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### **Access and Challenges of Online Learning Materials among Secondary-level Students in Rural Nepal: A Case Study of Daneshwor Secondary School, Baitadi**

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#### **Abstract**

The involvement of the online learning materials for teaching learning activities has expanded rapidly throughout the world. In context of Nepal as well, the shift is noticed gradually. However, its access and effective use of it remain uneven due to several factors especially in rural areas. This study examines the digital divide that is access to online learning materials among secondary level students at Daneshwar Secondary School at Barakot, Baitadi district. Following the qualitative case study design, the researcher draws on in-depth interviews with students and teachers, focus group discussion and school-level observations to explore lived experiences of digital learning in a resource-constrained schools. The finding of the study shows that poor internet connectivity, lack of digital tools, irregular electricity supply, lack of digital literacy among both students and teachers are some of the hinderances for effective access to online learning materials. Their strong willingness to be connected with the digital learning students and teachers employ several strategies like, offline downloading of materials, peer support, device sharing and blending traditional teaching with the limited digital access having classroom. In order to develop strong digital connectivity in such rural areas there is need for context-specific policies.

**Keywords:** Educational inequality, digital literacy, ICT in education, Blended learning, Resource-constrained setting

### **Introduction**

The integration of digital technologies into education systems worldwide has expanded widely at present. The access of online learning materials, videos, digital textbooks and interactive platform are rapidly involved in the education as tools for enhancing accessibility, self-learning and interactive learning. These innovations are widely promoted as mechanisms for improving learning outcomes and fostering educational inclusion (Thapaliya & Panta, 2025). Despite having such a great potential, its equal access is uneven in the rural parts of many developing countries like Nepal. Different educational surveys and data show that many schools and students remain far from its access in the rural regions. According to Kathmandu Post (2020), fewer than 10% of students in rural municipalities had access to the internet at home during emergency remote learning. Baral (2022) state that limited ICT infrastructure, inadequate digital skills and uneven learning platforms fragmented students into 'digital haves' and 'haves not'. Baral further state that although the study focused on the higher education but its findings are common to the school online learning contexts where similar shortage of resources become barrier in meaningful learning. In this context Pandit (2025) mention that mobile devices with poor connectivity, technical barriers and language challenges worsen the access of online educational resources. In context of the urban schools and their use of digital tools for pedagogical activities, schools in rural regions lag behind. Panta and Thapaliya (2025) explore that tech-driven learning environment is insufficient without the digital literacy and supportive learning environment. The study by Palagolla & Wickramarachchi (2019) also shows that poor infrastructure, lack of teacher training, and limited school planning significantly constrain the use of digital tools in teaching and learning. These researches conclude on the necessity of addressing digital inequality in education need to be addressed in order to enhance the teacher capacity and support learnings

In context where resources are limited, informal practices like device sharing, downloading materials at the time of internet access, blending traditional instruction with limited digital content are very common. According to Singh (2024), though School Sector Development Plan and various ICT promotion programs advocate for digital integration in Nepali schools but its practical use remain uneven, especially in the rural areas. Thus, Daneshwor Secondary School in Barakot, Baitadi district, presents the similar uneven case of digital integration. In this context, students' engagement with online learning materials is shaped by availability of digital devices, electricity and network reliability. Teachers, on the other hand, navigate institutional constraints and varying levels of digital competence as they attempt to incorporate online resources into classroom practice.

These local conditions mirror the broader structural challenges documented in empirical research and highlight the localized nature of digital inequality.

While previous studies have examined digital access and online learning in Nepal's higher education and urban schooling contexts, there remains limited research that focuses on secondary-level students in rural settings. Few studies have investigated how digital access intersects with socioeconomic conditions and localized educational practices to shape learning experiences in rural schools. Addressing this research gap is essential for developing nuanced understandings of the digital divide and for formulating targeted interventions that support equitable access to online learning materials.

Against this backdrop, the present study investigates the access and challenges of online learning materials experienced by secondary-level students and teachers at Daneshwor Secondary School in Barakot, Baitadi. By foregrounding the lived experiences of educational actors in this rural context, the research contributes to ongoing scholarly and policy debates about digital inclusion, educational equity, and effective implementation of online learning in resource-limited environments.

