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How does online tools affect in education sector in context of Covid19? An empirical study in Nepal

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Abstract

Online education provides accessible and flexible learning opportunities, enabling individuals to acquire new skills and knowledge from anywhere, at any time. This is particularly crucial in today's fast-paced, technology-driven world, ensuring continuous education and professional development. This research delves into the intricate dynamics of online education, employing factor analysis to discern and evaluate the key factors that significantly impact its effectiveness. Through a meticulous examination of seven critical dimensions, namely course structure, online tutorial quality, online tutorial flexibility, technology quality, social influence, e-learning system effectiveness, and information quality. This study offers profound insights into the foundational elements that shape the online learning experience. The findings not only provide a comprehensive framework for understanding the multifaceted nature of online education but also furnish valuable guidance for educators, institutions, and instructional designers seeking to optimize digital learning platforms. By recognizing and prioritizing these factors, educational stakeholders can implement targeted enhancements, ultimately elevating the quality and efficacy of online education in an evolving educational landscape. This research serves as a pivotal resource for decision-makers invested in advancing online education to meet the demands of contemporary learners.

Keywords: Covid19, Online Education, Online Tools, DSS, Global impact

INTRODUCTION

The COVID-19 pandemic has affected many aspects of people's lives, majorly impacting sociocultural, economical, as well as educational aspects. These impacts have been experienced by educational institutions around the globe. Students' lives have been impacted by this pandemic from the onset, as all educational institutions had to be closed, with the whole education system shifting to the use of online platforms. Thus, online learning took place throughout the world, and numerous technologies and the internet have played an important role in program management, the creation of material, and educational distribution.

All educators were forced to adopt online learning, as school buildings were not open. Even though a number of people did not feel ready for this change, students had to adjust themselves to this new learning process while dealing with many other challenges resulting from this pandemic [2]. Learning shifted from an offline to online mode, with the hope that the effects on learning would be mostly beneficial. There is remarkable proof of a higher student success rate when using an online learning mode. The effectiveness of planned online learning and planned and onsite learning is indistinguishable and supported by substantial evidence [3].

Although the number of problems faced by students as well as educators during online learning is mostly related to the difficulty in using e-learning applications mainly experienced by those in remote areas, there are also issues of an increased number of assignments, disturbances due to poor network connection, and so forth. These

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obstacles also negatively impact students' motivation to complete assignments. As a result of these issues, they do not perceive the optimal outcomes of learning, and thus, the objective of e-learning is not always successfully achieved [**4**]. There are many learners who are self-motivated, intelligent, and self-directed, and they have achieved success from the online learning mode in spite of its obstacles. The parents of some students stated that their wards became indolent when it came to studying online. This shows the negative side of the learning attitude of students with respect to the online learning mode [**5**].

As the pandemic altered the whole learning system, students and teachers were also trying to adapt to these recent developments in the learning process and the new mechanisms governing teaching and learning methodology. As there is a strong need for e-learning instead of conventional teaching and learning processes, as per the current scenario, it is also important to be aware of students' opinions regarding e-learning [**6**]. Knowledge of the learners' readiness for this new teaching methodology, and their ideas, if they have any, are significant when it comes to creating a considerable change and determining the degree of adaption. The objective of our survey is thus to assess the viewpoint of learners toward online classes conducted by the numerous institutions during the lockdown phase of the pandemic. The aim of these study the perception of students regarding the significance of an online mode of learning during the lockdown phase of the COVID-19 pandemic in Nepal.

Background and Scope of the Study

The education sector has experienced significant evolution, shifting from a teacher- to learner-centered mode. As a result of the former, teachers play an important role as knowledge informants, while learners play a passive role as mere recipients of that knowledge [**7**]. However, within a learner-centered approach, learners are the producers of knowledge in the class under the guidance of the teacher. In this approach, teachers answer the assignments and motivate learners to find alternate solutions. The internet and a number of new technologies have been incredible facilitators of a learner-centered approach [**8**]. Online learning has been a major development in the education sector in the 21st century [**9**]. Online learning or e-learning can be understood as learning through the internet and various different technologies which help a student to almost immediately access information.

During the COVID-19 pandemic, face-to-face learning was not possible, and e-learning was the only solution. However, the experience of online learning varies from country to country. For some countries, it is fairly easy to facilitate online learning, whereas for some countries with middle- and low-income groups, implementation is challenging due to a lack of proper resources. In the Arab region, many countries, such as Qatar, Jordan, Bahrain, Kuwait, Emirates, and the KSA, are more developed than others [**10**]. Most of the higher educational institutions in Arab countries shifted to asynchronous and synchronous learning systems during the pandemic. The Arab country Jordan started e-learning according to the Education and Planning and Information Technology Ministries in 2002 [**11**]. Jordan also initiated an online instruction system, switching from conventional to virtual teaching. Similarly, Talal Abu-Ghazaleh University adopted an online mode for the recruitment and enrolment of new scholars and organized online classes for the first time in 2012. The University of Jordan launched synchronic "blended learning". This is a kind of learning in which a mixed system of online and onsite learning is present, and as a result, some practical courses are conducted on a university campus while the theoretical courses are run online. Jordan is among the countries that retaliated to the calamity by launching an online platform, "Darsak", to ease virtual learning in schools [**12**]. However, in Jordan, the online learning method was not adopted in schools before the pandemic.

