer all instruction in person and online and learners themselves choose how to take their course. This can allow

students the flexibility to choose with their teacher how they will attend classes: online or in person. *In the enriched virtual model*, learners progress on a programme of largely online learning with required face to face sessions with a teacher. These sessions are infrequent unlike flipped learning.

OBJECTIVES OF THE STUDY

The purpose of the study was to explore experiences of the university teachers on ICT blended pedagogical practices. The specific objectives are as follows:

- To study the university teachers' experiences on blended learning in Post-graduation classroom, and
- To find out the issues and challenges in the implementation of blended learning in the Post-graduation classroom.

RESEARCH QUESTIONS

- How do university teacher experience blended learning in Post-graduation classroom? And
- What are the major issues and challenges which affect blended learning in Post-graduation classroom?

LITERATURE REVIEW

During the course of study, it was found out that a number of studies on were carried out on BL. Among these studies, a nominal number of studies conducted in Nepal. But most of the studies were carried out by the international researchers. Relevant studies have been presented in this section.

PREVIOUS STUDIES ON BLENDED LEARNING AND IT POLICY IN NEPAL

IT Policy 2000 was the first government policy document to incorporate IT into educational institutions for various reasons, including distance learning (*Nepal Telecommunications Authority, 2012*). There was, however, a lack of consistent ICT education regulation. The National School Education Curriculum Framework-2005 included ICT as a tool to be integrated into school education and taught as a separate subject (*MoES, 2005*) and the reformed curriculum 2007 reiterated the objectives (*MoES, 2007*). The Education Sector Reformed Plan 2009-2015 stressed the incorporation of ICT resources into school teaching and learning programs (*MoE, 2009*), but explicitly indicated that there was no money for ICT technology and ICT preparation. ICT in Education Master Plan 2013, the first mainstream action paper, emphasized the convergence of ICT in higher education and school teaching and learning, but made clear the scarcity of project support (*MoE, 2013*). The 2016-2023 School Sector Growth Plan further stresses the use of ICT in education and its implementation to turn conventional pedagogy into new learning methods, but also the lack of project funding (*MoE, 2016*).

A study of *Rana (2017)* indicated that while the University Grants Commission sets policies and offers

funds to resource colleges, hire personnel and prepare personnel, the University Grants Commission plays a major role in university growth overall. Tribhuvan University, the oldest and renowned university in Nepal, has Bachelors and Masters programmes including ICT in Education, a separate module, but the course is too technical and focused on teaching computer programmes (*Rana, 2018*). While the 2013 ICT Education Master Plan focuses on incorporating ICT into teacher education, school teaching and in-service teacher training programs (*MoE, 2013*), in their educational programs, none of the universities in Nepal have the systematic use of digital technology (*Rana, 2018*). Many private colleges and schools also have internet services for teachers and students. Governmental universities and schools, however, are still waiting for funding to support ICT adoption in their teaching and learning activities. Most teachers and students, especially in urban areas, have access to internet facilities outside their schools in their daily lives.

The Tribhuvan University (TU) and Kathmandu University (KU) have policies aimed at promoting the use of ICT for students of open and distance education. TU has pursued several measures to introduce ICT into higher education. The Faculty of Education offers a teacher training program (B.ED in ICT) and a Bachelor in Information Technology (BIM) degree in management. The Engineering Institute has the Centre for Information Technology (CIT) and the Centre for Information Technology and Communication (ICTC). In 2015, TU founded the Open and Distance Learning Center which aims to "provide access through open and distance mode to high-quality higher education for mass people in Nepal." As a phased shift to interactive learning, the center will also assist other organizations in incorporating e-learning by hybridizing existing education systems (*ODEC-TU, 2015*). The Center will develop android learning aid technology (*Adhikari, 2015*). This project officially endorses electronic learning in the higher education sector in Nepal. The Center will build tools and train faculty to facilitate open and distance education in information and communication technology. In this sense, mobile technology will cross the digital divide by providing new learning solutions. Mobile learning is an emerging trend in Nepalese higher education, focused on new mobile technology technologies. Mobile devices may be an effective platform for incorporating ICTs in Nepalese education. But it's too early to say how these programs are going to affect Nepalese education. It is critical that universities analyze the existing mobile learning habits of students before introducing new learning modes.

