

Information and Communication Technology (ICT) for Online Classes in Economics Education in TU, Nepal

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Abstract

This study intends to investigate how ICT is used for online economics classes and how students view online learning. This study has used a mixed-methods research approach to accomplish the objective. The quantitative findings from the student survey and the qualitative data gained from the evaluation of key informant interviews have provided a level of understanding. Total 28 students of Master Level Economics Education admitted in Mahendra Ratna Campus, Tahachal were taken for the study to investigate the issues. TU altered its academic calendar and closed physical sessions beginning on March 24, 2020, following the finding of the first case of COVID-19 in Nepal on January 23, 2020, in an effort to limit the impact on students' learning and time. The university then made the decision to switch to an online teaching mode. The objective of this action research is to analyze the role of ICT for online classes, to measure students' positive and negative reactions regarding online classes, and the problems underlying in online classes. The major findings of the study include infrastructure need to be enhanced for the expansion of ICT Services and use of ICT in education. The majority of students said that their online learning experience was normal and online classes were of good quality. Infrastructure connectivity is deemed to be adequate. Online learning platform is new among teachers and students and met educational needs and maintained regularity. Smart Phones were major device for remote learning.

Keywords

Monotonous, strategies, connectivity, virtual mode, smart phone, e-learning

Introduction

Educational institutions have switched from traditional face-to-face instruction in order to cope with the negative effects of the COVID-19 pandemic. The largest and oldest university in Nepal, Tribhuvan University, also formally recognized the virtual class format as a response to modern trends and provided guidelines for master's level online courses through MS teams (Kunwar, Shrestha & Poudel, 2020).

Educators, students, and families have been compelled by the pandemic to use new technologies, instructional strategies, and communication tools. Even if these changes have been difficult, they have also given rise to chances to reconsider and enhance the way education is supplied. The challenges presented by the pandemic are forcing schools, instructors, and students to navigate a new normal that is one of constant change and adaptation. (Pacheco, 2021). Due to the COVID-19 pandemic, there have been significant changes in how education is provided and received. Schools, colleges, and educators now need to quickly adopt remote and hybrid learning models, more technology in the classroom, and a focus on social-emotional learning and educational equity (Lemay, Bazalais, & Doleck, 2021).

Online learning is a mode of education that occurs online. Many educational institutions switched from traditional face-to-face instruction to online instruction as the lockdown to contain the Covid-19 pandemic got under way.

The Ministry of Education, Science, and Technology urged Tribhuvan University stakeholders to start classes using alternate methods, by. The largest and most prestigious university in Nepal, TU, has also disseminated a notification to all of its campuses and formally accepted the virtual class format along with

a set of guidelines. TU issued the detailed guideline for online classes and started in Master's level Economics Education students, using Microsoft Teams Software for virtual class.

Participants in online education gained both positive and negative experiences. Flexibility of class participation time, cost effectiveness, course layout. Negative experiences as access to the Internet, students delayed feedback from teacher, electronic accessories, no technical support, lack of self-regulation and self-motivation, sense of isolation, monotonous and nature of course content. Online education's strengths have been identified as reflection, flexibility, and convenience (Vonderwell, 2003). As communication between students and between students and teachers was a critical issue, (Howland, & Moore, 2002).

Institutional support is essential for effective and high-quality online education. Both professors and students should be engaged and productive, as well as self-controlled and motivated. Students must alter their own behaviors such as self-control, self-motivation, spending less time on the phone, or participating actively in their learning in order for online classes to be effective. Students' learning was ineffective when only textbooks or discussion posts were used as instructional techniques (Artino & Stephens, 2006). For the effective and quality online education, the instructor plays a key role. For the effective online class, administrator should provide sufficient supports, training, motivation and qualified faculty. This study is conducted with students from Mahindra Ratna Campus, Tahachal. The study is focused on the analysis of the role of ICT for online classes in the context of teaching-learning process (Shee-Mun, & Thi, 2022).

Literature Review

Virtual class is one of the popular way to deliver knowledge through the internet process to the

students. It is typically performed using a learning management system, where students may access

their course curriculum, track their academic progress, and interact with their peers and

instructors. It is frequently called e-learning.