On 11 March 2020, the World Health Organization (WHO) declared COVID-19 a global epidemic, and on 19 March, it was declared an emergency toward preventing the spread of disease. As an effect of this, curfews were imposed around the world for approximately two months, with universities being closed for longer periods. Consequently, face-to-face education was not possible, but learning discontinuity was also not acceptable, and

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therefore, the need for online education arose to ensure the maintenance of social distancing. Online education or learning has been a vital mechanism for today's learning, since it provides students with access to an education platform at all times so that they can conveniently learn in a place and at times suitable to them. This facilitates learning with flexibility independently of time and place [**13**]. Online learning also provides answers to questions and helpful feedback on the contents of assigned courses to learners [**14**].

Literature Review and Gap Identification

The evolution of information and communication technology has added numerous advantages to the lives of humans. Now it is important not only to be aware of the technology but to have a better understanding of it [**15**]. Because of the development of e-technology and better internet networks, the whole platform has changed from an onsite to online learning mode [**16**]. On top of the different electronic media such as television, satellite, and CD-ROM, e-learning is classified in the following way: "education delivered via internet", and virtual learning is referred to as "education delivered only via the internet or web-based media" by some experts [**17**]. E-learning is stated as "bridging the space between teachers and students through the use of web-based technology" [**18**].

The internet has been very useful for humans in numerous ways, mainly in the area of education. In recent times, new techniques of learning have depended on the use of technology [**19**]. However, not every student can accept and adapt to this change. Each and every student is different from others in many aspects such as age, ability of thinking, and interest in technology, and these attributes affect the acceptance of change in the process of learning [**20**]. The reactions of students to online learning differ according to their ages, with the older students manifesting more acknowledgment for online learning. There are still some crucial divergences in learners' views of online learning. There is concern for the effectiveness of e-learning environments [**21**].

The seriousness of students in online learning can be judged by their activeness in engaging in learning. The three aspects essentially required to be engaged in online learning are emotional, behavioral, and cognitive involvement [**22**]. These aspects are described as follows: (1) Behavioral participation—participation shown by the actions of heeding to learning during online class. (2) Cognitive participation—participation where a learner obtains a set of skills in the online learning mode. (3) Emotional participation—participation through which the learner has positive emotions for online learning, the teacher, as well as peers. The advancement of online learning in present times is the reason for the growth in the number of online courses conducted by colleges and school [**23**]. In addition to this, students' demand and technological evolution for online classes has prompted colleges and universities to execute online courses with normal learning [**24**]. A notable point is that online learning is not yet a requirement in schools, though it is considered as an advanced technique for dealing with challenges encountered in the learning process [**25**]. Now, many universities are implementing plans to invest in modern classes and in training and recruitment in faculties to teach online [**26**]. A survey indicates that online learning is expected to grow more remarkably in educational institutions and in corporate organizations in the near future [**27**]. It is supposed that online learning is interactive because of these recent developments, and online education provides students with an environment where they can actively engage with the content and practically learn, and it also increases understanding as they attain new knowledge [**28**]. Furthermore, online learning has been more important in the past few years globally, shifting the idea associated with universities that "online class is optional" to "online class is necessary" [**29**].

Thus, on the basis of the above-discussed extensive review of the literature, it seems that although studies have been carried out to explore students' perceptions of online learning, the interpretation of students' views on online learning in the context of the COVID-19 pandemic has not been addressed.

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Statement of the Problem

The ultimate aim of conducting this study was to analyze students' perceptions of online learning. The present study was centered on those colleges and universities that are providing education to their students via online means. In today's environment, one of the most critical challenges for universities is to engage students with study through their e-learning system. The study was carried out from the perspective of students enrolled in various universities and colleges in the KSA. Therefore, it was pertinent to examine students' perceptions of online learning. The present study attempted to answer the following research questions:

Table II:KMO and Bartlett's Test

Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		.799
Bartlett's Test of Sphericity	Approx. Chi-Square	751.838
	Df	180
	Sig.	.000

Reliability Statistics

Cronbach's Alpha	No. of Items
.723	37

Statement of Variables(1)	Variance Values	Factor
Course material is presented in a well structure.	0.946	Course Structure
The learning objectives in the online tutorial have been conveyed properly.	0.945	
The material in the online tutorial has been arranged in a logical sequence and understandable.	0.921	
The structure of the material in the online tutorial already covers all the material I need to learn in one subject.	0.867	

