# EXPLORING THE USE OF ICT IN TEACHING LEARNING PROCESS IN NEPALI SCHOOLS: A NARRATIVE INQUIRY

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A Dissertation

Submitted to
School of Education

in Partial Fulfilment of the Requirements for the Degree of
Masters in Educational Leadership

Kathmandu University
Dhulikhel

January 2025

AN ABSTRACT

of the dissertation of *Sandesh Banset* for the degree *Master in Educational Leadership* presented on *07 January 2025* entitled *Exploring the Use of ICT in Teaching Learning Process in Nepali Schools: A Narrative Inquiry*

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This study explores how public school teachers in Kathmandu integrate ICT into everyday teaching practices. Using the TPACK framework, the research interprets the narratives of six teachers from different subjects (Mathematics, Science, English, Nepali, and Social Studies), highlighting their personal experiences, understanding, and challenges in bringing technology into their classrooms.

Using a qualitative narrative approach, the findings reveal that while most teachers appreciate the value of ICT in improving student engagement and learning, they face significant hurdles. Limited access to digital tools, inadequate training, and infrastructure issues, like unstable internet connections, are some of the key challenges they grapple with. Despite these obstacles, many teachers are willing to embrace technology, often leaning on their peers for support and learning new digital tools independently. Their resilience and creativity in using ICT, even under difficult conditions, exemplify how teachers can adapt and innovate within their classrooms.

The study emphasizes better support systems for teachers to use ICT optimistically. Continuous professional development, adequate resources, and training are essential to ensure that teachers have access to the tools they need and feel confident in using them. Furthermore, school-level and policy-level efforts must work in tandem to address the gaps in infrastructure and training, enabling teachers to integrate technology more effectively.

Ultimately, this research highlights the need to empower teachers as leaders in their classrooms regarding ICT. In order to have a lasting impact of ICT on education, both teachers and institutions need to invest in the necessary resources and skills that will allow ICT to reach its full potential in transforming the learning experience.

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# शोध सार

शैक्षिक नेतृत्व तथा व्यवस्थापनमा स्नातकोत्तर डिग्रीको लागि सन्देश बस्नेतको शोध प्रबन्धको शीर्षक " नेपाली विद्यालयहरूमा शिक्षण सिकाई प्रक्रियामा सूचना तथा सञ्चार प्रविधिको प्रयोगको अन्वेषणः एक संकथन" २३ पुष २०८१ मा प्रस्तुत गरिएको थियो।

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सहशेषकान्त पंगेनी .प्रा–, पिएचडी

शोध निर्देशक

यस अध्ययनले काठमाडौँका सार्वजनिक विद्यालयमा कार्यरत शिक्षकहरूले आफ्नो दैनिक शिक्षण अभ्यासमा सूचना तथा सञ्चार प्रविधि (आईसीटी) लाई कसरी प्रयोग गर्छन् भन्ने विषयमा अनुसन्धान गरेको छ । टीप्याक (TPACK) फ्रेमवर्क प्रयोग गर्दै, यसले गणित, विज्ञान, अंग्रेजी, नेपाली र सामाजिक अध्ययन जस्ता विभिन्न विषयका छ जना शिक्षकहरूको व्यक्तिगत बुझाइ, प्रयोग र प्रविधिलाई कक्षाकोठामा ल्याउँदा उनीहरूले सामना गरेका चुनौतीहरूलाई व्याख्या गरेको छ ।

गुणात्मक कथन र विश्लेषण विधि प्रयोग गरी गरिएको यस अनुसन्धानले शिक्षकहरूले विद्यार्थीहरूको सहभागिता र सिकाइ सुधार गर्न आईसीटीको महत्त्वलाई महसुस गरे तापनि उनीहरूले धेरै चुनौतीहरूको सामना गर्नुपरेको कुरा पत्ता लगाएको छ । सीमित डिजिटल उपकरणहरूको पहुँच, पर्याप्त तालिमको अभाव, र अस्थिर इन्टरनेट जस्ता पूर्वाधारसम्बन्धी समस्याहरू शिक्षकहरूका मुख्य चुनौतीहरू हुन्। यस्ता कठिनाइहरूको बावजुद पनि शिक्षकहरू प्रविधिलाई शिक्षण सिकाइमा प्रयोग गर्न इच्छुक देखिन्छन्। शिक्षकहरू प्रायः आफ्ना सहकर्मीहरूबाट सहयोग लिँदै र आफ्नै प्रयासमा नयाँ डिजिटल उपकरणहरू सिक्दै गरेको पाइएको छ। कठिन परिस्थितिमा पनि शिक्षकहरूले देखाएको यो सिर्जनात्मकता र लचिलोपनले उनीहरू शिक्षण सिकाइमा नवप्रवद्र्धन र सहकार्यलाई जोड दिइरहेको कुरामा बल पुग्छ।

यस अध्ययनले शिक्षकहरूले आईसीटीको अधिकतम उपयोग गर्न सक्षम हुने वातावरण सिर्जना गर्न सहयोगी प्रणालीहरूको आवश्यकता भएको कुरामा जोड दिन्छ। शिक्षकहरूले आवश्यक पूर्वधारहरूमा पहुँच मात्र नभई ती पूर्वाधारहरूलाई पूर्ण उपयोग गर्न आत्मविश्वास बढाउन सकून् भन्नका लागि निरन्तर व्यावसायिक सीप विकासका तालिमहरु अपरिहार्य देखिन्छ । साथै, शिक्षकहरूलाई प्रविधिको प्रभावकारी उपयोग गर्न र सक्षम बनाउनको लागि पूर्वाधार तथा तालिमको व्यवस्थापन गर्न विद्यालय र नीतिगत दुवै तहमा काम गर्नुपर्ने देखिन्छ।

अन्ततः यो अनुसन्धानले आईसीटी सम्बन्धी विषयमा शिक्षकहरूलाई  सशक्त बनाउनुपर्ने आवश्यकतामाथि जोड दिन्छ। विद्यार्थीको सिकाइ अनुभवमा सकारात्मक  परिवर्तनको लागि शिक्षक र सबै शिक्षासँग सम्बन्धित निकायहरूले आईसिटी सम्बन्धी सिप र पूर्वधारमा लगानी बढाउनुपर्ने देखिन्छ।

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सन्देश बस्नेत

उपाधि उम्मेदवार

This dissertation entitled *Exploring the Use of ICT in Teaching Learning Process in Nepali Schools: A Narrative Inquiry*, presented by *Sandesh Basnet* on 7 January 2025.

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I understand that my dissertation will become a part of the permanent collection of the library of Kathmandu University. My signature below authorizes the release of my dissertation to any reader upon request for scholarly purposes.

…… January 7, 2025

Sandesh Basnet

Degree Candidate

# DECLARATION

I hereby declare that this dissertation is my original work and it has not been submitted for candidature for any other degree at any other university.

…… 7 January 2025

Sandesh Basnet

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# DEDICATION

I dedicate this dissertation to all the public school teachers who, despite limited resources, continue finding ways to incorporate ICT into their classrooms. Your determination, creativity, and commitment to enhancing education are a true source of inspiration.

# ACKNOWLEDGEMENT

I wish to extend my heartfelt gratitude to all those who supported me while writing this dissertation. Above all, I sincerely thank Associate Prof. Shesha Kanta Pangeni, PhD, Head of the Department of Educational Leadership, for his invaluable supervision. His insightful guidance, continuous encouragement, and thoughtful direction have been pivotal to the development of this study. I deeply appreciate his time and effort in providing constructive feedback, which significantly shaped my research. His dedication helped me remain focused and driven throughout this process.

I am equally grateful to our respected Dean, Prof. Bal Chandra Luitel, PhD, for his unwavering leadership and support. I also extend my thanks to Prof. Mana Prasad Wagley, PhD, and Asst. Prof. Basu Subedi, PhD and all the esteemed faculty members of KUSOED, for his guidance, facilitation, and motivation. Their expertise and feedback played a vital role in refining my work.

Furthermore, I would like to acknowledge Usha Bogati and all my colleagues from the M.Ed. Leadership and Management 2022 cohort for their shared enthusiasm, wisdom, and camaraderie. Their collective support provided an encouraging and inspiring environment that greatly enriched my dissertation experience. A special thank you goes to all of my research participants, whose willingness to share their experiences and perspectives made this study possible. Their insights were invaluable, and their contributions have inspired me to delve deeper into this subject.

Lastly, I wish to express my profound gratitude to my family. To my wife, Pramila Budhathoki; my brother, Sandeep Basnet; my sister, Mandira Budhathoki, whose continuous guidance and thoughtful review of my work kept me on track, and my entire family; your love, support, and encouragement have been the bedrock of my educational journey. This accomplishment would not have been possible without your unwavering belief in me.

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# ABBREVIATIONS

| | |
|---|---|
| CCTV | Closed-circuit Television |
| CD | Compact Disc |
| CHRD | Centre for Human Resource Development |
| CK | Content Knowledge |
| COVID-19 | CoronaVirus Disease of 2019 |
| 3E | Education, Experience and Exposure |
| ICT | Information and Communication Technology |
| KMC | Kathmandu Metropolitan City |
| KU | Kathmandu University |
| TPACK | Technology, Pedagogy, and Content Knowledge |
| PCK | Pedagogical Content Knowledge |
| PK | Pedagogical Knowledge |
| SESP | School Education Sector Plan |
| TCK | Technological Content Knowledge |
| TK | Technological knowledge |
| TPD | Teacher Professional Development |
| TPK | Technological Pedagogical Knowledge |
| UNESCO | United Nations Educational, Scientific and Cultural Organization |
| VR | Virtual Reality |

# LIST OF FIGURE

# CHAPTER I
# INTRODUCTION

Globalization and technological innovation have increased the use of ICT in all sectors, including teaching and learning. Its use in this field has also enhanced the interest of teachers and learners in the learning process, consequently increasing learning achievement (Sharma et al., 2016). So, this research has explored teachers' understanding of the use of ICT in school education and their challenges in the context of Nepal.

This chapter starts by giving a quick view of the researcher's autobiographical linkage to set the context for this study. After that, the researcher explains why this study is important and how it relates to different groups of people who might be interested in it. Then, the researcher describes the main issue being studied, the purpose, and the specific questions that the research answered. Finally, the researcher outlines the boundaries of this research, and that concludes this chapter.

## Background of the Study

I have been working as a secondary-level schoolteacher in Nepal for over six years. During this time, I have observed the transformation of schools from physical to virtual and blended learning environments, particularly in Dolakha district, located in the Himalayan region of the country. Over three years, even remote villages without internet access were equipped with round-the-clock internet facilities. Students who previously had no access to gadgets were provided with smartphones for online learning. However, in the post-COVID-19 period, I noticed a decline in students' interest in traditional classroom settings and increased involvement with gadgets at home and during travel to and from school. Nevertheless, I found that using ICT in my lessons, even to a small degree using tools like Microsoft PowerPoint slides and online videos, seemed to increase students' interest to some extent. This personal experience highlighted the significance of ICT use in teaching and learning, a topic I was passionate about exploring further.

Recent studies reveal that while the pandemic increases existing inequalities, such as socioeconomic disparities and generational divides, it also ignites innovation in education. Teachers began adopting creative approaches, incorporating gamified tools for engaging students and enhancing their learning experiences. This shift in

instructional practices underscored the pandemic's transformative effect on traditional education (Mospan & Sysoieva, 2022). It also highlighted the importance of continuing research and developing thoughtful policies on ICT that can sustain the digital progress made and address the inequities that have become more pronounced in the post-pandemic era.

In the instructional process, ICT refers to the use of computer systems and internet connectivity to manage and convey information specifically for teaching and learning (Fu, 2013). These rapidly evolving technological tools have brought forward some important changes in all the fields of society, including education. The effective utilization of these digital tools in the classroom and beyond for children's learning appears to be a demand of the present time. The techniques of using ICT as a pedagogical tool to deliver content to pupils are the ways of using ICT.

Teachers have a vital role in structuring the future generation through their educational duties. As technology advances rapidly, I feel that teachers must modify their instructional methods and curriculum to keep up with the evolving ICT. By utilizing ICT, teachers can transform traditional classrooms into modern ones and enhance students' learning experiences. The use of ICT in lesson planning requires teachers to have access to ICT resources, acquire ICT knowledge, receive external support, be committed to innovation, and have a school culture that encourages ICT use (Ali et al., 2009). Therefore, I firmly believe that using ICT in class facilitation efficiently may improve students' learning and prepare them for a world driven by technology. Teachers must enhance their competencies and knowledge to incorporate ICT into their instructional practices.

Research in the selected subject area is crucial to identify the current practices, address the challenges and maximize the advantages of ICT use in school education. By conducting research, we can identify strategies to enhance teachers' competencies and knowledge in using ICT. Additionally, research can explore ways to improve access to resources, provide necessary training and support, and foster a supportive school culture. Understanding the elements that support the successful use of ICT and addressing the contextual challenges help in achieving the goal of preparing students for a technology-driven world. Moreover, research can provide insights into the impact of low-cost ICT-based materials and community-based implementation approaches, particularly in developing countries. Overall, research in this subject area

is vital to promote effective ICT use in education and support the achievement of developmental goals.

## Statement of the Problem

The problem at hand is the conditions for using ICT in teaching and learning. While technology has significantly transformed society, its use in education remains challenging. Teachers are faced with adapting their teaching methods and curriculum to incorporate ICT tools and resources (Sharma et al., 2016).

Despite the increase in internet penetration (from 16% in 2005 to 66% in 2022) as reported by UNESCO (2023, p. 7), ICT use in schools remains limited. As per UNESCO's *Global Education Monitoring Report* (2023), Only 40% of primary and 50% of lower secondary schools worldwide are connected to the Internet (p. 211). In Nepal, the situation is not so different. As of Datareportal's Digital 2024: Nepal report (Kemp, 2024), only 49.6% of the population has access to the internet, leaving more than half offline. The problem is particularly severe in rural areas, where 77.9% of the population lives but where ICT infrastructure remains largely underdeveloped. Teacher training further compounds the issue; UNESCO (2023) notes that only half of the countries globally have established standards for developing teachers' ICT skills. In Nepal, many teachers lack the confidence and expertise to effectively integrate ICT into their pedagogy.

According to Ghavifekr and Rosdy (2015), failing to address the challenges of ICT use can have detrimental consequences for students' learning experiences and their preparedness for a technology-driven world. Without harnessing the potential of ICT, students may miss out on engaging and interactive learning opportunities. They may struggle to develop the digital literacy and skills necessary to excel in today's society. Moreover, educational institutions may lag in providing modern learning environments, hindering students' overall academic and personal growth.

I have experienced the increasing efforts made to address the challenges of ICT use in the classroom in my teaching career. Teachers like me have begun incorporating ICT tools such as Microsoft PowerPoint slides and online videos into their lessons, witnessing a moderate increase in student interest. Additionally, studies have identified key factors for successful use, including access to resources, teacher competencies, external support, commitment to innovation, and supportive school culture (Ali et al., 2009; Cha et al., 2020; König et al., 2022). However, despite these

endeavors, a gap exists between the potential advantages of ICT use and its implementation.

Globally, initiatives like China's rural education program, which reduced urban-rural educational gaps by 38%, show how powerful ICT can be in transforming education (UNESCO, 2023). However, as UNESCO (2023) warns, without proper infrastructure, resources, and teacher training, ICT use can widen existing inequalities. In Nepal, addressing these gaps is crucial; by increasing access to technology, improving teacher training, and creating inclusive policies that support both urban and rural areas, the country can ensure more equitable and effective ICT use in education.

The existing knowledge gap lies in understanding how to effectively bridge the divide between successful implementation and potential barriers to it. Further research is needed to identify teachers' understanding, recent practices and barriers. Also, it is necessary to research the strategies to enhance teachers' competencies and expertise in using ICT in their instructional strategies. This includes exploring approaches to improving access to ICT resources, providing necessary training and support, and fostering a supportive school culture. Additionally, research can shed light on the impact of cheaper ICT-based resources and community-based implementation approaches, particularly in developing countries like Nepal.

Therefore, successful ICT use in the process of teaching and learning is a rising issue in modern education. Failing to address this problem can hinder students' learning experiences and impede their preparedness for a technology-driven world. While attempts have been made to tackle the challenges, a significant knowledge gap still necessitates further research. By conducting research in this subject area, we can identify strategies to narrow the distance between the potential barriers to ICT use and its successful implementation. This will ultimately lead to the creation of enriching educational environments that empower students to thrive in the digital age.