Empirical Review

Empirical review is based on observed and measured phenomena and derives knowledge from actual experience rather than from theory or belief. The review of many aspects of an empirical study that hold some levels of significance to the study being conducted by different researchers.

The challenges of merging online teaching responsibilities with teaching identities that are frequently dominated and defined by face-to-face beliefs and practices have a significant impact on higher education faculty's teaching identities (Simon, 2012).

It is crucial to take into account the efficiency of online learning in comparison to conventional face-to-face formats, as well as the factors affecting the success of the various student learning outcomes and the inherent issue of the learning environment in online classes (Nguyen, 2015). Online education is equally efficient as classroom instruction. Earlier studies have demonstrated that maintaining a consistent teaching identity is a key element in teacher retention (Danielewicz, 2001).

Large number of students lack access to computers, cellphones, and the internet as well. Therefore, it looks more difficult to implement online courses as a teaching-learning alternative for schools and institutions (Ghimire, 2020).

Most students complied with the requirements of the online class code of conduct as set forth by the university. When it came to accessibility, user-friendly materials, and the significance of improving teaching and learning habits, they discovered that the actual class was more beneficial than the online session (Karki, Mahat, & Kandel, 2021).

For many teachers and students, the change from traditional face-to-face instruction to online instruction in Nepal's higher education represents

new experiences and practices. Effective online education is based on computer literacy, time management abilities, and technical knowledge. In the context of Nepal, only online teaching and learning methods are ineffective. Online education is built on a clear ICT policy and courses that are produced in accordance with it. Online education cannot replace traditional classroom instruction in Nepal; it can only be used in addition to it. In order for the educational process to be successful and effective in Nepal, blended learning—online instruction combined with in-person instruction—would be more suited (Paudel, 2021). If faculties are trained for the online education system, the online instruction can be more effective (Tuladhar et. al, 2020).

However, online/virtual classrooms must be embraced in 21st-century education. Therefore, by enhancing digital infrastructure, preparing for catastrophes, and strengthening the system's resilience, educational administrators and policymakers should use it as an opportunity to offer new learning modes that can reach everyone (Dawadi, Giri, & Simkhada, 2020).

The study aims to investigate how online learning is altering both teachers and students in higher education, the effects of online instruction on both, and the roles that technology plays in online instruction (Simon, 2012). The use of technology in the classroom is essential to its success and effectiveness (Alsup, 2005; Day et al., 2006).

The government ought to assist colleges and universities in enhancing their ability to offer online courses. The affordability and availability of technology for students should also be improved. The epidemic provided Nepalese academics and decision-makers with an opportunity to build out their human resources and ICT infrastructures in

educational institutions (Dawadi, Giri., & Simkhada, 2020). Online courses will be somewhat more successful if they have access to physical facilities,

skilled teachers, flexible curriculum design, and competency-based learning (Rijal, 2021).

Theoretical Review

To address these learners and promote their success, teaching pedagogy must be modified, and educators must be open to trying new techniques. Because learning is a collaborative process and forms a community via engagement, practice, and responsiveness to quick feedback, online learning involves modification from both instructors and students (Andrade, 2015). For dialogues to be effectively facilitated and for students to be able to

build knowledge, teachers must be helpful. Online collaborative learning's goal is to improve two-way communication between teachers and students in order to deepen knowledge construction, not to replace the teacher (Bates, 2015). Online learning is similar to distance learning, where instruction takes place remotely and use of technology has made it possible.

Policy Review

Tribhuvan University altered its academic calendar and closed physical sessions beginning on March 24, 2020, following the finding of the first case of COVID-19 in Nepal on January 23, 2020, in an effort to limit the impact on students' learning and time. The university then made the decision to switch to an online teaching style (TU, 2020). The major objective of the Fifteenth Plan is to

develop higher education scientific, inventive, research-based, technology-friendly, and employment-oriented, this strategy aims to secure the extension and quality of inclusive and equitable access to education and to establish a knowledge-based society and economy. A country's educational development depends on its Economics Education program (NPC, 2019).