Discussions on the introduction of information and communication technology (ICT) at the Nepalese school and university level have recently begun. The Government of Nepal has drawn up a master plan for ICT inclusion of education. The master plan aims at "ensuring the systematic use of ICT in the education sector and contributing to access to better education for all" (*MOE, 2013, p. 4*). It has a strategy to address the emerging

digital gap by offering seamless ICT teaching and learning experiences. Any pilot projects test the application of ICT in classrooms.

Alonso, Manrique, Martínez, and Vines (2011) compared the results of computer science subject between the years 2006 to 2008 with face-to-face classroom and the results of the course in 2009 when distance learning and BL were offered. Results showed that students that followed the e-learning course reached higher scores, due to the flexibility of the course. There were more students passing the course in 2009 than in the previous years and students obtained higher marks in 2009.

Chen and Jones (2007) published an article on blended learning vs traditional Classroom Settings: In an MBA Accounting Course, evaluating efficacy and student expectations. The students were divided into two groups, i.e., 38 students followed the course using the traditional class and 58 students followed the course with BL methodology. In the traditional classroom the professor teaches 75 minutes lessons twice a week. In blended lessons, the professor meets the students using two hours online meetings every week and one face to face meeting at the beginning of the course. Results indicated that the both methodologies offer the same final results and suggested the possibility of improving them through the combination of both.

Sendra, Jimenez, Lloret, and Vincent-Vela (2014) proposed a BL plan based on the use of two online learning platforms. In this case, the course was given to employees of a national enterprise. Authors presented the content of the course and the online learning platforms used during the course. The experience was performed during 3 years and the results of polls allowed extracting several conclusions. The most important issue was the satisfaction of the students, which was much related to their ages. Nonetheless, all of them obtained very good marks.

Innovative strategies by BL have been described as helpful in response to the problem of decreased government support for Australian universities in an uncertain period of needed educational transition. Such an approach will allow for the growth of faculty, library and classroom facilities and the maximization of services by technology (**Robinson, 2004**). Less face-to-face teaching also ensures a decline in the market criteria for brick-and-mortar classroom accommodation and reduced testing outlay in exchange. In addition, BL offers greater freedom for students to learn when, where, and how they choose, while educators help to direct their learning experiences. The strategy also has the potential to extend learning possibilities in both individual and collective ways, and to improve information development as has been the case before (**DEECD, 2012; Garrison & Kanuka, 2004; Robinson, 2004**).

Afore mentioned deliberation shows that there is urgent need of further study on BL in Nepal.

RESEARCH DESIGN

This study adopted qualitative research orientation known as narrative inquiry to find the rich experiences of University teachers on the implementation of blended learning in post-graduation classrooms since it would be possible to obtain rich and in-depth data. Research paradigms, strategies of inquiry and methods have been described below:

PHILOSOPHICAL PARADIGMS

Paradigms or worldview denote to a set of beliefs on how we interpret the world and conduct research (**Guba, 1990**). Ontological assumptions give rise to epistemological perspectives within worldviews, which guide methodological considerations and the determination of instrumentation choice, methods of data collection, and techniques of data analysis (**Hitchcock and Hughes, 1989**). **Denzin and Lincoln (2011:13)** further justify this argument, stating that the researcher approaches the world with a collection of theories, a framework (theory, ontology) that defines a set of questions (epistemology), which are then examined in particular ways (methodology, analysis). The researcher is bound to a net of epistemological and ontological premises that become partly self-validating, regardless of ultimate reality or falsehood (**Denzin & Lincoln, 2011:13**).

INTERPRETIVE PARADIGMS.

Present study is based on interpretive paradigms. The interpretive paradigms attempt to explain the beliefs, values and definitions of social phenomena and thereby obtain an understanding of the social behaviors and experiences of human beings (**Smith and Heshsius, 1986**). Interpretivists believe in the inseparability of understanding from interpretation. As all such research is motivated by the intention of the researcher to understand and perceive social reality, they see all social research as interpretive. The model of interpretation assumes that there are no truth, only interpretations (**Bhattacharya, 2008**). It is therefore aimed at exploring the experiences of individuals, sharing their definitions and gaining insights into the observed case (**Bryman, 2008; Grix, 2010**). In comparison to positivists, interpretive researchers generally do not start with a theory, rather they 'generate or inductively create a theory or sense pattern' (**Creswell, 2003: 9**) throughout the research process. Thus, a brief overview of ontological, epistemological, and axiological viewpoints is described in the present section.

