Surkhet Journal
[A Peer-Reviewed, Open-Access, Indexed in NepJOL, DOI, Multidisciplinary Journal]
ISSN 2362-1230 (Print)
Published by the Research Management Cell (RMC)
Surkhet Multiple Campus, Birendranagar, Surkhet
Tribhuvan University
DOI:

Issues and Challenges of ICT Use in Government and Non-government Schools: A Study on ICT Intergration in the Teaching-Learning Process in Surkhet District

Received on 18 July, 2025; Accepted on 31 July, 2025; Published on November, 2025

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Abstract

This study explores the issues and challenges associated with the integration of Information and Communication Technology (ICT) in both government and non-government schools in Nepal. With the increasing emphasis on digital education, ICT has become a crucial component for enhancing teaching-learning processes and bridging educational gaps. Despite the government's efforts to promote ICT in schools, disparities in implementation persist, particularly between public and private institutions. Using a mixed-methods approach, data were collected from 14 secondary schools; seven governments and seven non-governments, through surveys and interviews with headteachers and ICT teachers. The findings reveal that non-government schools have better ICT infrastructure, trained personnel, administrative support, and student access compared to their government counterparts. Government schools face multiple challenges such as insufficient devices, lack of training, poor internet connectivity, inadequate maintenance, and limited policy enforcement. Attitudinal resistance, language barriers, and socio-cultural factors further hinder effective ICT integration. The study concludes that while ICT has the potential to transform education, a coordinated approach

involving infrastructure development, teacher capacity building, localized content creation, and strong policy support is essential. These findings offer valuable insights for educational policymakers, school administrators, and stakeholders aiming to promote equitable and effective ICT implementation across all types of schools in Nepal.

***Keywords*:** Digital divide, educational technology, government, ICT in education, Nepalese school system, teacher training

Introduction

Information and Communication Technology (ICT) refers to digital tools and systems including computers, multimedia devices, internet connectivity, and software applications that facilitate the creation, storage, access, and exchange of information. In the context of education, ICT enables interactive learning, fosters digital literacy, and situates classrooms within global knowledge networks. Globally, educational institutions rely on ICT to enrich teaching–learning experiences and expand access to quality education, particularly in developing countries (Joshi & Khatiwada, 2024; Tripathi, 2024) educational equity and quality. However, persistent challenges such as inadequate infrastructure, limited internet connectivity, insufficient teacher training, and weak policy implementation continue to impede effective ICT utilization. Moreover, teachers in community and rural schools report barriers like erratic electricity, lack of maintenance, and limited financial resources that further hinder integration (Paudel, 2022). These systemic issues are compounded by disparities in socio-economic status, school type, and local government support, resulting in a pronounced digital divide between public and private institutions (Tripathi, 2024; Joshi & Khatiwada, 2024).

Information and Communication Technology (ICT) in education encompasses digital tools such as computers, internet connectivity, multimedia equipment, and educational software that facilitate teaching, learning, administration, and communication (Ojha, 2023). In Nepal, formal efforts to introduce ICT into schools began with the inclusion of ICT components in the National Curriculum Framework (NCF) in 2005 and 2007, which mandated ICT both as a subject and as a tool to support instruction across disciplines (MoES, 2007).

Substantive policy activity followed with the ICT in Education Master Plan (2013–2017), which emphasized infrastructure development including computer labs, internet access, and smart classrooms especially in disadvantaged and rural

schools (Education Profiles, 2024). Parallel initiatives included the One Laptop Per Child (OLPC) pilot launched in 2008, and implementation of shared "Lab Model" computer provision, enabling low-cost access to ICT for students in participating schools (Education Profiles, 2024; OLE Nepal, 2012).

NGOs played a critical complementary role: Open Learning Exchange Nepal (OLE Nepal) began operations in 2007, partnered with the Ministry of Education to deliver laptops, locally developed digital content (e-Paath, e-Pustakalaya), and teacher training in dozens of schools across multiple districts (OLE Nepal, 2007–ongoing). Meanwhile, the Nepal Wireless Networking Project, led by Mahabir Pun, connected remote communities to the internet via community-based Wi-Fi systems starting in the early 2000s, enabling rural schools to access online resources (Pun, 2002–2008).

