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Digital Colonialism and Inequalities in Remote Higher Education of Nepal: A Critical Case Study

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Abstract

The digital integration has rapidly been transforming higher education landscape in the age of artificial intelligence (AI). Guided from decolonial perspective, this study aims to explore the relevance of integrating digital tools in transforming remote higher education landscape, utilizing critical case study method. This study is grounded on qualitative research design. For this, we gathered empirical data using semi-structured interview questions from purposively selected fifteen research participants. The participants consisted of five university teachers and ten undergraduate students from three different remote higher education institutions of Kalikot district of Nepal. The data were then analyzed following Miles and Huberman's qualitative data abstraction method of thematic analysis which included data reduction (coding), data display (categorizing) and drawing conclusion (concept/theme development). The study revealed that although digitalization plays the transformative role in shaping higher education, it is unintentionally widening the structural inequalities and perpetuating digital colonialism in remote higher education. The findings are critical as they showcase exact realties of digital transformation in remote regions and give a way forward to the government authorities and policy makers to adopt equity-based digital strategies to enhance access, quality and inclusivity in Nepal's higher education landscape. Furthermore, the study offered some alternatives digital strategies such as Delayed tolerant Network (DTN), voice-based mobile telephony and local community radio to bridge the disparities and enhance teaching and learning.

Keywords: center-periphery, digital transformation, digitalization, inequality, marginalization and remote higher education institutions

1. Introduction

The application of digital technology has profoundly transformed several sectors of modern society including finance, government services, administrative processes and health sectors (Sharma & Giannakos, 2020). The wave of digitalization (internet) has even transformed the life of farmers as it provides information regarding: local weather forecasts, data on actual rainfall, information on prices at local market, treatment of animals' health and so on (Bon et al., 2022) which is vital for a good farming. Lately, the influence of digitalization in education is paramount. Digitalization has deeply begun to reshape the higher educational landscape globally, especially after the global COVID-19 pandemic. For example, the global pandemic period saw the significant expansion of digital infrastructure and digital content creation. Universities and educational institutions began investing online courses, digital academic resources, recorded lectures and online libraries to sustain learning (Adedoyin & Soykan, 2023).

After this incident, there has been a significant momentum in shifting face-to-face traditional mode of instruction to more flexible online or blended mode of learning environment in educational institutions. In particular, the integration of digital technologies in higher education institutions is now increasingly common across the world. Berners-Lee (2017) views that "the use of open access platforms such as World Wide Web [WWW] would allow everyone from everywhere to share information across geographical and cultural boundaries". Therefore, WWW is taken as the trans-geographical and trans-cultural means of digital learning tool, particularly in the higher education landscape across the globe. The introduction of WWW has opened up a new beginning for collaborative learning and creating a more equitable global-digital society. Recent integrative review of Lima et al. (2020) stresses the role of digital learning platforms in transforming higher education and conclude that digital learning tools are significantly working for internationalizing higher education by maintaining the global higher education standard.

It is significant to note that many developed countries are strategically using digitalization as a revolutionary tool for expanding educational opportunities to address the issues of equity, accessibility and inclusivity (Gottschalk & Weise, 2023; UNESCO, 2020). Furthermore, El Hajj and Harb (2023) sate that the shift of teaching and learning has necessarily opened up an avenue for enhanced learning experiences having been instrumental in promoting student-centered learning experiences. The integration of digital tools in language teaching and learning has provided the teacher to try out new teaching methodologies in new flexible environment. The initiatives to digitalize educational landscape, however, reflect the priorities of metropolitan questioning their relevance in decentered areas.

The least developed countries, particularly south Asia and sub-Saharan African countries, including Nepal are also influenced by the wave of digital transformation in education following the global COVID-19 pandemic. Notably, while digitalization offered learning opportunities for the students staying at home, paradoxically, it exposed a deep-rooted injustices and inequalities especially for the students in least developed and remote regions. Recent studies by Aristovnik et al. (2020) indicated the uneven participation of disadvantaged students' in higher education throughout the world. For instance, Aristovnik et al. (2020) conducted a large- scaled transnational survey form 62 countries during COVID-19 pandemic among 30,000 students and found that students from remotely located and marginalized communities were disproportionally affected by the shift to online learning. This disparity was primarily due to the lack of the availability and proportional distribution of digital resources between the metropolitan centered and decentered.