ONTOLOGY.

The researcher of this present believe that reality is multi-layered and complex (**Cohen et al, 2007**) and a single phenomenon have multiple interpretations. That's why; researcher considered interpretive approach more suitable for the phenomena which are context-dependent (**Lamb, 2004, p. 7**) with a belief that individual behavior is determined by the experience gained out of one's direct interaction with the phenomena. It ruled out any kind of objective external reality (**Dash, 2005**). Ontological

assumption of the present study is that there is a reality that can be apprehended. The subjective view reveals the real world is flexible and individual. All the members of the social world are individuals and they have individual knowledge. Subjective knowledge is generated through interaction of narratives. The knowledge is extensively used to describe my research questions along with research purpose. In nutshell, in the present study, ontological view is subjectivism where researcher will show the multiple reality characters.

EPISTEMOLOGY.

Knowledge arises from particular situations and is not reducible to simplistic interpretation. Knowledge is gained inductively to create a theory. In this paradigm, all knowledge is relative to the knower and can only be understood from the point of view of the individual who is directly involved. Truth is socially contrasted via multiple interpretations of the objects of knowledge thereby constructed and therefore shifts and changes through time. The investigator and the object of investigation are independent from each other and the object can be researched without being influenced by the researcher. Any possible researcher influence can be anticipated, detected, and accounted for controlled. The epistemology of the researcher is derived from the interpretive tradition. Researcher viewed knowledge as subjective and sought to find out how individuals interpret phenomena (*Glesne & Peshkin, 1992; Alwan, 2007*). The researcher believes in the subjectivity of knowledge and the multiple layers of interpretation (*Bryman, 2008*). Therefore, the researcher has to be *empathetic* to the different layers of interpretation so as to successfully identify with feelings, motives and thoughts of individuals participating in the research.

AXIOLOGY.

The interpretivists emphasize on important of the effects of subjective values in research findings, and they believe the separation between subject and object, researcher and the researched to be impossible. In the present study, the researcher acknowledges the value-added aspect of the study and actively reports its values and biases, as well as the value of the information obtained from field. Value judgements, or choice-making, are made on the basis of perception, preference, and prejudice (*Lincoln and Guba, 2000*).

STRATEGIES OF INQUIRY

Among the qualitative research design *narrative inquiry* has been adopted in the present study. Narrative inquiry is the process of gathering data through story telling for the purpose of research. Likewise, *Webster and Mertov (2007, p.1)* said that 'narrative research provides researchers with a rich context in which they can examine the ways in which people view the world in their stories. Therefore, I used narrative research to gather the experiences of university teachers in university classrooms to teach the Foundation of Education (ED.511) through blended learning.

METHODS

This section comprises of four topics such as sample selection procedures, informants, data collection tools and procedures, and data analysis.

SAMPLE SELECTION PROCEDURE.

The researcher selected a purposive and convenience sampling technique and teachers' subject area was ED. 511 from same department as researcher. To ensure obscurity, alpha-numeric identity (T1, S2 and T3) had been used for the participants involved in this study (*Embler, 2016*).

INFORMANTS.

In this study, three teachers (T1, T2 and T3) of ED. 511 are respondents who are teaching in the first semester (M ED) and he/she has many experiences of blended learning in higher education. This study was confined to three Post-graduation teachers of Sanothimi Campus. The informants of the study includes 2 male and 1 female who were teaching in Sanothimi Campus, Bhaktapur. The informants had more than ten years of teaching experience and all voluntarily participated in this study. In detail, teachers between seven and fifteen years of teaching experience were participated in the present study. Teachers' subject area was *Foundation of Education* (ED. 511) from same department. To ensure anonymity, alpha-numeric identity (T1, T2 and T3) had been used for the participants involved in present study.

DATA COLLECTION TOOLS AND PROCEDURES.

Interview technique was used to collect data in this study. *Seidman (2006)* described that an interview allowed the respondent to reflect on the meaning of his/her experiences. The interview, being the most common and powerful research method, enables participants to speak for themselves. The semi-structured interview was used in order to elicit in depth data from the teachers on their perception, practice and beliefs about experience of teaching with ICT blended pedagogy in Post-graduation classes in Sanothimi Campus.

