

PRINCIPALS' PERCEPTION OF ICT INTEGRATION IN PRIVATE SCHOOLS
OF DHARAN: A NARRATIVE INQUIRY

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AN ABSTRACT

of the dissertation of *Nilam Kumar Shrestha* for the degree *Master of Philosophy in Educational Leadership* presented on *18 November 2025* entitled *Principals' Perception of ICT Integration in Private Schools of Dharan: A Narrative Inquiry*.

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Information and Communication Technology (ICT) is one of the most essential tools in the modern educational context. Its use varies according to the availability, affordability, and the nature and needs of an organization. However, several barriers are being faced by such institutions and their leaders for the effective use of ICT so as to make technology an integral part of the school curriculum. Principals' perceptions of ICT integration, their ICT strategies, and experiences in integrating ICT in their schools can provide important insights into ICT integration.

This study has explored and interpreted the narratives of five private secondary-level school principals from the Dharan sub-metropolitan city, examining their perceptions of ICT strategies and experiences with ICT integration and its instructional use, based on data collected through personal in-depth interviews. It has highlighted the participants' personal experiences, understanding, and ICT skills, as well as the challenges and opportunities in integrating ICT in their schools in Dharan. Using a qualitative narrative approach following the SAMR framework, TAM, UNESCO's ICT Model, and TPACK model, the findings revealed that all the principals have a very positive attitude toward ICT and appreciate the value of ICT in improving pedagogy, student engagement, and learning. However, they have been facing significant challenges in ICT use, including limited access to digital tools, a

lack of training, and leadership and ICT infrastructure issues, such as unstable internet connections.

Ultimately, this study highlights the necessity for enhanced support systems for private school principals in Dharan to effectively utilize ICT. Effective and practical ICT strategies, supported by investable initiatives, continuous professional development, adequate resources, and skill-based teacher training and workshops, are crucial to ensuring that private schools in this area integrate ICT effectively. Furthermore, school-level and policy-level efforts must work in tandem to address the gaps in ICT infrastructure and training, thereby facilitating effective ICT integration and transforming the teaching-learning experience in private schools.

.....

18 November 2025

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शोध सार

शैक्षिक नेतृत्व तथा व्यवस्थापनमा दर्शनशास्त्रको स्नातकोत्तर डिग्रीको लागि निलम कुमार श्रेष्ठको शोध प्रबन्धको शीर्षक ” धरानका निजी विद्यालयहरूमा सूचना तथा सञ्चार प्रविधि (ICT) एकीकरणमा प्रधानाध्यापकहरूको धारणा: एक संकथन” २ मंसिर २०८२ मा प्रस्तुत गरिएको थियो ।

.....
सह प्रा. शेषकान्त पंगेनी, पीएचडी
शोध निर्देशक

आधुनिक शैक्षिक सन्दर्भमा सूचना तथा सञ्चार प्रविधि (ICT) सबैभन्दा आवश्यक उपकरणहरू मध्ये एक हो। संस्थाको प्रकृति, उद्देश्य, आर्थिक व्यवस्थापन र प्रविधिको उपलब्धता अनुसार यसको प्रयोग र उपयोगिता फरक-फरक हुन सक्छ। यद्यपि, प्रविधिलाई विद्यालय पाठ्यक्रमको अभिन्न अंग बनाउन ICT को प्रभावकारी प्रयोगको लागि त्यस्ता संस्थाहरू र तिनीहरूका नेतृत्वकर्ताहरूले विभिन्न कठिनाईहरूको सामना गरिरहेका छन्। ICT एकीकरणमा प्रधानाध्यापकहरूको धारणा र उनीहरूले विद्यालयमा ICT एकीकृत गर्ने प्रयास गर्दाको अनुभव, अवसर र चुनौती र रणनीति निजी विद्यालयहरूमा ICT एकीकरणको सन्दर्भमा महत्त्वपूर्ण निष्कर्षहरू हुन सक्छन्।

यस अध्ययनले धरान उप-महानगरकाका पाँच निजी माध्यमिक विद्यालय तहका प्रधानाध्यापकहरूसँग गरिएको गहन व्यक्तिगत अन्तर्वार्तामार्फत संकलन गरिएको तथ्याङ्कको आधारमा ICT प्रति निजहरूको धारणा, सूचना प्रविधि रणनीति र ICT एकीकरण र यसको शैक्षणिक प्रयोगको बारेमा अन्वेषण र व्याख्या गरेको छ। यसले सहभागीहरूको व्यक्तिगत अनुभव, बुझाइ, र ICT सीपहरू र धरानका आफ्ना विद्यालयहरूमा ICT एकीकरण गर्ने चुनौती र अवसरहरूबारे प्रकाश परेको छ। गुणात्मक तथा क्वाण्टात्मक दृष्टीकोणमार्फत SAMR Model, TAM, UNESCO ICT Integration Stages र TPACK Model गरिएको यस अध्ययनले सबै प्रधानाध्यापकहरूको ICT प्रति धेरै सकारात्मक दृष्टिकोण छ र शैक्षणिक, विद्यार्थी संलग्नता र सिकाइ सुधार गर्न ICT को मूल्यको कदर गर्छन् भन्ने निष्कर्ष प्रस्तुत गरेको छ। तथापि, उनीहरूले ICT प्रयोगको सन्दर्भमा डिजिटल उपकरणहरूको अपर्याप्तता, सीमित पहुँच, प्रशिक्षण अभाव, कमजोर नेतृत्व इच्छाशक्ति र नेतृत्वकर्ताहरूको कमजोर ICT प्रयोग क्षमता जस्ता प्रमुख चुनौतीहरूको सामना गरिरहेका छन्।

अन्त्यमा, यस अध्ययनले धरानका निजी विद्यालयका प्रधानाध्यापकहरूलाई ICT लाई आशावादी रूपमा प्रयोग गर्न राम्रो समर्थन प्रणालीको आवश्यकतालाई जोड दिन्छ। यस क्षेत्रका निजी विद्यालयहरूमा ICT लाई प्रभावकारी रूपमा एकीकृत गर्ने कुरा सुनिश्चित गर्न प्रभावकारी र व्यावहारिक ICT रणनीतिहरू, सहयोगी र दुरगामी लगानी, निरन्तर व्यावसायिक विकास, पर्याप्त स्रोतहरू, र सीप-आधारित शिक्षक तालिम

र कार्यशालाहरू धेरै महत्त्वपूर्ण छन्। यसबाहेक, निजी विद्यालयहरूमा शिक्षण-सिकाइ अनुभवलाई समयानुकुल रूपान्तरण गर्न, ICT लाई प्रभावकारी रूपमा एकीकृत गर्न र ICT पूर्वाधार, क्षमता र प्रशिक्षणमा रहेको दुरीलाई कम गर्न विद्यालय-स्तर र नीति-स्तरका प्रयासहरूले एकताबद्ध रूपमा काम गर्नुपर्छ।

.....
निलम कुमार श्रेष्ठ
उपाधि उमेदवार

२ मंसिर २०८२

This dissertation entitled *Principals' Perception of ICT Integration in Private Schools of Dharan: A Narrative Inquiry*, presented by *Nilam Kumar Shrestha* on 18 November 2025.

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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.