Objectives of the Study

The main objective of this action research is to assess the roles of ICT for online classes. The specific objectives are as follows;

1. To analyze the role of ICT for online economics education classes in Master Level and
2. To measure students' positive and negative reactions, problems underlying in online classes.

Methods and Materials

Mixed method design, which integrates both quantitative and qualitative techniques of analysis, mixes two forms of data in different ways and gives priority to one or both forms of data. The core of this method is that it uses quantitative and qualitative approaches in combination and provides better

understanding of research problem. When applied to the present topic, ICT for online classes, the action research process helps educators and learners enhance the use of technology in teaching learning environments.

Study Area

Mahendra Ratna Campus Tahachal is one out of three constituent education campus of TU in Kathmandu Valley. TU shifted from traditional face-to-face teaching to online teaching to cope with the adverse situation caused by covid-19 outbreak. In this context, the online teaching method could replace classroom teaching in lockdown situation. The study has attempted to find the roles of ICT for online classes and to analyze the satisfaction of the students of Master’s level Economics Education through MS Teams. Primary data were collected for quantitative analysis from student survey through

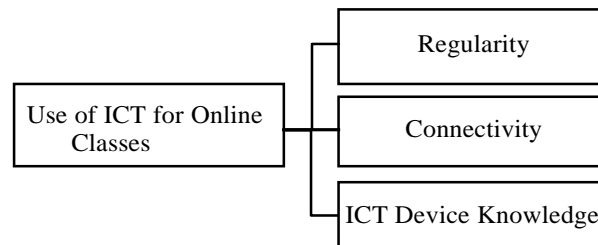
questionnaire. Using census method, total 28 students enrolled between 2020 and 2022 in Master Level Economics Education in Mahendra Ratna Campus, Tahachal were involved in online class during COVID-19 Pandemic. For qualitative analysis, Key informant interviews (KII) with teachers and concerned authorities of the campus were collected. The sample size was 10 using purposive sampling technique who were involved in teaching and admin of Master Level Economics Education in Mahendra Ratna Campus, Tahachal.

Conceptual Framework

Conceptual framework defines the relevant variables for the study and maps out how they might relate to each other. To analyses the use of ICT for online class in Master Level Economics Education in MR

Campus: regularity, connectivity, ICT device and knowledge are independent variables. Students’ positive and negative experiences were investigated.

Conceptual Framework



Results and Discussion

Some relevant literatures suggest that we should move beyond the traditional face-to-face teaching and consider the next stage of online learning. The study examines the evidence of the use of ICT for online classes by organizing and summarizing the results.

The infrastructure for 5G should be supported by the growth of FTTH Network and the expansion of 4G Network coverage. Within 5 years, the growth of services using new technology should aim to increase the number of FTTH subscribers from 2 lakhs to 10 lakhs while also improving service

quality with an all-fiber (copper-free) network. Telecom has been testing 5G using several bands as part of a trial operation and will launch its 5G project once the piloting is successful. For the best use of communications resources, appropriate policies for sharing company-owned infrastructures, such as land, buildings, shelter, towers, electricity, and fiber networks, should be developed. Service delivery should be rapid, continuous, and quality ensured (365 days a year, 24 hours each day). Quick, accommodating, and high-quality services can guarantee client attention (Sah, C. B.; Shastri, P., & Dawadi, B. R., 2022).

- Use of ICT in Education:** ICT can improve access to education by providing online learning resources, virtual classrooms, and distance education. It can also enhance the quality of education by enabling personalized learning, interactive teaching methods, and real-time feedback. ICT enables the development of e-learning platforms and resources, such as online courses, educational videos, and digital textbooks which makes education more accessible, flexible, and personalized, enabling learners to study at their own pace and from any location, with collaborative learning, where learners can work together on projects, share resources, and communicate with each other through digital platforms. This improves student engagement and teamwork skills, and also makes it easier for teachers to manage and monitor student progress. It enables distance learning, where learners can participate in classes and interact with teachers remotely through video conferencing and other online communication tools. Thus, makes education more accessible for learners from remote areas or with other constraints that prevent them from attending traditional face-to-face classes, enables the analysis of student performance, helps to identify areas where students need additional support to improve student learning outcomes. Overall, ICT has transformed education by making it more accessible, flexible, personalized, and effective enabling learners to access educational resources from anywhere, collaborate with peers and teachers, and receive more personalized instruction. As technology continues to evolve, we can expect ICT to have an even greater impact on education in the future.

