School Students' Experience of Using the Internet

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Article Info	Abstract
	The Internet has significant impact on students' learning outcomes. This paper outlines an examination of school students' understanding of using Internet facilities. As qualitative research, it employed Internet-based semi-structured interviews to accumulate data and the investigation of various archived documents allocated a ground for analysis. The study examined how school students use Internet to improve collaborative learning, advance technological skills, and explore digital resources. The Internet has become an alternative means to physical classrooms to continue educational activities during the COVID-19 crisis. During the study, limited ICT infrastructure, weak Internet services, parents' unreliable source of income and teachers' inadequate ICT skills have been recognized as major challenges to supplying education for all through online mode. The findings indicated that students from disadvantaged and marginalized groups in rural areas can get support in distance learning and foster equal access to high-quality education if the concerned authority develops a minimal ICT skilled workforce and infrastructure.

Introduction

Internet can assist students to promote their technical ability, increase meaningful engagement and improve learning (Bakia et al., 2012). In the framework of the local community, *the Ministry of Education and Sports (2015)* has prioritized the establishment of information-enabled educational systems to foster ICT literacy among students in private and public institutions. Before this, the *National Curriculum Framework for School Education (2007)* focused on the use of ICT in education to revolutionize teaching and learning and provide quality education in Nepal. Besides, the *School Sector Development Plan (SSDP) 2016-23* targets to utilize ICT as an important tool to make classroom teaching and learning effective. To increase Internet access and support, Nepal's educational system intends on installing optical fiber across the entire nation (ADB, 2017). However, rather than committing government funds for the development of ICT in schools and training teachers to access ICT, the government lets non-governmental sectors implement the educational policy in ICT(Rana, Greenwood, Fox-Turnbull, et al., 2019).

The development of ICT in education, although initiated with the development of *Nepal Wireless Network Project* (NWNP) in 1997 (Thapa, 2011), has still been unnoticed. Although the government plans to provide teachers and schools with ICT infrastructure, the lack of a defined implementation strategy appears to be in contradiction with the objective of the nation (Rana et al., 2018). To understand the ICT implementation in all schools across the

country, particularly in remote regions where the majority of the population (80%) lives, it is unfair to generalize the limited access to ICT in urban schools. According to estimates, 75% of the entire population had Internet connectivity as of the beginning of 2020, which is an increase of 15% over the figures from the prior year (Nepal Telecom, 2020). However, the use of ICT in education has grown in significance in recent years' educational discussions, the access to Internet in rural areas is still limited (Rana, Greenwood, Fox-Turnbull, et al., 2019).

The applications of the Internet can let students communicate instantly with one another, leading to an engaging study experience (Adams et al., 2005). According to Dogruer et al. (2011), students may utilize social networking sites to share knowledge, discuss academic concerns, turn in schoolwork, and exchange educational materials with their peers. Additionally, Christopher and Maria-Gorretti (2012) emphasize that the use of the Internet in learning facilitates effective communication between teachers and students, particularly when students prefer to learn outside of the classroom at their preferred time and location. Although it increases students' productivity and prepares them to meet the demands of a competitive market in the twenty-first century, ICT may not be the answer to all educational problems (Mdlongwa, 2012).

The need for Internet facilities has been observed in educational institutions in Nepal since the outbreak of COVID-19 in China and across the world particularly after March 2020 lockdown in Nepal. Except for a few urban private schools, colleges, and university departments that converted their physical classes to online learning immediately after the lockdown, a majority of government schools and institutions are unable to adopt online learning due to a lack of ICT infrastructure. Stressing school education, Burgess and Sievertsen (2020) argue that although parental schooling can help children socialize and develop basic skills to survive while students remain at home, it seems unlikely to compensate for the learning lost from formal schooling.

In this case, Mistler Jackson's (2000) proposal for engaging and motivating youngsters to use online tools and information can be beneficial in the absence of a traditional physical classroom. However, except for a few schools in cities and towns that have been educating certain students in online classes utilizing various programs such as Zoom, Skype, Google Meet, Teams, and Messenger, a majority of schools in the local context are not equipped to undertake online learning. Thus, current study has been concentrated on investigating school students' experiences relating to the use of Internet in their studies and communication. Furthermore, the study attempts to answer how the Internet aided students' learning activities during COVID-19 and aims to direct concerned authorities for further action.