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DEDICATION

I dedicate this dissertation to my beloved parents, whose unwavering love, blessings, and sacrifices made this academic pursuit possible, and to my loving spouse, Smita, whose steadfast belief, support, and encouragement made my academic journey worthwhile.

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ABBREVIATIONS

AI	Artificial Intelligence
AV	Audio Visual
CCTV	Closed-circuit Television
CD	Compact Disk
CK	Content Knowledge
COVID-19	Corona Virus Disease of 2019
DOI	Diffusion of Innovations
DVD	Digital Versatile Disc
ERP	Enterprise Resource Planning
ICT	Information and Communication Technology
INGO	International Non-governmental Organisation
IPTV	Internet Protocol Television
KU	Kathmandu University
LMS	Learning Management System
MoEST	Ministry of Education, Science and Technology.
NEP	National Education Policy
NGO	Non-governmental Organization
OLPC	One Laptop Per Child
PCK	Pedagogical Content Knowledge
PD	Professional Development
PEOU	Perceived Ease of Use
PK	Pedagogical Knowledge
PPP	Public-Private Partnership
PU	Perceived Usefulness
SAMR	Substitution, Augmentation, Modification, Redefinition
SESP	School Education Sector Plan
SMS	School Management System
SSDP	School Sector Development Plan
TAM	Technology Acceptance Model
TK	Technological Knowledge
TPACK	Technological Pedagogical Content Knowledge

TPK	Technological Pedagogical Knowledge
TV	Television
UNESCO	United Nations Educational, Scientific and Cultural Organisation

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CHAPTER I

INTRODUCTION

In this chapter, I have attempted to provide a general overview of the research topic. It consists of subheadings such as background of the study, problem statement, purpose of the study, research questions, rationale of the study, and delimitation of the study, as these are crucial aspects in conducting a research study.

Setting the Context

I have held school leadership roles for over a decade in various secondary-level private schools in Dharan. When I reflect on my roles and responsibilities, opportunities, and challenges in various leadership roles at schools, it seems to me that many things could have been done more effectively. I began my career as a teacher to receive financial assistance for my higher education. However, with time, it has evolved into a profession for me. Over time, I was given the opportunity to serve as a school leader in several secondary private schools, including the role of school principal. Excessive workload, pressure from school owners, job insecurity, and the private schools' sole focus on results and profit were the striking factors that always made me feel that the role of a principal in private schools was too challenging. However, I had no other options or expertise to transition to another profession.

The outbreak of the COVID-19 pandemic forced the education sector, like other areas, to adopt ICT as one of the inevitable tools for teaching and learning. During this period, I also managed to improve and increase the use of ICT in my school. Our school began offering online classes just a month after the COVID-19 lockdown, and we also provided online training and orientation to our teaching and non-teaching staff. However, I witnessed that a number of schools that had not been wary about the use of ICT in their schools had to suspend their teaching and learning for several months due to a lack of ICT tools and skilled human resources. In Nepal, Information and Communication Technology (ICT) in education is supposed to bring innovation in teaching-learning in the near future, but being in the private education sector makes me feel that though most of the private schools advertised ICT integration in education as a fascinating feature for their admission advertisements, its effective use and integration in the schools is in question.

Background

The initiation and continuous development of ICT prompted the Nepalese government to formulate a framework and policy regarding ICT in education, which may be regarded as the realization of the need for ICT in global knowledge and practices. In its master plan, the Ministry of Education (2013) highlighted increasing use of ICT in teaching and learning by introducing interactive courses, online and offline modules, and digital teaching and learning resources. It also believes that the use of ICT and knowledge is critical in addressing global concerns. ICT provides benefits in academic, economic, psychological, and sociological aspects. Academic benefits include the ability to learn new information, knowledge, and ideas from others, as well as assisting teachers in the formulation of classes. Students can conceptualize and acquire new knowledge, and collect materials from various internet resources. Moreover, it also helps reduce the cost of educational materials for students and faculty members.

According to the Ministry of Communication and Information Technology (2019), Nepal's digital adoption is remarkable, with mobile penetration exceeding 100% and internet penetration up to 63%. Bhandari et al. (2025) stated that, recognizing the transformative power of technology in education, the government of Nepal has recognized ICT in education as a crucial factor that makes Nepal competitive at the international level. In this regard, the government of Nepal and its development partners jointly support the School Sector Development Plan (SSDP) initiative, which encompasses the entire basic education system of Nepal. The national educational plan; School Sector Development Plan, SSDP (2016–2023) aims at using ICT to improve classroom delivery by establishing an ICT enabling learning environment (including institutional and professional capacity of managers and implementers) and based on need and context, developing access to learning materials and supporting professional development packages and guidelines to ensure adequate capacity for incorporating these in the curriculum, and using ICT to improve and increase the effectiveness and efficiency of governance and management of education as a whole.

Furthermore, the recent School Education Sector Plan (2022/23-2031/32) has also prioritized ICT integration and digital learning by developing technology skills of teachers and students in every school to enhance the use of technology as an essential part of teaching and learning (Ministry of Education, Science & Technology

[MoEST], 2022). The ICT policy does not appear to have given much thought to the principal's role in it; instead, it seems to have focused more on providing teachers with the technical know-how to enable them to integrate and use ICTs successfully in teaching. However, in contrast to this, Shrestha (2018) claims that the lack of teachers' confidence in adopting ICT and technological knowledge of using them properly is one of the major barriers in the context of Nepal. Additionally, a lack of understanding and unfavorable remarks and criticism from school administrators may discourage teachers from utilizing ICT effectively in the classroom. The implementation of ICTs in language education presents numerous difficulties, and the government's approaches to overcome these hurdles are insufficient and potentially unsustainable (Rana, 2018). The world is becoming more digitalized on one hand, while our school leaders' motivation, level of skills and expertise, and attitudes are being questioned on the other. The purpose and mission of our country's national education strategy will not be achieved if principals are not prepared, optimistic, and skilled in implementing and utilizing new technologies. There could be a gap between the ICT educational policy and its implementation and integration.

In the modern context, technological access, skills, and effective ICT management appear to be the most essential prerequisites for developing countries like Nepal to achieve prosperity. This is because the developing countries that are now developing have access to good technology, skilled personnel, and effective management. This strategic move should be taken seriously into consideration by developing countries, and lessons can be learned from the practices of those countries regarding their technology. Although Government of Nepal has formulated and executed different policies and plans regarding the ICT use in teaching-learning and some NGOs/INGOs in Nepal have been funding for effective ICT use by distributing computer, laptop and printer in community schools, neither the Government nor any NGOs and INGOs have ever taken the private schools and their teachers into consideration regarding ICT integration in education and providing necessary skill-based professional trainings and orientation. One of the significant shortcomings has been the inability of many private schools to successfully implement ICT for teaching and learning. Furthermore, private school owners' business incentives, as these schools are owned, financed, managed, and controlled by private individuals, may be the cause for the lack of significant investment in ICT integration in private schools.

According to the Dharan Sub-metropolitan City Department of Education, a total of 96 private schools are registered with the department. Except for a few schools in this area, the majority of schools are accused of being profit-driven and failing to provide teachers with sufficient compensation and allowances. Although the majority of private schools claim to have begun utilizing ICT in education, only a few appear to have made considerable investments in ICT, teacher training, and job opportunities. For the effective use of such technologies in teaching and learning, school leaders' skills and readiness are crucial, as these are essential attributes for effective teaching and the appropriate use of ICT tools. However, principals, as change agents in schools, seem to lack the required digital competency, initiatives, efforts, and resources for effective ICT integration in their schools.