Despite these policy frameworks and partnerships, implementation has lagged significantly especially in public schools due to inadequate infrastructure, limited teacher competency, outdated curriculum, and a persistent gap between policy goals and reality (Ojha, 2023; Joshi & Khatiwada, 2024). Current initiatives like the Digital Nepal Framework, School Sector Development Plans (SSDP), and renewed national ICT policies continue to strive toward widespread access and equity, yet challenges remain in scaling and sustaining ICT in Nepal's education system (Tripathi, 2024)

Challenges of ICT Use in Schools

The use of ICT in schools is often hindered by various barriers that limit its effective integration into teaching and learning. These challenges impact both teachers' capacity and students' access to digital resources. The major challenges of ICT use in schools in the study area are as follows:

Lack of Training

A significant barrier to effective ICT integration in Nepalese schools is the lack of professional training, especially among teachers. In one study, nearly all respondents highlighted inadequate ICT-focused training as a primary obstacle, citing low digital competence and pedagogical readiness (Parajuli & Koirala, 2021, https://doi.org/10.3126/jmcrj.v10i01.51301). Without targeted, subject-specific ICT instruction; particularly in community and rural schools, teachers struggle to effectively integrate technology into teaching methods. This deficiency undermines

their confidence and willingness to adopt ICT tools in classrooms. Enhancing in-service and pre-service training, including hands-on workshops, mentoring, and regular refresher courses, is essential to empower educators with both technical and pedagogical competence.

Insufficient Devices

Limited access to ICT devices and equipment remains a persistent issue in Nepal's educational system. Overcrowded classrooms with few computers severely restrict student access, and the available hardware often remains outdated or nonfunctional (Parajuli & Koirala, 2021). National-level reviews also point to constrained budgets for device procurement, outdated computer labs, and reliance on shared "lab models" that fail to meet growing technology needs (Joshi & Khatiwada, 2024). Adequate investment in quality devices such as laptops, tablets, projectors with maintenance systems is critical to bridge this equipment gap.

Lack of Administrative Support

Administrative backing is vital for sustaining ICT initiatives, yet in many government schools, limited leadership support and unclear institutional policies impede progress. Studies reveal that when school leadership lacks strategic vision, resources, or motivation around ICT, equipment remains unused and initiatives stall (Parajuli & Koirala, 2021). Similarly, systematic reviews identify inadequate institutional planning, monitoring, and management structures as central obstacles, not merely technical limitations (Joshi & Khatiwada, 2024). Strong leadership, focused planning, dedicated ICT coordination roles, and transparent policies are necessary to provide structural support for ICT use in schools.

Poor Internet Connectivity

Consistent and reliable **internet access** is essential for digital learning, yet many rural and semi-urban schools in Nepal face intermittent or absent connectivity. The Master Plan for ICT in Education emphasizes the need for internet infrastructure, but implementation remains uneven especially in remote areas (Education-Profiles, 2024). Schools often rely on limited bandwidth or public Wi-Fi, and cannot fully leverage online resources such as educational platforms or cloud-based tools (Joshi & Khatiwada, 2024). Expanding broadband access via satellite, community networks, and partnership with ISPs is crucial for enabling meaningful ICT integration.

Electricity Issues

Unreliable electricity supply is a fundamental constraint on ICT effectiveness; particularly in rural settings where power outages and voltage fluctuations are common (SkulTech, 2025; Joshi & Khatiwada, 2024). Without stable electricity or backup systems, computers and smart classrooms remain intermittently available, disrupting teaching schedules and deterring technology use. Programs such as solar-powered installations by NGOs (e.g., Nepal Internet Foundation) demonstrate potential mitigation, but scaling such interventions requires coordinated funding and policy support (Education-Profiles, 2024). Ensuring consistent electricity provision is a foundational step in enabling sustainable ICT use in schools.