## The rationale of the Study

Rapid technological advances have transformed traditional classrooms, requiring teachers to adapt their teaching approaches and curricula to incorporate ICT. Effective ICT use in the classroom must address the diverse needs of learners through personalized approaches, promote engagement through collaborative and interactive methods, and seamlessly integrate technology into teaching practices (Alfoudari et al., 2021). However, there is a disconnect between the availability of ICT and its effective

use in classrooms, especially when teachers lack the necessary skills and pedagogical alignment with technology (Kundu & Bej, 2020). This gap is created by limited access to resources, lack of ICT literacy, inadequate external support, resistance to change and unsupportive school cultures, as highlighted by Ali et al. (2009). Bridging this gap includes the need for teachers to be digitally literate, the importance of well-designed classroom environments, and ensuring that students are technologically literate. Similarly, ongoing professional development programs, supported by frameworks such as the 3E model, to enhance teachers' abilities to integrate ICT and promote collaborative, innovative digital pedagogy meaningfully are also essential (Kundu & Bej, 2020). Overcoming these challenges is essential to create inclusive, adaptive and effective digital learning environments.

Failing to address the problem of ICT can have detrimental consequences for students' learning experiences and their preparedness for a technology-driven world. Students may miss out on engaging and interactive learning opportunities, struggle to develop digital literacy and skills and experience limitations in their academic and personal growth. Therefore, research in this area is crucial to identify current practices and effective strategies that enhance teachers' competencies and knowledge in using CT. Additionally, research can explore ways to improve access to resources, provide necessary training and support, and foster a supportive school culture. By filling the distance between the potential barriers and the successful implementation of ICT, research can create enriching educational environments that empower students to thrive in the digital age.

## Purpose Statement

This research explores the teachers' understanding and the challenges they face in using ICT in teaching-learning. Moreover, this study provides insights into current practices of incorporating ICT in the process of teaching-learning within the context of Nepalese schools.

## Research Questions

The research questions for my research are listed below.

- What do teachers understand about the use of ICT in teaching-learning?
- How do teachers share their experiences of using ICT in their teaching-learning practices?

- How do teachers narrate their experiences about the challenges of using ICT in teaching-learning?

## Delimitation

The primary aim of this research is to look into the understanding, practices and challenges associated with successful ICT use in teaching and learning in Nepali schools. The study specifically explored the perspectives and experiences of teachers in their classroom practices only.

Furthermore, it is crucial to remember that the scope of this study is limited to exploring the understanding and challenges of using ICT in the process of teaching-learning inside the classroom. The research does not extensively cover other aspects related to ICT implementation, such as policy development, infrastructure planning, or resource allocation. Even though these factors are important in using ICT, this study is not focused on them.

Finally, it is important to consider the time frame within which the research is conducted. The study's findings reflect the conditions, challenges, perspectives and practices prevalent during data collection. As the educational landscape and technological advancements are rapidly evolving, it is important to keep in note that the findings may not capture the full extent of changes that may occur beyond the research period. However, the study provides valuable insights into the challenges and practices of ICT use in classrooms of grades 7, 8, 9 and 10 at the time of its conduct.

By recognizing these delimitations, the study ensures a focused investigation of the specific public school classroom context of the Kathmandu Valley.

## Chapter Summary

This chapter explores the use of ICT in education within the context of Nepali schools. The research highlights how technological advancements have reshaped teaching practices and the significance of using ICT tools to improve student engagement and improve learning outcomes. Drawing on personal experience and existing literature, the chapter outlines the challenges teachers face, including limited resources, lack of ICT knowledge, and unsupportive school cultures. These obstacles underscore the need for more focused efforts to equip teachers with the skills and support necessary to effectively use classroom technology.

The chapter also presents the research questions guiding this study, focusing on teachers' understanding of ICT use, current practices, and challenges. Focusing on public school settings in Kathmandu, this research sheds light on the unique

challenges educators face in Nepal, while acknowledging the wider impact of ICT adoption in education. It lays the groundwork for exploring ways to integrate technology more effectively into daily teaching and learning practices.

# CHAPTER II
# LITERATURE REVIEW

This chapter of the research aims to explore the different literature related to the themes, the recent research findings, the theories, and the policies associated with the topic, resulting in the research gap as an end product. I have blended the empirical and thematic review in the first section of the chapter and tried to give a different taste in the literature review. The TPACK and digital leadership frameworks are intensively reviewed, and a theoretical lens is developed in the middle section. After reviewing several policies related to the topic, a research gap is identified towards the end of the chapter.

## ICT in Education: Enhancing Teaching Practices and Addressing Challenges

In contemporary society, educators hold immense importance in shaping future generations. Teachers are catalysts for societal development by imparting knowledge and fostering creativity among students, nurturing their potential to contribute significantly across various fields. Rapid technological advancements have necessitated educators to adapt their instructional methods and curriculum to keep pace with the constantly evolving ICT landscape (Ratheeswari, 2018).

According to UNESCO (2017), ICT encompasses a range of technological resources and tools used for information transmission, storage, creation, sharing, and exchange. These tools encompass computers, internet-based platforms (websites, blogs, emails), live and recorded broadcast technologies (radio, television, webcasting, podcasting), and telephony. The transformative impact of ICT on contemporary society extends to reshaping lifestyles, cognition, and learning methods. ICT has been harnessed extensively in education because it offers diverse tools that enrich the learning experience (Ghavifekr et al., 2014).

In my teaching practice, before the COVID-19 pandemic, I initiated limited incorporation of ICT in my classroom facilitation practices. However, with the absence of formal training, my incorporation of ICT elements was constrained to activities like video watching, creating PowerPoint presentations, and designing worksheets. Subsequently, undergoing ICT training sessions significantly augmented my use level. Reflecting on this, my interest and motivation played pivotal roles in this development.

Research conducted by Ali et al. (2009) identified the crucial conditions for successful ICT use, including access to resources, ICT knowledge acquisition, external support, commitment to innovation, a supportive school culture, and practice opportunities. Notably, their study underscored education's pivotal role in fostering effective ICT utilization and advocated for specialized teacher training for seamless technology use in teaching and learning.

König et al. (2022) explored how teachers might incorporate ICT into their lesson preparations. Their findings emphasized teachers' competencies and planning decisions in incorporating ICT, highlighting the correlations with professional knowledge, attitudes, and motivational tendencies. Similarly, Cha et al. (2020) identified contextual factors crucial for using ICT in educational models, advocating for tailored approaches considering infrastructure, policies, and pedagogical methods in developing countries.

Tabira and Otieno's (2017) literature review highlighted the potential of low-cost ICT materials in developing countries' education systems. Their emphasis on community-based approaches for sustainable ICT use underscores the need for further research on its impact and implementation.

Challenges in using ICT in lesson planning are multifaceted. One major challenge is accessing ICT resources, including computers, internet connectivity, and software (Ali et al., 2009). Teachers require proficiency in utilizing ICT tools, necessitating continuous professional development and training (König et al., 2022). Support from administrators, IT personnel, and stakeholders is imperative for navigating technical issues and optimizing ICT tools effectively (Ali et al., 2009). A commitment to innovation, receptive school culture, and addressing contextual factors are pivotal in fostering effective ICT use (Cha et al., 2020; Koehler & Mishra, 2009).

While ICT use in education offers immense potential, challenges persist. Access to resources, ICT knowledge acquisition, external support, commitment to innovation, and a conducive school culture are imperative for successful use. Addressing these challenges demands a comprehensive approach that considers social, contextual, and professional aspects to harness the full potential of ICT in instructional practices.

## TPACK Framework: Enhancing ICT Use in Teaching Practices

Using ICT in classrooms may face multifaceted challenges, prompting educators and teacher trainers to seek solutions. While specific remedies require

extensive study, addressing these obstacles through teacher training, support, and resources enhances ICT use in lesson plans, enriching student learning experiences.

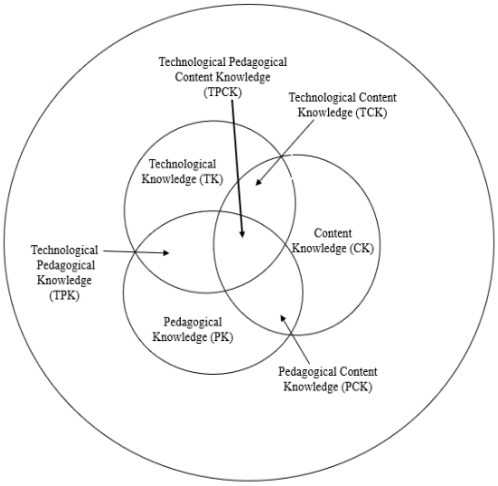
"The Technology, Pedagogy, and Content Knowledge (TPACK) framework illustrates the synergy among content, pedagogy, and technology domains, pivotal in effective teaching through technology" (Koehler & Mishra, 2009, p. 62). This framework, showcased in Figure 1, underscores the interconnections of teachers' knowledge domains; "content (CK), pedagogy (PK), technology (TK), and their intersections; pedagogical content knowledge (PCK), technological content knowledge (TCK), and technological pedagogical knowledge (TPK), forming TPACK" (Koehler & Mishra, 2009, p. 62).

CK comprises subject-specific knowledge, including concepts, theories, and practices, ensuring accurate information dissemination. PK encompasses understanding instructional processes and needing familiarity with learning theories and educational goals. PCK merges pedagogical and content knowledge, focusing on instructional adaptation. TK involves broad technological comprehension in work and daily life. TCK recognises the interplay between content and technology across domains. TPK strongly emphasizes teaching and learning with technology.

As per Koehler and Mishra (2009), the TPACK framework stresses the interconnectedness of technology, content and pedagogy knowledge, advocating for effective technology in teaching. However, they did not discern among technology types within TK. Yet, contemporary researchers focus primarily on digital technologies' use, emphasizing specific technological aspects within TPACK, like ICT-TPCK (Graham et al., 2012).

**Figure 1**

*TPACK Framework*




Harris et al. (2010) explain how technology is used in pedagogical content knowledge. They say that educators must incorporate technology into the teaching and learning process, and teachers need to integrate it into lesson plans. To do this, they suggest three steps for lesson planning. First, the teacher needs to choose the objective that they want their students to learn in a particular lesson, which is called content. Then, they need to plan the activity to achieve the objective called pedagogy. Finally, the teacher must choose a technology to support the students' learning.

My research uses the TPACK framework to explore the use of ICT in teaching and learning. Specifically, ICT falls under TK and contributes to constructs such as TPK, TPACK and TCK. Technologies outside of ICT are beyond the scope of TPACK. I will look at ICT implementation in the classroom through the TPACK lens, as Haris et al. (2010) suggested.

## Leadership Lenses for Using ICT in Teaching Learning

This research has used the frameworks of instructional leadership and digital leadership to explore the practices and challenges of ICT use in classrooms. These frameworks provide a comprehensive lens for exploring how teachers, as leaders in their classrooms, integrate technology to enhance teaching and learning while navigating the complexities of educational change.

**Instructional Leadership**

Instructional leadership highlights the pivotal role of educators in fostering high-quality teaching and learning. Hallinger (2005) identifies three key dimensions of instructional leadership: defining the classroom's mission, managing the instructional process, and cultivating a positive learning environment. These dimensions emphasize the need for a classroom culture that prioritizes teaching excellence and student achievement. In the context of ICT integration, instructional leadership involves establishing a clear vision for technology use, aligning instructional goals with this vision, and providing necessary resources and guidance to teachers (Leithwood & Riehl, 2003). Moreover, it entails ensuring ICT tools are used purposefully to improve learning outcomes and align with curricular standards. Collaboration among teachers, students, and other classroom stakeholders is also essential for creating an inclusive and supportive digital learning environment.

**Digital Leadership**

Digital leadership complements instructional leadership by focusing on the role of technology in driving classroom innovation. Digital leaders, or teachers acting as digital leaders, embrace technology that enhances productivity, communication, and teaching efficiency (Sağbaş & Erdoğan, 2022). According to Fisk (2002), digital leadership encompasses skills such as vision-setting, change management, and fostering innovation in the classroom. Key traits of digital leadership, such as adaptability and agility, enable teachers to effectively integrate emerging technologies into their teaching practices. Collaboration and networking promote partnerships and knowledge-sharing, while creativity and innovation encourage experimentation with new tools and teaching approaches. Empowering teachers and students to engage with technology fosters self-directed learning and critical thinking, which is essential for a dynamic and effective learning environment.

**Intersecting Traits**

The integration of instructional and digital leadership provides a multifaceted approach to ICT use in classrooms. Key intersecting traits for successful ICT use include vision-setting, where teachers ensure that technology use aligns with instructional goals (as suggested by the TPACK model) and fosters innovation (Fisk, 2002; Leithwood & Riehl, 2003). Collaboration is emphasized, with teachers guiding collaborative efforts toward improving learning outcomes while fostering partnerships and knowledge-sharing (Sağbaş & Erdoğan, 2022). Additionally, adaptability is

crucial, as teachers must navigate rapidly evolving technologies, with instructional leadership offering a framework for ICT integration and digital leadership supporting the responsiveness to technological changes (Hallinger, 2005; Sağbaş & Erdoğan, 2022).

By combining these leadership frameworks, this study has explored how the intersection of instructional strategies and digital competencies has shaped teaching practices and how leadership traits enabled teachers to overcome challenges.

## Policies for the ICT in Education

Numerous policy documents, both locally and globally, shape the educational landscape, with many being updated or replaced by newer versions. In this context, I have reviewed the most recent and prevailing policy documents that guide the use of ICT in teaching and learning.

In the global context, UNESCO's guiding document is 'Guidelines for ICT in Education Policies and Masterplans (2022)'. This policy document emphasizes the need for comprehensive, long-term policies and strategies to harness the potential of information and communication technologies (ICTs) to improve the quality of education and transform learning. These provisions include the use of ICT to redefine learning outcomes, the way learning is organized and assessed, and to prepare students to thrive in a technology-driven economy. The guidelines emphasize equitable access to quality education through ICT, advocating "universal access to connected digital devices and responsive digital learning environments" by 2030, regardless of socio-economic status, disability, or geographical location. They call for the use of ICTs in both formal and non-formal education settings to promote lifelong learning and skills development, including for vulnerable groups. In addition, the guidelines emphasize the need for inclusive and non-discriminatory education, gender equality, and women's empowerment through the effective use of ICT, in particular, to bridge the digital divide. Specific provisions also include the promotion of Open Educational Resources (OERs) to widen access to quality learning materials and the development of AI applications that enhance learning opportunities while ensuring privacy and security. The guidelines underline the importance of promoting digital literacy from primary to secondary education curricula, advocating the use of ICT in teacher training and developing relevant competencies for the effective use of ICT in pedagogy. To support this, the guidelines recommend establishing national monitoring

and evaluation systems to assess the impact of ICT use in education and to ensure the continuous improvement of education systems in the digital age.

Through the federal structure, the Government of Nepal has formulated and implemented the National Education Policy (2019) as a guiding policy for the education sector. One of the primary goals of this policy is to ensure that education at all levels is technology-friendly. The policy seeks to incorporate ICT into the process of teaching-learning, making it practical and productive.

The Ministry of Education, Science and Technology (MoEST) formulated and implemented a School Education Sector Plan (SESP) (2022) to effectively implement the National Educational Policy 2019, the main objective of which is to integrate ICT into teaching-learning. To achieve this goal, the plan outlines a strategy to manage ICT tools/devices and digital learning resources in schools while also enhancing the skills of both teachers and students (MoEST, 2022). The plan specifies a series of activities to be carried out over the next ten years, including the establishment of data centers and digital laboratories for administrative and educational purposes. Additionally, it aims to provide ICT infrastructure and internet connectivity to all schools. Education Training Centers (ETCs) are equipped to train teachers and staff in ICT usage for school management and education. Interactive digital resources will be developed for different grade levels, with a focus on ensuring accessibility for children with disabilities.

Furthermore, digital curriculum and textbooks will be created and made publicly available. The plan also emphasizes the inclusion of basic ICT skills in the curriculum and the development of an ICT subject curriculum. Building upon the Learning Portal, which was initially developed for continuity of learning during the COVID-19 outbreak, efforts will be made to institutionalize it further and improve accessibility through mobile applications. To ensure effective communication and information dissemination, online platforms and social media will be utilized as part of the SESP Communication strategy, facilitating interaction with responsible officers, stakeholders, and education beneficiaries.

The National Educational Policy and the School Education Sector Plan are Nepal's primary policy documents. The former outlines a clear objective, while the latter provides a roadmap with strategies and activities for the next ten years to achieve this goal. However, these policy documents fail to identify the current classroom situation of the Nepali public schools from the ICT perspective. Also, a

situation-specific concrete plan for using ICT in the teaching-learning process is lacking in the policies. This has resulted in confusion, dilemmas, and difficulties for leaders and teachers in navigating the implementation of ICT in the contemporary educational landscape.

## Research Gap

Acknowledging ICT's crucial role in education, there exists a significant gap in research concerning the distinct challenges faced by educators and school leaders in Nepal. While existing literature underscores the importance of ICT use and identifies key factors like resource accessibility, technological knowledge, and supportive school environments, minimal research delves into Nepal's educational setting. This gap hinders targeted strategies to aid educators in using ICT in lesson planning. To address this, thorough research capturing the experiences and challenges of Nepalese educators regarding ICT incorporation is imperative. Such insights will guide context-specific interventions and policies, fostering successful ICT use and improving educational outcomes.