Similarly, Borg (2024) investigated the digital inequalities of the Global South and demonstrated how the lack of digital infrastructure and financial resources and institutional

support exclude the disadvantaged learners. Their findings suggested that such exclusion widens not only social and educational inequalities but also contribute to creating epistemic injustice to the students pushing them towards further marginalization. Likewise extensive study by Bon et al. (2022) sketch the melancholic picture about the distribution and access of digitalization of the people of Global south. The authors estimate that nearly three billion (half of the world population) are unconnected and systematically excluded from the digital society and are not included in the debates about the future of digital society. The authors argue that digital infrastructures are extremely centralized and concentrated in the handful of Global North countries. The distribution of technology is absolutely uneven which ultimately is intentionally or unintentionally perpetuating inequalities in Global South regions. More specifically, as the digital norms and regulations are *all* set in such countries, they are sidelining the entire Global South people and colonizing them through digital technology. This systematic colonization through digital technology is referred to as "digital coloniality" (Bon et al., 2022). In such critical situation, marginalization further deepens and it becomes extremely difficult to achieve a more equitable and inclusive global digital society. In a similar vein, another South African study by Mzangwa (2019) concluded that when access to digital technology is unevenly distributed to the marginalized university students, especially from historically poor economic backgrounds, they severely experience digital divide and evolving inequalities.

These studies suggest that the issue of integrating digital tools in education is further deepening the regional disparities between economically sustained regions and the regions which are still striving for economic sustainability. It is to be noted that the availability of digital resources is commonly associated with the western power structures which are intentionally or intentionally imposed on the Global South. Exotic and subaltern people of Global South who are culturally and digitally unaffected have always been consistently decentered from the global discourse of digital transformation for educational opportunities. Essentially, people with poor economic structures have little agency in shaping digital transformation.

There is a great disparity in utilizing the digital learning environment in Nepali context as most of the educational institutions of Nepal, are primarily located in metropolitan centers. These educational institutions were able to bridge the gap of educational disruption particularly in the COVID pandemic period. However, online learning in remotely located under-resourced higher education institutions faced a lot of challenges due to the lack of accessibility of digital infrastructure resulting into educational inequalities.

Attempts to restructure the Nepalese educational landscape through the use of Information and Communication Technology (ICT) and modern digital tools have increasingly been reflected at the policy level in response to the wave of globalization and digital transformation. One notable effort, for example, was the formulation of National Educational Policy-2019, which stressed the importance of ICT in delivering quality education and producing human capital who can contribute to societal transformation (Joshi et al., 2024; Ministry of Education Science and Technology, 2019) on this policy, the Digital Nepal Framework (DNF) was introduced in 2019 which aimed at utilizing digital technologies to achieve the Sustainable Development Goals (SDGs). DNF identified eight crucial areas of digitalization in education including the management of smart classrooms, promotion of open learning, strengthening Education Management System (EMIS) and using biometric attendance and CCTV. Despite these ambitious plans, the framework faced significant challenges related to access to digital sources and technical capacity during its implementation. Consequently, when these policies were operationalized in practice that further widened the educational inequality among the people with of few opportunities.

Similarly, the Fifteenth Plan (2019/20-2023/24) formulated the institutional policies to promote research and the use of digital technology such as nanotechnology to foster the culture of collaboration with higher education institutions and universities. It was a landmark imitative for digital transformation in higher education of Nepal (Commission, 2019). This plan particularly focused on alternative approaches of distance education which were previously initiated by Kathmandu University, Open Distance Learning Education Center (ODEC), Trihbuvan University (TU) and Open University. Nevertheless, it is significant to note that the benefits of distance learning predominantly benefited people from well-off regions leaving the marginalized communities further behind form the early phases of digital transformation (Ghimire et al., 2022).

A tangible and more recent effort on digital transformation, however, was made by the University Grant Commission (UGC), Nepal which has been expanding digital literacy programs introducing digital pedagogies and strengthening Web-based EMIS across Nepal's higher education institutions (University Grants Commission [UGC], 2022). As the apex regularity body for Nepal's higher education sector, UGC has aimed to enhance quality by complementing face-to-face mode of teaching with virtual learning through the use of digital technologies such as computers, online content and distance learning platforms. UGC's Operation Policy and Guidelines of Digitalization 2022, specifically seeks to reduce regional disparities and promote inclusion and accessibility to quality education by ensuring access to quality higher education for students from remote and disadvantaged locations. This is particularly important in the Nepali context where many higher education students are unable to attend the face-to-face classes during office hours due to their employment obligation. However, it can be argued that while fundamentally the goal of digitalization in Nepalese higher education was to reduce the injustices in quality education between the poor and well-off regions, it has ironically exacerbated inequality contributing to a widening "digital divide" (Ghimire et al., 2022; Van De Werfhorst et al., 2022).