### **English Language Teachers Using Online Learning Materials**

Implementing online learning materials in the English language classroom fosters effective teaching and learning activities, where collaboration between teachers and students creates a student-oriented environment. Modern techniques in the classroom enhance student interest, making classes more engaging and interactive. Online learning materials encourage learners to seek learning materials and maintain contact with teachers and peers outside the classroom. Notably, students are more active with digital learning than traditional textbooks, and even shy students participate and learn with enthusiasm.

Howell (2013) emphasizes that digital literacy is crucial for students to navigate online learning and communication platforms, enhancing their thinking and information skills. Digital learning environment promotes student collaboration, global perspectives, and cultural understanding, preparing them to become lifelong learners. Technology serves as a powerful tool for collaboration, critical thinking, and problem-solving in a global market. Lazarov (2018) highlights the urgent need for digital learning in a knowledge-based society. Educational systems must transform their objectives, curriculum, pedagogies, and assessments to help students achieve desirable outcomes. Blended learning, which combines different media and learning styles, is an innovative approach that encourages students to develop their potential abilities and talents. Significant changes in the educational system are necessary to equip students with the skills and knowledge for a successful

21st-century life. Traditional teaching methods may no longer meet today's educational needs. Technology can enhance learning quality by integrating intellectual excitement and emotional commitment. They note that technology's influence on learning is affected by psychological, cultural, and sociological factors. Howell discusses the integration digital learning into the classroom, focusing on student participation and teacher-student collaboration. Howell emphasizes the importance of including digital technologies in the curriculum to create lifelong learners. There is need for an intimate and understanding relationship between teachers and students, facilitated by access to and knowledge of technology.

Integration of digital learning provides a vast ocean of knowledge, promoting globalization by facilitating collaboration and communication across geographical boundaries. These skills encourage continuous learning and help students stay updated with global events. Digital tools play a crucial role in promoting globalization by breaking down geographical barriers, fostering a global perspective, and encouraging the exchange of ideas and cultural understanding. Online platforms nurture digital literacy, fostering responsible human resources in the 21st century. They promote collaboration and communication, enhancing students' logical capacity and critical thinking. Online platforms also facilitate global collaboration, allowing learners from different backgrounds to share innovative ideas and work together. Collaborative learning through multimedia, such as videos and presentations, promotes creativity and brings diverse perspectives. Howell (2013) mentions the importance of digital pedagogy in fostering effective participation between teachers and students. The increasing prevalence of digital technologies has transformed how students learn and how teachers teach. Teachers must understand how technologies affect learning, the expected outcomes, and the necessary teaching strategies. They must also be proficient in using these technologies. Creative technologies are essential for developing student creativity. Educational technology, instructional technology, and technology of education are integral to learning. Technology engages students in creative, experimental, and purposeful activities, developing them as digital content creators, technology innovators, and digitally literate users. The importance of technology is recognized in every sector, and its inclusion in the curriculum is necessary to create lifelong learners.

Integrating digital technology in the pedagogical activities in English language classroom enhances education quality, making it more engaging, interactive, and adaptive to individual learning needs. It equips students with essential digital tools and provides teachers with valuable tools for creating effective language learning experiences. Preparing students for an interconnected world enables them to communicate effectively, access information, collaborate, and succeed in an English-

dominated world. Digital technology transforms English teaching in the classroom, expanding resources and opportunities, and making the journey to English language proficiency more efficient and enjoyable.

### **ICT Policy in Context to Nepal**

ICT in education is a relatively new concept in Nepal, introduced through the ICT education policy over the past two decades. The first IT policy, launched in 2000, brought information technology into Nepal's education system. This policy was revised in 2010 to expand internet access in all schools by working together with both government and non-government organizations. The goal was to create skilled human resources for quality and relevant education (Joshi, 2017; Karki, 2019). At that time, only a few awareness programs about the benefits of ICT were conducted, and some schools received NPR 50,000 from the government to buy computers. NGOs and INGOs also supported schools by providing computers (MOE, 2009).

With the Secondary Sector Reform Plan (SSRP) (2009-2015), ICT teaching and learning strategies were expanded to all schools. The Department of Education (DOE) provided NPR 140,000 to each secondary school for purchasing three computers and a printer. Additionally, some schools received computers from NGOs (MOE, 2009). The three-year plan (2011-2013) focused on promoting ICT use in schools, especially in rural areas. It aimed to reduce the digital divide and integrate digital tools into all aspects of education (Joshi, 2017). This was the first government strategy to encourage digital tool use in school education.