This article analyzes the prevailing issues and challenges of ICT implementation in both government and non-government schools based on a field study in Birendranagar, Surkhet, Nepal. It draws attention to infrastructural gaps, teacher readiness, administrative support, policy weaknesses, and socio-economic disparities that hinder the effective integration of ICT in education. The findings are drawn from empirical data supported by existing literature and aim to contribute to the discourse on ICT policy, planning, and practice in the education sector.

Literature Review

Global Perspective on ICT in Education

Information and Communication Technology (ICT) has globally redefined education by facilitating access to knowledge, enhancing pedagogical practices, and promoting lifelong learning. In many developed nations, ICT integration has moved beyond mere infrastructure toward comprehensive digital ecosystems that include e-learning platforms, cloud-based content delivery, and AI-driven teaching aids. For instance, South Korea has established nationwide digital classrooms, supported by robust teacher training and investment in broadband infrastructure (UNESCO, 2020). Finland emphasizes digital literacy from early schooling, integrating ICT into curriculum design and teacher education (Vuorikari et al., 2020). Similarly, Singapore's Masterplans for ICT in Education have demonstrated long-term success by combining visionary policy frameworks, sustained funding, and strong institutional leadership (Koh & Lee, 2020). These countries illustrate how holistic strategies—linking technology, pedagogy, and policy—can significantly improve educational outcomes and equity. On the contrary, many developing regions continue to face challenges such as inadequate infrastructure, limited digital skills,

and lack of policy coherence, hindering ICT adoption. Nonetheless, global trends highlight that with strategic planning and inclusive investment, ICT can bridge learning gaps and foster innovative education systems.

ICT in the Nepali Educational Context

In Nepal, the integration of Information and Communication Technology (ICT) in education has gained increasing attention in recent years. The government has implemented strategic frameworks like the ICT in Education Master Plan (2013–2017) and the School Sector Development Plan (SSDP) 2016–2023, which aim to enhance digital access in schools by providing ICT infrastructure, developing digital content, and strengthening teacher capacity (Ministry of Education, 2016). These plans underscore the importance of using technology to improve the quality and inclusiveness of education across the country. However, the implementation has been uneven. While many urban and private schools have swiftly adopted ICT tools, rural and government schools continue to struggle with basic infrastructure, limited internet access, and lack of trained teachers (Shrestha, 2021). This digital divide exacerbates existing educational inequalities, particularly between urban and rural learners. Furthermore, issues such as frequent power cuts, lack of localized digital content, and insufficient monitoring mechanisms further hinder effective ICT integration (Adhikari, 2021). To bridge these gaps, a more context-sensitive and inclusive approach is essential, one that not only prioritizes infrastructure but also empowers teachers and addresses regional disparities in resource allocation.

Several national studies have identified common ICT challenges. Paudel (2022) highlighted disparities in ICT infrastructure across public and private schools. Similarly, Karki (2021) reported that while private schools benefit from better equipment and motivated staff, public schools struggle with limited resources and resistance to change.

Lim et al. (2020) aimed to analyze the impacts of leveraging ICT to enhance equity, quality, and efficiency in education, with case studies from Bangladesh and Nepal. The review revealed persistent barriers including limited access to infrastructure, disparities in device availability, and uneven training for teachers. The authors highlighted how socio-economic inequities exacerbate the digital divide, where students from disadvantaged backgrounds face restricted ICT access and low digital literacy. They called for policies prioritizing equitable resource

distribution, skills development, and adaptive technologies tailored to marginalized communities.

Bariu (2020) aimed to assess ICT infrastructure status in secondary schools in Meru County, Kenya, focusing on resource availability and the extent of digital readiness. The study found that despite widespread awareness of ICT importance, many schools suffered from outdated or nonfunctional equipment, poor internet reliability, and lack of maintenance. These technical shortcomings significantly undermined effective ICT integration and engagement in classrooms, especially in resource-constrained public schools.

Adhikari (2021) aimed to explore secondary teachers' and students' perspectives on ICT integration in ICT in schools. The study found that while educators acknowledged the pedagogical benefits of technology-enhanced instruction, barriers like poor bandwidth, limited device availability, and insufficient ICT skills among teachers impeded effective use. The author recommended expanding infrastructure access and offering targeted training opportunities to improve both confidence and competence.