There exists a sharp imbalance of digitalization opportunities in Nepal, as digital infrastructures are concentrated mostly in urban centers which perpetuates epistemic injustice to the teachers and students sidelining them from the dominant narratives of progress and innovation (Maldonado-Torres, 2007; Mignolo, 2011). It is important to note that the forceful immersion of online teaching with less or no preparation is continuing the injustices to the less privileged people. Justice can be enhanced only through the equitable distribution of digital resources. A recent study by Devkota (2021) on online and distance learning reported that more than half of the students in rural higher education institutions in Nepal faced difficulties in transitioning to online learning to face-to-face instruction during the pandemic due to the unstable internet connectivity and unaffordable digital devices.

The integration of digital tools in education has been expected to reduce the century-old disparity between the urban and rural area by promoting accessibility and quality education in higher education. However, since digitalization infrastructures are predominantly centered in urban and metropolitan areas, digitalization has deliberately sidelined the less accessed population pushing them into deeper marginalization and inequality (Ragnedda & Gladkova, 2020). From this perspective, the slogan of "equity and accessibility in higher education" largely remains only in words to those who are residing in geographically disadvantaged locations. Instead of bridging the regional disparities between urban and rural areas, digitalization continues to marginalize people of remote regions restricting them from quality education opportunities

Grounded on Maldonado-Torres' decolonial theoretical framework, this study is significant because it critically investigates how digital technology is being implemented in classroom delivery and how teachers and students in remote regions of Nepal experience and negotiate these practices. Although, as presented above, a substantial number of studies on

online learning and digital-divide have been conducted both nationally and internationally, there is a gap of notable qualitative-empirical studies focusing on language teachers' experiences and students' perceptions about digitalization in Nepal's remote higher education sector from decolonial perspective. Addressing this gap, the present study explores teachers' and students' experiences and perception of digitalization guided by the following key research question: *How do digital coloniality and digital inequalities shape teaching and learning experiences in remote higher education institutions in Nepal?*

2. Methods

Guided by the ontological assumption of multiple realities of a single case and driven by the qualitative interpretive research design, this study adopted a critical case study method which provides narrative accounts to deeply understand and describe the case of digital access, its enhanced quality and opportunities among ELT teachers and under-graduate students studying in remote higher education institutions of Nepal. Multiple realities of a single case under investigation are explored in naturalistic setting in interpretive research design. A case study method is focused on a single case unit under special focus for multiple times which is not perfectly representative of the total population (Gerring, 2006).

Therefore, a critical case study is diachronically conducted and is based on more than observations where an observer may have a critical examination with-in case unit over time rather than at a single point in time till the information is fully triangulated. Case studies are aimed to systematically developing the pattern of behavior and improve the functioning of an organization without the significant intervention of the investigators (Fidel, 1984). Drawing insights from Skinner's work, Fidel (1984) further explains that case study research is so intensive that it emphasizes more on comprehensive examination of single behaviour rather than surficial observation of many behaviours at a time. Hence a case study is a comprehensive and empirical examination of a contemporary behivour/phenomenon conducted on one or few cases where evidences are gathered in naturalistic setting or real life context (Yin, 2009) and usually carried out to critically examine the system and power. Moreover, it is done to explore institutional practice, accelerate action and bring changes in the existing situation.

Similarly, Woodside (2010) mentions that a case study research is normally carried on single unfit (n=1) to describe, understand, predict and/or control the individual process, person, organization, group, industry, culture or nationality from multiple perspectives to find the uniqueness. Stake (1995) and Tellis (1997) have provided the methodological guidelines for undertaking the case study research. They have jointly identified six sources of evidence (data) collection for the case study which include: a) interviews, b) documents, c) archival records, d) direct observation, e) participant observation and f) physical artifacts. In addition, Wolcott (1994) provides three E's techniques of data collection for qualitative (case/ethnographic) research: Experiencing (participant observation), Enquiring (interviewing), and Examining (studying documents).

Informed by decolonial theoretical framework, this critical case study seeks to uncover the experiences of digital exclusion and inequality among the teachers and students in marginalized settings, To critique systematically on "systematic and structural inequalities in digitalization in remotely located Higher Education Institutions in Nepal" with empirical data, we employed semi-structured interview as a primary research tool to gather evidence from the participants to critique with empirical evidence. Interview method was subsequently followed by participant observation, document analysis and the study of physical artifacts to ensure data triangulation maintained in the offices. Theoretically, we were guided by *etic perspective* while collecting evidences in natural setting from 'bird-eye view' as 'non-participant'.

Earlier, we set the case boundaries such as selecting place, participant, determining timeframe and deciding scope to gather empirical data. The study was conducted among 15 participants in Kalikot district of Karnali province. Five university teachers and ten under-graduated students who experiences in involving in online and blended instruction were purposively selected for the study. It is to be noted that Kalikot is the district of geographical barriers with limited access of ICT tools and digital infrastructure due to which people are deprived of educational progress and digital equity in higher education settings. The study was extended for over nearly one and half month time frame starting from August 05 to September 20, 2025.