DATA ANALYSIS.

Researcher applied some systematic procedures to collect the data from the in-depth interview and to build the rapport themes with the respondents. I briefly reported the purposes and the terms for confidentiality. In this study, all interviews were *firstly* audio-recorded by the researcher by taking the informants' permission. *Secondly*, data was transcribed for analyzing process. *Thirdly*, content analysis was utilized based on the assigned codes, themes, sub-themes and categories, and also by mapping the themes with data. *Fourthly*, the global themes were defined in terms of the basic themes, organizing themes and codes given (*Cakmak, 2013*). Similarly, I construed the data by connecting them with some current literature. *Finally*, I drew conclusions based on analysis and interpretation.

RESULTS

In the present sections, findings and discussions have been presented. Various topics such as pedagogical practice at the post-graduation level, preferred tools for in BL, hindering factors of BL and suggestions for improvement have discussed in the following sections.

PEDAGOGICAL PRACTICE AT THE POST-GRADUATION LEVEL

In this way, BL is enabled to personalized learning; enhanced teamwork and cooperation improved learning ED. 522. BL not only gives learners the opportunities to control students' own learning process, but also provide collaboration, permanent and incorporate in learning mathematics (**Lam & Lawrence, 2002**). I found the teachers preferred the BL tools for the effective classroom delivery tools in ED. 511 and their values are help to increase knowledge competition, provide opportunities of reflection for the teachers and students, develop ICT awareness among teachers and students, demonstration of knowledge, supporting their knowledge. Another interesting experience was that high attendance of students and active participation of the students in the virtual class. So, most of the teacher were believed in the positive use of blending learning in teaching mathematics at higher level.

Aktaruzzaman, Shamim, Clement (2011) mentioned that BL are the powerful tools for extending educational opportunities in education. BL is based on problem solving in the teaching learning curricula in a constructivist way helped student-teachers to recognized potential for learning (**Alimisis, 2007**). BL was supportive for pedagogical practices in postgraduate classroom and also support for the demonstration of their lesson. BL enhanced constructivist classroom practices of Ed. 511. But there are so many hurdles in the implementation of the BL.

Informants **T2** said:

Before the lockdown, we used to teach in the college classroom. But after the lockdown, I had to teach online and use various ICT tools. In this way, we completed the course by doing half course in the classroom and half course online. In this way, we used various ICT tools while teaching in two different situations. Actually, I have always used various ICT tools in the postgraduate classrooms. To discuss the various topics of social foundation of education, I used power point slides. It saves times and makes easy to discuss the different premises, strong points and weak points of these topics. Accordingly, YouTube is another important tools for the effective classroom delivery. I have also used multimedia in the teaching learning process of Ed. 511. I motivate students to utilize of e-book, e-journal, YouTube and so on to complete their assignments. But our government and university have not clear vision, policy, and plan on BL. There is urgent need to formulate the BL policy and to revisit the existing ICT policy.

Likewise, another respondent **T1** said,

Most of our teachers skilled in pedagogical practices and we used learner centred pedagogical practices in our classrooms. I motive students to use e-book, e-journal, online journal, YouTube, relevant website to complete their lesson and assignment. I used multimedia in teaching learning in various topics of Ed. 511. I have given assignment about contribution of different sociological theorists in the field education and educational institutions and students also completed their assignment and present their work with the help of online books. But most of the faculty of our university are not skilled on technology. Our colleges and university do not provide training on BL and other aspects. Students are also not skilled on email, internet, power points and slide presentation and other aspects of technology.

Similarly, **T3** respondent said,

*Before this situation I used some educational YouTube and videos of educationists to clear concepts of the concerned philosophies and I have given classwork on criticisms of eastern philosophes. Different groups of the students submitted their class task with the help of online educational materials. Groups of the students search research articles, e-books, **the free encyclopedia, and Wikipedia to complete their assignment.** Nepal's education system is in crisis after the pandemic hit. Thus, various medium and tools of ICT has been becoming essential educational tools for the classroom delivery even if there are so many hurdles.*

PREFERRED TOOLS FOR IN BLENDED LEARNING

Most of the teachers used power point slides to teach various topics of their subjects. Before lockdown, teacher took their classes in the college. But after lockdown, teachers took their class from their resident and used various ICT tools. I found that most of the teachers preferred tools like power point slide, YouTube, Google search and so on. It could be used to promote the collaborative learning rather than lecture method.