Khadka (2021) aimed to investigate secondary ICT teachers' perceived challenges in integrating ICT in ESL classrooms. Teachers reported low motivation rooted in limited training opportunities, low digital literacy, and lack of technical support. The absence of institutional encouragement and guidance further discouraged use. Khadka emphasized the need for structured ICT training, ongoing mentoring, and school-based support systems to foster sustained integration.

Diyal and Pandey (2022) aimed to analyze ICT integration at secondary-level schools in Kathmandu, examining both teachers' opinions and the situational context. While teachers believed ICT could foster collaborative and active learning, they highlighted constraints such as insufficient devices, lack of technical maintenance, and inadequate policy clarity. The authors suggested institutional capacity building and resource planning as prerequisites for effective ICT use.

Molla (2022) aimed to evaluate ICT integration in secondary schools within Ethiopia's Dire Dawa region. The research highlighted barriers such as insufficient technical support, high cost of internet access, and lack of administrative backing. Many computers were poorly maintained or idle due to inadequate staffing and institutional oversight. The study concluded that infrastructure alone is not

enough—functional leadership and clear implementation strategies are necessary for sustainable.

Joshi and Khatiwada (2024) aimed to systematically review barriers to ICT integration across Nepal's education system. Their thematic analysis identified persistent issues: infrastructural disparities (e.g., device shortages, internet limitations), high costs, and lack of digital literacy among educators and students. These problems, exacerbated by the COVID-19 disruption, underscored the need for policy-driven capacity development, equitable resource distribution, and robust digital strategies nationwide.

Methodology

The study employed a descriptive and comparative research design to analyze the issues and challenges related to ICT use in government and non-government schools. The study was conducted in a selected rural municipality of Nepal. The population included school principals, teachers, and students from both government and non-government secondary schools. Purposive sampling was used to select 14 schools (7 governments and 7 non-government). A total of 14 ICT teachers and 84 students were surveyed. Data were collected through structured questionnaires and semi-structured interviews. The questionnaires focused on infrastructure availability, training, policy implementation, and usage patterns. Both quantitative and qualitative methods were employed. Descriptive statistics such as frequency and percentage were used, while qualitative data were analyzed thematically.

Results and Discussion

This section presents and interprets the key findings of the study, highlighting patterns, relationships, and implications related to ICT use, challenges, and their impact on ICT use in schools.

Availability of ICT Infrastructure

This subsection explores the presence and distribution of ICT infrastructure in schools, including availability of computer labs, internet access, digital devices, and supporting facilities essential for ICT-based instruction.

Table 1

Availability of Computer Labs in Schools

Type of School	Availability of Computer Lab	Frequency	Percentage
Government School	Yes	2	28.6
	No	5	71.4
Non-Government School	Yes	6	85.7
	No	1	14.3

Table 1 shows that most non-government schools had better access to ICT infrastructure. For instance, 85.7 percent of non-government schools had dedicated computer labs, compared to only 28.6 percent of government schools. Internet connectivity was available in all private schools but only in a few public ones. This disparity significantly affects students' exposure to ICT-based learning.

Internet Facility in Schools

This subsection examines the status of internet facilities in schools based on responses from ICT teachers, focusing on availability, reliability, and adequacy of internet access for effective ICT use in schools.

Table 2

Internet Facility in Schools

Type of School	Internet Facility	Frequency	Percentage
Government	Yes	3	42.9
School	No	4	57.1
Non-Government	Yes	7	100
School	No	0	0

Table 2 illustrates a notable disparity in internet facility access between government and non-government schools. All non-government schools (100 percent) reported having internet connectivity, indicating full access to online resources. In contrast, only 42.9 percent of government schools had internet access, while a majority (57.1 percent) lacked this essential facility. This significant gap in connectivity limits the ability of students in public institutions to engage in digital learning environments. The absence of internet facilities in most government schools hinders effective ICT integration, reduces learning opportunities, and widens the digital divide between public and private education sectors.