The scope of the study was de-limited to understand the perception and use of digital tools in teaching, their distribution and accessibility, and students' outcome. Primarily, we used open-ended interview questions to capture in-depth perceptions and experiences form the study participants. For this purpose, we designed the open-ended questions to directly focus on key issues research questions such as: the experience with digital tools, perception of accessibility, quality, inclusivity, challenges and resistance on digitalization in Higher Education Institution's. Besides, the use of direct observation, document analysis and physical artifacts enabled me supplementary information to understand the official digital education situation such as UGC policies, government policies/DNF framework, schools ICT plans, digital and teaching/training materials. Unlike in the phenomenological method, which uses interview as the key source of data, case study research applies multiple sources. However, not all sources are equally relevant for all the case studies (Yin, 1999). Furthermore, phenomenological study is often conducted on broad and universal ideas while a case study is focused on a deep, holistic and contextual understanding of a complex issue with in a broad idea.

3. Data Analysis

We employed the inductive thematic data analysis method while analyzing the unstructured qualitative data. Thematic analysis is driven by the inductive method of data analysis. In an inductive method of data analysis, data remain as precise content and then move to broader generalization and finally to a theory (Patton, 1990). Therefore, the goal of inductive thematic data analysis is to organize and interpret the data to find patterns and uncover hidden meaning (Creswell & Poth, 2018) and deduce a general understanding of a case or phenomenon being investigated. Similarly, Rawlings et al. (2017) argue that thematic data analysis is appropriate when the researcher aims to examine the data in order to discover the common themes and thought from more than one participants. The data gained from the participants' diverse statements enables the researcher to gain a clear and logical connection of the participant's thoughts and convey their experience. In the same way thematic analysis Namey et al. (2008) entails that the fundamental aim of thematic analysis is to gain insight and discover relationship between the diverse data and to compare the relative frequencies of themes or topics with in a data set, looking for code-occurrence or graphically displaying code relationship.

Most specifically, we used Miles and Huberman's data reduction method of thematic analysis which included data reduction (coding), data display (categorizing) and drawing conclusion (concept/theme development). Data reduction is breaking down the data into smaller segments or codes through comparing and contrasting and organizing in meaningful pattern. More technically, "Data reduction is a form of analysis that sharpen, sorts, focuses, discard and organizes data in such a way that 'final' conclusion can be drawn" (Miles, 1994). The data reduction is to develop codes from the participants' responses. Coding allows the researcher to review the whole of data by identifying its most significant meaning or coding

informs the researcher what the data is trying to say (Coffey & Atkinson, 1996; King et al., 1994; Miles, 1994).

Informed by the methodological guidelines of data reduction, we read, highlighted, specified and transferred the data into a coherent form to develop them into meaningful patterns (codes), keeping the research questions in consideration. We validated the codes based on the feedback of an outside-reviewer. Miles (1994) entails that codes validation by an out sider-independent reviewer is very essential because validation enables the researcher to compare his codes with that of the reviewer and gain more validity of coding. Validity of coding leads to "build reliability in themes" (Hosmer, 2008). After reducing the data into 'codes', we moved to the second step of Miles and Huberman's thematic analysis. It was called 'data display'. Data display is "organized compressed assembly of information" (Miles, 1994). We displayed the codes in terms of their characteristics (e.g. similarities, differences, interrelationship, and grouping). This process enabled us to arrange the concepts and thought and make a conceptual cluster for further analysis. This step of data display, finally led us to a draw conclusion by identifying the interrelations among variables and building conceptual coherence.

During field work or data analysis process, we strongly acknowledged ethical consideration because maintaining ethical standards and moral principles is very critical in the research process, particularly when gathering information from participants in the field. Before field work, we obtained consent form the participants which is of paramount importance in qualitative research. Flick (2010) emphasizes the importance of considering participants' viewpoints in research, and we fully maintained the ethical considerations and protected confidentiality while planning and conducting this research. During data analysis and report writing, each participant was assigned pseudonyms to safeguard the participants' anonymity.