In this context, informant **T1** supported this view by saying:

Students are also very excitingly using ICT and online materials are very helpful to students for presentation, assignment and writing research paper. I use slide or white board in virtual classroom. Sometimes, I use YouTube video to teach various aspects of ED. But it is not easy to teach and there are challenges to use these tools in post-graduation the classrooms.

Similarly, respondent **T3** said that,

I use YouTube, Google search, and power point in my classrooms. My students prepare their assignment using various online materials. The

students may panic if they are given the task individually so they can form group of 2 or 3 and work jointly on it. This way they can do better and gain confidence and experience for future.

Similarly next respondent **T2** said,

Students are active in online classes from both rural and urban areas. Nowadays, we are using various tools of technology. Zoom, YouTube, Google Meet, and Microsoft Team and other relevant tools.

Most of the informants of the present study mentioned that they used various ICT tools such as Zoom, Google meet, Microsoft Meet, YouTube, Google search, power point, and on. Accordingly, they used e-book and e-journal, face book, in their daily class.

ISSUES AND CHALLENGES IN IMPLEMENTING BLENDED LEARNING

The implementation of any new program must face several challenges and same is true with BL. In this context, informants of the present study mentioned following issues and challenges:

T3 mentioned,

BL is associated with a number of problems and challenges. This types of problems and challenges may be divided into four categories such as universities, teachers, students and technical aspects. There is lack of technology friendly environment and integrated tools. There is lack of skilled and trained technicians, well trained experts professors, well equipped libraries and easy access of internet service. Some learning problems are like teacher not being able to update themselves in technological field. At the same, time, our students have not sufficient skills in technical area and internet is also expensive.

Next, respondent **T1** said that,

The class has to be dismissed due to poor internet connection. The major problem in online education system is lack of knowledge regarding technology and lack of internet access in all parts of the country. Still students are using mobile data for taking class. There are many problems such as lack of time to use the computer, resources, and funding support. Our university also unable to provide qualitative internet service in our colleges. The teachers have to deal with several issues like increased workload, increased time devotion, lack of skills to conduct BL and difficulty in finding the right blend for their curriculum.

Similarly, **T2** said,

During the rainy season, sometimes, there is rainfall, sometimes it is stormy and the internet can be problematic and students may not be connected in class and lack of time to complete the course in time there are influence seen in them and sometimes the students face many problems

regarding online classes due to limited use of data, no proper connectivity, no electricity etc.". Issues like poor weather, limited bandwidth access and inability to view students' body language in online environment are among the restrictions that comes with technology. This issue has become one of the barriers in BL implementation.

The evidence above helped me know that there are many challenges of online class with BL such as geographical complexness, difficult to manage multicultural and misconception about ICT uses. **Bauer and Kenton (2005)**, explained that technologies are helpful to make students innovative and adept at overcoming obstacles but the problems is fell comfortable in the use of ICT in school or high school.

ICT alone cannot create the teaching learning environment; rather, it has its own demands. Teachers must know how to structure lessons, select resources, and guide the activities so as to make the optimum use of various tools of ICT. Most of the traditionally trained teachers are not ready to take up this responsibility. The set up cost of ICT is another most important challenge that has to be taken into consideration before using ICT. Further, despite of much benefits and greater flexibility of e-learning, traditional universities are still favoured by most students in large parts because of the social role served by them. There is an overload of information available in an educational context when the teachers access internet. This can pose a real danger of information overload if the teachers do not have the skill of filtering information for relevance. This skill of filtering the necessary information has to be possessed by both the teachers and the students. At the same time, teachers are also found familiar with many hindering factors in blending ICT tools in mathematics teaching. I found that lack of access in ICT components among faculties was the major hindering factors of blended learning. Though, there was lack of idea and skills among faculties in online mathematics learning.