As it emerges, a thorough investigation of private school principals' perceptions regarding the ICT integration in their schools in this region, and also the possible factors influencing their perceptions and readiness for instructional use of ICT, was a topic that had to be pursued in order to pave the way for private school leaders to develop necessary strategies for using ICT effectively in private schools.

Statement of the Problem

Academia in the 21st century is founded and steered by technological expansion. Hence, ICT should be incorporated into pedagogy and classroom instruction, as it enhances learning both online and offline, utilizing various ICT devices as important teaching and learning tools. However, based on my own observation and realization, ICT has not been utilized effectively in private school classrooms due to a lack of initiatives from private school leaders, suitable ICT tools, and inadequate human resources. It is challenging to alter deeply ingrained roles of teachers, school administration, and students, as well as outdated beliefs and attitudes. Other barriers to ICT integration in teaching and learning include limited access to ICT facilities, unfavorable ICT policies, a lack of technical support, unfavorable evaluation procedures for ICT use, and difficulty in evaluating ICT use (O'Mahony, 2003). It also makes us realize that among various challenges, the roles of school administration are one of the crucial parts that affects ICT integration in schools. As far as private schools are concerned, it can be stated that private schools may not be able to make successful use of ICT in their schools until stakeholders are aware of principals' perceptions of ICT integration, probable variables influencing their perspective, and possible remedial steps to overcome these challenges.

The government and several non-governmental organizations have been aiding community school principals in implementing ICT in education effectively; nevertheless, private school principals are seldom been considered and are kept in isolation. However, it is often felt that the owners and founders of such private schools seem not to have properly understood their school principals' perceptions and attitudes regarding ICT integration and promotion in their schools, and to support them by helping develop strategic and corrective plans to address such concerns. Moreover, educational leaders in private schools appear to have paid less heed to the principles of 21st century ICT practices, such as collaboration, creation, and cooperation, in adopting and integrating ICT effectively in education.

Though some studies on ICT use have been conducted, private school principals and ICT integration in private schools have rarely been the focus of these studies. Although some private schools have undertaken work on ICT integration, these initiatives have not been fully supported by either government efforts or the umbrella association of private schools. As such, many private schools are still lagging behind in regard to effective ICT integration. Why does such a situation exist? Is it because principals are not aware of its importance, or are they not willing to invest significantly? Therefore, many questions remain unanswered when discussing the integration of ICT in teaching and learning within the context of private schools in Nepal.

Purpose of the Study

The purpose of this study was to explore the perceptions of private school principals regarding the integration of ICT in their schools in the Dharan sub-metropolitan city for administrative and instructional purposes in classrooms. The study also focused on exploring the different ICT strategies that private school principals have adopted and how their lived experiences, opportunities, and challenges have affected ICT integration in private schools in Dharan.

Research Questions

The researcher attempted to address the following research questions in this study:

- i) How do principals perceive the ICT integration in the private schools?
- ii) What are the strategies for effective ICT integration in private schools?
- iii) How do school principals share their experience of ICT integration in private schools?

Rationale of the Study

This study was important in examining private school principals' perceptions regarding the integration of ICT in schools and exploring what contributes to the challenges and opportunities of integrating new technology in private schools. According to a study carried out by Sanchez and Aleman (2011), recent research has shown that proper implementation of ICT in schools helps transform a traditional teaching environment into a learner-centered one. This sort of study might be helpful for the private schools' leaders, such as principals, owners, and founders, including the policy makers, to get to know the private school principals' perceptions on ICT integration and the areas to be reviewed and revamped regarding the existing practices and policies for the effective use of ICT in their schools. It would further help researchers to explore the effective use of ICT in private schools in the Dharan Sub-metropolitan city. In the lack of such a study, it would be difficult for the private school stakeholders in particular and the concerned policy makers in general to have an insight into the ICT integration in the private schools in Dharan, and it would take more time for the school leaders to enhance the teaching-learning process with innovation and technology as the need of the 21st century.

Delimitation of the Study

Although information and communication technology (ICT) are being used for a variety of purposes in schools, including communicating, creating, disseminating, storing, and managing data, this study focused solely on the perceptions of the private schools' principals about ICT integration in their schools in regard to administrative and instructional use in the classroom in particular and the challenges and opportunities the private school principals faced due to ICT integration in the private schools Dharan sub-metropolitan city in general. Moreover, this study is based solely on data collected through in-depth interviews, and no field observations were conducted for evidence.

Organization of Dissertation

This dissertation has been organized into seven chapters. Chapter one introduces the study, including my personal story, which sets the scene for this study by drawing on my experience in school leadership roles. It includes a problem statement, a rationale of the statement, a purpose of the study, including three research questions, and a delimitation of the study. Chapter two consists of a conceptual review of different literature introducing ICT integration and principals' roles for its

effectiveness in education. I have discussed various thematic reviews, empirical studies, policy reviews, theoretical reviews, and research gaps. In Chapter Three, I present my research methodology. It includes philosophical considerations, research paradigms and designs, participant selection, profiles of the five study participants, data gathering, meaning-making processes, quality standards, and ethical considerations.

In Chapters 4, 5, and 6, I have attempted to address my three research questions. These chapters present the narrated stories of the research participants in response to the research questions. Chapter Four explores the participants' perceptions of ICT integration under four themes. Chapter Five examines the participants' ICT strategies and their instructional use, and it also comprises four themes that cover the various aspects of the chapter's topic. In Chapter Six, I present the lived experiences of the study participants regarding the challenges and opportunities of ICT integration in their schools, which are organized into two themes and several sub-themes for each. All the above-mentioned chapters include a chapter summary at the end. As the final chapter, chapter seven includes my learning and reflection, as well as the insights and theoretical discussions based on the perceptions, strategies, and experiences of the study participants regarding ICT integration. At the end of this chapter, I have placed the study conclusion, implications, and my reflection on M. Phil journey. I have completed my dissertation, incorporating references that contributed to the development and advancement of my study.

Chapter Summary

This chapter introduces my research topic by outlining the background, problem statement, purpose of the study, and rationale, which focus on ICT integration in private schools in the Dharan sub-metropolitan city. Based on my decade-long experience in leadership roles in private schools, I have also highlighted several challenges, including excessive workload, profit-driven motives and priorities, inadequate ICT infrastructure, and the role played by the COVID pandemic in prompting school stakeholders to prioritize ICT. Although the government has formulated policies, such as the School Sector Development Plan (2016-2023), to promote ICT in education, gaps in implementation persist, particularly regarding private schools, where the perceptions and readiness of private school principals remain understudied. Therefore, this study aims to explore the private school principal's perception of ICT integration, identify potential hindrances, and assess

opportunities for enhancing innovation. The research questions aim to investigate the experiences, actions, and plans of private schools regarding the use of ICT in their institutions. The study's findings may be useful for private school stakeholders and policymakers to bridge the gap between policy and practice. This chapter concluded with the organization of the dissertation.