4. Results and Discussion

4.1 Spatial-Temporal Digital Inequalities in Remote

The dominant narrative of transformation is that it ensures the access to quality-higher education opportunity and enhance teaching even for the historically marginalized communities by breaking the geographical barriers. Therefore, digitalization is perceived as the most effective means to end century-long regional hierarchies in education and fostering equitable society. Nevertheless, the empirical findings of the study revealed a paradoxical relationship between digital transformation and digital access in remote higher education institutions. Digital transformation is assumed to promote equity, it is paradoxically reproducing exclusion in remote higher education institutions. The worrying aspect is that the global digital transformation is significantly reducing the participation of marginalized communities in digital learning platforms even in the age of artificial intelligence (AI). Reduced participation ultimately leads to digital exclusion in higher education settings among the teachers and students in marginalized settings. Additionally, the study revealed the fact that access to network connectivity was strictly limited among both teachers and students. This finding aligns with Devkota (2021) who demonstrated the displacement and disengagement of students due to the closure of universities during COVID-19 pandemic. Despite availability of basic digital tools (e.g. mobiles, tablets and computers), students, especially from remote regions were digitally disconnected and completely excluded formal learning spaces, pushing remote higher education institutions to marginalization. Indicating to the digital exclusion and deprivation from the recent technological transformation in higher education, one participant teacher shared his nostalgic experience as:

> *Any new development occurs late in our 'Karnali of Karnali'. Same is happening the case of digitalization. COVID pandemic period was a landmark stage for digital*

transformation, especially in teaching and learning but the students of our exotic region were deprived of online learning due to the closure of educational institutions. 4G internet service wasn't available. We did not knwo about digital learning platforms, as a result, we were totally ignorant about digital teaching and learning. Now, the area is connected with national electricity transmission line and 4G service is available, though electricity is not stable. (T1, personal communication on September 05, 2025)

Another teacher teaching in a campus of semi-urban area (Kalikot district headquarter) resorted as:

Each teacher and student has smart phones, even laptops. When we try to join virtually and talk to course materials, our virtual connection gets disturbed unprecedentedly and our communication breaks down indefinitely due to poor network connection. (T2, personal communication on September 05, 2025)

In a similar vein, a bachelor- graduated female participant student remarked:

Learning through digital tools is obviously the matter of privilege to the students like us. They are convenient for sharing our project works, assignments through Email, Messengers and WhatsApps digital platform. Learning through was largely unsuccessful due to unstable internet connectivity and digital skills. I felt nervous while trying to join the online class. (S1, personal communication on September 06, 2025)

Next participant teacher having experience of teaching in a 10+2 college at Nepalgunj Sub-metropolitan city; and now teaching in TU affiliated-community campus located in remote village of Kalikot district, narrated about the unequal access of digitalization in higher education as:

Although today's children are digitally 'natives', comparatively, students in city areas like Nepalgunj and Kathmandu are better skilled with digital devices than those in remote regions like this. This is mainly due to unequal access to reliable and affordable internet. Digital tools are basic learning tools for urban students; they remain a luxury for poor and remote areas students.

Despite the widely acknowledged benefits of digital learning, the thematic analysis of data signaled the deep-rooted structural injustices and persistent center-periphery disparities within higher education landscape of Nepal. The finding clearly demonstrated that spatial and temporal inequality are structurally shaping unequal access to digital higher education in Nepal. There is a systematic pattern of inequality, based on geographical location and timing of technological diffusion. Spatial inequality is explicitly marginalizing the geographically remote students by limiting their access to the basic digital infrastructure for pedagogical transformation. Besides, temporal inequality, which is often not overtly seen but it is seriously exacerbating injustice in digital learning reach to the students of exotic regions. It is to be noted that temporal inequality occurs when the access of digital tools reaches to the 'center' first and gradually transfer to the 'periphery' regions later. This tendency of spatial and temporal inequalities in not accidental but reflect the deep-rooted colonial structures as Maldonado-Torres' (2007) theoretical framework also argues that such colonial structures perpetuate ontological exclusion, positioning the learners of remote regions as digitally deficient and delayed subject of modernity.

Previous research findings have also consistently documented the early-stage technological familiarization and geographical accessibility as the crucial factors shaping digital competence (Hilbert, 2016; Warschauer, 2004). Fundamentally, these studies focus on the early shift to technological integration and diffusion into communities, institutions and societies for equity based-social inclusion. Warschauer (2004) further argued that strengthening people's digital ability is more important than making physical availability of

computers to engage in meaningful social practices. From a capability perspective, the limited access of digital infrastructures may reflect deprivation of *capabilities*, restricting the real freedom of opportunities to use digital tools for meaningful social inclusion in teaching and learning (Sen, 1999).

Therefore, the geographical remoteness and often delayed diffusion have reinforced structural and epistemic injustices. Furthermore, the caste-based stratification even within remote region have collectively subjected to technological disparities in remote higher educational institutions. Such disparities have enforced social injustice and digital exclusion. Both the teachers and students involved in teaching and learning were found to have limited digital competence, as a result of this, technological anxiety persisted while using digital learning tools. Additionally, center-periphery division can be overtly observed in terms of ' hierarchy of needs'. The students of periphery or remote viewed digital tools as the tools of luxury while the same technological tools for the students of center or city area remain as 'basic educational needs'. Besides, there is stratification and historically-rooted inequalities based on the caste, class, gender, ethnicity and linguistic background within the peripheral communities (Devkota, 2021).