SUGGESTIONS FOR IMPROVEMENT

The respondents of the present study suggested some measures for the improvement of BL. They felt the importance of BL in teaching ED. 511 in their classroom. In this regards, most of the informants laid emphasize on the formulation of the relevant policy on BL. Accordingly, online evaluation system, easy access in internet, and development of the e-materials for the learners are also urgent need. Suggestions of the respondents provided below:

The teacher **T3** provided following suggestions,

After the outbreak of Covid-19, the use of BL has become very important and everyone understands the importance of BL. In my opinion, there is urgent need in the improvement at institutional level. Accordingly, training should be provided to the teachers on use of BL. it must be creating ICT friendly environment in higher institutions.

Training should be given to teachers about the use of BL. So that teaching will be more easy and effective. It increases access to BL among students and teachers. On the other hand, there is urgent need of curriculum improvement to make it BL friendly. Courses should be based on online and it should be implemented immediately.

Similarly, next respondent **T2** said,

University should create BL friendly environment in its colleges. It is necessary to invest more budget on education. Training should be provided to all teachers of the university. Accordingly, there is need of infrastructures to implement curriculum smoothly. BL pedagogy can also be accepted as teaching learning policy. The quality of the internet should be improved. Students should be provided cheap internet service.

Similarly, next respondent **T1** said,

The importance of BL is increasing day by day. Recently, the learners living at home have been forced to learn through various mediums including Zoom, Google Meet and Microsoft Team. The existing educational policy and rules are inadequate. On the other hand, students must be active in the teaching learning process. They must be skilled in technology.

Similar view is seen in the ICT master plan 2013-2017. *Information & Communication Technology (ICT) in Education Master Plan 2013-2017* has incorporated the four fundamental components such as development of infrastructure including connectivity, development of human resource, and development of digital learning materials and enhancement of education system (**MoE, 2013**). According to **Karrie and Jennifer (2008)**, the constructivist educational Paradigm continuous to take hold, it is likely that the higher education will continue to make progress in alignment with this movement. The teaching learning in ED. 511 plays the vital role to empower in higher level. I think it is efficient, effective and constructivist approach in teaching ED 511 and the students should be assured about the future scope to increase their interest. The blended pedagogy can be applied with computers in the real classroom (**Alimisis, 2007**). It is more effective as students for semester system in Post-graduate classroom.

DISCUSSION

Present study found out that there so many issues and challenges associated with the implementation of the BL in the post-graduation classroom at Tribhuvan University. In the respect, culture, policy, technology and support are major issues and challenges associated the institutional level. Among these issues, institutional culture is one of the most prominent challenge (**Alebaikan & Troudi, 2010, Ramos et al., 2011**). **Alebaikan and Troudi (2010)** reported that most of the universities faculties conditioned on the traditional didactic, lecture-based classroom and

they feel difficult to adopt new teaching learning strategies. In the same context, **Ramos et al., 2011**) also mentioned that it is difficult to change the mindsets and practices of the teaching faculties that are so used to the traditional method.

Similarly, the teachers have to deal with several other issues like increased workload, increased time devotion, lack of skills to conduct BL and difficulty in finding the right blend for their curriculum. Based on the data, it appears that workload being the most frequently reported issue among the universities teachers (**Alebaikan & Troudi, 2010; Kenney & Newcombe, 2010; Gedik et al., 2013**). The universities teachers generally find that BL placed a burden on them both physically and cognitively. They have to spend more time in few tasks such as redesigning the module, preparing for the materials to be uploaded, dealing with students' posts and evaluating students' work online. They found this as requiring a high level-of-effort and thus pose a challenge to them. This eventually relates to the issue of time which is also another issue raised in implementing BL (**Kenney & newcombe, 2010; Gedik et al., 2013; Lotrecchiano et al., 2013**).

Furthermore, the teacher's lack of pedagogical and technological skills is also a source of problem for them (**Alebaikan & Troudi, 2010; Gedik et al., 2013, Lotrecchiano et al., 2013**). Some teachers who aim to implement blended courses lack specific instructional design framework to be used for the curricula (**Alebaikan & Troudi, 2010**). They also lack in competency to create a harmony between the two environments; face-to-face and online (**Gedik et al., 2013; Lotrecchiano et al., 2013**). Such constraints create problems for them in ensuring learning effectiveness.

Another challenge faced by teachers is in deciding the right blend; as in how much time should be allocated for classroom meetings and virtual learning respectively (**Alebaikan & Troudi, 2010; Korr et al., 2012; Gedik et al., 2013**). They consider this as a daunting task since they have to critically find the balance between the two environments. **Alebaikan and Troudi (2010)** in their study mentioned about lack of instructional design framework to be used as guide and teachers' insufficient knowledge as the contributing factors for this problem.