CHAPTER II

REVIEW OF THE LITERATURE

In this chapter, I have presented a summary of different literature reviews relevant to the study topic, which helped me to present arguments about what research has been done in the study area to explore principals' perceptions of ICT integration in private schools. Besides having discussions and presentations about thematic, empirical, and policy reviews, the SAMR model, UNESCO's ICT integration model, TAM, and TPACK framework have been referred to for further discussion as theoretical lenses. Benini (2014) stated that ICT supports providing a new avenue for the effective teaching-learning process; thus, it is being used in a more effective and efficient manner in the educational field. Since ICT integration in schools requires combined efforts from all stakeholders, the principals, as the academic leaders, can play a pivotal role in leading effective ICT integration in schools.

Thematic Review

The thematic review enabled me to synthesize different literatures, identify major issues, trends, and gaps in the literature, including a comparison of diverse perspectives on ICT integration in schools. In this section, I have reviewed various literatures under three broad themes, which encompass different facets of ICT integration, instructional use, and the prospects and challenges of ICT integration.

ICT Integration in Schools

ICT integration in education has come a long way of evolution from a peripheral luxury to one of the most crucial pillars of modern education. The United Nations Educational, Scientific, and Cultural Organization (2008) defines ICT as the tools and the process to access, retrieve, store, organize, manipulate, produce, present, and exchange information by electronic and other automated means. This statement clearly stresses that ICT is not only about management or collection of hardware and software; rather it encompasses the active process of engaging with information as well. The scope and integration of ICT in education includes various aspects ranging from computers and interactive whiteboards to the cloud-based platforms, educational apps, and rapidly emerging artificial intelligence (AI) tools. Hence, it is essential that the educational leaders and other major stakeholders are expected to have a broad understanding of ICT as an umbrella term for all sorts of technologies that are used to

gather, store, edit, and communicate information in various forms from one user to another for a variety of educational purposes and its boundaries are being reshaped by latest technological innovation.

ICT has become essential for the modern schools to do the needful so as to have effective and timely ICT integration in their schools to keep pace with time. In a study conducted by Ghavifekr and Rosdy (2015), they argued that failing to address the challenges of ICT integration can have negative consequences for students' learning experiences and their preparedness for a technology-driven world. They further stressed that without effective integration of ICT, learners may miss out on engaging and interactive learning opportunities. Nevertheless, effective ICT integration is not only about arrangement or installation of technology in schools because a true integration also requires a fundamental shift in classroom activities where ICT is taken as an indispensable part of teaching and learning that transforms the existing roles of both; teachers and students. In research conducted by Rana and Rana (2020), it was found that the ICT integration in education can facilitate for the effective communication and collaboration between teachers and students and help transforming their roles and classroom activities.

However, the effective ICT integration in education in Nepal is complex and interconnected. It includes lack of proper technological infrastructure, connectivity, effective and timely pedagogically-focused professional development training and workshops for teachers. Rigid school curricula and evaluation system has also added to the challenges of ICT integration in schools in Nepal. Thus, effective ICT integration in schools in Nepal is more challenging and it demands a holistic involvement of strong and far-sighted leadership, professional faculty, strong technical support and sufficient ICT tools for creating a future-learning environment.

Instructional Use of ICT in Classrooms

With my 15 years of experience in leadership roles at private schools, I regard myself to be more familiar to the topic of ICT integration in education. Many educators still regard information and communication technology (ICT) as merely the ability to operate computer systems and play audio and video for students in the classroom, whereas others view it as an extra burden, which has also created obstacles for the effective use of ICT in teaching and learning. In Nepali context, instructional use of ICT in classrooms is mostly about incorporating technology such as computers, Audio-visual utilities and different online resources for teaching-learning activities.

Effective instructional use of ICT has many benefits like improving teaching and learning activities, helping for personalized and active learning, and easy accessibility to different educational resources and so on. Bharti et al. (2024) in their study concluded that the instructional use of ICT can help improve learners' academic performance and achievement, particularly for students who do not rely solely on traditional instructional methods.

As mentioned in the SESP, one of the crucial obstacles for the instructional use of ICT in the classroom and gaining proficiency in ICT skills is the inadequate access of teachers and students to technology, including ICT. It can also be understood as crucial obstacles for the instructional use of ICT in classroom which can cause the lack of confidence and pedagogical skill-based training among the teachers and educators, who often regard ICT as an extra workload rather than a useful transformative tool for their profession whereas different studies have shown that there is a strong relationship between professional development and successful integration as the educators who received the skill-based trainings were more likely to use ICT and could visualize the complicated subject related concepts. In this regard, Kumar et al. (2022) stated that with the use of proper hardware and software technology in English language instruction, teachers and students can exploit a number of benefits such as the ability to access the relevant materials at the time of their convenience, cost effectiveness, and quick and lasting learning in a short period of time. This statement denotes a shift in the classroom instruction with successful ICT integration. However, the instructional use of ICT in Nepal seems to be in the state of transition and stark contrast. In our context, it is often observed that the pedagogical integration of ICT in teaching and learning is very limited, and the common practice is a 'computer lab' model, where ICT is taught as a distinct subject instead of being integrated into the curriculum.

Prospects and Challenges of ICT Integration

Since ICT integration in education has been in the limelight in recent years, school leaders and other stakeholders are reportedly facing several obstacles that may outweigh the opportunities they have experienced. On the brighter side, Hwang et al. (2015) stated that ICT tools are crucial for creating a conducive learning environment for learners, as they actively construct knowledge rather than being passive recipients. They further highlighted their findings that ICT integration in education, such as simulations, educational games, and interactive software, helps learners explore

complex concepts, develop creative and critical thinking, and improve their conceptual understanding.

In a study conducted by Shahi (2022) among the secondary level teachers, it was found that they had positive attitudes towards instructional use of ICT in teaching-learning, but were facing problems such as insufficient class time and inadequate ICT training opportunities, which hindered effective ICT integration. In other words, like the teachers, during the interviews for this study, it was obvious that the school principals in the area have also realized the need for ICT integration in education; however, they are struggling with a lack of budget, skill-based training, and, to some extent, teachers' reluctance. Moreover, insufficient technical and instructional support can be considered a significant challenge to ICT integration in the Nepalese educational scenario. According to Poudel (2022), the success of ICT integration in Nepali context is often questioned due to high operational costs, absence of a proper ICT policy and strategy, inadequate implementation, supervision, and a lack of ICT-friendly curricula. In other words, the author states that the ineffective and inadequate use of ICT in schools is not only due to lack of technology, but also due to a systematic failure including financial, administrative, leadership and pedagogical dimensions. For the successful ICT integration and to address all these areas, a holistic and coordinated approach and involvement of all the major stakeholders is a must.

My personal observation is that schools often invest in hardware but are not cautious enough about the ongoing technical assistance required to maintain it. It is generally considered that the status of ICT use in private schools is better than in public schools. However, all private schools lack similar infrastructure. As a result, smaller or less prosperous private schools, particularly those located in the outskirts of urban areas, struggle with the high costs of hardware, software, and reliable internet access.