4.2 Epistemic Injustice and Digital Coloniality

The common hypothesis regarding digital learning platforms is that it enhances justice, promotes inclusivity and ensures representation in higher education opportunities. Additionally, digitalization creates an equitable inclusive society. Similarly, digital tools such as Facebook, Messenger, WhatsApp and other virtual learning platforms such as Google Meet, Zoom clouds and e-Library address the cross-cutting issue of inclusivity in higher education landscape. However, the results drawn for the inductive thematic analysis of the data demonstrated the deep-rooted linear-epistemic injustice to continue in the decolonial-contemporary society. This finding aligns with the case study of Jere et al. (2025) from four African countries namely: Zimbabwe, South Africa, Botswana and Namibia regarding digital coloniality. The authors documented that the historical colonial past still influences the access to digital infrastructure despite the declaration of independence as profit-driven digital programs always target towns where people can afford such services. Similarly, Bon et al. (2022) declared the digital colonially of *white*. The authors viewed that white people develop highly advanced-digital technologies as the private-corporate to intentionally influence non-whites and Asian faces in the name of "Free Internet Connective. However, there is hidden motive guided by making profit and imposing digital coloniality under the soft–shadow of globalization and mutual-operation.

This study also revealed a clear hegemony of digital imperialism in terms of the development/ production, transmission, distribution and consumption of technological knowledge and skill in center-periphery dimensions. One of the student participants expressed his inferiority in digital knowledge skills as:

> *Unlike in city colleges, we rarely get opportunity to work with ICT tools. Urban students are more confident with digital tools they have better English proficiency, But we lack that knowledge and skills required for digital learning. So, digitalization has become a privilege for city campuses, not for us. (S1, personal communication on September 7, 2025)*

The technological development emerges in 'center' and decentralize gradually to the 'periphery' areas in the form of digital coloniality. Comparatively, marginalized and digitally deprived students' need more access of digital learning platform for inclusive learning environment. Nevertheless, digitalization is unevenly distributed, prioritizing the urban locations. Furthermore, digitalization policies are formulated without understanding complexities of 'exotic remote regions'. Teachers and students voices from remote regions is

often unheard or underrated in policy formulation process and national educational discourse as Spivak (2023) critically argued that subalterns' voices are rarely addressed and meaningfully represented in policy formation. Although the present digital policies claim inclusivity, there is a vast difference between formation of the digital policies and its exact implementation. The following representative quotes of teacher and student participants justify the arguments.

> *The policies formulated in Kathmandu and they are forcefully implemented in the places like ours. We just follow whatever they set, even if it doesn't work here. Who speaks for us and takes our problem seriously? (T3, personal communication on September 7, 2025)*
>
> *The digital platforms are far from us. We do not have opportunity to practice them. We are automatically pushed out from digital learning opportunity. (S2, personal communication on September 8, 2025)*

The finding indicated a tangible form of epistemic injustice manifested through the imperial power of English language which is directly associated to digital pedagogical practices. Epistemic injustices persist when marginalized groups are inadequately conceptualized or ill-understood or disrespected because of geographical origin and social status (Fricker, 2007).

Digital knowledge and skills are closely linked to the proficiency in English and other dominant colonial languages such as French or Spanish. It is significant to note that English is the preferred language in the field of digital technology. Therefore, city-people are structurally proficient in handling digital tools due to greater exposure to digital tools and English-medium culture and background. Conversely, the people of exotic remote regions are mostly unaffected by modern language and culture. As a result, this pace of digital teaching and learning may differ significantly. Moreover, highlighting the intrinsic significance and consequence of English, Tochon (2019) also noted that the global hegemony of English as a lingua franca and its immense top-down imposition in education has become a threat in pluralist world, dehumanizing the linguistic minorities. From a critical and decolonial perspective, perceiving English as the linguistic capital for potential career opportunity and its direct association to digitalization is rising serious issue of digital inclusivity among digitally disadvantaged groups because English is taken as the key indicator of quality in education and English proficiency is an invaluable tool for future success (Poudel et al., 2022). As a result of this linguistic hierarchies, disproportionately disadvantaged students from the marginalized communities are digitally excluded from learning opportunities. Therefore, the finding of the study revealed the fact that superiority of colonial knowledge and enforcement of colonial English language is critically excluding and dehumanizing remote communities (Maldonado-Torres, 2007) from meaningful engagement in digital learning. This exclusion of digital learning is ultimately reproducing colonial power relation in predictable ways.