In Nepal, policy documents like the National Education Policy, 2076 and the School Education Sector Plan (SESP) outline aspirations for a technology-friendly educational system but lack specific directives on implementation. This absence creates ambiguity and complications for teachers and school leaders. The absence of a clear roadmap impedes addressing challenges linked with ICT use, including adapting materials and utilizing technological tools effectively. Moreover, this policy gap hampers a shared understanding among stakeholders regarding ICT's role in education. A detailed implementation plan with specific steps, timelines, and responsibilities for ICT use is essential to bridge this gap. This plan should encompass infrastructure development, teacher training, curriculum use, digital resource creation, and provisions for students with disabilities. Regular monitoring and evaluation mechanisms must also be established to track progress. Addressing this gap and providing clear guidelines empowers educators, enhances student learning experiences, and advances education in Nepal.

## Chapter Summary

This chapter reviews relevant literature on ICT use in education, focusing on empirical findings, theoretical frameworks, and policies, culminating in the identification of a research gap. The chapter discusses the transformative impact of ICT on education, highlighting challenges such as resource access, teacher training,

and contextual factors. The TPACK framework is explored as a means to enhance ICT use by connecting technology, pedagogy, and content knowledge, while digital leadership is emphasized as crucial for guiding educational institutions toward effective technology adoption. Policies such as UNESCO’s guidelines and Nepal's National Education Policy and School Education Sector Plan are explored for their role in promoting ICT use, though they lack specific strategies for addressing the current classroom context in Nepali public schools. The research gap identified points to the need for further investigation into the challenges faced by educators and school leaders in Nepal, particularly in using ICT in lesson planning and teaching practices.

# CHAPTER III
# RESEARCH METHODOLOGY

From my understanding, philosophical assumptions act as a guiding force for researchers, pointing them toward the most appropriate research methods to achieve enhanced outcomes. My research is focused on narrative study; I delved into the diverse approaches to acquiring knowledge, encompassing a wide spectrum of epistemological and ontological perspectives. Through this exploration, I have uncovered multiple realities and shed light on the intricate interplay between philosophical assumptions and research methodology. This chapter delves into the detailed framework and rationale behind the chosen research methods, showcasing how they align with the overarching goals of my study and contribute to an extensive comprehension of the subject.

## Philosophical Foundation of Research

As the viability and potential benefits of ICT in the context of Nepal continue to multiply, the erosion of many challenges in effective use in the daily classroom is suitable for the Nepalese context is evident. Teachers encounter difficulties identifying suitable strategies, techniques, and instructional design principles essential for successful ICT use. So, I felt an urgent need for research to explore and identify teachers' understanding, recent practices and barriers to using ICT in daily class facilitation in the Nepali context. To accomplish this, I had to gather information from the teachers at the school. The information gathered differs from person to person based on their individual experiences, opinions, and beliefs. This implies that the information for my research is a shared contribution of different personalities. According to Alharahsheh and Pius (2020), ontology involves searching for an answer or understanding of a research question by referencing existing available forms of knowledge. They further stress that, in this perspective, reality is seen as something that is understood by taking into account the shared meanings and social experiences in the research. It emphasizes the importance of considering how people collectively perceive and interpret the world rather than just focusing on individual viewpoints. Therefore, the underlying ontology of my research is the recognition of multiple realities.

I believe that human beings are distinct from physical phenomena, and we should not treat them the same way when gathering information for research. Building close relationships with participants over a prolonged length of time can greatly impact the accuracy and precision of the collected information (Hiller, 2016). This is because of the subjective nature of the knowledge. As explained by Alharahsheh and Pius (2020), epistemology refers to how researchers understand and gain knowledge about reality. It focuses on the methods researchers use to uncover knowledge and grasp the true nature of things. They further stress that if there is a connection between the research and the knowledge from the people's experiences, beliefs and values, then the epistemology is subjectivity. Epistemological assumptions serve as a basis for validating research choices and reflect one's beliefs about the connection between the person acquiring knowledge and the subject of study, specifically the researcher and those being explored (Hiller, 2016). So, my epistemological belief is subjectivity which requires the closeness with the participants for a prolonged time to increase the validity of the information collected.

As a researcher, I recognized that my personal beliefs, values and personal experiences as a human can shape both the data I collected and the research itself. This understanding aligned with the interpretive research paradigm, which emphasizes the co-creation of knowledge through the interaction between participants' experiences and my subjective experience. According to Aliyu et al. (2015), the axiology of the interpretive research paradigm is centered around the recognition and use of values within the process of research. As a collaborator in meaning-making, the researcher acknowledges their personal subjective experience and brings it to the forefront of the study. By doing so, they work to create a thorough understanding of the entire phenomenon being studied and deeply explore the connections and relationships between each part.

Within the interpretive paradigm, values are regarded as an essential part of social life, and values are not considered inherently wrong or superior to others (Aliyu et al., 2015). This perspective allows for a more inclusive and diverse exploration of the research topic, embracing the multiple perspectives and interpretations that individuals may hold. The focus is on understanding and respecting different values and recognizing their influence on the research process.

Based on the subjective nature of reality (epistemology) and the value-laden axiology, the paradigm that underpins my research is interpretivism. This approach

allowed me to delve into the subjective experiences, values, and meanings attributed by participants, providing an in-depth understanding of the research topic and fostering a more inclusive and subtle exploration (Aliyu et al., 2015). Thus, my research is framed within the lens of interpretivism, offering valuable insights and perspectives aligned with the overarching objectives of my study.

## A Narrative Inquiry as the Research Design

This study's research design adheres to the interpretive research paradigm, where the ontology acknowledges multiple realities, the epistemology emphasizes the subjective nature of reality and seeks closeness with participants, and the axiology is value-laden. Spector-Mersel (2010) states that narrative research aligns with these aspects of the interpretivist paradigm. Ontologically, narrative research recognizes that reality is shaped by society and people, and groups construct their identities and experiences by interpreting their narratives. Epistemologically, narrative research values subjective and personal perspectives as valid sources of knowledge and understanding. Axiologically, narrative research values the perceptions and experiences of individuals, aiming to promote empathy, understanding, and social justice.

Therefore, a narrative inquiry is chosen for this study's research design. By embracing the foundational principles of the interpretive paradigm, the research has engaged in meaningful dialogue and advanced interpretative inquiry in a focused and purposeful manner (Spector-Mersel, 2010). This design enabled exploring and interpreting participants' narratives, providing insights into their lived experiences and subjective realities. By immersing in the participants' narratives, this research has developed a comprehensive insight into how ICT is used in the educational process. Also, it has shed light on the challenges in the context of Nepalese schools

## Research Site and Participants

Rehman and Alharthi (2016) state that multiple realities are acknowledged by the interpretive paradigm and constructed through the researcher's and participants' interpretations and reflections. This qualitative research is where my personal opinions and judgments are essential in understanding the world and constructing knowledge. The interpretivist paradigm aligns with qualitative research approaches that aim to investigate and comprehend the interpretations that people of organizations make about social or human issues. With this understanding, the research design for this study involved purposeful selection of the participants

(Shaheen et al., 2019), which allowed the researcher to subjectively select participants based on their judgment rather than relying on random selection. Ayhan (2011) explains that this method involves the researcher's deliberate selection of respondents, considering factors such as their relevance to the research objectives.

**School's Profile**

In this study, three public schools from different locations (central, northeast and southwest Kathmandu) in Kathmandu were selected purposefully. The reason for choosing these schools is that they were easily accessible to me. Two subject teachers (mathematics or science and one language teacher) from each school were selected as respondents. This approach was feasible within the research budget, resources and time constraints.

**Heritage Secondary School**

Heritage (pseudo name) Secondary School has a history of almost eight decades. Located in the center of Kathmandu Valley, it is one of the oldest government schools in the country. With 17 classrooms, 35 teaching and 6 non-teaching staff, the school provides education from grade one to ten during the day for the 628 students in the academic year 2024/25. The school has three buildings and a playground. When you enter the school at 10 am on a normal school day, you will see the school's morning assembly. During the assembly, you will see a pupil leading the assembly with a microphone and an appropriate sound system, and you will see some pupils in the ground-faced first-floor window controlling the sound system. You will see CCTV surveillance in every corner of the school, including the classrooms.

***Hilly Garden Secondary School***

Located in the southwestern part of Kathmandu, Hilly Garden (pseudo name) school has a legacy of more than 5 decades. With three buildings, 25 teaching and 3 non-teaching staff, this school provides education from class 1 to 10 during the daytime (10 am to 4 pm) for 366 students. As you enter the school, you can see beautiful rows of gardens on either side of the playground. One interesting thing you might notice is the security guard scrolling through his mobile phone, as the internet is available on-site. There are CCTV cameras at every corner of the school and everything inside the school is under surveillance.

***Sunrise Secondary School***

Sunrise (pseudo name) school is a government school with more than six decades of history in school education. This school is located in the northeastern end

of Kathmandu. This school has only one building with thirteen academic classes. Due to the lack of infrastructure, they conduct classes in two shifts. They conduct classes from 6 to 10 from 6 am to 10.50 am and up to class 5 after 11 am. This school provides education to more than 800 students by more than 40 teaching and non-teaching staff. Like the previous two schools, this school is under CCTV surveillance as the local government has installed CCTV in all schools in Kathmandu Metropolitan City.

**Participant's Profile**

From each of the above three schools, I selected two participants as my research respondents. Among these two participants, one was either a mathematics or science teacher, and the other was either an English, Nepali, or social studies teacher. The profile of my respondents from each school is prepared below:

***Ram***

Ram (pseudo name) is a 46-year-old male social studies teacher at Heritage Secondary School. He teaches Social Studies from grade 7 to grade 9. He has been teaching Social Studies since 1997 AD. He has an MA/Med in Geography/Economics. He has received many professional development training from the government of Nepal and the Teacher College Programme conducted by Kathmandu Metropolitan City (KMC) in collaboration with Kathmandu University (KU) is the most recent training he has attended. However, he has not yet attended any ICT-focused training. Though he has been in the teaching sector since 1997 AD, he joined Heritage School in 2023 AD. He likes to teach Nepali and Social Studies.

***Suman***

Suman (pseudo name) is a male teacher aged 37. He teaches science in grades 8, 9 and 10 at Heritage Secondary School from 2021. He has a master's degree in science with Biology. He has been teaching science since 2006 AD. Although he has been in the teaching sector since 2006 AD, he only joined the public schools as a government teacher in 2023 AD. Before that, he taught in various private schools in the Kathmandu Valley. He has undergone a few trainings, and the Teacher College Programme conducted by KMC in collaboration with KU is the most recent one. Teaching science and dealing with individual students is his interest.

***Bishnu***

Bishnu (pseudo name) has a master's in education with Mathematics. He is 53 years old and has been in the teaching profession for 33 years. He has been teaching

mathematics since the beginning of his career. He has been teaching mathematics at Hilly Garden Secondary School for the last 10 years in Grades 9 and 10. He has attended numerous teacher professional development (TPD) trainings conducted by the Government of Nepal, the Centre for Human Resource Development (CHRD), and the Teacher College Programme conducted by KMC in collaboration with KU, which is the latest. However, he has not received any training in mathematics education on ICT. He is also the Vice Principal of Hilly Garden School.

***Kiran***

A 45-year-old man with a Master's in English is Kiran (pseudo name). He has more than 25 years of teaching experience and has been teaching at Hilly Garden Secondary School for 1 year. He has been teaching English at the school level since the beginning of his teaching career and is currently teaching English in grades 8, 9 and 10 at Hilly Garden School. He has attended several trainings related to TPD and training of trainers. The last training he attended was at Teachers College, conducted by KMC in collaboration with KU.

**Sarita**

Sarita (pseudo name) is an experienced 58-year-old teacher at Sunrise Secondary School. She has a master's in education in Nepali. She has been a teacher for 40 years. At the beginning of her teaching career, she was a primary school teacher, where teachers were not allowed to choose a particular subject to teach. Later, in 1988 AD, she became a Parament Government Teacher of Secondary Level and started teaching Nepali in Classes 9 and 10. She has been teaching at Sunrise Secondary School for the last four years. She has received several trainings related to TPD but very little on ICT in teaching Nepali. The Teachers College was the last training she attended. She has visited different schools in Japan for professional growth and development.

**Rajesh**

Rajesh (pseudonym) is a 53-year-old male teacher at Sunrise Secondary School. He has an intermediate science degree and a bachelor's degree in mathematics. He has 33 years of experience and has been teaching at Sunrise School for 29 years. In terms of the subjects he teaches, he alternates between Maths, English, Science and Computer Science. He currently teaches Science to grades 7, 8 and 9. He has attended various training sessions on TPD and the Teachers College is

the latest training he has attended. Learning from the child is his greatest area of interest.

The chosen participants were engaged in interviews, where storytelling was employed as a method of gathering information. Participants were encouraged to discuss their own experiences that are connected to the research topic by the interview questions. The experiences shared by the participants provided valuable insights into their perspectives and experiences. This qualitative approach enabled an in-depth understanding of the research questions within the context of schools in Kathmandu Valley. By employing purposive sampling and conducting interviews, this research tried to capture the rich and diverse experiences of school leaders and teachers, shedding light on their unique perspectives and challenges in ICT in education.

## Data Collection Methods, Tools and Procedure

According to Butania (2015), qualitative research involves utilizing various techniques such as observations, interviews and document analysis. While interviews are commonly employed in qualitative studies, researchers also have the option to gather data through observations and/or documents. “The data collection process in qualitative research revolves around the activities of asking, watching, and reviewing" (Butania, 2015, p. 191) which constitute a series of actions undertaken by researchers during the data collection phase. For my research, the primary method of data collection is conducting in-depth interviews with participants. The participants consisted of teachers from different schools in Kathmandu Valley. As an educator with access to a wide network of teachers and school leaders in the area, I could conveniently engage them in the research process.

Interviews are considered a powerful tool for data collection and can be structured, semi-structured, or unstructured, as noted by Efron and Ravid (2013). I utilized the unstructured interview method to gather data in the study. The unstructured format allows for greater flexibility, leading to rich and detailed insights, as highlighted by Hofisi et al. (2014). To ensure comprehensive data collection, I conducted multiple interviews based on requirements with the schoolteachers. I recorded these interviews using my phone and transcribed the recordings, incorporating them into the explanation of the study procedure and data presentation section of this study.

## Data Analysis and Interpretation

According to Butina (2015), qualitative research entails the process of understanding and extracting meaning from the collected data. Researchers fully engage with the data, focusing on segments that offer potential insights related to their research questions. By comparing and identifying patterns or themes within the data, researchers interpret the content and derive meaningful understandings that form the study's findings. The collection and analysis of data in qualitative research are not sequential but rather simultaneous activities. Initial analysis occurs during the first interview, where emerging insights and hunches are identified, guiding further exploration or refinement of interview questions. Once data collection is complete, a more intensive analysis phase commences.

In my analysis, I have employed simple narrative analysis, a common approach in interpretative inquiry. Various methods can be used in this approach. One widely used method is narrative, thematic analysis, which concentrates on the textual content. For my study, I chose this approach.

I have applied five steps in the narrative thematic analysis. Firstly, the data is organized and prepared, involving transcribing audio tapes and noting initial patterns or themes in the transcripts. The next stage, coding, involved manually identifying repetitive words and ideas in the data. I highlighted significant ideas and repeated words or messages within each narration and assigned corresponding codes to facilitate easy identification. I constructed a master theme and arranged the codes into logical groups representing major findings.

I have condensed the codes into different categories or themes in my study, such as ICT as electronic means and ICT for the transformative pedagogical shift. The last stage of the analysis entailed interpreting the data by studying the categories and codes to identify overarching themes or theories that illuminate my research questions. These themes were generated from the shared perspectives and serve as the foundation for interpreting and deriving meaning from the data.

## Ethical Consideration

It's the job of the qualitative researcher to make sure that people can decide for themselves if they want to be part of the study. They must also keep participants' identities secret when finding people for the study and sharing the results. Lastly, they should report their research in a manner that is simple to understand and truthful, without tricking anyone. Ethical considerations will play an important role in ensuring

the protection, dignity, and well-being of all participants involved in qualitative research, as emphasized by Creswell (2009). These considerations will involve questioning the underlying moral assumptions, and political and ethical beliefs, and ensuring fair treatment of diverse perspectives within research agendas (Pirzada, 2022). Firstly, I was committed to upholding the principle of voluntary participation, ensuring that individuals provide informed consent or assent without any compulsion. Moreover, I ensured the participants' privacy and confidentiality, acknowledging the sensitive nature of qualitative research and the potential risks of data disclosure by using pseudonyms to address individuals and their schools. To mitigate harm, I implemented strategies to minimize physical, emotional, and spiritual distress, including providing access to counseling support if needed. Additionally, I recognized the importance of reciprocity, ensuring that participants benefit directly or indirectly from their involvement in the study. By adhering to these ethical principles, I conducted my research with integrity, respect, and sensitivity towards all participants involved.