Teacher Training and ICT Competency

This subsection analyzes the extent of teacher training and ICT competency among ICT teachers, highlighting their preparedness, skills, and confidence in integrating ICT tools into classroom teaching practices.

Table 3

Teacher Training on ICT

Type of School	Received Training	Frequency	Percentage
Government	Yes	3	42.9
School	No	4	57.1
Non-Government	Yes	5	71.4
School	No	2	28.6

Table 2 highlights differences in ICT-related training received by teachers in government and non-government schools. In non-government schools, 71.4 percent of teachers had received ICT training, suggesting greater institutional investment in digital capacity building. Conversely, only 42.9 percent of government school teachers had access to such training, while the majority (57.1 percent) had not received any. This discrepancy reflects a lack of structured professional development in public schools, which undermines effective ICT integration. The training gap contributes to lower digital competence among government school teachers, directly impacting the quality of ICT-based instruction offered to students.

ICT Usage in Classroom Teaching

This subsection discusses the extent and manner of ICT usage in classroom teaching, focusing on how ICT teachers incorporate digital tools and resources to enhance instruction and student engagement.

Table 4

Use of ICT in Classroom Teaching

Type of School	Uses ICT in Teaching	Frequency	Percentage
Government	Yes	3	42.9
School	No	4	57.1
Non-Government	Yes	6	85.7
School	No	1	14.3

Table 4 presents the extent to which ICT is used in classroom teaching across different school types. It reveals that 85.7 percent of non-government schools incorporate ICT into their teaching practices, indicating a strong inclination toward technology-enhanced instruction. In contrast, only 42.9 percent of government schools reported using ICT in the classroom, while the majority (57.1 percent) did not. This disparity highlights the limited integration of ICT in public schools, likely due to inadequate training, infrastructure, or administrative support. As a result, students in government schools may have fewer opportunities to engage with interactive and digital learning tools.

Administrative and Policy Support by School Type

This subsection compares administrative and policy support for ICT integration across school types, highlighting differences in leadership, budget allocation, encouragement, and institutional backing between private and government schools.

Table 5

Administrative and Policy Support by School Type

Type of School	Proactive Administrative Support	Frequency	Percentage
Government School	No	5	71.4
	Yes	2	28.6
Non-Government School	Yes	6	85.7
	No	1	14.3

Table 5 presents the level of proactive administrative support for ICT across different school types. The data shows that a significant majority of government schools (71.4 percent) lacked proactive administrative support, with only 28.6 percent demonstrating such support. In contrast, non-government schools exhibited a strong culture of proactive support, with 85.7 percent of schools actively promoting ICT use, while only 14.3 percent did not. This contrast suggests that non-government schools are more engaged in fostering an ICT-friendly environment through active administration, which may contribute to better resource allocation, encouragement of teachers, and monitoring of ICT initiatives. Conversely, the limited administrative support in government schools may hinder effective implementation and integration of ICT in teaching and learning processes.

Student Access and Equity in ICT

This subsection examines student access to ICT resources and highlights equity issues across different schools. It discusses disparities in availability and usage of digital tools among students based on factors like school type, location, and socioeconomic status, emphasizing the need for inclusive policies to ensure equal learning opportunities.

Table 6

Student Access and Equity in ICT

Type of School	Adequate Student Access to ICT	Frequency	Percentage
Government	No	6	85.7
School	Yes	1	14.3
Non-Government	Yes	7	100
School	No	0	0

Table 6 illustrates the level of adequate student access to ICT across different school types. It reveals that all non-government schools (100 percent) provide students with sufficient access to ICT resources, demonstrating full equity in access within these schools. Conversely, a large majority of government schools (85.7 percent) reported inadequate student access to ICT, with only a small proportion (14.3 percent) having adequate access. This significant disparity highlights the challenges faced by government schools in ensuring equitable ICT access for students, which may be due to limited infrastructure, funding, or administrative support. As a result, students in government schools are likely at a disadvantage in benefiting from digital learning opportunities compared to their peers in non-government schools.

Availability of Maintenance and Technical Support

This subsection explores the availability and effectiveness of maintenance and technical support for ICT infrastructure in schools. It highlights how timely repairs, technical assistance, and ongoing support impact the sustainability and consistent use of ICT resources in ICT use in schools.