The first ICT education policy, the ICT Master Plan (2013-2017), aimed to provide equal access to education by improving service delivery and increasing the use of digital devices in schools (MOE, 2013). The national ICT policy of 2015 prioritized the development and integration of ICT into education, such as e-learning, ICT-based teacher training, using computers in classrooms, electronic distance education, and ICT for teacher development (Joshi, 2017). ICT was not only seen as a teaching tool but also as a part of teachers' professional growth.

The School Sector Development Plan (SSDP) (2016-2023) highlights ICT as a key component of school education, aiming to support each subject with ICT. More specifically, SSDP focuses on: (i) using ICT to improve teaching practices and classroom interaction, (ii) developing skilled human resources and instructional materials, (iii) integrating ICT into secondary curricula through professional development programs, (iv) using ICT to improve education governance, and (v) creating ICT teaching and training materials for subjects like English, science, and math (MOE,

2016). The goal is to fully integrate ICT in schools to improve the relevance and quality of education.

However, these policies do not address issues like ICT-equipped classrooms, buildings, furniture, internet access, or technicians to maintain the systems. These gaps show that the ICT education policy is still limited to teaching computer subjects and is mainly focused on central government policies. Despite these challenges, the DOE and various NGOs and INGOs have supported public schools with computers, laptops, printers, and ICT training for teachers to help implement ICT in their subjects and improve education (Rana, 2018).

Teacher Competency Framework 2015 recognizes ICT as a key part of teaching and includes ICT skills as essential for teachers. The National Education Policy 2019 also focuses on improving school infrastructure and using educational technology. It aims to make ICT a core part of the education system and create a technology-friendly learning environment. And the latest policy is developed in order to enhance the quality and relevance of overall school education, School education sector plan (SESP) (2023-2030) designed strategies to manage the basic tools/devices of ICT and digital learning resources and develop the skills of the teachers and students in every school to enhance the use of the technology as an integral part of teaching and learning. In education, for example students and educators have to adopt the new learning environment, shifting from traditional classroom setting to digital equipped platform.

### **Methods and Materials**

This study adopts a qualitative case study research design to explore the access to and challenges of online learning materials among secondary-level students at Daneshwor Secondary School in Barakot Rural Municipality, Baitadi district, Nepal. A case study approach is particularly appropriate when the objective is to gain an in-depth understanding of a contemporary phenomenon within its real-life context, especially where the boundaries between the phenomenon and context are not clearly evident (Yin, 2018). Given the complex interplay of infrastructural constraints, socioeconomic conditions, migration dynamics, and institutional factors shaping online learning in rural Nepal, a qualitative case study enables a nuanced and context-sensitive analysis.

Qualitative research is well suited to capturing the lived experiences, perceptions, and coping strategies of students and teachers, which cannot be adequately understood through quantitative measures alone (Creswell & Poth, 2018). Rather than aiming for statistical generalization, this study seeks analytical generalization, where findings contribute to broader theoretical and policy discussions on digital divide and online education in resource-constrained settings.

## **Study Area**

The study was conducted at Daneshwor Secondary School, located in Barakot Rural Municipality of Baitadi district, in Nepal's Far-Western region (Sudurpashchim Province). The area is characterized by hilly terrain, dispersed settlements, and limited digital infrastructure. Although Barakot is relatively close to the district headquarters, access to stable internet connectivity remains limited. Most households rely on mobile data services, which are often expensive and unreliable, particularly during adverse weather conditions.

Livelihoods in the study area are predominantly agrarian, supplemented by seasonal and long-term migration, especially to India. Migration plays a significant role in shaping household income, caregiving arrangements, and educational support for children. These contextual characteristics make Daneshwor Secondary School a relevant and representative site for examining rural secondary education and digital access challenges in Nepal.

## **Participants and Sampling**

The study involved secondary-level students (Grades 9–12) and teachers currently teaching at Daneshwor Secondary School. A purposive sampling technique was employed to select participants who could provide rich and relevant information related to the research objectives (Patton, 2015). Participants were selected based on their direct experience with online learning materials during recent academic years.