Empirical Review

Numerous studies have been conducted on the use of ICT in schools. These studies have focused on either the benefits of ICT integration in education for teaching and learning or the challenges of ICT in the Nepalese context. Most studies are related to community schools and the government's policies regarding the use of ICT in these schools. However, very few studies have focused on private school

principals' perceptions of ICT use, their readiness, and their roles in the instructional use of ICT. The very near ones were reviewed as below:

Quest (2014) stated that as strategic managers of schools, school principals should share and explain the required information to the teaching faculty, which ultimately helps leaders gain general agreement and confidence from employees for the effective implementation of ICT in schools. For this, the author further advises that school leaders should set the right directions for their teaching and non-teaching staff and also should trigger their creativity to inspire and motivate them to effectively practice and implement ICT at their schools. Furthermore, Dias (2001), in his qualitative research article, which was conducted in America with four teacher participants, stated that the educational leaders and managers first need to understand the different facets that contribute to adopting best practices in teaching, including proper and effective technology integration. However, these studies could not focus on the importance of the school principal's contribution to creating cooperative and supportive behavior, sharing institutional culture, adequately using the reward and punishment system, conducting motivation and skill-based training for effective use of ICT in classrooms for teachers, which are important parts of the psychological environment in the workplace. ICT integration in instruction helps to prepare students with the knowledge and skills they need in their subject matter.

In research conducted by Wu et al. (2019) in China regarding the impacts of principals' e-leadership on ICT transformation in schools, they found that there lie interconnected pathways among government policies, principals' leadership, schools' technology strategies, and teachers' perception for instructional change and positive and improved student learning outcomes. This finding clearly indicates that principals' leadership has a significant impact on school technology strategies and ICT integration, which in turn affects their teachers' instructional practices and student performance. In addition, a principal is a decision-maker and facilitator of school culture and staff's professional development. Therefore, s/he has double roles in leading digital transformation by contributing to vision-setting, resource management, investment, and collaborative learning as these initiatives have a direct impact on effective ICT integration in schools (Gyeltshen, 2021).

Kandel (2022) presents possible ways to overcome the multiple challenges associated with effective ICT integration in his study. He stated that full cooperation and support from school leaders and the school administration, as well as positive

attitudes from teachers, and timely professional and technological training to update their ICT skills, are crucial for effective ICT integration in education. Different institutions have varying levels of ICT status or levels of ICT integration. For this, the SAMR model is helpful in evaluating and describing the degree of technology integration in education, which illustrates the journey from traditional education to modern and digital education (Puentedura, 2010).

A research study conducted in Kathmandu District by Diyal and Pandey (2022) concluded that secondary school teachers require access to ICT infrastructures, including computer hardware and software, as well as sufficient time and technical support. They further added that since none of these elements alone is sufficient to deliver high-quality instruction, they all need to be made available for secondary level schools to successfully integrate ICT. It emphasizes the importance of integrating ICT effectively for effective teaching and learning. According to Khan et al. (2012), a lack of institutional readiness to integrate ICT in education, poor government initiatives, and a physically unfavorable environment for technology at universities are significant issues in developing country contexts. This should be taken seriously, as it emphasizes the importance of stakeholders playing their roles effectively and creating a positive and encouraging work environment to integrate ICT effectively in schools.

Ahmad et al. (2024) concluded in their study that the administrative responsibility of the school principal is crucial in supporting and motivating teachers to adopt and integrate ICT into their instruction, which helps teachers develop a positive attitude towards the use of ICT. As far as the effective implementation of educational aims with new technology is concerned, proper planning and effective principal leadership are major instruments. School principals should have a strategic vision of new technology and how it can be integrated into the school setting. Thus, school principals and administrators should be aware of the new technology available for teaching and learning activities (Perkins-Jacobs, 2015). According to Donaldson and Jackman (2024), effective leadership encompasses resource management, technology integration, and regular professional development. Such endeavors will help them overcome challenges related to remote access, infrastructure, and hardware, as well as teacher resistance to ICT integration in classroom instruction. Yang et al. (2025) highlighted the school principals' perceptions and their roles in technology integration in schools, advocating that if principals have a positive perception and are technology-friendly; their technological leadership motivates teachers to integrate ICT

effectively through skill-based training, which in turn supports educational transformation in developing regions.

When Fadia (2023) conducted research on the school principal's ICT practices and their impact on teachers 'ICT integration, it was found that the principal's ICT literacy and support have a significant impact on ICT integration and classroom instruction. This research found that the school principals lacked proper ICT training and competency, and also recommended the need for proper ICT training for school principals and academic leaders, as they are primarily responsible for ICT vision and modeling in their schools. Krawchuk (2022) conducted a study to assess how principals' tech leadership and professional development affect teacher tech integration in the COVID-19 pandemic era. The study also concluded that the school leaders' limited skills and knowledge on ICT and limited PD had created barriers to effective ICT integration and suggested the need for leadership training regarding the same. The above-mentioned literatures and most of the other literatures I have been through about ICT are found to be primarily focusing on the ICT use in language teaching or mathematics teaching, but they talk less about the school leaders and the principals' understanding or perception and their stories about the ICT integration in private schools of this research area, which I have tried explore in this study.

Policy Review

School Sector Development Plan (2016-2023) credits school sector reform programs with increasing teachers' access to computers and the internet. This makes it possible to expand its application in classroom settings. However, there are no provisions in this strategy to include private schools and empower their principals to implement ICT effectively in government policy.

As mentioned in the education master plan (2013), the four main components of ICT are infrastructure development, including connectivity, human resource development, development of digital learning tools and resources, and the improvement of the education system. This initiative aims to educate schools and teachers about ICT technologies and their effective use. However, this strategy primarily focuses on community schools and makes no mention of private schools or the principals who work in those schools.

Following the declaration of federalism in Nepal, the government introduced the National Education Policy (2019) as a guiding policy that emphasizes ICT as a crucial component of pedagogy, aiming to make it technology-friendly, practical, and

result-oriented. Additionally, the Ministry of Education and Technology formulated and implemented the School Education Sector Plan (SESP) (2022) to facilitate the implementation of the NEP. The SESP primarily presents plans and strategies for managing ICT tools and learning resources in schools nationwide, which will contribute to developing and enhancing the required ICT skills among teachers and students (MoEST, 2022).

The School Education Sector Plan (SESP) (2022/23-2031/32), formulated by the Ministry of Education, Science, and Technology during the COVID-19 pandemic, is regarded as the roadmap to strengthen school education in Nepal. The objective number 2 in the SESP talks about the enhancement of the quality and relevance of overall school education and its key strategy number 4 states that in every school, teachers and students should be trained for effectively managing the basic ICT tools and devices, including the digital learning resources so as to improve the use of ICT as an integral part of teaching and learning.

However, the effective implementation of this policy and the accountability of the relevant stakeholders regarding the integration of ICT in schools have been questionable for quite some time. The above-mentioned policy documents regarding ICT integration in schools appear to have overlooked the current situation and practices of ICT use in private schools in the country. These policy documents also fail to present a concrete, ground-based, inclusive, and executable plan for the proper and effective integration of ICT in private schools, in particular, and all types of schools in general. Such a deficit in policies has not only created confusion and hurdles for private school principals in enhancing and navigating ICT integration in their schools, but also appears to have kept private schools at bay while formulating ICT-related provisions.

Theoretical Review

Different theoretical frameworks relevant to my study topic provided me with guiding blueprints for my research activities. The following theoretical lenses were adopted to study the private school principal's perception of ICT integration.