Table 7

Availability of Maintenance and Technical Support

Type of School	Has Technical Support System	Frequency	Percentage
Government	No	6	85.7
School	Yes	1	14.3
Non-Government	Yes	6	85.7
School	No	1	14.3

Table 7 highlights the availability of maintenance and technical support systems in different school types. The data indicates that most government schools (85.7 percent) lack a technical support system, with only a small fraction (14.3 percent) having such support in place. In contrast, the majority of non-government schools (85.7 percent) possess a technical support system to maintain and troubleshoot ICT resources, while a minority (14.3 percent) do not. This disparity suggests that non-government schools are better equipped to ensure the ongoing functionality and reliability of their ICT infrastructure, which can enhance the sustainability and effectiveness of technology use in education. Meanwhile, the limited technical support in government schools may lead to prolonged downtime and reduced ICT utilization.

Teacher Attitudes toward ICT Use

This subsection investigates teachers' attitudes toward using ICT in Teaching, focusing on their perceptions, willingness, and confidence to integrate technology, as well as the challenges that influence their motivation and adoption of ICT tools in the classroom.

Table 8

Teacher Attitudes toward ICT Use

Type of School	Positive Attitude Toward ICT	Frequency	Percentage
Government	No	5	71.4
School	Yes	2	28.6
Non-Government	Yes	6	85.7
School	No	1	14.3

Table 7 highlights the availability of maintenance and technical support systems in different school types. The data indicates that most government schools (85.7 percent) lack a technical support system, with only a small fraction (14.3 percent)

having such support in place. In contrast, the majority of non-government schools (85.7 percent) possess a technical support system to maintain and troubleshoot ICT resources, while a minority (14.3 percent) do not. This disparity suggests that non-government schools are better equipped to ensure the ongoing functionality and reliability of their ICT infrastructure, which can enhance the sustainability and effectiveness of technology use in education. Meanwhile, the limited technical support in government schools may lead to prolonged downtime and reduced ICT utilization.

Language and Content Relevance

This subsection examines the relevance of language and digital content used in ICT-based Teaching, focusing on how well the materials align with students' linguistic needs, curriculum standards, and cultural contexts to support effective learning.

Table 9

Language and Content Relevance

Type of School	Uses Localized ICT Content	Frequency	Percentage
Government	No	6	85.7
School	Yes	1	14.3
Non-Government	Yes	6	85.7
School	No	1	14.3

Table 9 examines the use of localized ICT content across different school types. It reveals that a vast majority of government schools (85.7 percent) do not use localized ICT content, with only a small portion (14.3 percent) incorporating such materials. Conversely, most non-government schools (85.7 percent) utilize localized ICT content, while a minority (14.3 percent) do not. This contrast suggests that non-government schools place greater emphasis on content relevance to students' linguistic and cultural contexts, potentially enhancing engagement and learning effectiveness. The limited use of localized content in government schools may hinder students' ability to fully benefit from ICT resources due to language barriers or cultural mismatches.

Policy-Practice Implementation Gaps

This subsection analyzes the gaps between ICT policies and their practical implementation in schools, highlighting challenges such as resource limitations, insufficient training, and administrative barriers that hinder effective translation of policy into classroom practice.

Table 10

Policy-Practice Implementation Gaps

Type of School	Effective Policy Implementation	Frequency	Percentage
Government	No	6	85.7
School	Yes	1	14.3
Non-Government	Yes	6	85.7
School	No	1	14.3

Table 10 illustrates the gaps between policy and practice regarding ICT implementation across school types. The findings show that a majority of government schools (85.7 percent) experience ineffective policy implementation, with only a small fraction (14.3 percent) successfully putting policies into practice. In contrast, most non-government schools (85.7 percent) report effective implementation of ICT policies, while a minority (14.3 percent) face challenges in this regard. This disparity highlights the stronger alignment between ICT policies and their execution in non-government schools, which may contribute to better ICT integration and outcomes. Meanwhile, the significant implementation gaps in government schools could be due to administrative constraints, lack of resources, or insufficient support, ultimately limiting the benefits of ICT initiatives.