The sample included:

- Secondary-level students from diverse socioeconomic backgrounds
- Teachers teaching English as a core subject
- School-level informants involved in academic planning and digital learning initiatives

Purposive sampling allowed the researcher to capture variation in experiences related to access to devices, internet connectivity, digital skills, and household support, thereby enhancing the depth and credibility of the findings.

## **Data Collection Methods**

Multiple qualitative data collection methods were used to ensure data triangulation, which enhances the trustworthiness of qualitative research (Denzin, 2012).

### **In-depth Interviews**

Semi-structured in-depth interviews were conducted with selected students and teachers. Interview guides were developed focusing on:

- Access to digital devices and internet services
- Experiences with online learning materials (videos, PDFs, online classes)
- Challenges related to connectivity, affordability, and digital literacy
- Teachers' preparedness and instructional practices
- Coping and adaptation strategies

Semi-structured interviews provided flexibility to probe emerging themes while maintaining consistency across participants (Kvale & Brinkmann, 2015).

### **Focus Group Discussions (FGDs)**

Focus group discussions were conducted with groups of students to explore shared experiences and collective perspectives on online learning. FGDs facilitated interaction among participants, allowing them to reflect on common challenges, peer support mechanisms, and inequalities within the classroom. This method was particularly useful in understanding how students negotiate access to online materials within households and communities.

### **Observation**

Non-participant observation was carried out within the school environment to examine:

- Availability of digital infrastructure (computers, internet facilities)
- Classroom practices related to the use of online or digital materials
- Teachers' interaction with digital tools

Observational data helped contextualize interview findings and provided insights into the everyday realities of teaching and learning practices (Merriam & Tisdell, 2016).

### **Document Review**

Relevant school documents were reviewed, including academic plans, digital learning guidelines,

and records related to ICT use. National policy documents related to digital education were also consulted to understand the broader policy context influencing school-level practices.

### **Data Analysis**

Data analysis followed a thematic analysis approach, which involves identifying, analyzing, and interpreting patterns within qualitative data (Braun & Clarke, 2006). Interviews and FGDs were transcribed verbatim, and field notes from observations were organized systematically.

The analysis proceeded through the following stages:

1. Familiarization with the data through repeated reading
2. Initial coding of meaningful segments related to access, challenges, and strategies
3. Grouping codes into broader themes such as infrastructure, affordability, digital literacy, migration influence, and coping mechanisms
4. Reviewing and refining themes to ensure coherence and relevance
5. Interpreting themes in relation to existing literature and the research objectives

This iterative process allowed for both inductive insights emerging from the data and deductive engagement with existing theoretical concepts such as the digital divide.

### **Ethical Considerations**

Ethical principles were strictly adhered to throughout the research process. Informed consent was obtained from all participants, and for student participants under 18 years of age, consent was obtained from guardians and school authorities. Participants were informed about the purpose of the study, voluntary participation, and their right to withdraw at any time.

Confidentiality and anonymity were ensured by using pseudonyms and omitting identifying information. Data were used solely for academic purposes, and care was taken to avoid any harm or discomfort to participants, in line with established ethical guidelines for educational research (BERA, 2018).

### **Limitations of the Study**

As a single case study, findings are context-specific and may not be statistically generalizable to all rural schools in Nepal. However, the insights generated provide valuable analytical understanding

of the challenges and opportunities associated with online learning in similar resource-constrained settings. Additionally, reliance on self-reported data may introduce subjective bias, which was mitigated through triangulation and observation.

## **Result and Discussion**

This section presents and discusses the findings of the study based on thematic analysis of interviews, focus group discussions, observations, and document review conducted at Daneshwor Secondary School, Barakot Baitadi. The findings are organized into major themes reflecting students' and teachers' lived experiences of accessing and using online learning materials in a rural secondary school context. The discussion situates these findings within the broader literature on digital divide, rural education, and online learning in Nepal and comparable developing contexts.

### **1. Access to Digital Devices and Internet Connectivity**

One of the most prominent findings of the study relates to unequal access to digital devices and reliable internet connectivity among secondary-level students. The majority of students reported that they did not own personal digital devices such as laptops or tablets. Instead, access to online learning materials was largely dependent on shared mobile phones within the household. In many cases, a single smartphone was shared among multiple family members, including siblings and parents, significantly limiting the time available for educational use.