SAMR Model

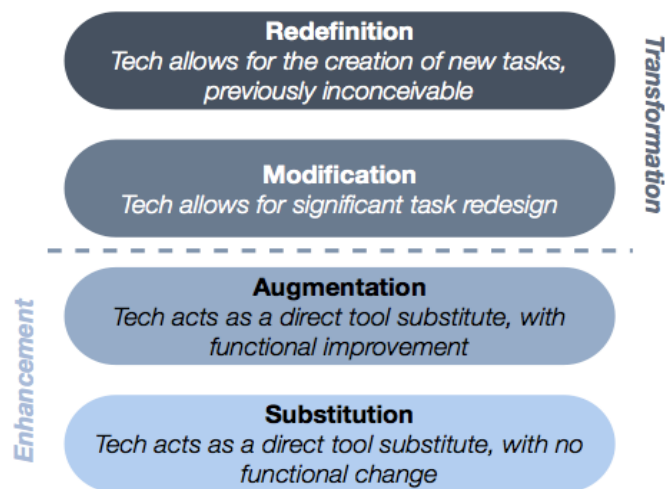
In modern academia, every educator should seek out educational technology because it can have a considerable positive impact on the performance of both teachers and students. However, most educators find it very challenging and are often confused about how to integrate technology effectively in education. This is where the

SAMR model is useful. The SAMR model was developed by educational technology expert Ruben Puentedura as a powerful framework for education. SAMR stands for the Substitution, Augmentation, Modification, and Redefinition model. This model is useful for educators to understand the integration of technology in educational activities.

Puentedura developed this model as a way for educators to evaluate how to incorporate technology into their instructional practices. This model describes a hierarchical progression through four levels, also known as a ladder that advances from simple replacements to transformative experiences. The first two lower levels, Substitution and Augmentation, are kept in the group of 'Enhancement' where the technology functions as a direct tool of substitution for improvement of classroom activities. On the other side, the last two, namely modification and redefinition, refer to a higher level of practices, which represent 'Transformation'. At these levels, technology is utilized to create remarkable redesigns of tasks and to introduce a new learning experience unlike any previous ones. According to Zamir and Mohamad (2024), the SAMR model provides educators with a systematic framework to assess and lead the integration of technology in their instructional activities. In addition, through its distinctive levels, the SAMR model inspires educators to advance from basic technology substitution to transformative redefinition, aligning the goals of their integration with the needs of 21st-century education.

Figure 1

SAMR Model

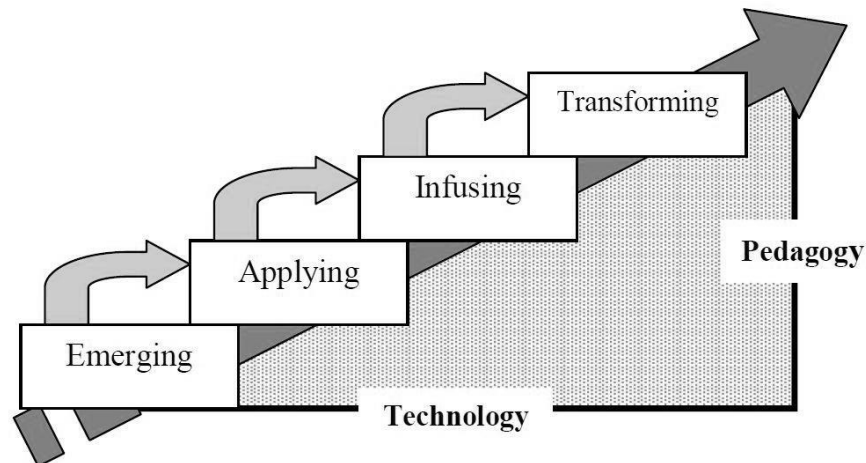


(Hunter, 2015)

As far as technology use in the schools of Nepal is concerned, from the lens of the SAMR model, several studies show that most of the efforts are limited to the earlier two stages; Substitution or Augmentation, where technology use is limited to presenting information or digitalizing the current administrative cores, rather than enhancing the pedagogical alternatives. Therefore, it is recommended that educators and policymakers in Nepal focus more on the higher tiers of the SAMR, specifically Modification and Redefinition, and promote student-centered learning, including the development of 21st-century skills for meaningful ICT integration in schools. Hence, the SAMR model was a crucial theoretical viewpoint and practical guideline for me to explore my research topic.

UNESCO's ICT Integration Stages

Effective ICT integration contributes to achieving higher educational goals, including 21st century skills, instructional innovations, and promoting transformation in the learning environment and student-centered pedagogy (UNESCO, 2018). UNESCO (2010) has presented four major stages of ICT integration in education, namely Emerging, Applying, Infusing, and Transforming. These four stages are based on a progression, starting with basic infrastructure and skills (Emerging), to the ultimate stage, where technology is integrated primarily to enhance teaching and learning methods (Transformation). The schools that are at the basic and beginning stages of ICT integration demonstrate the emerging stage, as these schools have just started their efforts for ICT integration with very basic ICT infrastructure. At this stage, school leaders, authorities, and a few teachers begin to explore the possibilities and outcomes of ICT integration for school management and instructional use, while classroom practice remains largely teacher-centered. Schools at the application stage have managed more ICT equipment, and school leaders and administrators use ICT for a wider range of organizational and management tasks. These schools adopt a curriculum that increases the use of ICT in various subject areas, utilizing a few key ICT tools and software. However, teachers largely dominate the learning environment in this stage.

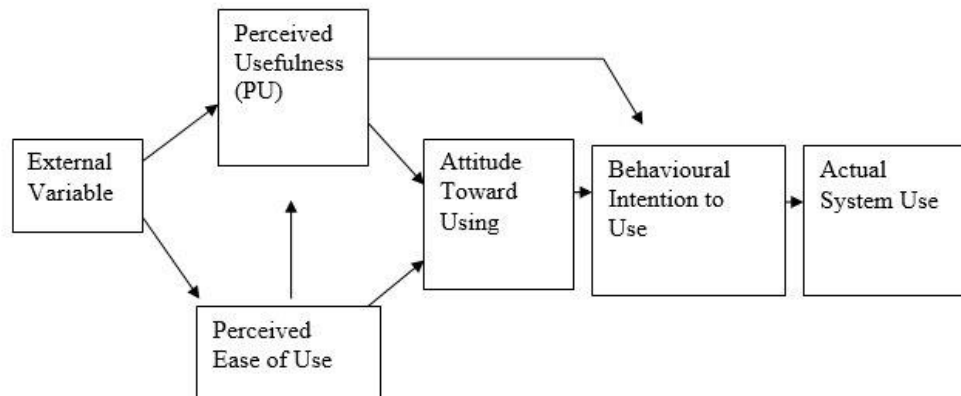
Figure 2*Stages of ICT Integration*

(UNESCO, 2010)

The third stage, the infusing approach, involves schools where ICT has been more deeply integrated into the curriculum, and these schools employ a wide range of computer-based technologies in labs, classrooms, and administrative settings. This endeavor in such schools enables learners to go beyond simple knowledge acquisition to a deeper understanding of how to address complex problems. The schools at the transforming stage integrate ICT to rethink and reinvent school organization in creative ways, where ICT is adopted as an inevitable part of the school curriculum and administrative practices. The curriculum now focuses on learner-centered education, integrating various subject areas in real-world applications. When a school reaches the transformative stage, the entire character of the school changes as administrators, teachers, and support staff consider ICT as an integral part of their daily lives in the school.