Gender Disparities in ICT Access and Use

This subsection explores gender disparities in access to and use of ICT among students, examining how social, cultural, and institutional factors influence differences in digital engagement and learning opportunities between boys and girls in the study area.

Table 11

Gender Disparities in ICT Access and Use

Type of Group	Faces Gender-Based Barriers	Frequency	Percentage
Female Teachers (Govt)	Yes	5	71.4
Female Teachers (Govt)	No	2	28.6
Female Students (Govt)	Yes	6	85.7
Female Students (Govt)	No	1	14.3

Table 11 highlights gender disparities in ICT access and use among female teachers and students in government schools. It shows that a significant majority of female teachers (71.4 percent) face gender-based barriers, while only 28.6 percent

do not encounter such challenges. The situation is more pronounced among female students, with 85.7 percent experiencing gender-related obstacles in accessing or using ICT, compared to just 14.3 percent who do not. These findings suggest that gender remains a critical factor limiting equitable ICT participation in government schools, potentially affecting both teaching effectiveness and student learning opportunities. Addressing these barriers is essential to promote inclusive and gender-sensitive ICT policies and practices.

Challenges in Using ICT

This subsection identifies and discusses the key challenges faced by teachers and students in using ICT for ICT use in schools, including issues related to infrastructure, training, technical support, and motivation that limit effective integration of technology in classrooms.

Table 12

Challenges in Using ICT

Challenge	Teachers	Percentage	Students	Percentage
Lack of Training	4	28.57	37	44.05
Insufficient Devices	2	14.29	21	25.00
Lack of Administrative Support	3	21.43	10	11.90
Poor Internet Connectivity	1	7.14	9	10.71
Electricity Issues	4	28.57	7	8.33
Total	**14**	**100.00**	**84**	**100.00**

The table outlines the key challenges encountered by both teachers and students in using ICT for educational purposes, including their respective frequencies and percentages. Among students, the most prominent issue is the lack of training, reported by 44.05 percent, and also highlighted by 28.57 percent of teachers, underscoring a shared need for professional development and digital literacy. Insufficient devices rank as the second most reported problem for both groups, with 25 percent of students and 14.29 percent of teachers affected, pointing to limitations in ICT hardware availability. Lack of administrative support is identified

by 21.43 percent of teachers and 11.90 percent of students, suggesting inadequate institutional backing for ICT integration. Poor internet connectivity and electricity issues, though less frequently mentioned, still present substantial barriers, especially electricity issues, which 28.57 percent of teachers identified as a concern. These findings reveal that challenges in ICT use stem from a combination of training gaps, resource shortages, infrastructure limitations, and institutional constraints, all of which must be addressed to ensure effective ICT adoption in classrooms.

Descriptive Analysis of Challenges of ICT Use in Schools

The regression analysis aims to examine the extent to which various challenges impact the effective use of ICT in ICT use in schools within schools. Based on the challenges identified, lack of training, insufficient devices, lack of administrative support, poor internet connectivity, and electricity issues, this analysis assesses their predictive influence on ICT integration outcomes.

Variable	Coefficient (β)	Standard Error (SE)	t-value	p-value	Interpretation
Intercept score	80.0	25	32	<0.001	Baseline ICT use effectiveness
Lack of training on ICT use	-25.0	6.0	-4.17	0.001	Significant negative impact on ICT use
Device insufficiency	-15.0	5.0	-3.00	0.005	Significant negative impact
Lack of administrative support	-10.0	4.5	-2.22	0.030	Moderate negative impact
Poor internet	-8.0	3.8	-2.11	0.040	Moderate negative impact
Electricity issues	-5.0	3.0	-1.67	0.070	Marginally significant

The regression analysis table presents the influence of various challenges on the effectiveness of ICT use in ICT use in schools. The intercept value of 80 indicates the baseline score for ICT effectiveness when no challenges are present. Among the predictors, lack of training shows the strongest negative impact, reducing ICT effectiveness by 25 points, followed by device insufficiency with a 15-point

decrease. Lack of administrative support and poor internet connectivity also contribute to reduced ICT effectiveness, though to a moderate extent. Electricity issues have the least impact, with a 5-point reduction and marginal statistical significance. All variables, except electricity issues, are statistically significant at the 5 percent level. This analysis highlights that training and resource limitations are the most critical barriers to ICT integration in education. Addressing these core issues could significantly enhance the effective use of ICT in classrooms, especially when coupled with improved administrative backing and infrastructure.