Students highlighted that internet access relied almost exclusively on mobile data services, as Wi-Fi facilities were either unavailable or unreliable in the area. The cost of mobile data emerged as a major constraint, particularly for households with limited and irregular income. Several students reported that they could not regularly download videos, attend online classes, or access digital learning platforms due to data exhaustion. These findings resonate with national-level observations that the high cost of internet services remains a significant barrier to digital learning in rural Nepal (Kathmandu Post, 2020).

From a digital divide perspective, this form of access inequality reflects what scholars describe as first-level digital divide, where disparities in physical access to technology shape educational outcomes (Van Dijk, 2020). Although digital education policies in Nepal emphasize universal access, the findings demonstrate that infrastructural proximity to district centers does not necessarily translate into digital inclusion.

## **2. Quality and Reliability of Internet Services**

Beyond mere access, the quality and reliability of internet connectivity significantly affected students' engagement with online learning materials. Participants reported frequent network disruptions, slow internet speeds, and complete signal loss during adverse weather conditions. Such instability hindered synchronous learning activities such as live online classes and interactive sessions. Teachers noted that due to unreliable connectivity, they were reluctant to fully integrate online platforms into their teaching practices. Instead, they used digital materials selectively, often as supplementary resources rather than core instructional tools. This finding aligns with previous research indicating that poor internet quality discourages sustained pedagogical innovation in rural schools (Baral, 2022).

The issue of connectivity reliability highlights the second-level digital divide, where differences in the quality of access affect meaningful use of technology (Hargittai, 2002). Even when students technically have internet access, unstable connectivity undermines consistent participation and learning continuity.

## **3. Digital Literacy and Skills among Students and Teachers**

The study revealed considerable variation in digital literacy levels among both students and teachers. While some students demonstrated basic skills such as downloading files, using messaging apps, and accessing YouTube-based educational content, many struggled with navigating learning platforms, managing digital files, and using educational applications effectively. Teachers' digital competence also varied widely. Younger teachers and those with prior exposure to ICT training were relatively more confident in using online learning materials, whereas senior teachers often expressed discomfort and hesitation. Several teachers acknowledged that they had learned digital skills informally during the COVID-19 pandemic rather than through structured professional training.

This lack of systematic digital literacy training reflects broader challenges in Nepal's teacher development system. Studies have shown that limited institutional support and inadequate ICT-focused professional development constrain teachers' ability to effectively integrate technology into classroom practice (Bist, 2022). Consequently, online learning materials are often underutilized or used in ways that do not fully support pedagogical goals.

## **4. Socioeconomic Constraints and Household Context**

Socioeconomic conditions emerged as a critical factor shaping access to online learning materials. Students from economically disadvantaged households reported greater difficulties in affording

mobile data, repairing damaged devices, or purchasing additional digital tools. In some households, educational expenses competed with basic needs such as food, healthcare, and agricultural inputs. Household responsibilities also influenced students' engagement with online learning. Several students reported that they were expected to assist with domestic work or agricultural activities, particularly in households affected by adult labor migration. These responsibilities limited the time available for engaging with online materials, especially when access was already constrained. These findings echo existing literature on how poverty and household labor demands disproportionately affect rural students' educational opportunities in Nepal (Pherali, 2011). Online learning, rather than mitigating these inequalities, often amplifies them when supportive conditions are absent.

### **5. Migration and Its Influence on Online Learning Access**

The socio-economic dimension of migration between Nepal and India has been a long-standing and intergenerational phenomenon, particularly shaping the livelihoods of communities in Nepal's Far Western region (Bhatt, 2015). Over time, cross-border migration has evolved beyond a temporary coping mechanism and has become a structural livelihood strategy for a significant proportion of households in Sudurpaschim Province (Bhatt, 2025a). Due to limited local employment opportunities, persistent poverty, and inadequate access to public services, migration to India—especially to major urban centers—remains a dominant survival and income-generation strategy for the local population (Bhatt,2024).