Utmost importance was given to honesty, professionalism, and unbiased approaches. The information provided by participants was treated with respect, without misinterpretation or distortion that could impact their lives. There was no pressure or coercion to compel them to answer questions. Confidentiality was maintained by safeguarding participants' privacy, and all rules, regulations, customs, and norms of the local context were strictly adhered to. The research was planned and executed within the designated time frame, demonstrating a strong commitment to ethical guidelines set forth by the research guidelines presented by Kathmandu University School of Education.

**Credibility and Trustworthiness**

In research, credibility refers to the data's accuracy, the participants' viewpoints, and the researcher's interpretation of the collected information (Cope, 2013). It will be imperative to avoid any unethical behavior that could compromise the credibility of the findings of research (Creswell, 2009). The researcher has the opportunity to use different methodologies throughout the research process to meet different standards and enhance the study's credibility and dependability. As per Cope (2013), triangulation, for example, involves the use of different data sources, including interviews, observations and journaling, to conclude. Techniques such as prolonged engagement, sustained observation and self-reflection are important during

data collection, as they encourage in-depth responses while mitigating researcher bias (Creswell, 2012). Documenting research decisions and assumptions through an audit trail ensures transparency while seeking validation from participants through member checking adds an extra layer of authenticity. Presenting these methods alongside compelling quotes from participants allows readers to assess the study's credibility and validate its interpretations.

In this study, ensuring criticality and thoroughness were involved in offering a comprehensive account of detailed data analysis and repeatedly reviewing transcripts, establishing a method to attain data saturation and a thorough Comprehension of the phenomenon. Confirmability and vividness were achieved through the use of substantial, expressive quotes that embody the emerging themes. Accuracy in interpretations was ensured by maintaining an audit trail and involving an experienced mentor in the data analysis process. Triangulation was confirmed by employing various data collection methods, such as interviews, reflexive journal notes, and information from scientific literature.

**Temporality**

Temporality is about understanding the influence of time and how past experiences, current situations, and future goals shape how experiences are told and understood (Haydon & Riet, 2016). In my research, I thought about how the teachers' previous experiences with ICT shaped what they were doing in the classroom today and how these past experiences might affect their future teaching practices. As I analyzed their stories, I reflected on how their development had unfolded over time, how past encounters with technology had shaped their current approach, and how those experiences were always in flux. By keeping this in mind, I ensured that I saw their experiences as evolving and not fixed.

**Sociality**

Sociality is about the connections and relationships between people, highlighting how social, cultural, and institutional factors influence how experiences are shared and understood (Clandinin & Rosiek, 2007). I focused on the social and cultural contexts of the teachers' experiences with ICT, paying attention to how their relationships with students, colleagues, and school leaders shaped their practices. The support or challenges they received from others in their school community had a big impact on how they used technology in their instructional practices. I recognized that

the teachers' use of ICT was influenced by the broader social networks and cultural expectations in their schools rather than being just a personal choice.

**Spatiality**

Spatiality looks at how the physical environment and space influence the formation of experiences and perceptions (Haydon & Riet, 2016). I explored how the physical settings of the schools, such as classroom layouts, access to technology, and the overall infrastructure, shaped the teachers' capability to incorporate ICT into their lessons. I considered how the resources available at each school or the limitations of their infrastructure impacted how teachers were capable of incorporating technology into their teaching. I understood that the teachers' ability to effectively incorporate ICT was deeply connected to the physical environment in which they worked.

**Positionality**

Maintaining high-quality standards is an important part of educational research, particularly when exploring the use of technology in teaching. Therefore, all studies in this field must adhere to established quality standards. Adhering to these standards not only enables others to evaluate the quality of my research but also ensures the credibility and validity of my findings. As a narrative researcher within the interpretive paradigm, my objective is to gain an understanding of teachers' experiences with using ICT in the classroom. To ensure the maintenance of quality standards in my research, I prioritized aligning my methodology with the research purpose. By employing rubrics as an interactive tool, I interpreted and understood the teachers' experiences with ICT use. I was a school teacher, and I had preconceived notions regarding the use of ICT. However, I was aware of the responsibility I hold to maintain the quality and truthfulness of my research. Therefore, I carefully considered whether I could uphold the standards when exploring the teachers' experiences of ICT's impact on teaching and learning, keeping myself free from possible biases. Additionally, I was committed to maintaining methodological rigor, fulfilling the theoretical objectives, and upholding ethical guidelines throughout my research journey. Furthermore, I applied critical reflection and explored the three common aspects of narrative inquiry- temporality, sociality, and place- to maintain the required quality standards in investigating the role of ICT in teaching and learning.

## Chapter Summary

This chapter outlines the research methodology, covering the philosophical foundation, research design, participants, data collection methods, analysis, and

ethics. It stresses effective ICT use in Nepalese teaching-learning, emphasizing input from teachers. The chapter adopts an interpretivist paradigm recognizing multiple realities, subjectivity, and close researcher-participant relationships. Using a narrative inquiry design aligned with interpretive principles allows a deep exploration of participant experiences. It details data collection methods like interviews, employing narrative thematic analysis for interpretation. Ethical considerations prioritize confidentiality, honesty, professionalism, and adherence to ethical guidelines.

# CHAPTER IV
# UNVEILING THE TEACHER'S PERSPECTIVES ON ICT USE

The perspective from person to person differs. Their different experiences shape a person's perspective. So, individuals from different environments might have different perspectives on a common issue. More so in the case of teachers, they might have different perspectives on the same issue teaching in different grades of the same school. I have collected the teachers' perspectives on ICT use via interviews and filed notes. Those perspectives are presented in this chapter to seek the answer to my first research question, 'What do schoolteachers understand about the use of ICT in teaching-learning?'.

I have presented the teacher's understanding of ICT use into four different themes, which are (1) ICT as an electronic means of teaching (2) digital classroom (3) ICT for transformative pedagogy (4) ICT's role in learning enhancement.

## ICT as an Electronic Means of Teaching

ICT in education is the diverse set of electronic tools used inside and outside the classroom to facilitate learning (Nnaekwe & Ugwu, 2019). In Public School classrooms in Kathmandu, ICT use in education has also been shaped in diverse forms. ICT is often viewed as an electronic means to enhance teaching. As teachers adapt to new technologies, their understanding of ICT reveals how it functions as an electronic tool.

At Heritage Secondary School, a science teacher shares his perspective on how ICT makes learning more engaging:

> *In short, to make teaching and learning more interesting for the students and to enhance their understanding, we use various tools in the classroom. Whether it's a laptop, a smartboard, equipment in virtual labs, PowerPoint presentations, or videos we display, this is what ICT is all about (Suman, interview).*

As per Suman's opinion, ICT is the electronic tool used in the classroom. Across town, at Sunrise Secondary School, another teacher elaborates on using technology creatively, even with limited resources which makes the teacher's understanding more concrete:

> *We still have an old television in the school. I bought a CD drive with educational videos on topics like cell division. We used it to show videos in the classroom, including topics like animals, astronomy, and even some from Jurassic Park. We also used VR for a year, which made learning more interactive. Though we can't do it every year, it was a very impactful experience (*Rajesh*, interview).*

Even in schools with fewer technological tools, ICT is strategically employed in ways that resonate with students. At Sunrise, an experienced Nepali language teacher explains how digital tools can enrich language learning:

> *Information and Communication Technology (ICT) is about exchanging knowledge. It refers to the new tools and methods used in teaching. Nowadays, when using ICT, students are more engaged. For example, in Nepali classes, when teaching poetry, we can show the author's introduction using ICT, and during literature classes, we display biographies. We don't use ICT for everything, but we apply it where it's most effective" (*Sarita*, interview).*

She opined that ICT is the use of digital devices to share knowledge, with video displays being a good example. She also thinks that students are more engaged in learning when ICT is used compared to when it's not. Her view is backed by Alkamel and Chouthaiwale (2018), they explain that ICT is being used more in language teaching to make learning more interactive and personalized, improving traditional methods, especially when skilled teachers use online tools.

Teachers have witnessed a shift in how technology has shaped their teaching, especially since the COVID-19 pandemic. At Hilly Garden Secondary School, the vice principal cum mathematics teacher reflects on the importance of adapting ICT tools for teaching:

> *ICT involves teaching and learning through electronic means. This includes everything from laptops to televisions. During the COVID-19 pandemic, we even had to use mobile phones to teach. Now, we use them for project work as well, and we are beginning to use smartboards in the classroom (Bishnu, interview).*

Different devices, from mobile phones to projectors, have come under the ICT umbrella. At Hilly Garden, another teacher speaks to the variety of tools used to enhance the learning process:

> *ICT also refers to using audio and video. This includes devices like smartboards, projectors, laptops, and mobile phones. The purpose is to facilitate the teaching and learning process. I use mobile phones, laptops, and audio devices such as speakers. At my previous school, we frequently used projectors and smartboards, although not so much now (Kiran, interview).*

The teachers' experiences and perspectives underscore ICT as a vital electronic tool for facilitating learning. These insights align with Nnaekwe and Ugwu's (2019) definition of ICT, reinforcing its role in enhancing teaching and learning in diverse educational settings.

Teachers understand ICT as a collection of electronic tools and resources that enhance teaching and learning by making it more engaging, interactive, and accessible. Their perspectives reveal a practical understanding shaped by the tools available in their schools and the need to adapt creatively to resource constraints. ICT is viewed as a medium for exchanging knowledge, enriching lessons with multimedia elements like videos and biographies, and fostering greater student engagement. The COVID-19 pandemic further broadened their understanding, highlighting ICT's role in ensuring continuity of education through tools like mobile phones and digital platforms.

## Digital Classroom

The use of ICT in education has led to a significant transformation, evolving from the basic use of computers to the establishment of fully digital classrooms. As Alisoy (2023) notes, this shift is driven by the need to modernize teaching methods and respond to the evolving needs of learners in today's tech-focused world. Modern digital classrooms are interactive environments that incorporate tools such as smartboards, high-speed internet, and educational software, which promote engaging, collaborative, and personalized learning experiences. Alisoy further emphasizes that "digital classrooms serve as a vital point where technology enhances traditional teaching approaches, offering immediate access to global resources and connecting students worldwide" (p. 35).

The shift toward ICT has brought the digital classroom concept to life in many schools. Teachers have discovered how digital resources and pre-made materials streamline their work. At Heritage Secondary School, a science teacher reflects on the value of pre-existing digital content and how it saves time:

> *There's going to be a problem, sir. What if not all the class PowerPoints are made in the same year? I already have them from previous years and use them again. I now have PowerPoints for classes 7, 8, and 9, which were used a lot during COVID. If we had backed them up earlier, we wouldn't have wasted this year at home. It would be great to have softcopy books that we could copy and paste from, making it easy to use without wasting time. Creating new documents wouldn't be difficult as we already use old ones. For example, if you need to explain free fall, you could use ChatGPT to generate material for the class and explain it in language the child understands (Suman, interview).*

Another teacher from the same school reflects on how technology has changed teaching practices, especially in subjects like geography, where visual tools have become indispensable:

> *For example, showing maps on the smartboard and explaining them is much easier now. Previously, we had to create and prepare materials manually. Now we can use Google and search for educational content, historical information, and videos on YouTube, making teaching more convenient (Ram, interview).*

However, not all schools have the luxury of fully equipped digital classrooms. At Sunrise, a teacher improvises by making use of available facilities whenever possible:

> *There is a separate place for audio-visual content upstairs. We take our class there as needed. We don't have an ICT class, a smartboard, or a television, so I take the students upstairs to the computer class, when necessary, especially since I'm a science teacher (*Rajesh*, interview).*

Despite these resource limitations, some teachers wish they could integrate ICT more deeply into their classrooms. One teacher from Hilly Garden reflects on how a lack of ICT skills can be frustrating:

> *Teaching would have been even more enjoyable if I had been more frequently involved. My knowledge of ICT was limited at the time, and I wanted to dedicate more time to it, but I couldn't. That was a frustrating experience, although what I could provide was engaging for the students. There was more testing, and the students enjoyed it. I felt limited by my lack of ICT experience and could have offered more (Bishnu, interview).*

The aforementioned understanding and experiences of ICT use in teaching and learning practices significantly supplement the digital classroom concept. As teachers

address the challenges of using technology in their pedagogy, their insights reveal how effectively these tools can be utilized to enhance learning experiences. For instance, educators who grasp the complexities of ICT are better equipped to create interactive and engaging environments aligning with Alisoy's (2023) assertion that digital classrooms serve as vital spaces where technology enhances traditional teaching approaches. Conversely, when teachers face challenges such as limited ICT skills or inadequate resources, it can hinder the full realization of the digital classroom's potential (Nnaekwe & Ugwu, 2019). This highlights the significance of continuous professional development and support for educators, ensuring they can use ICT to its fullest extent. By bridging the gap between technological tools and pedagogical strategies, teachers enrich their teaching practices and contribute to a more effective and responsive digital classroom environment that accommodates the varied needs of today's learners.

## ICT for Transformative Pedagogical Shifts

Rana et al. (2018) note that the use of ICT in classrooms has indeed opened up new avenues for learning; however, challenges remain. They point out that, in some cases, the introduction of technology may seem like a simple replacement of textbooks with digital devices rather than instigating meaningful changes in teaching methods. Nevertheless, the incorporation of interactive and visually stimulating resources enriches the learning experience. Students enjoy the freedom to explore at their own pace and thrive in a more welcoming classroom environment that fosters peer support and dialogue. This evolution toward collaborative and shared learning marks a significant shift from traditional, top-down teaching approaches to a more student-centered approach that empowers learners. However, it is crucial to recognize that these positive developments are fragile and could be compromised if educators face persistent challenges, such as inadequate infrastructure and the sustainability of innovative practices.

Teachers across Kathmandu Valley have observed significant changes in their teaching practices as they integrate ICT tools into their classrooms. They shared their experiences and understanding of ICT use in teaching-learning, which resembles the findings of Rana et al. (2018), as mentioned in the previous paragraph. At Heritage Secondary School, a science teacher reflects on how ICT has transformed the traditional classroom setup:

> *The difference in pedagogical approaches is significant. Previously, we only used a marker and duster on a whiteboard to explain pictures. Now, with smartboards, the process is easier and more interactive. Last year, the smartboards were connected, and we've already seen their benefits. The real question is how long they will last and how effectively we can use them (Suman, interview).*

The transition from conventional methods, such as verbal explanations, to more interactive and visually engaging materials has become a common theme. Another teacher at Heritage highlights this shift:

> *That change happened automatically. Before, I focused more on verbal explanations, but now I can show educational materials directly. Things that might have been missed earlier are now included, and it has become easier to cover all content while offering more learning opportunities (Ram, interview).*

ICT not only enhances how content is delivered, but it also fosters greater student engagement. At Hilly Garden Secondary School, the vice principal shares how this transformation has empowered students to take a more active role in their learning:

> *Earlier, I had to be very active in leading the class. Now, the students are more involved and engaged in making decisions. Before, I was the one who knew everything, but now the students actively participate and share their knowledge (Bishnu, interview).*

This shift from teacher-centered instruction to a more participatory classroom environment illustrates how ICT bridges the gap between traditional and modern pedagogies. With access to digital tools, students can contribute more meaningfully, sharing their ideas and exploring knowledge beyond the textbook.

ICT has also improved the way teachers prepare for their lessons. At Hilly Garden, a language teacher explains how technology has expanded his teaching resources:

> *Before entering the classroom, I now prepare lessons using resources on my laptop and mobile phone, gathering information from web addresses and even reference books. I frequently use mobile dictionaries, which has broadened my teaching approach and knowledge. ICT has enhanced my preparation and made teaching more effective (Kiran, interview).*

The use of laptops, mobile phones, and other digital resources has allowed teachers to gather a wealth of information from multiple sources, elevating the quality of the material they present in class. This blend of traditional teaching methods with modern tools is helping teachers move toward a more enriched and meaningful educational experience for their students.

Teachers have embraced new pedagogical approaches, shifting from conventional methods to more engaging and collaborative learning environments. This transition not only improves the quality of education but also enables students to actively participate in their learning process. As educators continue to adapt their practices, the use of digital tools has proven to be invaluable in fostering engagement and enriching lesson preparation. However, the sustainability of these advancements relies heavily on adequate infrastructure and ongoing support. To fully harness the potential of ICT in education, stakeholders need to address these challenges, ensuring that the positive changes in teaching and learning are not only sustained but also expanded in the future.

## ICT in Learning Enhancement

Incorporating ICT in education can transform learning experiences by shifting from traditional content-focused methods to interactive, competency-based curricula (Rana et al., 2018). This transition enhances instructional quality and promotes collaborative learning, allowing students to engage more actively in their education. The role of ICT in enhancing learning stands out as one of the most critical aspects of its use in the classroom. Teachers across various schools have shared their insights into how ICT tools have significantly improved teaching-learning, making it more engaging and effective for students.