Furthermore, the mere importation of western, digital learning policies and attempt to forceful implementation uncritically, without understanding social-economic status and sufficient technological preparedness and educational and cultural background of remote regions is adding another layer of social injustice is intentionally widening the pattern of marginalizing students from the main stream of education. From this prospective, it can be argued that, digital knowledge is a dehumanizing tool for marginalized communities, reinforcing injustice rather than as the means of addressing inclusivity in higher educational landscape. As a result of this, they are gradually being sidelined from higher-education opportunity.

4.3 Digital Competency and Readiness

Digital competency is concerned with how the teachers and students are able to handle digital tools effectively. This dimension ensures quality in digital learning. The study demonstrates the fact that both the teachers and students in remote higher education institutions were not digitally competent. Most of the students were completely unknown about the real time- synchronic digital learning platforms such as Google classrooms, Zooms clouds, Hangouts and MS Teams. However, some of the students residing in bazaar areas shared their painful experiences of while trying to join online classes during the time of school closures in COVID-19 pandemic. Nevertheless, the wave of digitalization has brought them at least into contact of digital social media such as YouTube, Messenger, WhatsApp, and Tik Tok basically for watching videos and chatting with friends and relatives and entertainment purposes. When the Wi-Fi service is available, they were found to download the videos of their interests to watch them when not connected with the Wi-Fi. Furthermore, teacher participants' shared the painful stories of their competency and preparedness of for digital teaching. Some representative quotes of the participants are as follow.

> *We were instructed to take online class from the university during pandemic despite any readiness. As I tried to learn watching the videos on YouTube about online class, it was very difficult for me to do so due to technical knowledge. I myself was scared of learning management systems. But after the pandemic, online teaching lost its relevance in our context. (T5, personal communication on September 9, 2025)*
>
> *Although we had 24 hours Wi-Fi service in my home. I was not aware of digital learning platforms during pandemic. Since our college did not start classes, I used the internet only for chatting with friends and watching videos. (S2, personal communication on October 6, 2025)*

Of course, digital learning platforms offer significant benefits to both teachers and students in higher education. First, digital learning platforms have potential to promote quality education irrespective of the students' geographical locations, gender, caste, ethnicity and religion. It is especially important for students even form disadvantaged and marginalized communities and get excellent opportunities to take classes by internationally recognized educators through online learning platforms, which is absolutely impossible in traditional face-to-face educational settings. This finding is also supported by Adedoyin and Soykan (2023) who viewed that digital learning platforms have been providing unprecedented access to disadvantaged and marginalized communities who were unable to global academic resources. Moreover, digital tools are equally beneficial to the teachers as they may have opportunity to update their teaching skills at their own pace and time. Furthermore, integration of digital technology in education also enables teachers and educators creates opportunities for online training, collaborative research and experiment diverse instructional strategies such as flipped classroom to enhance teaching and student engagement.

Acknowledging the global wave of digitalization and recognizing the potential benefits associated with digital tools for universal quality higher education, University Grant Commission [UGC] Nepal, a statutory body under Government of Nepal had imitated efforts to reform and transform HEIs through digitalization. These initiatives aim to expand the excess of higher education opportunity especially for disadvantaged and disaster affected communities. To achieve the goals Nurturing Excellence in Higher Education Program [NEHEP]- 2021-2030 has been implemented with the core reform agenda of digitalization (Commission, 2022). This program aims to promote accessibility and inclusivity in higher education enhancing quality, especially for disadvantaged, remote or marginalized groups by enabling online/blended learning. Furthermore, these national efforts align with United

Nations' Sustainable Development Goals [SDGs]-2015-2030 particular Goal no 4 which envisions to provide inclusive, equitable, affordable technical and vocational education to university students. However, the data revealed that despite the well-formulation of digital policies, digital development is not progressing as such, particularly in remote regions of Nepal. Teachers/students digital competency/literacy and digital preparedness are hampering in quality participation and engagement of both teachers and students in digital learning environments.

4.4 Resistance and Local adaptive Digital Strategies

As discussed in earlier section, language plays a dominant role in shaping digital transformation in marginalized settings, promoting inclusive digital pedagogy. Due to the hegemonic influence of English in digital learning, people of remote location are sidelining from educational opportunity. It is important to decolonize the hegemonic linguistic aggression, knowledge and policies (Macedo, 2019). Minimizing language hegemony is critical for digital transformation. In this regard, digital tools must be simple and user-friendly. Digital tools developed based on students' convenient language reduces digital anxiety and promotes participation and engagement in teaching and learning. The data from the field work affirms these claims, for example, one faculty participant in remotely located college within the district remarked as:

> *Language is the problem both in face to face and digital instruction in our colleges, though digital learning is far beyond. Students from diverse ethnic backgrounds come for higher education, with no or very less proficiency in English. (T7, personal communication on September 10, 2025)*

The data revealed that there is communication difficulties in digital learning platforms largely due to language barrier. The findings indicated need of incorporating students' familiar language, possibly students' home language students in digital learning software. This is the strategy of resisting western linguistic hegemony. Digital software developers should therefore consider on the alternative way of integrating multiple languages to accommodate linguistically diverse students while designing and developing digital platforms. Incorporation of students' familiar language can enhance comprehension and promote inclusivity in digital learning, on the one hand, and more importantly, this takeaway resists the hegemony of dominant language, on the other.