As for the students, the issue of participation becomes the most outstanding barrier for the implementers of blended learning. While blended learning is supposed to improve student participation in learning, several studies reported that this aspect had been an issue in BL implementation (**Alebaikan & Troudi, 2010; Lotrecchiano et al., 2013**). Some studies reported that students were unable to meet the demands of BL which require high level of student discipline and responsiveness (**Alebaikan & Troudi, 2010; Heaney & Walker, 2012**). Besides, poor time management (**Kenney & Newcombe, 2010**) and students' heterogeneous backgrounds (**Lotrecchiano et al., 2013**) also affect student participation in BL.

In terms of technological aspects, it is observed that

internet connection has posed the greatest challenge for BL (Alebaikan & Troudi, 2010; Levin et al., 2013). Issues like poor weather (Levin et al., 2013), limited bandwidth access (Alebaikan & Troudi, 2010) and inability to view students' body language in online environment (Heaney & Walker, 2012) are among the restrictions that comes with technology. This issue has become one of the barriers in BL implementation.

SOLUTIONS TO DEAL WITH THE CHALLENGES

This study identified a number of issues and challenges regarding the implementation of the BL in the post-graduation classrooms at Tribhuvan University in Nepal. First of all, there is urgent need of proper review of the existing policy and programs regarding the classroom delivery (Ramos et al., 2011; Gedik et al., 2013). This relates to the study of institutional deliverables and systems of support (Gedik et al., 2013), including student circumstances and contexts, teachers, support staff, provision of technology and access (Ramos et al., 2011). It is also recommended that a BL model selection be carefully carried out (Korr et al., 2012; Levin et al., 2013). This is to ensure that the model and design chosen for the institution is the most suitable one. In addition, there are three key guidelines. The employee training is *first* and *foremost* (Alebaikan & Troudi, 2010; Kenney & Newcombe, 2010; Ramos et al., 2011). Staff preparation here relates to the provision of pre-implementation, orientation and continuous improvement services with respect to the pedagogical and technical dimensions of BL. This is vital in ensuring efficient delivery and also in re-orienting the attitudes and practices of instructors (Ramos et al., 2011). *Second* is the value of assistance (Kenney & Newcombe, 2010; Lotrecchiano et al., 2013). The required support could come from different sources for the teachers, such as teaching assistants (Kenney & Newcombe, 2010; Gedik et al., 2013) technical support (Gedik et al., 2013), and from the institution itself (Heaney & Walker, 2012; Lotrecchiano et al., 2013). This could possibly decrease their burden, especially in terms of time commitment and workload in the BL program. *Finally*, networking among the teachers is crucial (Kenney & Newcombe, 2010; Heaney & Walker, 2012; Gedik et al., 2013). Teachers are encouraged to interact with their peers, share ideas with each other and work collaboratively for the effective implementation of BL.

Although support is vital for teachers to overcome challenges in BL, this is also important for students (Alebaikan & Troudi, 2010) and for technical aspects (Ramos et al., 2011; Levin et al., 2013) as well. Support may be offered to students in terms of technological aspects such as the helpdesk (Kenney & Newcombe, 2010), mental and wellbeing aspects such as counselling (Levin et al., 2013) and even professional development such as management skills (Lotrecchiano et al., 2013). In addition to dealing with technological problems, the establishment of a technical support team is highly recommended for the efficient and smooth delivery of blended learning (Ramos et al., 2011; Levin et al., 2013).

It requires a detailed needs review prior to the design of the BL program (Ramos et al., 2011; Gedik et al., 2013) and training personnel to equip them with the expertise and skills required to perform BL (Alebaikan & Troudi, 2010; Lotrecchiano et al., 2013). This is consistent with *the Oxford Group review (2013)* which highlighted these four success factors for BL, namely a systematic design process that generates a coherent whole, is comprehensive in the analysis of needs and involves stakeholders, involves people with appropriate skills and takes into account the constraints of the organisation. If these considerations are emphasized in the design and development of a BL programme, there tends to be a higher propensity for a specific institution to reduce obstacles and thereby contribute to a effective implementation of BL.

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