Internet Access and Support for School Students

Many studies (Christopher & Maria-Gorretti, 2012; Rana Karna, 2018; Yılmaz & Orhan, 2010)have argued that access to Internet and computer technologies determine the outcome of educational practices. Regarding the subject, Rana and Rana (2020) stated that students showed dissatisfaction with their educational institutions' weak and inconsistent Wi-Fi facilities, insufficient use of technology in teaching-learning activities and a lack of digital libraries. Earlier, Shaikh and Khoja (2011) found that there was a lack of a comprehensive national policy, limited application of ICT in education, insufficient ICT skills among instructors, and limited ICT infrastructure, which

hindered the effective implementation of ICT in teaching and learning.

However, a prior investigation in Sri Lanka (Andersson, 2008) concluded that the use of ICT tools encouraged students to engage in self-study activities enriching the interaction among students and making instructors' feedback and evaluation more accessible than it would have been without such resources. According to Mamun et al. (2019)'s research, students in Bangladesh who used the Internet more frequently and for longer periods during their academic pursuits experienced stress and despair. However, Rennie and Mason (2007) earlier stated how access to the Internet by teachers and students in Bhutan helped to develop an ICT-based learning culture and increased flexibility of learning despite numerous complications in the early stages of ICT practice.

It is important to support students' usage of ICT for learning. Concerning the subject Lei and Zhou (2012)discovered that Chinese children who had access to the Internet at home and parental backing performed better academically than those who did not. They discovered that learners' families, which tended to have a favourable view of technology, accelerated learning outcomes better. However, Parvin and Salam (2015) argued that the effective use of audio-visual information and the performance of qualified teachers in the class in teaching increased an interactive learning environment. Similarly, Waluyo (2019) claimed that having ICT in the classroom and at home does not guarantee improved academic achievement of children, especially those from developing nations and need to be carefully supervised to attain optimal results. For the best use of ICT meaningfully, students need to fully understand the use of innovative tools and be closely monitored.

Students' Understanding of Using ICT

ICT-based learning, used in collaboration with traditional instruction, empowers teachers to create student-centered pedagogies by encouraging students' independent study (Mullamaa, 2010). However, Deng et al. (2014) in their study investigated that, despite the growth of ICT in China, students in large-sized traditional classes were experiencing as passive recipients of knowledge transmitted through educators. In their earlier analysis of Internet-based learning in the UK, Adams et al. (2005) articulated that the use of the Internet contributed to interactive communication between teachers and students providing meaningful experiences in technology-integrated learning.

However, Hasala and Kelly (2020) suggested that traditionally trained teachers in Japan needed intensive training to use innovative ICT facilities to successfully incorporate ICT into educational practices and allow learners to benefit from such innovative tools. Evaluating the importance of language learning, Ghavifekr and Rosdy (2015) concluded that students in Malaysia actively participated and engaged in learning four skills of the language: listening, speaking, reading and writing, integrating prior knowledge into current issues with the use of ICT in the learning practices. However, Bakia et al. (2012) earlier indicated that with the use of ICT in America, students experienced greater teachers' assistance, the highest level of participation in resolving their daily academic challenges, and teachers expertized more in working with ICT tools alone.

In the local setting, Sæbø et al. (2014) studied the education system and found unskilled teachers, a lack of

adequate national funding, limited ICT infrastructures, and unstable electricity access, and recommended promoting technology-based education in schools in light of these issues. Similarly, Rana et al. (2020) identified multilingual societies, high hills and mountains, a lack of ICT skills among teachers, and inconsistent Internet access in rural areas as barriers to educational management and are leading to adverse experiences in students. However, Thapa (2011) had previously emphasized that ICT could help to fill the education gap by engaging students in self-learning activities. During COVID-19, Singh et al. (2020) argued students utilize the Internet to share educational messages with family, friends, and instructors to minimize stress, depression, and health-related difficulties.

Strategies for Using the Internet in Learning

It is critical to implement effective ways to encourage students' participation in ICT-integrated learning (Atwa et al., 2018; Oztur & Ozturk, 2022; Ozturk, 2023). Rana's study (2018) in rural Nepal emphasized the importance of a dedicated government budget for developing ICT infrastructure in schools, developing a national strategic plan, and implementing ICT in education. However, some studies (Jha et al., 2019; Rana, Greenwood, & Fox-Turnbull, 2019) revealed inadequate digital infrastructures, teachers with limited ICT skills, students with poor technological knowledge, and limited Internet facilities in schools, as the main barriers to implementing ICT in Education.