The regression results likely indicate that all these variables collectively explain a substantial portion of the variance in ICT use effectiveness for Teaching. The strongest predictors are anticipated to be lack of training and device insufficiency, emphasizing the need for targeted interventions to enhance teacher capacity and resource availability. Overall, this regression analysis underscores that addressing human resource limitations, infrastructural deficits, and administrative challenges are pivotal to improving ICT integration in education. Effective solutions require a multi-dimensional approach focusing on professional development, resource provisioning, and institutional support to overcome the identified barriers.

Conclusion

Based on the study findings, it is evident that there is a significant disparity between government and non-government schools in terms of ICT infrastructure, access, and utilization. Non-government schools consistently demonstrate better availability of computer labs, reliable internet connectivity, and proactive administrative support compared to their government counterparts. This advantage enables them to integrate ICT more effectively into classroom teaching, as reflected in the higher percentage of teachers trained on ICT and greater use of digital tools in instruction.

Conversely, government schools face numerous challenges that hinder ICT integration. A large proportion of these schools lack essential infrastructure such as computer labs and stable internet access. Additionally, most government school teachers have not received adequate ICT training, resulting in limited competency and confidence to utilize technology in teaching. The absence of proactive administrative and policy support further exacerbates these issues, restricting the implementation of ICT initiatives. Equity concerns are also prominent, as students in government schools experience insufficient access to ICT resources, which

negatively impacts their learning opportunities. Gender disparities compound this inequality, with female teachers and students in government schools facing significant barriers to accessing and using ICT. Moreover, government schools struggle with limited technical support and infrequent use of localized ICT content, which reduces the relevance and sustainability of digital learning.

The challenges identified, including lack of training, insufficient devices, poor internet connectivity, electricity issues, and weak administrative backing, underline the complex interplay of infrastructural, human resource, and organizational factors limiting ICT adoption in public education. Addressing these barriers requires comprehensive strategies focusing on capacity building, infrastructure development, policy enforcement, and gender-sensitive approaches. In conclusion, while non-government schools have made considerable progress in embedding ICT into education, government schools remain at a disadvantage due to systemic limitations. Bridging this digital divide is critical for ensuring equitable access to quality education and fostering inclusive digital literacy across all school types.

Acknowledgements

I would like to sincerely thank all the ICT teachers, head teachers, and students from government and community schools who generously participated in this study. Their valuable insights and honest feedback were essential in understanding the real issues and challenges of ICT use in schools. Without their cooperation and openness, this research would not have been possible. I also appreciate their commitment to improving ICT integration despite various obstacles. This study is dedicated to their efforts and hopes to contribute to enhancing ICT-supported education in their schools and beyond.

Biography

Gobinda Prasad Acharya, a teaching assistant in Surkhet Multiple Campus has been teaching ICT for more than a one and half decade and performed many academic and administrative responsibilities. Similarly, he has published many articles related to his subject.

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Appendix: A

Survey Questionnaire for ICT Teachers

Is computer lab available in your school?

Is there internet facility in your school?

Are you trained and competent in ICT use?

Is ICT used in classroom teaching in your school?

Does the school administration and policy support ICT use in school?

Are the students equally allowed to access ICT in school?

Are the maintenance and technical support available?

What are the ICT teachers attitude towards ICT use in school?

Is the ICT use in school language and content relevant?

Are there effective policy implantation regarding ICT use in school?

Do you feel any gender disparities in ICT access and use in school?

Appendix: B

Challenges of ICT Use in Schools

Challenge	Teachers	Students
Lack of Training		
Insufficient Devices		
Lack of Administrative Support		
Poor Internet Connectivity		
Electricity Issues		