Another strategy of digital resistance is through the adoption of alternative to synchronous, real time online learning. The findings revealed that both the university teachers and students in remote region compensated real time synchronous teaching substituting by delayed asynchronous digital learning tools to suit local infrastructural realities. Expressing this situation, an undergraduate student viewed as:

> *We don't have the access of digital learning platforms such as zoom clouds for face-to- face real time learning. Our campus uses WhatsApp and Messenger groups to share information about exam routine and admission notice. Moreover, some of teachers share their class notes through social media. (S3, personal communication on September 3, 2025)*

The data demonstrated that remotely located higher education institutions are mediating the real time learning through the use social media. The use of social media has emerged as effective alternative pedagogical strategies for digital learning in marginalized settings. Similarly, as an attempt to leverage digital exclusion, Abdeljabar et al. (2025) suggested Delayed Tolerant Networking (DTN) approach to connect towns and villages. This approach assumes that DTN can address infrastructural scarcity in remote region by

transporting digital data regularly through vehicles such as buses and trucks which travel between city and rural areas regularly. This system is powerful and effective because it connects remote educational institutions and promotes digital inclusion. It is to note that DTN system remains as a reliable alternative, affordable and sustainable solution of digital connectivity in geographically disadvantaged areas despite having shortcoming of delayed communications. Besides, the initiative to establish a national broadband secretary body with statutory mechanism could be an effective to in designing and implementing the satellite and cellular broadband internet service policy to the alleviate the lack of internet access because of the lack of electricity (Jere et al., 2025). Satellite and cellular broadband internet services are considered to be more feasible and cheaper options for ensuring digital access and inclusivity. Additionally, the establishment of voice-based mobile telephony and local community radio can be other effective alternative strategies in low-resource environment. These local technologies are vital especially for local farmers since such digital technologies are very useful for sharing the information about local weather forecasts, data on actual rainfall, information on the prices of local market.in local languages (Bon et. al., 2022). At the same time, such alternative technologies can be effective integrated in an innovative way in teaching and learning to the students of marginalized and disadvantaged groups,

5. Conclusion

Initially, the integration of digital tools in remote HEIs in Nepal was viewed as the transformative initiative to enhance the teaching and learning through digital technology. Its primary purpose was to end long-standing regional and social disparity especially in higher education by promoting access and inclusivity to digital pedagogy. However, the findings of this study reveal that the uncritical immersion of digital technology without adequate preparedness has reinforced disparities and exacerbated deeper injustice to students and teachers in remote regions. More specifically, the incorporation of digital technology has paradoxically emerged as a new layer of socio-techno injustice to the people who have already been marginalized due to geographical complication, single-language domination and social exclusion. This newly emerged layer of injustice is ultimately widening the center-periphery disparity under the gauge of digital transformation.

Several interrelated factors shape digital disparities: First, geographical remoteness with delayed diffusion of technology is structurally producing both spatial and temporal disparities in remote regions. Secondly, colonial legacy of linguistic hegemony is another critical barrier for digital transformation, as unknown or unfamiliar language is crating anxiety and exclusion among the students in digital learning environments. Moreover, the center-focused digital policies, largely designed with the preference of center is shaping digital disparities of remote regions' HEIs.

Addressing these challenges are very crucial to reshape the remote higher education through digital technologies. To address these challenges, the governing bodies must re-consider on the policy formulation based on equity-based digitalization policies rather than on 'equality-based digitalization model'. In addition, learners' familiar language in digital platform can address the digital barrier due to linguistic hegemony. Additionally, the governing bodies must explore alternative digital strategies which a have been already successful in adjoining center-periphery disparity. For example, the Delayed Tolerant Network (DTN) approach which is already being applied such as in Bangladesh other south East Asian countries, could be an affordable, sustainable and effective connectivity strategy in transforming remote regions digitally despite its delayed version. Moreover, satellite based cellular technology can leverage the challenges of internet caused by the lack of electricity. These alternatives, in turns, will collectively ensure digital justice, strength access and

inclusivity and more specifically, challenge digital imperialism within Nepal's remote-higher education landscape

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