Statement of Variables	Variance Values	Factors

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Learning through online tutorial make me able to improve my learning quality.	0.751	Online Tutorial Quality
Online tutorial as a whole has a good quality.	0.786	
The appearance of online tutorial is interesting	0.798	
I have no difficulty using the features in online tutorial.	0.761	
The appearance of online tutorial is up to date.	0.715	
The material shown in the online tutorial has good quality.	0.763	
The interaction between students and tutors are well established.	0.742	

Statement of Variables (2)	Variance Values	Factors
Learning through online tutorial gave me the flexibility to adjust my learning time.	0.815	Online Tutorial Flexibility
Learning through online tutorial benefit me.	0.843	
Learning through online tutorial made me have the flexibility to divide their time between learning activities/other jobs.	0.829	

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There is no disadvantage I get to learn through online tutorial.	0.897	
Learning through online tutorial lets me manage my time more effectively.	0.872	
Learning through online tutorial makes me save time rather than to having to attend class.	0.831	
Learning through online tutorial made I would not miss material than If I do not attend class because I can learn the material at any time.	0.879	

Statement of Variables	Variance Values	Factor
I can ac	0.799	Technolo

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cess online learning anywhere.		gy Quality
I do not encounter any difficulty in responding to the discussion.	0.763	
I do not see any difficulty when uploading task.	0.804	
I feel that technology for online learning is easy to use.	0.819	
I feel that technology for online learning have useful functions.	0.787	
I feel that technology for online learning is very helpful for learning the materials.	0.782	
I feel that technology for online learning facilitate communication with tutors or other students.	0.832	

Statement of Variables	**Variance Values**	**Factors**
I would use e-learning If it was recommended to me by my lecturers.	0.845	Social Influence
I would use e-learning If it was recommended to me by my classmate.	0.865	

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I would like to use e-learning If my lecturers' supported the use of it.	0.874	
People who are important to me think that I should use e-learning.	0.883	

e-learning system provided high availability.	0.673	e-Learning System effectiveness
The response time of the e-learning system is reasonable.	0.648	
e-learning system has attractive features to appeal to the users.	0.665	
e-learning system provides interactive communication between teachers and students.	0.613	

Statement of Variables	Variance Values	Factors
The information provided by e-learning is relevant.	0.813	Information Quality

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The information provided by e-learning is easy to understand.	0.822	
The information provided by e-learning is up to date.	0.797	
The information provided by e-learning is complete.	0.821	

RESULT

The Course Structure encompasses the organization and layout of online courses, including the sequence of modules and clarity of learning objectives. The Online Tutorial Quality pertains to the overall excellence and comprehensiveness of instructional materials available online.The Online Tutorial Flexibility reflects the adaptability and accessibility of tutorials to accommodate diverse learning styles and preferences.The Technology Quality assesses the reliability, speed, and functionality of the technological infrastructure supporting the online education platform.Social Influence encompasses the impact of social interactions, collaborative learning environments, and peer-to-peer engagement on the learning experience. E-Learning System Effectiveness stands as a pivotal determinant of the online education experience, encompassing a comprehensive evaluation of the system's performance and reliability. It critically examines various facets, including the system's availability, ensuring that learners have seamless and uninterrupted access to a wealth of educational resources. Additionally, it assesses the system's response time, striving for swift and efficient navigation, which is crucial for an engaging and productive learning journey. A robust and dependable e-learning system lays the foundation for a learning environment that is not only technologically sound but also conducive to effective knowledge absorption.

Together, E-Learning System Effectiveness and Information Quality synergistically contribute to the overall efficacy and excellence of the online education experience. They form the bedrock of a dynamic and enriching digital learning environment. By upholding high standards of system performance and the integrity of educational content, institutions and educators empower learners to not only acquire knowledge but also to cultivate critical thinking skills, fostering a deeper understanding of the subjects at hand. Ultimately, these factors culminate in an online education experience that is not only efficient but also of unparalleled quality, allowing learners to thrive in the digital landscape of education.

CONCLUSION

The empirical study has unveiled a comprehensive framework encompassing seven pivotal components that collectively define the effectiveness and quality of online education. These identified factors stand as valuable guiding principles for educators and institutions, offering profound insights into the intricate dynamics of online learning environments. Acknowledging the crucial role played by each factor empowers educators to tailor strategies and implement specific enhancements, thereby elevating the educational experience in virtual settings. As the

landscape of online education continues to evolve, these findings provide a robust foundation for refining instructional practices and maximizing the efficiency of digital learning platforms.

Managerial Implication

The findings of this factor analysis hold significant implications for educational institutions and instructional designers. Recognizing the pivotal components that shape the effectiveness of online education provides a clear roadmap for enhancing instructional strategies. Institutions can allocate resources towards optimizing the identified factors, such as refining course structures, ensuring high-quality tutorials, and bolstering technological infrastructure. Additionally, understanding the influence of social interactions and information accuracy allows for the creation of collaborative learning environments and the curation of reliable educational content. By proactively addressing these factors, institutions can not only elevate the quality of online education but also stay competitive in an evolving educational landscape. This research serves as a valuable resource for decision-makers seeking to maximize the potential of digital learning platforms and provide a superior educational experience for their students.

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