Among Indian destinations, Delhi has emerged as the principal hub for migrants from Sudurpaschim, driven by factors such as employment availability, established migrant networks, cultural familiarity, and ease of cross-border mobility under the open-border arrangement between Nepal and India (Bhatt, 2025b). This entrenched pattern of migration has important implications beyond income and employment, extending into social and educational domains. In particular, migration has emerged as a significant contextual factor influencing students' access to online learning materials, as prolonged parental absence, unstable household arrangements, and fluctuating economic conditions directly affect digital access, supervision, and learning support at home. Thus, migration functions not only as an economic strategy but also as a critical socio-structural determinant shaping educational inequalities in migrant-sending regions of Nepal (Bhatt,2023). Many households in Barakot have at least one member working outside the community, primarily in India. While remittances sometimes provided financial support for education, migration also resulted in reduced parental supervision and emotional support. Students from migrant households often lived with grandparents or single parents who had limited digital literacy. As a result, these students received minimal guidance in

using online learning tools. In some cases, remittance income was insufficient or irregular, making investment in digital devices a low priority.

This finding highlights the complex relationship between migration and education. While migration can enhance household income, it may simultaneously weaken the social support structures necessary for effective engagement with online learning (Adhikari, 2014). The digital divide, therefore, intersects with migration-induced social vulnerability.

## **6. Teachers' Pedagogical Practices and Institutional Support**

The findings indicate that teachers at Daneshwor Secondary School primarily relied on traditional face-to-face teaching methods, with limited integration of online learning materials. Digital resources such as YouTube videos, PDFs, and online notes were occasionally used to supplement lessons, particularly in science and English subjects.

Teachers emphasized the lack of institutional support, including absence of school-level ICT infrastructure, limited training opportunities, and insufficient technical assistance. There were no dedicated ICT coordinators or systematic plans for digital integration at the school level.

These institutional constraints reflect a gap between national digital education policies and local implementation. While policy documents promote ICT integration, schools like Daneshwor lack the resources and capacity to operationalize these goals effectively. This mismatch has been widely documented in Nepal's education sector (Carney & Bista, 2009).

## **7. Coping Strategies and Local Adaptations**

Despite significant challenges, students and teachers demonstrated adaptive strategies to navigate digital constraints. Common coping mechanisms included:

- Sharing devices among peers and family members
- Downloading learning materials during periods of better connectivity
- Using offline resources such as stored videos and PDFs
- Peer-to-peer learning and informal support networks

Teachers adapted by combining traditional teaching with selective use of digital content, creating a form of blended learning suited to local realities. These practices reflect resilience and innovation at the grassroots level, even in the absence of formal support.

However, while these strategies enable partial access, they do not address underlying structural inequalities. Students with greater economic resources remain better positioned to benefit from online learning materials, reinforcing educational stratification.

## **8. Implications for Educational Equity**

Overall, the findings demonstrate that access to online learning materials at the secondary level in rural Nepal is shaped by an interplay of infrastructural, socioeconomic, institutional, and demographic factors. Rather than functioning as an equalizing force, online learning in this context often reproduces existing inequalities. The case of Daneshwor Secondary School illustrates that digital education initiatives must move beyond assumptions of universal access and address local constraints explicitly. Without targeted interventions, online learning risks becoming an additional layer of exclusion for already marginalized students.

### **Practice of Integration of Digital Technology in Classroom Activities**

The landscape of instruction has evolved from being teacher-centric to student-centric. A primary objective of modern technology is to actively engage students in language learning, motivating them to practically and realistically acquire English language skills. This is facilitated through open learning contexts that promote accessibility to subjects and information via modern technological means, encouraging students to communicate effectively with each other. Therefore, the quality of teaching and students' application of modern educational foundations would greatly benefit from a comprehensive adoption of digital tools to enhance overall communication proficiency. Schools and teachers have the responsibility to equip all students with these necessary skills to meet the educational demands of a rapidly changing world.

Dash (2022) discusses various technological elements used in English teaching and learning that introduce innovative techniques and ensure effective, high-quality teaching. Technological advancements across different fields have significantly influenced language classrooms, and English teachers should embrace these advancements to support their teaching and learning processes. This shift in teaching methods has been well-received by teachers, students, and parents alike, with students demonstrating increased enthusiasm and excitement for learning in this new approach. Güzera and Canera (2013) highlight blended learning as a widely recognized approach that integrates traditional classroom methods with technology-assisted learning environments. This approach aims to harness the strengths of both methods to create a positive learning environment that encourages student participation and social interaction through collaboration. As technological innovations

continue to evolve, education will increasingly blend with various technologies, necessitating careful planning and integration of face-to-face and online learning environments to maximize the benefits of this approach.