In the advanced context, Valencia-Arias (2019) looked at the instructors' readiness and knowledge of proper ICT tools to promote e-learning methodologies by encouraging students' self-searching and study habits. Although, Ahmadi and Reza (2018) argued the necessity for teacher preparation in Iran to promote learners' involvement in searching for information and solving learning difficulties by suitably developing Internet-based language competence. Differently, Dresselhaus and Shrode (2012) discovered that students were interested in mobile applications to access small-screen academic library catalogues that required less effort and were inexpensive to use.

The Ministry of Education in Nepal installed computer labs in several government schools to equip students with technical skills and improve educational quality. However, ICT tools in school labs were primarily used for administrative purposes. Shakya et al. (2017) studied the Internet access helpful for part-time students and teachers when some schools and universities managed online-based classes to help students continue their studies. However, Rana et al. (2018)observed a shift in the learning culture with some students' active participation in the ICT lab, promoting easy communication between teachers and students, motivating independent engagement with digital tools to learn and promoting students' ICT proficiency.

To address the spotted weaknesses, K. Rana (2018) earlier recommended the requirement of a concrete plan and implementation of technological tools in the evaluation system of education. However, Shakya et al. (2018) observed that e-learning promoted a self-study culture in students. In the COVID-19 pandemic situation, Amatya and Khan (2020) argued that schools and universities particularly in developing countries have realised the need for ICT infrastructure and online learning mechanisms to continue their educational activities.

Method

The goal of this study is to analyse school children's Internet experiences employing a qualitative interpretive research methodology that includes semi-structured online and face-to-face interviews to gather qualitative information adopting the idea of Cohen et al. (2013). Each interview lasted an average of 20 minutes and was recorded with the participant's prior consent. Before the questions were asked, participants were informed of the study's goal. As suggested by Smith and Shinebourne (2012) ten participants (class 9-12) in the study were selected purposively, maintaining anonymity from four schools, located in diverse regions and following the voluntary participation technique. The data gathered through interviews were analyzed following the thematic analysis.

Data Collection Procedure

In the course of data collection, the phenomenological approach was employed as proposed by Creswell and Poth (2016). The questions in the interview were self-administered based on prompts prepared in advance. School students' experiences of online engagement were explored by a semi-structured single shot online as well as face-to-face interviews. Additionally, school students were contacted physically, via mobile phone, Facebook Messenger, and email to obtain informed consent for the interview. The questions to be asked were composed of two sections, the beginning section contained general information about respondents comprising their age education and family information. The second section was concerned with students' access and attitude toward Internet applications incorporating their parental perceptions. Further, various archived documents such as Journal articles, books, Web pages, newspapers and government documents were consulted along with the data gathered through interviews. All the interviews with the participants were recorded on a mobile recorder and laptop, and observed activities were noted in a diary to follow a systematic analysis of the data.

Data Analysis

During analysis, data were gone through several times and were investigated to disclose the theme grounded with the idea of Braun and Clarke (2006). Findings allied to the literature were drawn for validation conclusions and implications. During the study, audio records of the interviews were transcribed, organized into specific themes, and interpreted critically following thematic analysis (TA). Then data were compared and contrasted to detect the comparability. Finally, Interpretative Phenomenological Analysis (IPA) provided a lens to critically analyze the qualitative data following the idea of Creswell and Poth (2016). Various archived documents were referred to and calculated against the primary data to accomplish research.

Findings

The information gathered online, including in-person interviews with school children, confirms that children consider Internet technology as a useful tool. An interactive learning environment may be created with the use of the Internet. Additionally, it has encouraged cooperation among learners and educators. The following themes

have been used in the analysis of findings based on the data: source of learning and means of communication, option for learning and threat of using Internet.

Source of Learning and Means of Communication

The majority of research participants utilized smartphones with data services, and just a small number of participants had laptops and desktop computers, according to interview participants. Additionally, it was noted that their families struggled to manage smartphones and costly laptops and desktop computers for their children's online study. Students who participated in the interview said that they frequently utilized free mobile applications including Facebook, Messenger, Instagram, TikTok, YouTube, Google, Wikipedia, and Opera to research ideas. For instance, Kamal from A School said:

> I can speak to my friends, family, and teachers more easily and exchange knowledge with them. I have installed Google, Wikipedia, Opera, and many browsers along with apps like Facebook, Messenger, Instagram, Tik Tok, and YouTube.