At Heritage Secondary School, a science teacher describes how ICT, particularly visual aids, has made learning more impactful and memorable for students:

> *When teaching the classification of living beings, like Phylum Porifera, we used to only give an example of Sycon by mentioning its name or showing a picture from the book. Now, students can look at videos of Sycon, and even if they don't see it in reality, the visual aids make the learning more permanent. We use this approach in almost every lesson (Suman, interview).*

Using videos and other visual materials has made it easier for students to grasp concepts previously explained only through text or static images. This has led to a

deeper understanding and longer retention of the material, particularly in subjects like science, where visual representation plays a key role.

Another teacher at Heritage points out how ICT helps keep students engaged, especially when their motivation to learn through traditional methods is low:

> *One benefit is that when students are reluctant to read, they might say, 'Sir, let's watch this.' Showing them relevant content provides a learning opportunity, even when their motivation is low. Today's students are curious and have a strong interest in ICT, which stimulates learning and increases knowledge sharing. This helps them understand historical facts better and makes learning more effective (Ram, interview).*

ICT tools such as videos or interactive content capture students' attention, turning moments of disengagement into opportunities for learning. Teachers have noticed that students are naturally drawn to technology, making it a powerful tool to stimulate curiosity and encourage knowledge sharing.

At Sunrise Secondary School, the impact of ICT on generating student interest has been particularly noticeable. A teacher reflects on how the use of digital tools has transformed the classroom atmosphere:

> *Interest is the biggest benefit. A few years ago, students had to be encouraged to study, but now, the old ways of teaching don't generate much enthusiasm. ICT creates interest and makes the subject clearer, simplifying teaching as it presents content automatically rather than having it manually created (*Rajesh*, interview).*

The shift from teacher-driven methods to ICT-enabled teaching has not only simplified lesson delivery but also sparked more interest among students. The ability to present content more dynamically and engagingly has made learning easier and more appealing, especially when traditional methods might feel outdated.

In addition to fostering interest, ICT has proven to be a powerful tool for reinforcing concepts and ensuring better retention. A teacher at Hilly Garden Secondary School explains how visual methods have enhanced students' understanding:

> *Visual methods have proven to be the most effective for student retention. For example, when teaching geometry, students better grasp the concepts of rectangles and triangles through visuals. ICT also helps students understand*

*abstract concepts more clearly, like using the variable 'n' in math (Bishnu, interview).*

By using ICT to visualize complex ideas, such as geometric shapes or abstract mathematical concepts, teachers can make difficult topics more accessible and easier to understand. The use of technology to illustrate lessons brings clarity to topics that might otherwise seem daunting to students.

Even in subjects where ICT might not be used extensively, its impact is still felt. A language teacher at Hilly Garden notes how ICT can motivate students during specific lessons, particularly in listening activities:

*"I haven't used ICT extensively, but I use it during listening classes, and it motivates students well. They enjoy it and understand the material more easily" (Kiran, interview).*

In these cases, the selective use of ICT can make a noticeable difference, transforming a standard lesson into a more engaging and enjoyable learning experience. Even in a limited capacity, the use of technology contributes to better comprehension and increased student motivation.

By facilitating personalized learning pathways and providing rapid feedback, ICT empowers educators to address diverse student needs effectively. Moreover, equipping students with essential digital skills prepares them for a technology-driven workforce, ensuring they are not only active learners but also capable contributors in an increasingly digital world (Das, 2019). Across these experiences, it is evident that ICT has played a crucial role in enhancing learning. From fostering deeper engagement and interest to improving retention and understanding, digital tools have proven invaluable in supporting teachers and students in the classroom.

The use of ICT in education enhances learning by transitioning from traditional methods to interactive, competency-based approaches, fostering deeper engagement and retention. Teachers across schools emphasize ICT's role in simplifying complex concepts, using visual aids and multimedia to make learning more impactful and memorable. For instance, videos help students grasp abstract scientific and mathematical concepts, while interactive tools capture their attention and stimulate curiosity. ICT also motivates disengaged students and generates interest, transforming classroom dynamics into more engaging and student-centered environments. Additionally, ICT supports personalized learning, rapid feedback, and the development of digital skills, equipping students for a technology-driven future.

## Reflection and Discussion

The teachers' understanding of ICT use, reveals a mixed level of competence in blending these three areas. For instance, the science teacher at Heritage Secondary School demonstrates an ability to combine content knowledge with technological tools, such as videos, in a pedagogically sound manner to teach complex concepts like the classification of living beings. This reflects an application of the TPACK model, where technology enhances content delivery in a way that aligns with the pedagogical goal. However, the fact that many teachers, particularly those from Sunrise and Hilly Garden Secondary Schools, lack formal ICT training indicates that their technological knowledge is often underdeveloped, limiting their capacity to effectively incorporate ICT into their lesson planning and teaching methods. These gaps prevent teachers from fully exploring the potential in the interconnectedness of technology, pedagogy, and content knowledge (Harris et al., 2010).

Teachers struggle to be digital leaders in their classrooms without sufficient training and support, underscoring the need for targeted professional development to cultivate these skills and promote more effective ICT use (Sağbaş & Erdoğan, 2022). In light of the digital leadership framework, which underscores the significance of technology in transforming education, it becomes apparent that the teachers' understanding of ICT use is hindered by their limited exposure to professional development in this area. Digital leadership traits, such as the capacity to foster innovation and lead change in digital environments, are crucial for teachers to not only use technology but to harness it in ways that drive student engagement and creativity. Teachers like Bishnu, who express frustration at missed opportunities due to insufficient ICT skills, reflect the critical role of digital leadership in education.

## Chapter Summary

This chapter, *Unveiling the Teacher's Perspectives on ICT Use*, explores teachers' diverse understandings and experiences regarding the use of ICT in their teaching practices. Based on interviews and field notes, the chapter seeks to answer the research question, "What do schoolteachers understand about the use of ICT in teaching-learning?" The findings are organized into four key themes.

The findings from the research highlight varying levels of understanding among teachers regarding ICT use in teaching-learning. Some teachers view ICT primarily as an electronic tool to enhance traditional teaching methods, such as presenting content through PowerPoint or accessing online resources. This

perspective reflects a basic use of technology, where ICT supplements their existing teaching practices without fundamentally altering pedagogical approaches.

Others, however, have a more developed understanding, recognizing ICT's ability to transform classrooms into more engaging and engaging spaces. These teachers see ICT as a bridge to facilitate student-centered learning, enabling activities such as collaborative projects, real-time assessments, and access to diverse learning materials. They believe that ICT, when used effectively, can significantly improve the quality of education. Nonetheless, even these teachers acknowledge that their understanding of ICT use is still evolving and that continuous professional development is crucial for staying current with technological advancements and effectively applying them in the classroom.

# CHAPTER V
# TEACHER'S APPROACHES TO EVERYDAY TEACHING PRACTICES

As I mentioned in the first chapter, I have been involved in the teaching sector as a teacher before the COVID-19 pandemic. However, I was introduced to ICT in teaching-learning after COVID-19 to a small degree. As a practitioner, I can say that almost all teachers have at least a little knowledge about ICT, which is also observed in Chapter IV. However, I cannot claim to which extent the teachers are applying the knowledge of ICT in their daily class facilitation. So, I have collected the data regarding teachers' practices inside the classroom and presented and analyzed it in this chapter.

This chapter talks about the teachers' activities to incorporate ICT in their daily class teaching. I have tried to seek the answer to my second research question, "How have the schoolteachers been using ICT in their teaching-learning practices?". The six different experiences of the subject teachers across various schools show the current practices of ICT use in teaching-learning in Kathmandu. I have presented the experiences of Nepali, English, Science, Social Studies and Mathematics teachers in this chapter under separate headings. Further, I have tried to validate those experiences by connecting them with literature and theoretical support.

## ICT to Foster Engagement in Nepali Language Teaching

From my observation and interaction with students and teachers, I found that the Nepali language is the mother tongue of many students. Also, all the students are native speakers of the Nepali language. That's why we can see the Nepali language teaching from the point of view of mother tongue teaching.

In teaching Nepali, the use of ICT has been a gradual but significant process. One teacher from Sunrise Secondary School reflects on her evolving use of technology in the classroom, which began about three years ago in May. Initially, the use of ICT emerged in response to online classes for students in grades 8 and 9, a shift prompted by the need to adapt to the new demands of teaching during the pandemic. As the teacher recalls:

> *I don't remember exactly when I started using ICT in teaching. It wasn't four years ago but rather around three years back, starting from May. My online classes for grades 8-9 started then. Some students joined online classes, while*

> *others came through their friends, showing interest in studying (*Sarita*, interview).*

During this time, the teacher's husband played a key role in setting up and facilitating the online learning environment, enabling students to participate. The use of ICT in these early stages was not only practical but also supportive of the learning process, with the teacher and her husband working together to create teaching materials. The teacher shares:

> *I used to type the content, and my husband would help format it. It made it easier for me to teach and for the students to learn. Preparing the material was time-consuming but more manageable (*Sarita*, interview).*

Despite the benefits, the shift to ICT was not immediate or all-encompassing. In the physical classroom, traditional methods such as using a whiteboard for writing and explaining continued to dominate. However, the gradual introduction of laptops for teachers has opened up new opportunities, although not every teacher has received one yet. The teacher mentions using her laptop at home and relying on her husband's assistance to navigate certain tasks. The transition to ICT has not been without its limitations, as the teacher notes:

> *The school has started providing a laptop to every teacher, but I have not got one yet. I do have a laptop at home. My husband had taught me some computer skills, and I learned a bit (*Sarita*, interview).*

While the use of ICT in teaching Nepali may not be extensive, it has certainly been impactful. The teacher describes how students are encouraged to use their mobile phones to research authors or topics before lessons. However, the lack of access to phones for all students and the limited use of ICT in the classroom restrict its full potential. Yet, the teacher has incorporated ICT in some ways, particularly in teaching poetry and biographies:

> *I showed a video on Satyamohan Joshi's biography and his book. The students enjoyed it a lot and were more engaged. The review and the overall experience were positive (*Sarita*, interview).*

This use of video content in lessons has enhanced student engagement and led to better learning outcomes, especially when compared to traditional textbook-based teaching. However, the teacher acknowledges that such use of ICT is not widespread across all topics, and logistical limitations, such as the availability of only one ICT room, pose challenges to more frequent use.

Technology has proven effective in certain aspects of teaching, such as content delivery and engagement, but it has not been incorporated into all areas of the teacher's practice. For instance, in Nepali exams, students continue to take paper-pencil tests, and ICT is primarily used for typing questions and entering marks. Internal assessment and record-keeping are still done manually, with the teacher tracking homework completion without the aid of digital tools:

> *Technology is not used during exams. Students appear for paper-pencil tests in Nepali subjects. After completion of the exam and paper correction, all the data is entered into computers. The teachers handle this part, and I only provide the marks (*Sarita*, interview).*

Reflecting on their experience, the teacher expresses a desire to expand their ICT skills, particularly in using the smartboard. They recognize the potential of ICT to make teaching more interactive and acknowledge that students often better understand the technology than the teachers themselves. This was evident during a lesson on Satyamohan Joshi's biography when the students, after a technical glitch, were able to fix the issue on their own:

> *If we had [a smartboard] in the classroom, we could teach using it. Sometimes, the students know how to use it better than I do. If something goes wrong, they fix it themselves (*Sarita*, interview).*

The teacher's use of ICT in Nepali language teaching has been both rewarding and challenging. While ICT has enhanced engagement and made certain lessons more interactive, its use remains limited due to factors like access to resources, teacher training, and the traditional nature of some classroom practices. Nonetheless, the teacher is open to further learning and using ICT more fully in their teaching, recognizing its potential to transform the learning experience.

**Using ICT in English Language Listening and Speaking Instruction**

As an English language teacher at Hilly Garden Secondary School, the journey of using ICT in the classroom has been both rewarding and challenging. The teacher reflects on the personal efforts made to introduce technology into his lessons, starting with bringing his equipment to class:

> *In the beginning, I had to make personal efforts to bring technology into my lessons. Since the school didn't provide equipment, I would bring my laptop and speaker. Whenever I needed to show a video, I'd connect my laptop to the*

> *speaker, but over time, carrying the speaker myself became difficult (*Kiran*, interview).*

This early experience illustrates the difficulty of maintaining the use of ICT without institutional support. The school now has a large speaker, but its use is not always practical, and the burden of purchasing and maintaining equipment has posed a financial challenge for the teacher. Despite these hurdles, the teacher continues to integrate ICT into lessons, particularly for listening exercises where Bluetooth speakers and mobile phones are regularly used:

> *I frequently use ICT in my teaching, especially Bluetooth speakers and mobile phones when students are listening to texts. It has become such a regular part of my lessons that I hardly even think about it (*Kiran*, interview).*

The shift from traditional methods, such as using tape recorders and radios, to modern ICT tools like laptops and mobile phones has transformed how content is delivered in the classroom. However, financial constraints and limited resources still hinder the full potential of ICT in the classroom. The teacher recalls an instance from a previous school where they had access to a Smart Board, which significantly enhanced the learning experience during a lesson about the film *Jhola*:

> *We used Smart Board to show a film named Jhola by Garima Pant about traditions... I remember using the film Jhola for a lecture, and only about 10% of the students understood it initially. However, after I reviewed the material with them and took them to the lab to watch the film again, they were all excited and wrote very clearly afterward (*Kiran*, interview).*

This example underscores the power of ICT when used effectively, particularly in enhancing students' understanding of complex topics. Unfortunately, the opportunity to use such tools is rare due to the limited availability of resources at the current school.

In terms of lesson preparation, the teacher has incorporated ICT into daily tasks such as creating test questions and searching for teaching materials. The use of mobile apps and Bluetooth technology has streamlined these processes, making it easier to find summaries and other educational resources. However, the teacher feels that the lack of a Smart Board and projector would allow for the seamless use of ICT in their lessons. For now, mobile phones are a key tool in delivering audio files and sharing information with students:

> *For test preparation, I primarily use my laptop to create questions. After writing them, I type them, email them, and print them out at school. I have also started using mobile apps to search for summaries, which is easier to transfer through Bluetooth... I remember when I used to carry my laptop and occasionally show students information about poets during poetry lessons (*Kiran*, interview).*

The teacher's journey with ICT has also involved learning new skills, such as using Excel to manage student grades, a task he initially struggled with. A colleague helped him become proficient in entering student names, calculating percentages, and assigning grades, which has greatly improved efficiency.

However, communication with students and managing homework still relies on more traditional methods, such as writing assignments on the board or using diaries. The teacher had previously set up messenger groups at another school, which allowed for easier communication and homework sharing. However, at Hilly Garden Secondary School, this has not been possible due to the lack of mobile phones or IDs among many students:

> *I set up messenger groups for each class to share homework and other information, which allowed students who missed classes to catch up. But here, I can't create such groups because many students don't have mobile phones or IDs (*Kiran*, interview).*

While the teacher has made significant strides in using ICT, this experience is primarily limited to listening exercises in the classroom. These exercises involve playing audio files and having students write based on what they hear, often requiring multiple repetitions to accommodate students at different academic levels. This gap in understanding among students poses a challenge, particularly in mixed-ability classrooms where some students quickly grasp the content while others struggle:

> *Typically, I let them listen three times before they begin their work. While some students understand after one listen, others need to hear it again, and some even become bored (*Kiran*, interview).*

Despite these challenges, the teacher remains optimistic about the future of ICT in his teaching. They express a readiness to use Smart Boards and other tools if they become available and believe that with the right training, the school can overcome the limitations they currently face:

> *I'm ready to use Smart Boards and other tools if they become available, and I believe that with the right training, we can overcome the challenges (*Kiran*, interview).*

While ICT has become a regular part of English language teaching at Hilly Garden Secondary School, its use is still limited by resource availability and financial constraints. The teacher has demonstrated resilience and adaptability in using technology in their lessons, but greater institutional support and access to more advanced tools, such as Smart Boards, could significantly enhance the learning experience for students.

**ICT for Enhanced Content Delivery in Science Teaching**

The use of ICT in science teaching has brought significant changes to the classroom experience, as shared by teachers from Heritage and Sunrise Secondary Schools. At Heritage Secondary School, the science teacher has been using technology for several years, with a particular shift during the COVID-19 pandemic. The creation of PowerPoint presentations for grades 7, 8, and 9 became a vital tool in delivering lessons:

> *I now have presentations ready for classes 7, 8, and 9, and these were particularly helpful during that time. We didn't need to create new ones each year because we already had them from previous years. The softcopy materials made editing and adapting easier, saving a lot of time (Suman, interview).*

The use of pre-prepared digital materials allows for efficient lesson planning and easy updates. Moreover, tools like ChatGPT have been used to generate reading material at the student's level, which is then incorporated into presentations for clarity and focus. This has streamlined the teaching process, especially when covering topics like free fall, where important points can be highlighted effectively.