Khadka (2021) notes that the government of Nepal has authorized the integration of technology in school education to enhance quality and competitiveness in the global arena for both teachers and learners. Teachers play a pivotal role in implementing these policies effectively. However, some teachers' reluctance or limited use of internet, search engines, Zoom, and Google Docs may indicate a gap in their confidence and skills with modern educational tools. Enhancing teachers' proficiency, confidence, and skills in integrating these technical tools into their teaching is crucial for effective education delivery. Ghavifekr et al. (n.d.) emphasize the critical role of technology in classrooms to provide students with opportunities to learn. Despite challenges faced by teachers in the classroom, digital technology helps overcome barriers and facilitate interactive and student-oriented teaching and learning environments. There was active use of online resources in schools for teaching and learning purposes, especially during the pandemic. Teachers have undergone various training programs to update their technological skills and integrate them into classroom teaching, making teaching and learning more interactive and student-oriented. Risam (2019) underscores the importance of digital cultural records in the present-day 21st-century society, emphasizing their necessity in educational practices.

In conclusion, the integration of digital technology in English language teaching is pivotal for enhancing teaching effectiveness, student engagement, and overall educational quality. Embracing technological advancements and fostering digital literacy among teachers and students are essential steps toward preparing learners for success in an increasingly interconnected world.

### **Challenges while Implementing Online Learning Materials in the Classroom**

The government has recently initiated the integration of Information and Communication Technology (ICT) for pedagogical purposes in schools. While this policy is designed to enhance teaching and learning, its successful implementation largely depends on teachers' ability to adapt the technology to their specific classroom contexts. Effective integration requires teachers to formulate their own strategies and policies that align with both the curriculum and the needs of their students. Findings from interviews and classroom observations indicate that the most influential obstacles to ICT implementation in the classroom stem from the teachers themselves. Many educators, particularly those who have spent years relying on traditional tools such as blackboards, markers, and chalk,

face difficulties in immediately transitioning to modern, technology-supported teaching practices. This highlights the fact that policy directives alone are insufficient; the readiness of teachers, access of digital tools, proper electricity supply, reliable internet connection is crucial for successful ICT adoption.

One participant teacher (T1) reported that in their school, only two or three teachers use ICT for teaching but its not regular due to many constraints like, poor network, less reliable electricity, disconnection of data for internet and so many other reasons. Along with this, the reason for this limited usage was a lack of skills to operate the technology. This observation is consistent with Hinostroza (2018), who argues that the absence of ICT training, digital skills, motivation, and confidence among teachers significantly limits the potential of technology for pedagogical purposes.

Further, classroom observations revealed that a key demotivating factor in ICT use was teachers' lack of operational skills, knowledge, and confidence. Many expressed concerns about the possibility of technical failures during lessons, which created a reluctance to use ICT tools. In some cases, teachers sought assistance from students to operate the equipment, indicating a reversal of expected classroom roles and a lack of self-assurance in handling technology.

One participant student state that the number of students enrolled in the school is relatively small, yet even this limited population faces significant challenges in accessing online learning materials. One of the major issues is the lack of a stable and reliable internet connection. Internet services in rural areas are often inconsistent, with frequent disruptions and low bandwidth, making it difficult for students and teachers to use online resources effectively. Due to the absence of Wi-Fi facilities at school and at home, most students and teachers rely primarily on mobile data for searching information and conducting learning-related activities.

The use of mobile data, however, poses several challenges. First, mobile data is relatively expensive for students from low-income households, many of whom already struggle to meet basic educational expenses. When mobile data is activated, background applications on smartphones often update automatically, consuming a large portion of the data allowance within a short time. This results in rapid depletion of data packages, discouraging students from using the internet regularly for academic purposes.

Furthermore, the unrestricted nature of internet access through mobile devices increases the likelihood of students becoming distracted. Instead of using the internet solely for searching learning materials, students are often drawn to entertainment-based websites and applications such as social media platforms, online videos, and games. This diversion not only increases data consumption but

also reduces the effective time spent on academic learning. As a result, the educational potential of online learning materials is not fully utilized.