Table 1
Use of ICT for classes in master level economics education

Characteristics		Rating				Result
1.	Online Learning Experience	1	2	3	4	1 & 2 Excellent 3 Normal 4 Poor
2.	No. of student	4	5	11	8	
		Student Grading				
	Infrastructure connectivity	Excellent	Satisfactory	Poor		
	No. of student	5	19	4		
	overall quality of the online education	Very good	good	moderate		
	No. of Student	6	19	3	Total: 28 Student	

Source: Field Survey, 2023

- The majority of students said their experience learning online was normal:** Students in an online course can benefit from more flexibility and convenience than they would from traditional face-to-face instruction. Students have the freedom to learn whenever, from wherever, and at their own speed. Learning is made more pleasurable and successful by the more dynamic and engaging experiences offered by online learning platforms.

- 3. **Overall, online classes are of good quality:** An online course can offer a high-quality learning experience that is somewhat comparable to traditional face-to-face instruction with careful planning, excellent delivery, and regular evaluation.
- 4. **Infrastructure connectivity is deemed to be adequate:** Connectivity problems are essential to improving the online learning experience. Infrastructure connectivity makes ensuring that students have access to a high-quality, dependable, and inexpensive internet connection so they can participate. Students are happy with their online classes using MS Teams in this aspect.
- 5. **Online learning platform is new among teachers and students:** Technical support, guidance and comprehensive training for the faculties and students was offered at the institutional level to enhance digital literacy.

Table 2

Number of students by the impact of online classes

Characteristics	Response		(%)	Result
1. Online class help to maintain regularity	Yes	No		Yes Regular
No. of Students	25	3		No Irregular
2. Online education serve educational needs	yes	No		Yes fulfilled
No. of Students	19	9		No not fulfilled
4. Devices used for remote learning	Smart phone	Desk top	Tablet	
No. of Students	26	1	1	
				Total: 28 students

Source: Field Survey, 2023

- 6. **Online learning met educational needs and maintained regularity:** Online education has been beneficial in meeting current educational needs and in keeping regularity among faculty and students as it provides flexible and affordable access to education.
- 7. **Smart Phone as a major device for remote learning:** According to the study, most students used their smart phones as their main devices for online learning. Mobile phones are comparably widely available, affordable and accessible in this era of information and communication, and students are somewhat familiar with gadgets.

Limitations and Delimitations

The study is mainly confined to Master Level Economics Education in Mahendra Ratna campus, TU to study the use of ICT for online classes.

The choice of the study year is also one of this study’s shortcomings. It covers 2020, 2021, and

2022, the year following the Covid-19 Pandemic breakout. The study only includes data from the most recent three years following the official launch of TU’s online courses.

Conclusion

Tribhuvan University decided to use an online teaching from January 23, 2020. The goals of this action research are to examine how ICT is used in online classes, gauge students' attitudes toward them (both positively and negatively), and investigate the issues that surround them. First of all, detailed plan of action was outlined to integrate ICT in online classes in Economics Education. Then appropriate MS TEAMS as ICT tools was selected. After that teachers and students were trained for their uses. Finally, the impact of student learning outcomes was assessed.

The study's main conclusions include the need for improved infrastructure to support the expansion of ICT services and the use of ICT in education. Most students reported having a typical online learning

experience and finding the classes to be of moderate quality. It is found that infrastructure connectivity is sufficient to the students of master level economics education in Mahendra Ratna Campus Tahachal. The online learning environment was brand-new to both teachers and students as it was a quick response to COVID-19 Pandemic, and it fulfilled educational needs while maintaining consistency. The main technology used for remote learning was smartphones.

As an alternative to traditional face-to-face classrooms, the government should put more emphasis on virtual learning, such as television, radio, and online education. This will help people deal with future crises like the Covid-19 epidemic and other unpredictable events.

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