> *The softcopy materials made it easier for us to edit and adapt, which saved a lot of time. For example, when I teach topics like free fall, I sometimes use ChatGPT to generate reading material that matches the students' level and then insert it into the presentation. It is simple to highlight important points and explain the content. Preparing these materials isn't a big issue anymore (*Suman, interview*).*

Weekly assessments are also a critical part of the science teacher's practice. ICT has simplified this process by enabling the teacher to record test results on their phone, which helps track student progress and allows for more targeted support:

> *We also conduct weekly tests after completing each unit. The test results help me assess each student's progress and identify where they need more support. For example, I recently taught three lessons in class nine and then conducted unit tests to measure their understanding. I now keep a record of the test scores on my phone, which makes it easier to track progress. After completing one chapter, I gave a test, and in science, we had about 24 to 25 chapters, so this method worked well for evaluation. I use a paper-pencil test format, and now, with the smart board, it's even easier to display the questions and conduct the test. (Suman, interview).*

The introduction of a smartboard in 2019 at Heritage Secondary School further transformed teaching practices. Initially met with curiosity and uncertainty, the smartboard quickly became a key tool for displaying digital textbooks and interacting with the material on the board. This technology eliminated the need for physical textbooks and facilitated more dynamic and engaging lessons, particularly when teaching complex subjects like the classification of living beings:

> *When teaching the classification of living beings, I used to just mention Sycon or show its picture from the book. Now, I show videos or more detailed images, which help the students visualize and remember better (Suman, interview).*

At Sunrise Secondary School, another science teacher shared a similar approach to using ICT in science teaching, emphasizing the value of multimedia resources such as videos from Google and YouTube. These are particularly effective when explaining scientific concepts, such as acids, bases, and salts, with everyday materials like lemon, soap, and litmus paper:

*"I often show short videos from Google and YouTube to explain these concepts, which makes it easier for the students to grasp the material" (Rajesh, interview).*

The challenge of using ICT in the classroom, such as the small screen of laptops and low audio volume, is mitigated by careful planning. The teacher downloads materials in advance and makes use of the smartboard in the ICT lab to enhance the students' understanding.

Project work has also benefited from ICT, particularly in fostering student engagement and participation. At Sunrise Secondary School, students are tasked with projects that involve photographing plants and animals in their surroundings and

emailing their presentations to the teacher. This interactive use of technology has encouraged students to explore their environments and has made learning more enjoyable:

*"The students showed a lot of interest, especially when they were asked to take photos of plants and animals in their surroundings as part of their project work" (Rajesh, interview).*

In addition to classroom activities, ICT has supported extracurricular science projects, such as launching water rockets and using virtual reality (VR) to explore astronomical content. These experiences have sparked student excitement and deepened their interest in science:

> *The students were amazed and excited to use these tools, which made learning more engaging and enjoyable. We also organized science-related activities outside the classroom, such as launching water rockets and taking students to see the stars through telescopes (Rajesh, interview).*

Collaboration between students and teachers has also been a valuable aspect of ICT use. Teachers, recognizing that students are often more familiar with certain technologies, actively involve them in the learning process. This not only creates a more interactive classroom environment but also enhances the teacher's skills with technology:

*"Sometimes, I even ask them to show me how to use certain technology, like my phone, to search for images more effectively" (Rajesh, interview).*

Preparing for exams has also become more efficient, with ICT tools used for scanning and editing exam papers, ensuring that everything is done in-house without relying on external sources.

ICT has become an integral part of science teaching in both schools, offering dynamic, interactive, and accessible learning opportunities. The use of presentations, videos, smartboards, and project-based learning has transformed how scientific concepts are taught, providing students with a richer, more engaging educational experience. Despite the challenges of limited resources, teachers remain committed to using ICT to enhance their lessons and look forward to further technological advancements in the classroom.

**ICT for Immediate Classroom Assistance in Social Studies Teaching**

The use of ICT in social studies teaching is still a relatively new experience for teachers at Heritage Secondary School, but its impact has already been noticeable.

The teacher recently started using PowerPoint presentations to aid in delivering lessons, and this shift has enhanced student engagement and understanding, particularly when teaching complex topics like the seven provinces of Nepal:

> *When I showed the map and we reviewed the details together, the students found it much easier to understand. They become excited and interested, often asking to repeat and review the material. This heightened curiosity makes the learning process much more effective and makes it easier for me to teach (Ram, interview).*

The use of visual aids like maps in PowerPoint presentations has sparked a noticeable change in the classroom dynamic as students become more curious and eager to participate. This interactive approach has helped make complex geographical concepts more accessible and engaging for the students.

In terms of lesson preparation, the teacher emphasizes the importance of planning and reviewing material in advance to ensure a smooth lesson. Although there are occasional internet connectivity issues, the overall impact of ICT on lesson delivery has been positive:

> *My goal is to engage and excite the students, so sometimes I include additional content based on immediate needs. However, generally, I prepare everything in advance. The internet is generally working, but sometimes there are issues (Ram, interview).*

The initial introduction of ICT in the classroom was a learning experience for both the teacher and the students. On the first day of using technology to create maps related to the subject matter, the students were energized and excited, which significantly enhanced their learning experience:

> *When I first started using ICT in the classroom last year, it was a completely new experience for both me and the students. On the first day, I demonstrated how to create a map related to my subject matter, and this made the students excited and happy (Ram, interview).*

ICT has also provided opportunities for real-time learning and addressing student queries on the spot. If students encounter confusion with a particular topic, the teacher can quickly search for relevant information and incorporate it into the lesson, making the teaching process more flexible and responsive to student needs:

> *"Another important role of ICT is that we can immediately search for any confusing topics, using it as educational material on the spot" (Ram, interview).*

The school has shown a commitment to expanding the use of ICT by allocating funds for internet access and providing periodic ICT training for teachers. There is also a plan to gradually provide laptops and smart boards to teachers, though the rollout has been slow:

> *From what I understand, this may come from the municipality or another institution based on last year's plan. For example, one teacher attended a three-day training session (Ram, interview).*

In addition to classroom instruction, ICT has streamlined several administrative tasks, such as recording marks, conducting unit tests and exams, and managing student attendance. Teachers use communication tools like Viber to send homework notifications and provide additional instructions as needed. This use of ICT in both teaching and administrative duties has simplified processes that were previously more time-consuming:

*"We still maintain written lesson plans, such as diaries for planning, but ICT has also made things like homework assignments and evaluations simpler" (Ram, interview).*

While ICT has not yet been fully integrated into student project work, the teacher notes that students are enthusiastic about learning through technology. The current generation of students shows a natural inclination toward using ICT, even if it is not a formal part of their project assignments:

*"Our students, being part of the current generation, are very enthusiastic about it. They quickly utilize and learn from whatever is available" (Ram, interview).*

In conclusion, ICT has already made a noticeable impact in Social Studies teaching at HERITAGE Secondary School, improving student engagement and understanding. Although the teacher is still in the early stages of using tools like PowerPoint, the benefits of incorporating technology into lessons are clear, and there is a strong potential for further growth as the school continues to provide more ICT resources and training.

**ICT to Visualize Difficult Concepts in Mathematics Teaching**

ICT has proven to be a valuable tool in mathematics teaching, especially in making abstract concepts like geometry more tangible for students. A mathematics teacher at Hilly Garden Secondary School shared how technology helps students grasp difficult concepts, particularly when it comes to visualizing shapes and understanding the relationships between angles:

> *I often use ICT to show the angles of triangles and rectangles and the relationships between angles inside and outside shapes. For example, I can demonstrate whether the sum of the angles inside a triangle is 180 degrees and how the angles relate to each other. This has made it easier for students to grasp the concept (Bishnu, interview).*

For students who struggle with traditional methods of learning, visual aids can make a significant difference. The teacher explained that many students have difficulty memorizing definitions or concepts taught through conventional methods, but when they are shown through visual representations, retention improves:

> *When showing figures such as rectangles, triangles, and quadrilaterals, students who are not very attentive in class often understand the concepts better through these visual methods. For instance, when I define a rectangle traditionally, only about 5% of the students remember it the next day... with visual methods, they retain the information much better (Bishnu, interview).*

ICT also plays a crucial role in explaining more complex mathematical concepts like sequences and series. The teacher shared a story of a student who struggled to understand the meaning of the general term "n" in sequences. Through the use of ICT, the teacher was able to clarify this concept by visually demonstrating how "n" could represent any number:

> *One student got confused by the term 'general term n.' She saw n as just a symbol rather than a serial number... ICT helped me explain this concept more clearly, and she eventually understood that n could represent any number (Bishnu, interview).*

The support from the municipality has been instrumental in ensuring the availability of ICT resources for teaching, which has encouraged both younger and older teachers to embrace technology:

> *The municipality has been very supportive in providing ICT resources. We don't have to worry about availability because they ensure we have what we need and give us direction. Both the younger and older generations are making efforts to learn technology (Bishnu, interview).*

The use of ICT has also facilitated administrative tasks, such as typing exam questions and creating results. Initially, the teacher faced challenges, particularly with tasks related to PowerPoint and geometry, but over time, they became more adept at using ICT for such purposes:

> *I remember when we first started working with ICT, particularly with PowerPoint-related tasks. Teachers learned how to create figures and type math questions. At first, I struggled with these tasks, but now I can type math questions quickly on my own (Bishnu, interview).*

However, some challenges remain, particularly in teaching geometry using ICT. The teacher expressed the need to improve his skills with the smart board, as it is essential for demonstrating geometric concepts effectively in class:

> *I feel it's crucial to learn how to use the smart board... To teach effectively, I need to be able to demonstrate the features of geometry on the smart board, showing both what is and isn't possible (Bishnu, interview).*

In addition to instructional use, ICT has been incorporated into communication with parents. The school has shifted from using diaries for homework notifications to digital calendars, which include updates on events, holidays, and other important information:

> *We've also moved toward using digital methods to communicate with parents... These calendars include all relevant information such as events, holidays, results, and other updates (Bishnu, interview).*

Despite these advances, the school still faces some challenges in communication, particularly in the absence of a school website or email system. Emergency communications are handled through phone calls and messages sent to students. The school has also moved away from using physical letters, opting instead to encourage parents to check the digital calendar:

> *In the past, we used physical letters for communication, but this year, we decided to stop that practice. Instead, we ask parents to check the calendar one week in advance (Bishnu, interview).*

ICT has become an invaluable asset in teaching mathematics at Hilly Garden Secondary School, particularly in helping students visualize and understand complex concepts. While challenges remain in fully using technology, particularly in geometry, the teacher's experience highlights the positive impact of ICT in both instructional and administrative tasks. With continued support and training, ICT will likely play an even greater role in enhancing mathematics education.

## Reflection and Discussion

In exploring the use of ICT within the teaching practices of educators in Kathmandu, the findings from the data analysis reveal a multifaceted approach to ICT

use, emphasizing the crucial influence of teachers' technological, pedagogical, and content knowledge in shaping their teaching strategies.

I have employed the TPACK framework alongside principles of digital leadership to assess how teachers navigate the complexities of ICT adoption in their classrooms. The theoretical framework suggests that effective ICT use requires a deep understanding of how technology intersects with pedagogy and content. As highlighted by Andyani et al. (2020), teachers' self-efficacy significantly influences their willingness to adopt innovative teaching practices. This assertion is echoed in the data, where teachers who exhibit high confidence in their technological skills demonstrate a greater propensity to experiment with ICT tools (which is observed in science teaching), ultimately enhancing the classroom experience for their students. This aligns with the TPACK framework, which posits that a teacher's ability to integrate technology effectively depends on their mastery of content knowledge, pedagogical techniques, and technology itself (Mishra & Koehler, 2006).

Moreover, the findings underscore the necessity for a supportive organizational climate conducive to innovation. Andyani et al. (2020) further emphasize that an innovative organizational climate positively impacts ICT use in teaching, which resonates with the experiences shared by teachers in this study. They reported feeling more empowered to integrate technology when their school environment encouraged collaboration and provided resources. This aligns with the call for cohesive teaching frameworks that Foutsitzi and Caridakis (2019) advocate, highlighting the need for structured pedagogical principles to facilitate the effective implementation of ICT.

However, challenges persist, particularly concerning resource availability and technical support, as identified by Adekunle et al. (2019). Despite the advantages of multimedia tools in engaging students and improving learning outcomes, many teachers encounter significant hurdles, including inadequate infrastructure and high costs. These barriers often hinder their ability to leverage technology effectively, reflecting the dichotomy between potential and actual practice in ICT use. Such challenges necessitate a revaluation of the support structures in place for teachers, ensuring that they have access to the resources necessary for meaningful ICT implementation.

In reflecting on students' perspectives regarding ICT, the findings reveal a generally positive outlook on technology-enhanced learning, as reported by Castro

(2019). Students appreciate the variety of media that ICT provides, which makes learning more engaging and motivating. Nevertheless, they express concerns about an over-reliance on technology potentially overshadowing traditional pedagogical approaches. This sentiment underscores the need for educators to strike a balance, using technology while maintaining essential pedagogical practices.

As digital leaders, teachers play a pivotal role in shaping the educational landscape through the use of ICT in their teaching practices. This leadership extends beyond the mere adoption of technology; it involves fostering an innovative learning environment that encourages student engagement and critical thinking. Andyani et al. (2020) highlight the importance of teachers perceiving themselves as agents of significant change, as their confidence in using technology can significantly influence student outcomes. Educators who embrace their roles as digital leaders often innovate their teaching methods, using various technological tools that enhance learning experiences and accommodate diverse learning styles.

Moreover, teachers, as digital leaders, cultivate a culture of collaboration and shared learning within their classrooms. They model digital citizenship and effective technology use, guiding students to navigate the complexities of a technology-rich environment. Castro (2019) emphasizes that students appreciate ICT resources for their ability to improve both individual and collaborative work. By empowering students to engage with technology thoughtfully, teachers not only enhance academic performance but also equip them with essential skills for the 21st century. This transformative approach underscores the vital role that teachers, as digital leaders, play in fostering an educational environment where technology enriches learning and prepares students for future challenges.

Ultimately, the use of ICT in education, as explored through the lens of the TPACK framework and digital leadership, underscores the intricate relationship between teachers' knowledge, confidence, and the organizational climate in which they operate. The findings reveal that while teachers demonstrate a willingness to embrace technology, challenges such as resource limitations and insufficient support systems must be addressed to fully realize the potential of ICT in enhancing educational outcomes. By fostering an environment that promotes collaboration and innovation, educators can effectively position themselves as digital leaders, enriching their students' learning experiences and preparing them for the demands of a technology-driven world. This study advocates for continued investment in teacher

training and resources, recognizing teachers' critical role in harnessing the power of ICT for meaningful educational transformation.

## Chapter Summary

Chapter V talked about ICT in everyday teaching practices in selected schools in Kathmandu, focusing on teachers' experiences and approaches. Utilizing the TPACK framework and digital leadership principles, the chapter explored how teachers combine their technology, pedagogy, and content knowledge to enhance classroom instruction. The analysis revealed that teachers who demonstrate confidence in their technological abilities are more likely to adopt innovative practices, positively influencing their classroom dynamics.

The chapter highlighted that effective ICT use is contingent upon a supportive organizational climate where collaboration and innovation are encouraged. Teachers reported feeling more motivated to implement technology when their schools provided the necessary resources and an atmosphere conducive to experimentation. However, several challenges were noted, including limited infrastructure, high costs, and insufficient technical support, which often hinder full-scale ICT adoption.

Additionally, the chapter addressed the role of teachers as digital leaders, emphasizing their influence in creating a technology-rich learning environment that promotes critical thinking and student engagement. As digital leaders, teachers guide students in navigating ICT tools, ensuring that technology is used effectively without overshadowing essential pedagogical practices. The chapter also incorporated student perspectives, which generally reflected a positive outlook on ICT but raised concerns about potential over-reliance on technology.

# CHAPTER VI
# EXPLORING THE BARRIERS TO ICT USE

The use of ICT in education has the potential to significantly enhance teaching and learning processes. However, numerous barriers hinder its effective implementation in classrooms. This chapter explores the obstacles teachers from three secondary schools in Kathmandu-Sunrise, Hilly Garden, and Heritage encountered when incorporating ICT into their pedagogical practices. Through their perspectives, it becomes evident that limited access to ICT resources, including inadequate facilities and equipment, creates obstacles that disrupt the teaching process and often force educators to rely on traditional methods.