Technology Acceptance Model (TAM)

Fred D. Davis developed the Technology Acceptance Model (TAM) in 1989, which has become one of the most popular theoretical frameworks for understanding technology use and the adoption of new information technologies by users. This model advocates that the user's perception plays a significant role in the adoption and use of new technology. According to this model, users' Perceived Usefulness (PU) and Perceived Ease of Use (PEOU) are the two key perceptual beliefs that shape their intention to use such technologies, which ultimately influence their attitude toward these technologies.

Figure 3*Technology Acceptance Model (TAM)*

(David & Davis, 1989)

Under this model, the Perceived Usefulness (PU) refers to the users' belief and confidence that the use particular use of technology would have a positive and productive impact on their performance, and the Perceived Ease of Use (PEOU) refers to the users' beliefs and confidence that the use of technology would reduce their efforts and is convenient. These beliefs of the users are influenced by several internal and external factors. In a study carried out by Bhattarai and Maharjan (2020) among the students in Kathmandu Valley about the application of TAM, they stated that availability and development of ICT infrastructure and accessibility to use technology helped the learners to enhance their performance and learning achievement. They further concluded that the perceived usefulness (PU) of learners regarding digital learning was not found to be sufficiently supportive of the behavioral intention to use it. Therefore, it can be argued that although the participants' perceived Usefulness (PU) may be taken as a significantly positive indicator, the other variables, such as computer self-efficacy and internet connectivity reliability, had a substantial impact on their Perceived Ease of Use (PEOU). However, the perceived usefulness can be regarded as a major factor influencing the user's attitude toward ICT integration in classroom instruction. Hence, the TAM served as a crucial lens for me to examine the private school principals' perceptions of usefulness and ease of ICT integration in their schools, as well as the factors that influence these perceptions.

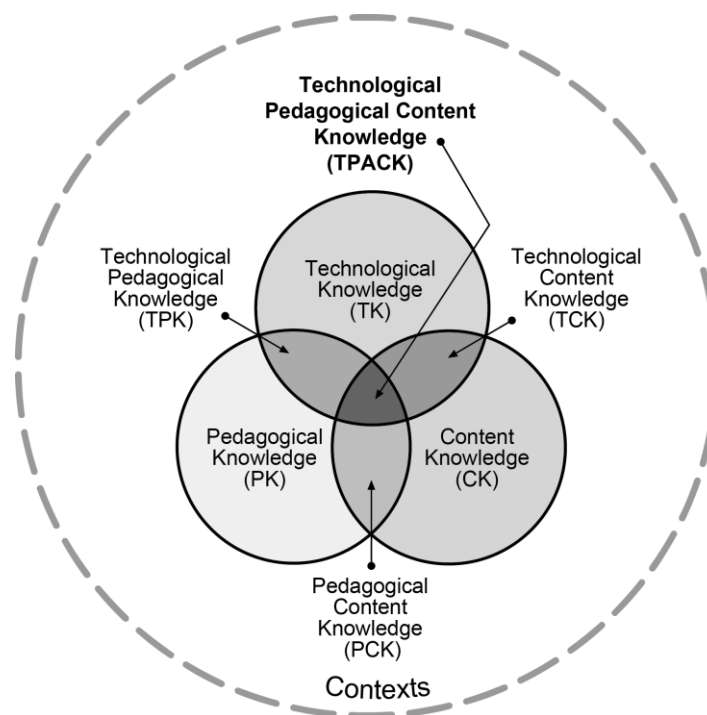
TPACK Framework

Educators face numerous challenges when attempting to integrate ICT in their schools. To resolve these issues and promote ICT integration to enhance classroom

activities, the TPACK framework can be highly useful. TPACK refers to Technological Pedagogical Content Knowledge (TPCK), which was conceptualized by Punya Mishra and Matthew J. Koehler. This theoretical lens presents the synergy among content, pedagogy, and technology domains that is crucial for the effective integration of ICT in teaching and learning. It discusses three core components for the meaningful integration of technology in education: Content Knowledge (CK), Pedagogical Knowledge (PK), and Technological Knowledge (TK).

Figure 4

TPACK Framework



(Mishra & Koehler, 2006)

According to Mishra and Koehler (2006), the TPACK framework emphasizes the interconnectedness of technology, content, and pedagogy knowledge, with a special focus on effective technology use in teaching. The focal point lies in the transformative spaces where these bases overlap, such as Pedagogical Content Knowledge (PCK), Technological Content Knowledge (TCK), and Technological Pedagogical Knowledge (TPK). Ultimately, the combination of all these three aspects forms the Technological Pedagogical Content Knowledge (TPACK). The ICT

integration skills of teachers have a positive correlation with their TPACK insights and self-efficacy in ICT integration in classrooms (Joshi, 2023).

According to Mishra and Koehler's (2006) study, the TPACK framework promotes the integration of technology into classroom activities and emphasizes the interrelationship among technology, content, and pedagogical knowledge. The authors, however, did not distinguish between different kinds of technology within TK. Nevertheless, contemporary researchers emphasize particular technological features of TPACK, such as ICT-TPCK, and concentrate mostly on the use of digital technology (Graham et al., 2012). Several post-pandemic research also indicate that there lies a critical gap between the Technological Knowledge (TK) and Technological Pedagogical Knowledge (TPK) as the availability and accessibility to hardware alone is ineffective and insufficient until and unless the educators have the pedagogical understanding to execute it effectively. The TPACK framework can be a vital tool for every school leader and educator to conduct a needs analysis regarding professional development and formulate the necessary strategies and training programs to develop the ICT skills of school leaders and educators, addressing the current needs.

For concerned stakeholders to have effective ICT use in classrooms, a proper understanding and study of principals' psychology and perceptions regarding ICT use are critical. Cognitive theory may also be useful in explaining human behavior by understanding their thought processes through psychological perspectives.

Research Gap

To communicate, generate, and deliver information to students in schools, various ICT tools are utilized. The availability of sufficient physical resources, principals' initiatives, and a positive attitude, combined with teachers' training, a proper school culture and environment, and teachers' favorable attitude toward ICT usage in the classroom, are all aspects that contribute to effective ICT use in the classroom.

Different strategies and policies developed by the concerned stakeholders can have a significant impact on ICT integration in education. These variables must be considered by ICT issue planners to help and empower school principals in effectively integrating ICT in schools. However, most of the research on ICT integration appears to have been conducted, focusing on community schools and their teachers in the context of Nepal. Even government policies are primarily focused on enhancing ICT

integration in community schools only. Whether we talk about the School sector development plan (2016-2023), ICT in education master plan (2013), National education Policy (2019) or the School Education Sector Plan (SESP), there's seems no consideration for ICT policy for the private schools and no provisions for the principal's ICT skills who are serving for a remarkable period of time contributing significantly in education sector of Nepal. Such policy gaps adversely affect the effective integration of ICT in private schools and also hinder shared responsibilities and understanding among stakeholders regarding ICT integration.