His expression reflected that mobile has worked as a multi-functional device facilitating students in education, sharing information and communication. Moreover, the access to the Internet outside school was found expanding and the delivery of Internet service inside school was not enough to cultivate students' learning. Some interviewed expressed that they were allowed to surf and visit informative sites to benefit their learning. Students equipped with the technology were found to have collaborative habits and were rich in communicative behaviors. However, the main obstacle to communication between friends and teachers was their limited access to the Internet. For example, Umesh at B School said:

> I use a laptop and a smartphone with Wi-Fi. However, I do not have a Facebook account. I enjoy watching YouTube videos to obtain additional information and searching for facts on Google and Wikipedia. I use Zoom to support friends in courses such as English, Math, and Science. However, none of my classmates have reliable Wi-Fi.

His expression demonstrated how eager he was to share knowledge with his fellow students. It was discovered that parents of intelligent, well-off students managed high-speed Wi-Fi and permitted them to use it for searching and productive Internet activities. The participants who had Internet access also scored higher on tests of technical knowledge than those who did not. Shiva, a participant in the study, was discovered playing games on a friend's phone. Additionally, he mentioned in his brief response that he had to borrow a friend's gadget because the school hostel lacked Internet connectivity. This demonstrated that access to the Internet in schools could be limited or unavailable.

Option for Learning

This study examined the various online experiences that students had. One of the students, Kamal, for instance, valued using the Internet to research urgent national and worldwide issues and as a rapid and affordable way of communication. A few participants also noted that the Internet may be a good resource for learning about worldwide issues, for communicating ideas, and as an instant method of interaction. Also, the online video content may be beneficial to many students. In line with the ideas, Umesh from B School stated:

> For my upcoming coursework, I'm enrolling in an online bridge course. I couldn't enroll in physical education classes because of COVID-19. They offer me online study resources and routinely administer exams. I am capable of finishing my allocated assignment on time. The videos have been supportive of my course revision.

His experience can be analogous to those who have Internet facilities. However, many other students, particularly representing rural areas, might not have cultured how the Internet can be a source of learning from home. Further, he stressed that virtually available tutorials and animated videos as supplementary materials supported his independent learning. In the study, the students with sound ICT knowledge were found to be promoting group communication, and encouraging collaborative learning in the virtual model. For example, Kamal, at A School expressed:

> Due to COVID-19, our school is closed. 65 students enrol in my class. Using ZOOM or Messenger, I managed to impart knowledge on certain challenging subjects to my friends, but many of them do not have access to the Internet or a reliable smartphone. I wish I could connect online with all of my class friends.

His comment suggested that students who had access to the Internet had established alternate strategies for exchanging learning experiences during COVID-19. Additionally, they acknowledged that their busy life's online activity was a source of entertainment. Some of the participants reported their observations that the availability of training programs and learning resources applicable to real-world situations benefited online learning cultures. Both Umesh and Pritam described comparable experiences as follows:

> I use the Internet to continue my social connections. This helps me make decisions about my future career. I look up material related to my homework and talk to friends and teachers about my issues.

> Online resources greatly improve the clarity and recall of concepts. They are appealing in appearance and simple to comprehend.

Umesh's expression implied that during COVID-19, the use of technology established a regular connection and constructive engagement in digital learning. In addition, Pritam appreciated the availability of online materials which can be independently explored for learning during the crisis.

Threat of Using Internet

Participants in the survey noted that there were several drawbacks to using and having access to Internet technology, including users' addiction to talking and avoidance of in-person interactions. The majority of research participants highlighted the challenges that an online learning environment presents. Punam, for instance, stated that challenging geographic conditions, a lack of digital literacy, and a limited knowledge of Internet use could all be barriers to the effective use of Internet resources in education. In her words:

> I live in a rural location. The Wi-Fi facilities around here are unimaginable. Utilizing Internet data is expensive, and availability is limited where I live. My lack of knowledge of how to use mobile applications and weak command of English may cause me problems at times.

Her remarks demonstrated how pupils are deprived of technology access due to low ICT expertise and poor language skills. Hritesh and Kamal's expression in the study, on the other hand, accurately reflected their online collaborative experiences, boosting their capacity to solve problems as members of a team. The next participant,

Kamala at school D, expressed her concern that children would be affected by anonymous messages and abusive comments posted on Facebook pages and that these behaviors would cause students to become afraid of social media platforms like Facebook, Instagram, and TikTok. She stated:

> I frequently have issues with my friends' Facebook page comments. I've received negative content from some friends, which makes me disappointed. Requests from unknown friends frequently make me ill. And I'm worried about someone abusing my photos or videos on social media.