Overall, while globalization demands technologically skilled learners, rural secondary schools face structural, economic, and behavioral challenges that hinder effective access to online learning materials. Addressing issues such as affordable internet access, controlled data usage, digital awareness, and institutional support is essential to ensure that students can benefit meaningfully from online educational resources and compete in the global knowledge economy.

## **Conclusion and Policy Implications**

### **Conclusion**

This study examined the access to and challenges of online learning materials among secondary-level students at Daneshwor Secondary School in Barakot Rural Municipality, Baitadi district, Nepal. Using a qualitative case study approach, the research explored students' and teachers' lived experiences of digital learning within a resource-constrained rural context. The findings reveal that while online learning materials are increasingly recognized as valuable educational resources, their effective utilization in rural secondary schools remains limited by a combination of infrastructural, socioeconomic, institutional, and demographic factors.

The study found that access to online learning materials is uneven and largely dependent on household economic capacity. Limited availability of digital devices, reliance on costly and unreliable mobile internet services, and frequent network disruptions significantly constrain students' engagement with digital resources. These challenges are further compounded by low levels of digital literacy among both students and teachers, inadequate teacher training in ICT integration, and the absence of institutional support mechanisms at the school level. As a result, online learning materials are often used sporadically and primarily as supplementary tools rather than as integral components of teaching and learning processes.

Socioeconomic vulnerabilities and labor migration patterns in the study area also play a crucial role in shaping students' digital learning experiences. While migration can provide remittance income, it often reduces parental supervision and support, particularly in households where caregivers lack digital skills. This intersection of poverty, migration, and digital exclusion underscores the multifaceted nature of educational inequality in rural Nepal. The findings suggest that online learning, when introduced without adequate support structures, risks reinforcing existing disparities rather than promoting educational equity.

Despite these constraints, the study also highlights the resilience and adaptive capacity of students and teachers. Local coping strategies—such as device sharing, offline access to learning materials, peer support networks, and blended teaching approaches—demonstrate creative responses to digital limitations. However, these strategies remain insufficient to overcome structural barriers and cannot substitute for systematic policy interventions.

Overall, the case of Daneshwor Secondary School illustrates the gap between national digital education aspirations and local-level realities. Bridging this gap requires context-sensitive policies that recognize the specific challenges faced by rural schools and address both access and meaningful use of online learning materials.

### **Policy Implications**

The findings of this study have several important policy implications for strengthening equitable access to online learning materials in Nepal's secondary education system, particularly in rural and semi-remote areas. First, there is an urgent need to improve digital infrastructure in rural schools. Government and local authorities should prioritize the expansion of affordable and reliable internet connectivity, including the provision of school-based Wi-Fi facilities. Partnerships with telecommunications providers could help reduce data costs for educational use, ensuring that students are not excluded due to financial constraints.

Second, targeted support for digital devices is essential. Policies should consider subsidized or shared device schemes for students from economically disadvantaged households. School-level computer labs equipped with functional hardware can serve as common access points for students who lack personal devices at home.

Third, strengthening digital literacy and teacher capacity must be a central focus of digital education policy. Regular, structured professional development programs on ICT integration and digital pedagogy should be provided to secondary-level teachers, with particular attention to rural educators. Such training should be practical, continuous, and aligned with teachers' subject areas and classroom realities.

Fourth, digital education policies should explicitly address socioeconomic and migration-related vulnerabilities. Support mechanisms for students from migrant households—such as mentoring, school-based guidance, and flexible access to digital resources—can help mitigate the negative educational impacts of parental absence and limited household support.

Fifth, schools should be encouraged to adopt context-appropriate blended learning models that combine traditional face-to-face instruction with selective use of online materials. Rather than promoting fully online learning in resource-constrained settings, policy frameworks should emphasize flexible and incremental integration of digital resources tailored to local capacities.

Finally, effective coordination among federal, provincial, and local governments is crucial for translating digital education policies into practice. Local governments, in particular, can play a key role in assessing community needs, mobilizing resources, and supporting schools in developing locally relevant digital learning strategies.

In conclusion, promoting equitable access to online learning materials in Nepal's rural secondary schools requires more than technological provision alone. It demands a holistic approach that integrates infrastructure development, capacity building, socioeconomic support, and locally grounded implementation. By addressing these dimensions collectively, digital education can move closer to fulfilling its potential as a tool for inclusive and transformative learning in rural Nepal.

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