In addition to resource constraints, the chapter highlights critical issues such as power outages, unreliable internet connectivity, and a lack of formal training in ICT tools. These factors contribute to an environment where teachers feel unprepared to effectively utilize technology in their lessons. Moreover, the pressures of completing a rigid curriculum within strict timeframes and the challenges of mixed-ability classrooms complicate the use of ICT. Despite these barriers, some teachers demonstrate a personal commitment to improving their ICT skills and fostering collaborative peer support networks, underscoring the importance of systemic support to enable educators to fully embrace technology in their teaching practices

## Limited Access to ICT Resources

One of the key barriers to using ICT in teaching-learning, as shared by teachers, is the limited access to ICT resources. Teachers from Sunrise Secondary School frequently pointed out how this lack of access disrupts their teaching process. *"Since we have only one ICT room, we can't always take the class there even if we want to. Sometimes, another teacher is already using it. We also have an Economics class there, which can cause conflicts*," one teacher shared, highlighting the constant struggle to secure the ICT room (Rajesh, interview). Another teacher echoed this challenge, adding, *"We only have one ICT room. Sometimes all the classes collide, and sometimes there isn't enough time" (Sarita, interview).* These limited resources make it difficult for teachers to rely on ICT tools, creating a bottleneck in their usage.

This issue isn't confined to one school. Over at Hilly Garden Secondary School, teachers faced similar resource shortages. *"We have one smartboard for Plus*

*Two classes, but we haven't been able to use it. We also have a projector, but it's not in usable condition,"* a teacher recalled, underscoring the gap between having technology and being able to use it effectively (Kiran, interview). In such cases, the availability of ICT equipment does not guarantee its use in daily classroom practices, further complicating the efforts to embrace technology for learning.

Beyond this, teachers also face physical challenges in using ICT in their classrooms. A Hilly Garden Secondary School teacher explained how logistical issues with ICT equipment added to their difficulties. *"We have a large speaker for listening exercises, but it's not portable. One person can't carry it alone; it needs to be carried by 2 or 3 people to the classroom"* (Kiran, interview). This lack of portability makes it impractical for teachers to consistently use the available ICT tools, forcing them to abandon technology-based activities in favor of more traditional methods.

**Power and Connectivity Issues**

In addition to resource shortages, power outages and poor internet connectivity also pose significant hurdles. A teacher from Sunrise Secondary School shared their frustration with power outages, which disrupt classroom activities reliant on ICT: *"We sometimes face power outages" (Rajesh, interview)*. The inconsistency in power supply makes it difficult for teachers to incorporate technology into lessons, leaving them with no choice but to revert to traditional teaching methods during such instances.

Internet connectivity issues are another significant obstacle. One teacher expressed their repeated attempts to use mobile internet during class but encountered persistent difficulties. *"It's more that the internet on mobile doesn't work. I tried 2-3 times. The internet just doesn't work," they explained (Sarita, interview)*. Even when mobile phones could be used as an alternative, the lack of reliable internet makes it impractical. *"Mobile phones don't work well in the classroom,"* another teacher commented, highlighting that connectivity issues hinder efforts to innovate through ICT (Sarita, interview). These ongoing problems with power and internet connectivity significantly hamper the use of ICT in classrooms, as technology is only as effective as the infrastructure supporting it.

**Lack of Teacher Training and ICT Expertise**

The lack of adequate training and expertise in ICT tools is another critical barrier to use. Teachers shared that many lack formal technology training while they are experienced educators. *"We only have degrees in teaching, not in ICT. We lack*

*formal education in technology, which leads to weaknesses in even basic elementary knowledge about ICT,"* one teacher from Hilly Garden Secondary School revealed (Bishnu, interview). This gap in ICT knowledge makes it difficult for teachers to confidently incorporate technology into their lessons, even if they have a desire to do so.

Although some training programs have been provided, they are often insufficient. A teacher recounted attending an ICT training session organized by KMC, but it was limited in scope. *"The one-day training did not cover much and mostly benefited those who already had some idea about ICT. For those who were unfamiliar, it was less useful,"* they shared (Kiran, interview). This underscores a broader issue in teacher development: While training opportunities exist, they often fail to meet the needs of educators who start from a lower knowledge base, leaving them feeling underprepared to integrate ICT in meaningful ways.

**Curriculum and Time Constraints**

Another significant challenge teachers face is the pressure to complete the curriculum within a strict timeframe, leaving little room for incorporating ICT. A Hilly Garden Secondary School teacher explained, *"We are required to complete the lessons within the given time frame for each term. If we don't complete the lessons, we are questioned about why they are incomplete. ICT requires time, and if we use it, we might not be able to complete the chapters within the given time"* (Kiran, interview). The pressure to adhere to the curriculum timetable makes it difficult for teachers to experiment with new teaching methods that require additional preparation and execution time.

This issue is not confined to one school. At Sunrise Secondary School, a teacher similarly reflected on how time constraints impacted their ability to integrate ICT, *"There's also the time needed for moving between classes. We need to complete the course within that time"* (Sarita, interview). The rigid structure of the school day, combined with the demand to complete the syllabus, leaves little flexibility for teachers to incorporate ICT in a meaningful way. As a result, teachers often revert to traditional methods to ensure they cover all required content within the allotted time.

**Lack of Student Readiness and Mixed Ability Classes**

Incorporating ICT into classrooms with mixed-ability students also presents unique challenges. At Hilly Garden Secondary School, one teacher emphasized the difficulty of using ICT tools when students are at varying academic levels. *"ICT might*

*not be suitable for all student levels. It can be effective if we have a small number of students and can tailor the ICT tools to their levels. However, if students are not at the appropriate level, ICT might not be as beneficial,"* the teacher shared (Kiran, interview).

This issue is further complicated by the fact that students are often grouped regardless of their capabilities. *"We don't have sections for different levels, so if we had separate sections or groups, ICT would be more effective,"* the same teacher pointed out (Kiran, interview). For ICT to be fully effective, the tools must be adapted to the student's learning needs, but this becomes challenging in classrooms where learners are at different levels. Teachers must balance using ICT to benefit more advanced students while accommodating those who need additional support.

**Personal Motivation and Efforts in ICT Learning**

Despite these challenges, some teachers have expressed a personal drive to overcome barriers and improve their ICT skills. For instance, a teacher from Sunrise Secondary School expressed interest in video editing, seeing it as a way to enhance their teaching. *"I want to learn video editing. If I could cut and edit videos, I could create educational content for the students,"* they shared (Rajesh, interview). Another teacher from Hilly Garden Secondary School also expressed a strong motivation to keep learning, even in their later years. *"Even if I am over 50, I am still eager to learn,"* they said, emphasizing the importance of continuous learning and adaptation (Bishnu, interview). These experiences reflect a growing awareness among some teachers of the potential benefits of ICT, even as they continue to face systemic barriers.

Suman, the science teacher at Heritage Secondary School, narrates his personal effort to overcome certain challenges in a story:

> *"...with PowerPoint, I have found that searching for lesson-related presentations on Google is very helpful. Spending half an hour at home to find what you need is often enough for a class. Additionally, instead of practising manually, I use videos for lab activities. I record the activities with a mobile phone and show them in class. Although there is limited space on Google Drive, it can still be used effectively. There is a lot of useful content available. For instance, during a chemistry experiment, 'an acid-base indicator test,' I didn't need to experiment in the lab. In animations, I showed how much lemon*

*juice needed to be added, how much HCl needed to be used, and what color the result was. This visualized the concept clearly and effectively."*

He further shared his story of helping his colleagues to navigate through some challenges:

*"In some cases, if you're busy checking homework, tasks can be managed during sharing sessions. For instance, typing in Nepali or English becomes clearer when you use Google Docs' voice typing feature. Nepali, however, does not come out clearly sometimes. A moment ago, I needed to send a long message to a friend in Nepali. Instead of typing it out, I used the voice feature on my mobile phone, which took less than a minute. These tools are quite useful, sir. And I have shared these tools with my friends."*

Despite the numerous challenges, teachers have developed informal networks of peer support to help each other navigate ICT-related difficulties. One teacher at Sunrise Secondary School described how they assist their colleagues with science-related questions: *"I mainly help my colleagues with science-related problems. Sometimes they don't know about things like black holes. It's a mutual exchange of knowledge"* (Rajesh, interview). Similarly, at Hilly Garden Secondary School, another teacher shared that *"Personal sharing among colleagues does happen. Those who are interested help each other without hesitation"* (Kiran, interview). These peer-support systems offer a way for teachers to collaboratively improve their ICT skills, even when formal training is lacking.

Through these narratives, it becomes clear that while there is a growing recognition of the potential of ICT in education, multiple barriers prevent its effective use. Limited access to resources, power and connectivity issues, insufficient training, curriculum pressures, and varying student readiness all contribute to the challenges faced by teachers. Nevertheless, some teachers demonstrate personal motivation to improve their ICT skills, supported by informal peer networks. These experiences highlight the complexity of using ICT in teaching-learning and underscore the need for more comprehensive, system-wide support to enable teachers to fully embrace technology in their classrooms.

## Reflection and Discussion

In exploring how teachers narrate their experiences regarding the challenges of using ICT in teaching-learning, it is clear that their struggles stem from several intertwined factors. Teachers from Heritage, Sunrise and Hilly Garden Secondary

Schools frequently mention difficulties in balancing technological skills with their existing pedagogical approaches. While they recognize the potential of ICT to enhance engagement and learning, the lack of reliable resources and inadequate training proves to be a significant hurdle. This aligns with the observations of Ferk (2017), who notes that teachers often face difficulties in fully utilizing ICT due to these limitations. Furthermore, the packed curricula that don't prioritize technology leave teachers grappling with how to fit it meaningfully into their lessons.

Teachers also shared their frustrations with their limited experience with technology, which affects their confidence in using digital resources effectively. Razak et al. (2018) emphasize that ongoing professional development is critical in helping teachers build the skills necessary for using technology in their teaching practices. The narratives reveal a clear need for more targeted training programs, particularly those that align technological skills with pedagogical strategies suited to diverse learner needs. Without these, the use of ICT remains fragmented, with teachers struggling to blend technology seamlessly into their day-to-day teaching.

Additionally, teachers' beliefs about technology significantly influence their ability to integrate ICT. As Vongkulluksn et al. (2018) suggest, those who view technology positively are more likely to adopt and effectively use it. However, many teachers expressed reservations due to a lack of exposure or the perception that it requires additional effort with uncertain results. This reluctance points to the need for fostering environments where positive attitudes toward technology can flourish. Leadership and peer collaboration play a crucial role in this, as teachers who receive support and encouragement are more likely to experiment with and adopt digital tools. Teachers' experiences illustrate that when they feel supported by their peers and school leadership, they are more inclined to take risks and embrace new technological approaches in the classroom.

Moreover, as highlighted by Hinostroza (2017), socioeconomic factors create further challenges. Many teachers in less-resourced schools struggle with outdated or insufficient ICT tools, exacerbating the gap between technology's potential and its actual application in the classroom. Teachers in these environments often feel that the lack of access to up-to-date resources hampers their efforts even if they are willing to integrate ICT. This reinforces the importance of creating equitable access to technology and ensuring that all teachers have the tools and support they need to succeed.

The role of collaboration is also evident in the teachers' narratives. Many teachers emphasized the value of working together to share resources, strategies, and ideas for using ICT. This resonates with the findings of Hinostroza (2017) and others who argue that building a collaborative culture among educators is essential in overcoming the barriers to ICT use. When teachers are allowed to learn from one another, they are better able to develop creative solutions and feel more confident in using technology. This shared learning environment not only improves their practice but also strengthens the collective approach to ICT use across schools.

In exploring the policies on ICT use in Nepal's education system, it becomes apparent that there is a significant gap between the intended goals and the ground realities of classroom practices. UNESCO’s global guidelines for ICT in education advocate for equitable access, teacher training, and the use of digital tools to transform teaching and learning. These principles align with Nepal's National Education Policy, 2076 and the School Education Sector Plan (SESP), which aim to provide schools with the infrastructure, internet connectivity, and digital resources necessary for effective education.

However, despite the progressive nature of these policy frameworks, the implementation of ICT integration in Nepali classrooms has been inconsistent. While the policies advocate for the provision of ICT resources and training, teachers continue to face difficulties in integrating ICT due to the lack of concrete plans that address the diverse needs of classrooms. These policies fail to sufficiently address the gaps in teacher ICT competencies or the varying levels of access to digital devices and internet connectivity in rural versus urban schools. For example, while the SESP mentions the development of digital resources and curricula, many teachers still rely on traditional methods because they lack access to the necessary ICT tools or have not received adequate training.

The gap between policy intent and practice further highlights the need for a more detailed, context-specific approach. While the policies offer an ambitious roadmap for ICT integration, the lack of clear strategies for practical implementation at the school level has left teachers and school leaders uncertain about how to integrate technology effectively within their unique environments. This disparity between policy and practice reinforces the need for an implementation strategy that addresses the challenges of teacher training, infrastructure limitations, and varying levels of ICT access.

In conclusion, the teachers' experiences offer valuable insights into the complex challenges of using ICT in their teaching practices. These challenges are not only technical but also stem from training, resources, attitudes, and support issues. The teachers' narratives show the need for ongoing professional development, access to reliable ICT resources, and a supportive network of peers and leadership. Addressing these challenges requires a comprehensive approach that supports both the technical and pedagogical aspects of ICT use and creates an environment where teachers feel empowered and equipped to navigate the digital age of education.

## Chapter Summary

This chapter brings to light the real-world challenges teachers face when trying to integrate ICT into their everyday teaching. Through the voices of teachers, it becomes clear that while technology holds the promise of making learning more engaging and interactive, many struggle with how to effectively blend technology with their teaching methods. Limited access to reliable resources, insufficient training, and the pressure of tight curricula often make it difficult for teachers to fully embrace ICT in the classroom.

What resonates through the teachers' stories is their desire for more continuous training and practical support that would help them feel more confident and capable in using digital tools to enhance student learning. They also point out how crucial a collaborative, supportive environment is. Teachers who have the chance to share ideas and strategies with their peers are more likely to experiment with new technologies and overcome the obstacles they face.

A key takeaway from the interpretations is the importance of attitude. Teachers who approach technology with a positive mindset are more inclined to use it creatively and effectively, showing how a supportive atmosphere can make a real difference. By encouraging a culture of collaboration and providing the necessary training, schools can help teachers make ICT a more natural and impactful part of their teaching. This chapter paints a picture of teachers navigating the complexities of technology, highlighting the need for ongoing support and professional growth to make ICT use a meaningful part of the classroom experience.

# CHAPTER VII
# KEY INSIGHTS, CONCLUSION AND IMPLICATIONS

The use of ICT in education offers significant potential to enhance teaching and learning. However, the insights of teachers from Sunrise, Hilly Garden and Heritage Secondary Schools highlight the multifaceted challenges that impede this use. Although teachers acknowledge the importance of ICT in promoting engagement and facilitating diverse teaching methods, various barriers often shape their understanding and practices.

Many educators express a keen awareness of ICT's transformative potential but grapple with limited access to essential resources. Inadequate facilities and equipment hinder their ability to implement technology effectively in their classrooms. Teachers often find themselves in situations where they must rely on traditional methods, as seen in their struggles to secure ICT rooms and maintain equipment. This scenario underscores a critical disconnect between recognizing the value of ICT and the practical ability to implement it.

Moreover, teachers' understanding of ICT use is influenced by their training and professional development experiences. Many participants report lacking formal ICT training, which contributes to their uncertainty and hesitance in employing technology in their teaching. This gap highlights the need for ongoing specialized professional development designed to equip educators with the skills to confidently navigate the digital landscape.

The pressures of adhering to a rigid curriculum further complicate the use of ICT in teaching practices. With limited time to explore innovative approaches, teachers often resort to traditional methods to meet curriculum demands. Additionally, the challenges presented by mixed-ability classrooms necessitate careful consideration of how to use ICT to cater to diverse learning needs effectively.

Despite these obstacles, some educators demonstrate a personal commitment to improving their ICT skills and actively seek collaborative peer support. Their willingness to learn and adapt is crucial in creating a culture of innovation within the classroom. Informal networks among teachers enable them to share resources, strategies, and knowledge, helping them navigate the complexities of ICT use.

To address these challenges, schools must prioritize enhancing access to ICT resources and providing comprehensive training opportunities that align with teachers' needs. Infrastructure improvements, such as reliable internet connectivity and backup power systems, will further support teachers in their efforts to integrate technology into their practices. Furthermore, cultivating a collaborative culture and promoting knowledge-sharing among educators will enable them to learn from each other and strengthen their ICT skills.

In conclusion, educators' perspectives and strategies for using ICT are influenced by a combination of resource availability, training, curriculum pressures, and peer support. Addressing these factors holistically will enable educators to embrace technology more fully, enriching the learning experience for both teachers and students and fostering a more dynamic and inclusive educational environment.

## Implications

The findings have significant implications for various stakeholders, including educators, policymakers and institutions, particularly in the context of ICT use in Nepalese schools.