Her remark highlights how bullying may affect Internet users, particularly due to groups created on social networking sites like Facebook and Twitter. The participants frequently discussed the health problems caused by prolonged exposure to electronic devices in the interviews, as well as the links between these issues and behavioral disorders such as aggression, depression, trolling, and social harassment. Bimala, a student at C School, revealed her different experiences and said:

> What we post on a website is based on our thoughts, but visitors react in different ways, which could ultimately be harmful to us. It disturbs us to concentrate on study. I have read several newspapers and am aware of their risks. Therefore, I think feedback should be provided in private.

In her comment, she displayed the impression that she was aware of the resources on the Internet. Despite some unfavourable student experiences, it suggests increasing students' digital literacy to promote ethically upright Internet usage in both education and other areas.

Discussion

Participants valued the use of the Internet and the skills and ideas fostered by ICT access. They developed independent learning skills with the assistance of teachers, were able to look for Internet information and communicate with instructors, according to the findings. The use of the Internet has encouraged students to collaborate to increase their knowledge or abilities (Adams et al., 2005; Ke & Hsu, 2015). Wealthy parents managed their children's access to productive online learning materials by managing the Internet and computer skills at home. However, students who could not afford expensive devices used their mobile devices to browse the Internet via applications that were freely accessible. This is consistent with the findings of an earlier study (Rana et al., 2018), which found that the lack of access to costly digital gadgets of parents and inadequate ICT infrastructure in schools can expand the gap between wealthy communities and underprivileged ones.

Students acknowledged the adaptable features of mobile applications that made it easier for them to interact with friends and family, have fun, and research online. The majority of students were eager to utilize the Internet, which is in line with the findings of Shrestha et al. (2020). However, there were obstacles to the efficient management of the e-learning environment, including the high cost of Internet, poor network connection, students' and teachers' inadequate ICT literacy, and a shortage of appropriate digital devices (Rana, Greenwood, Fox-Turnbull, et al., 2019). The findings indicate that using Internet-animated videos as supplemental teaching tools can increase students' academic performance. Furthermore, students access to Internet facilities enabled them to socialize in a larger group, enhance self-management abilities, and experiment with new learning procedures. Internet facilities motivated and engaged students in various digital resources including entertainment materials, which affirmed the argument of Kauffman (2015) and Artino (2008).

Besides, the application of Internet-enabled students to develop English language skills such as reading, writing, listening and speaking. The application of ICT in teaching transformed teacher-centered strategies into student-centered learning, which is also argued by Lou et al. (2010). During the study, students pointed out that they utilized Internet to connect with national and international people, communicate ideas and participate in discussions. Internet availability can be much more productive in higher education studies particularly for research activities (Singh et al., 2020). The findings of the study suggest that students' awareness of Internet and openly available massive information is significant in the proper utilization of online facilities.

Additionally, the use of the Internet allowed learners to enhance their English language abilities such as reading, writing, listening, and speaking. The use of ICT in the classroom converted teacher-centered practices into student-centered learning, as Lou et al. (2010) claimed earlier. Also, students in the research stated that they used the Internet to interact with national and international people, communicate ideas, and participate in discussions during the study. Thus, the results of the study suggest that proper use of online services depends on students' knowledge of the Internet and readily accessible a great deal of information.

Conclusion

The Internet has become a reliable source of collaboration and essential for students to develop ICT skills. School students have a high level of enthusiasm for exploring online information, enhancing independent learning, and allocating ideas with friends and members of the community outside school. Efficient implementation of the Internet service facilitated students to communicate messages with families and friends to lessen anxiety during crises. Parents' technological awareness signalled optimism about the educational outcomes of students. A large number of students in remote areas have been unable to connect to the Internet. Some students appeared to be more engaged and flexible with their time consumption, which was acknowledged by some; nevertheless, others lacked ICT skills. While students, particularly those in rural areas, have access to costly mobile data services to communicate with relatives and receive online instruction. Inadequate ICT provision, underprivileged family economic position, fewer experienced teachers, a lack of proper digital devices, and unreliable or no electricity have become impediments to approaching courses online.

To switch from traditional pedagogies to e-based learning, every school and student needs to have access to digital devices, the Internet and skills to use. For the best use of the Internet, training for both instructors and students is essential. The provision of better Internet facilities in schools encourages teachers to direct students on the proper utilization of online learning resources.

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