1. The study highlights the need for targeted professional development programs to improve teachers' technological knowledge (TK) and their ability to integrate it with pedagogical knowledge (PK) and content knowledge (CK). Training programs should focus on practical, context-specific applications of ICT in lesson planning and classroom activities.
2. Teachers need to be empowered to assume the role of digital leaders, where they can effectively navigate and use ICT tools to promote innovative teaching methods, increase student engagement and create collaborative learning environments.
3. School administrators should create a culture that encourages innovation and provides the necessary support, such as technical assistance and opportunities for teachers to collaborate. Such an environment increases teachers' confidence and effectiveness in using ICT in their teaching practices.
4. The research underlines the need for schools to prioritise adequate infrastructure, such as reliable internet access, multimedia tools and maintenance support, to remove barriers to ICT adoption.
5. National policies such as the National Education Policy (2019) and the School Education Sector Plan (2022) should be revised to include specific, actionable

steps for ICT implementation. These should include timelines, resource allocations and clear accountability measures.

6. Curriculum frameworks should integrate ICT across subjects to ensure that it is not treated as an isolated component but as an enabler for different pedagogical approaches.
7. The study addresses a critical gap in the literature on the Nepalese context. Further research should explore longitudinal studies to track the impact of ICT use over time, given the rapid advances in technology and their evolving implications. The findings encourage the development of ICT models tailored to Nepalese schools that take into account resource constraints, cultural nuances, and local pedagogical practices.
8. Establishing mechanisms for regularly monitoring and evaluating ICT practices can help track progress, identify challenges and effectively refine implementation strategies.
9. Establishing feedback loops involving teachers, pupils and parents ensures that ICT tools and practices align with all stakeholders' educational goals and expectations.

Addressing these implications enriches the broader discussion on ICT use in education and offers practical insights for enhancing teaching and learning practices in Nepal and comparable settings.

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# ANNEXES

## Annex-I

### Field Visit Guidelines

Guideline for interview

a. Title: “Exploring the Use of ICT in Teaching Learning Process in the Public Schools in Nepali: A Narrative Inquiry”
b. Purpose: This study aims to explore the teachers’ understanding, challenges and the current practices of using ICT in the teaching and learning process.
c. Research questions:
    - What do teachers understand about the use of ICT in teaching-learning?
    - How do teachers narrate their experiences about their current practices and challenges of using ICT in teaching-learning?
d. Possible interview questions/guideline

Basic information (participant profile)

| | |
|---|---|
| Name: | |
| Gender: | |
| Age: | |
| Working Institution: | |
| Teaching Experience: | |
| Teaching experience in current school: | |
| Subject taught throughout the teaching career: | |
| Currently teaching subject: | |
| Qualification: | |
| Participated trainings and professional development program: | |

Specific information aligned to the purpose and research questions

Interview Site:

Interviewer:

Date:

Start:

End:

| Research questions | Possible questions |
|---|---|
| What do school teachers understand about use of ICT in teaching-learning? | ● How would you define the use of ICT in teaching and learning?<br>● What types of ICT tools and resources do you currently use in your teaching?<br>● Can you share an example of a lesson where you used technology effectively? How did you execute the plan in class?<br>● What do you think are the benefits of using ICT in your teaching?<br>● Can you share an example of benefits that your students got after using ICT in teaching learning?<br>● What challenges or barriers do you perceive in using ICT in the classroom?<br>● How do you measure the effectiveness of ICT in your teaching practices? |
| How do school teachers narrate their experiences about their current practices and challenges of using ICT in teaching-learning? | ● Can you describe your first experiences of using ICT into your teaching?<br>● What are some specific examples of successful ICT use in your teaching? How did your students react to these lessons?<br>● Have you encountered any challenges or obstacles when trying to use ICT in your teaching? How do you deal with these challenges?<br>● What support do you receive from your school or local government to integrate ICT? What types of support or resources do you think would help you integrate technology more effectively?<br>● How has the use of technology affected your teaching and your students' learning? |

| | |
|---|---|
| | • How do you evaluate the effectiveness of technology in your classroom?<br>• How have you noticed changes in your teaching style or methods since you started using ICT?<br>• How do you work with other teachers or school leaders to integrate technology into your teaching?<br>• How do you keep abreast of new ICT tools and methods for teaching?<br>• How do you see the future of ICT in education? What role do you see it playing in your classroom in the coming years?<br>• Are there any new technologies or teaching methods that you would like to explore?<br>• What is your ideal role for technology in teaching and learning? |

# Annex-II

## Informed Consent Form

**Informed Consent Form**

For the research study: Exploring the Integration of ICT in Teaching Learning Process in the Public Schools in Nepal: A Narrative Inquiry

This study is being conducted by Sandesh Basnet, a masters Candidate at Kathmandu University.. Dr. Shesh Kanta Pangeni, Professor of Educational Leadership and Management, is overseeing the research.

**Please read this form carefully – it tells you about your rights in this study. Ask questions if you want more information about this form or the study.**

If you decide to participate in this study, you will sign this form – make sure you understand it completely before signing. Keep a copy of this form for your records – it has important information like whom to contact if you have questions later.

**What is this study about?**

What do school teachers understand about ICT integration in teaching learning process and how are they doing in their practices.

**Who are we asking to participate?**

Any math, science, language arts teacher of public school of Kathmandu.

**What will you be asked to do?**

There are three parts to this study – you do not have to participate in all three parts:

- Today we will ask you to go through this consent form. It will give you the information about the research project and give consent. This will take you about 20 minutes.
- We would like to interview you. This interview will take about 45 minutes – we can do it here or somewhere more convenient or comfortable for you, like a coffee shop. We would like to record you during the interview. If you don't want to be recorded, that's okay – you can still participate. Before you sign this form, we will ask for your permission to be recorded.
- We would like to observe your class facilitation within a week of your interview. During my observation, I will not disturb your class and I will not share any information with

anyone else. I will sit inside your class for a full period. I will take photo of your lesson plan as well.

**Are there any possible risks to you?**

Some questions may make you feel uncomfortable. If they do, you can skip the question – or ask the interviewer to move on to another topic. You can also quit the study completely at any time. Your information could be accidently leaked to people not connected with this study. We will do everything we can to make sure this doesn't happen.

**Will you benefit from participation?**

No – you will not. But we hope to learn more about how do the teachers of Kathmandu are integrating ICT in their teaching and learning process after going through the writeup.

**Will it cost you anything to participate?**

Just your time (20 minutes for beginning, 45 minutes for the interview, and 45 minutes for the observation).

**Will you receive anything for participating in the study?**

- You will not receive any thing.

**How will we keep your information private?**

We will use a random code to keep track of your answers. The code will link your answers to your name through a master list that will be stored separately from your answers. The recording of your interview will be copied into print and erased. Any information that could directly identify you will be deleted. Your answers will be stored in a database protected by a password. When we publish what we have learned, everyone's answers will be combined – this will make it harder for someone to figure out which answers are yours.

**What will happen with your answers after this study?**

We will store your answers – without information that can identify you – indefinitely.

**What if you don't want to participate or change your mind partway through?**

Participating in this study is completely voluntary. You can refuse to participate or quit at any time. You may also refuse to answer specific questions– simply skip them or ask the interviewer to move on to another topic.

**Who can you call if you have more questions?**

If you have any questions about the research or your participation in the study, feel free to contact Mr. Sandesh Basnet at 9860118419 or sandesh14313@gmail.com, or Dr. Shesh Kanta Pangeni at 9860999362 sheshakanta@kusoed.edu.np . This research was approved by an office/committee that oversees the ethics of human subjects' research at Kathmandu University, School of Education. If you have any questions about your rights, concerns about the study, or would like to offer input, you may contact them at eduleadership@kusoed.edu.np.

**Subject Consent**

I have read this consent form completely. I have been encouraged to ask questions, and have received helpful answers. I understand that:

- My participation is voluntary
- I may quit at any time without penalty

☑ I do ☐ I do not give you permission to record me during the interview.

By signing this form, I voluntarily agree to participate in this study.

Participant's Signature _____ Date 2081-03-02

Investigator's Signature _____ Date 2081/03/02

Annex-III

Letter for the Field Work from the University

Kathmandu University
School of Education

04 June 2024

**To Whom It May Concern**

**Mr. Sandesh Basnet (Reg.No.030583-21)** has been studying Master of Education in Leadership and Management at the School of Education of this University since August 2022. For the completion of his Master's, he is conducting research titled " Integration of ICT in Teaching Learning Process in the Public Schools of Nepal: A Narrative Inquiry "

In course of his research, he is visiting different places where he needs to consult hospital, libraries, research centers, educational consultancies, related government, and non-government organizations, colleges & schools.

Therefore, I would like to request the concerned organizations and personalities to co-operate with him on his research activities.

Asst. Prof. Shesha Kanta Pangeni, PhD
Acting Head of Department
Department of Educational Leadership

## Annex-IV

### Transcribed Data of a Participant's Interview

**Participant Name:** Ram (pseudo name)

**Interviewer:** Sir, how many years have you been in the teaching field?

**Teacher:** Since the year 2000.

**Interviewer:** And how long have you been at this school?

**Teacher:** Since last April.

**Interviewer:** You teach Social Studies, right?

**Teacher:** Yes, that's right.

**Interviewer:** Did you start teaching Social Studies from the year 2000 or later?

**Teacher:** I have been teaching Social Studies from before that.

**Interviewer:** What are your qualifications?

**Teacher:** MA, MEd.

**Interviewer:** What specific subjects do you specialize in?

**Teacher:** Geography and Economics.

**Interviewer:** Have you taken any recent training programs related to ICT?

**Teacher:** No, I haven't.

**Interviewer:** Have you received any pedagogical training for teaching?

**Teacher:** I haven't received any recent training. However, I did attend a 4-day training from Kathmandu University recently.

**Interviewer:** Was that training conducted by KU and KMC?

**Teacher:** Yes, it was.

**Interviewer:** How about any training from the government side?

**Teacher:** There was no specific training for Social Studies; I had received training for Nepali.

**Interviewer:** When did you last take a training?

**Teacher:** Last year, when I was also teaching Nepali.

**Interviewer:** So, you also teach Nepali?

**Teacher:** Yes, occasionally I do.

**Interviewer:** From which classes do you teach?

**Teacher:** I teach from class 5 to 8. I am a teacher at the lower secondary level.

**Interviewer:** How many classes do you have in a day?

**Teacher:** On regular days, I have about three to four classes.

**Interviewer:** Is it a 3 to 4-week schedule?

**Teacher:** Our periods are 55 minutes long. I generally have three periods.

**Interviewer:** Regarding ICT, what do you know about Information and Communication Technology?

**Teacher:** ICT has become essential in the teaching field nowadays. We haven't had much specific training in it, but we are using smart boards and learning according to our ability. It has made teaching easier. However, personally, I'm not very proficient in ICT. We were teachers before and haven't received ICT training yet. This lack of training is something I've noticed. Especially in Social Studies, it is crucial for understanding content, showing maps, and other related aspects.

**Interviewer:** You mentioned that it has made teaching easier. How has it made things easier?

**Teacher:** For example, showing maps on the smart board and explaining them is much easier now. Previously, we had to create and prepare these materials manually. This has made things much easier and more convenient for both teaching and learning.

**Interviewer:** Have you used Google for making maps or other ICT tools in your classes? What other tools do you use?

**Teacher:** We use Google for this purpose. We can search for educational content, historical information, and videos on YouTube. This helps in explaining historical subjects and provides a briefing to students.

**Interviewer:** Have you used tools like Word or PowerPoint?

**Teacher:** We have just started learning to use PowerPoint recently. I haven't used it extensively yet.

**Interviewer:** Could you recall any specific lesson where you used ICT? How did it impact students' reactions and learning?

Teacher For example, in a lesson about the seven provinces of Nepal, when I show the map and we review the details together, the students find it much easier to understand. They become excited and interested, often asking to repeat and review the material. This heightened curiosity and improved understanding also make it easier for me to teach. The increasing curiosity among the students makes the learning process more effective.

**Interviewer:** Do you plan in advance for using ICT tools or do you search for them during class?

**Teacher:** For today's lesson or when preparing to show it the next day, I first review the material myself. After that, I create a plan for introducing it in class, with the goal of engaging and exciting the students. Sometimes, I include additional content based on immediate needs, but generally, I prepare everything in advance.

**Interviewer:** How has ICT affected the benefits for students compared to before?

**Teacher:** One benefit is that when students are reluctant to read thoroughly, they might say, "Sir, let's watch this." At such times, showing them relevant content related to the subject provides an opportunity for learning even when their motivation is low. Additionally, today's students are curious and have a strong interest in ICT. They stimulate each other's curiosity, which leads to increased learning and knowledge sharing. They understand historical facts better and grasp the subject matter more effectively. This makes a significant difference, and in my view, using ICT greatly facilitates the learning process for them.

**Interviewer:** What challenges have you faced with ICT?

**Teacher:** Firstly, we are not fully proficient in ICT in all areas. For instance, we are still learning to create and present PowerPoint presentations. It's important to master these skills. If we achieve proficiency and have regular access to the necessary tools, it would greatly reduce any problems.

**Interviewer:** How is the internet connectivity?

**Teacher:** The internet is generally working, but sometimes there are issues. Improvements in this area would be very beneficial.

**Interviewer:** Do you remember any specific incidents from when you first started using ICT?

**Teacher:** This has been in place since last year, and I also began using it then. Previously, there was no such practice, so on the first day, I demonstrated how to create a map related to my subject matter. This made the students excited and happy. They found it easier to learn and understand.

**Interviewer:** Do you ever feel you need to overcome certain challenges in using ICT?

**Teacher:** Sometimes, the lack of knowledge can be a barrier. However, collaborating with colleagues and getting their help has made it easier.

**Interviewer:** What has the local government done for ICT so far?

**Teacher:** The local government has planned to provide smart boards, but this is still in progress.

**Interviewer:** What other support has been provided?

**Teacher:** Regarding ICT, there will be some funds allocated for the internet, though I'm not sure of the exact amount. Besides that, there isn't much support. ICT training is also provided sporadically. From what I understand, this may come from the municipality or another institution, based on last year's plan. One teacher attended a three-day training session. The goal seems to be to gradually provide laptops and training to teachers and distribute smart boards. I've heard that this plan is promising.
**Interviewer:** Has ICT changed the way you teach?
**Teacher:** That change happened automatically. Previously, I focused more on verbal explanations, but now I can show educational materials directly. Likewise, some things that could have been missed before are now included. It has become possible to cover all the content and provide more learning opportunities.
**Interviewer:** How do you collaborate with others during training?
**Teacher:** We share knowledge among ourselves and collaborate when needed. Most learning is done through peer support.
**Interviewer:** Have there been any specific stories of peer learning?
**Teacher:** Generally, peers help each other with learning. For example, when someone is unsure, they ask others for assistance.
**Interviewer:** How do you think ICT should be used to improve teaching methods?
**Teacher:** First of all, training should be provided in a well-organized manner. The training should be of good quality, focusing on technology. Then, the internet should run a bit faster, right? And every class should have a smart board. If that happens, it will make learning easier for students. If something is confusing, it can be looked up immediately. Therefore, it will be very beneficial.
**Interviewer:** It all came after COVID, right? We didn't have any of this before, not even the name. How do you think the classroom will evolve in the future?
**Teacher:** If the use of ICT continues to increase like this, eventually, we might not even need teachers. From my understanding, once people become proficient with ICT, they can study everything on their own, similar to how one writes a thesis or a Ph.D. With this approach, anyone curious can study from home, gain an education, and have places to ask questions when needed. This will lead to significant changes and a big transformation.
**Interviewer:** What would you like to learn more about in ICT?
**Teacher:** I would like to gain more clarity on areas where I feel confused, especially in creating and using presentations effectively.

**Interviewer:** Could you summarize the role of ICT in teaching?

**Teacher:** An important role is that, as I mentioned earlier, we can immediately search for any confusing things. Similarly, we can use ICT right away as educational material. Additionally, if we're a bit physically unwell, we can present information easily without much effort. We can also explore new techniques and apply them. Managing the class and explaining concepts become easier, which makes learning more effective and, therefore, very suitable.

**Interviewer:** Do you maintain written lesson plans?

**Teacher:** We maintain diaries for planning.

**Interviewer:** Do you use ICT for homework assignments?

**Teacher:** We use communication tools like Viber for homework notifications. We also provide additional instructions as needed.

**Interviewer:** How do you incorporate ICT into unit tests and evaluations?

**Teacher:** That involves recording marks, conducting unit tests, and various exams like first, second, and final term exams, as well as managing projects. Additionally, maintaining daily attendance and other details becomes easier, simplifying the process of providing internal marks later on.

**Interviewer:** Have you considered using ICT for student projects?

**Teacher:** We haven't used ICT extensively so far, but our students, the current generation, are very enthusiastic. They quickly utilize and learn from whatever is available. A positive aspect is their awareness of how things work. For example, they might say, "This is how it looked when I checked it, sir."

**Interviewer:** Do students ask for ICT-based projects?

**Teacher:** Students haven't specifically asked for ICT-based projects, but they are enthusiastic about learning through technology when provided.

**Interviewer:** Thank you very much for your time. Could you show me your class today?

**Teacher:** Sure