Moreover, many school owners have been working as principals in their schools, and their academic qualifications, training, and interest in effectively integrating ICT in schools may be questioned in some instances. Those qualified and trained principals employed by a small number of private schools appear to have less authority to make significant decisions that would add financial burden to the school owners. To narrow down the policy gaps, detailed implementation plans that include specific steps, a timeline, and responsibilities for technology integration are essential. Such policies should also be inclusive, addressing the need for mandatory provisions in private schools to have an ICT policy that aligns with their institutions' and national frameworks. Moreover, regular supervision and evaluation of private schools, along with some form of subsidy for ICT tools, would be effective in promoting the integration of ICT.

Chapter Summary

This chapter presents various reviews of the relevant literature on ICT integration, focusing on different topic-related themes, empirical findings, theoretical frameworks and models, and policies, and concludes with the identification of a research gap. The thematic review highlights the limited and superficial use of ICT, rather than for transformative, student-centered learning, identifying barriers such as a lack of training, pedagogical skills, confidence, ICT infrastructure, and technical support. The empirical review reveals that a number of studies primarily focus on the community schools and government policies; there lies the gap and lack in the research on the private school principals' perception, readiness, and leadership roles about the ICT integration. It is also supplemented by a policy review that explores national Policy documents regarding ICT in education, such as SESP, NEP, and SSDP, which often seem to overlook private schools in regard to ICT integration. The theoretical review presents various frameworks and models, including SAMR,

UNESCO's ICT Integration stages, TAM, and TPACK, that provide insights into how technology integration in education can be evaluated and understood. It also underscores the wide gap between policy objectives and provisions and the ground reality in the private schools in the country.

CHAPTER III

RESEARCH METHODOLOGY

This chapter outlines the detailed procedures and techniques used for identifying, selecting, processing, and analyzing information on the research topic. I believe the overall credibility of the research depends on the appropriate methodology adopted by the researchers throughout the research. Somekh and Lewin (2005) stated that a research methodology can be considered to be “the collection of methods or rules” we use for our research, as well as the “principles, theories, and values” that contribute to our research approach. In other words, this section sheds light on how I gathered or generated my research data and also demonstrates how I analyzed them.

Philosophical Foundations of the Research

Ontology deals with the nature of existence. Since this study is based on the opinions and viewpoints of private school principals regarding ICT integration in schools, as informed by their lived experiences, the information is subject to the participants' subjectivity. Private school principals face challenges in identifying and adopting appropriate ICT strategies, pedagogy, and technology, as well as motivating stakeholders to implement them meaningfully. This is what led me to realise the need for this research to study, explore, and identify the private school principals' beliefs, practices, and opportunities and challenges in using ICT in their schools. In other words, it can be argued that the world takes on reality through our interactions with it and meaning through our interpretations of those interactions. The truth, therefore, is a synthesis of realities, and gaining access to it is a challenge due to its subjective nature. Alharahsheh and Pius (2020) also opined that ontology seeks to find an answer or understanding of a research question by referencing existing forms of knowledge. They also emphasized that, from this perspective, reality is understood as something that is perceived by considering the shared meanings and social experiences within the research. The information provided by the participant principals may be influenced by various internal and external factors; therefore, it cannot be considered to represent the final, universally accepted reality. There are various realities on this matter depending on the participants' life experiences, level of knowledge, and exposure. Hence, the underlying ontology of this study is the recognition of multiple realities.

Epistemology is concerned with how researchers understand and acquire knowledge about reality. In other words, it focuses on how we acquire knowledge and how we know what we know. For this study, I collected data from participants through open interviews about their lived experiences, as narrated in their stories, which helped me explore how various factors have affected their perceptions and the effective integration of ICT in their schools. I established a good connection with the participants and carried on the interview with their permission. The participants may have learned information from various sources, which influenced and shaped their perspective on and understanding of the problems they have been facing.

The facilities, infrastructures, career opportunities, employment security, compensation, and climate and culture of the school and the locality seemed to have a significant impact on the participants' perceptions regarding the effective integration of ICT in their schools because their prior knowledge and experiences remarkably contributed to the construction of knowledge, and it differed from one person to another. According to Hiller (2016), epistemological assumptions can serve as a foundation for validating research choices and also reflect an individual's beliefs and understanding of the interrelationship between the person acquiring knowledge and the subject of the research. Therefore, the nature of knowledge in this context was subjective, and my epistemological belief is that subjectivity requires close proximity to the research participants over an extended period to increase the validity of the data collected.

Axiology is concerned with values and their nature. Since people are intricate and complex, and due to their diverse value systems and life experiences, I assumed that the research participants, including the researcher, might hold varied perspectives on the same "objective reality." Hence, I valued the subjective nature of the participants' reality because it relates to the participants and their actions; for this reason, an in-depth interview was conducted. The purpose of this study was to gain a thorough understanding of private school principals' perspectives on the use of ICT in their institutions and the variables influencing these perspectives. I consider that ICT integration in education is vital in modern times across various domains of an institution, enabling swift, motivating, and effective classroom activities, efficient school management, and communication and collaboration with different school stakeholders. This value and belief guided and motivated me to delve into this area of

research and explore the experiences, perceptions, and practices of private school principals regarding ICT integration in private schools in Dharan.

Research Paradigm and Design

This study has adopted an interpretivist research paradigm as its primary aim was to look at the subjective meaning and experience of the private school principals. Since this study is based on the school principals' life experiences that they shared with me, I attempted to collect data through the collection of stories. According to Kim and Latta (2009), a branch of approach known as "narrative research" focuses on the stories that individuals tell to explain and describe many facets of their lives. In this regard, this research is qualitative in nature, as it includes multiple stories from the participants. The narrative inquiry approach is adopted as the research design for this study, allowing me to understand and encapsulate the perceptions and lived experiences of private school principals regarding ICT use in their schools.

Clandinin and Connelly (2000) stated that a narrative inquiry is a means of understanding people's experiences by exploring the stories they tell about their lives. Their primary focus in the narrative inquiry seemed to be studying the lived experiences rooted in the individuals due to their social, cultural, and historical backgrounds. Therefore, I strongly believe that narrative inquiry was highly valuable for my study because it enabled me to explore the complexity, nuance, and diversity of the participants' experiences in a way that no other method could. Moreover, it also eased my task of narrating their stories of experience and uncovering how their experiences depicted their way of understanding ICT and integrating it into schools for effective teaching and learning.

Selecting the Participants

This study is primarily based on the primary source of data. To collect the required data from the participants, a non-probability sampling strategy was used to select them. Firstly, five private schools were selected from the Dharan Sub-metropolitan city of Sunsari district on the basis of the student number such as less than 500, less than 1000 and more than 1000, and altogether 5 principals from these schools were selected who had been in the leadership position for at least 5 years and they were selected through purposive sampling to reach the data saturation. Since my research is a narrative inquiry and has adopted an interpretivist paradigm, purposive sampling is the most appropriate sampling strategy. I needed participants with good experience in leadership roles and a diverse student population to gain a deep and

insightful understanding of my study. To minimize gender bias, the study included at least one female and one male principal.

Profile of the Study Participants

Participant (**P1**): My first participant was 45 years old and is the principal of JM Secondary School (Pseudonym). The school was established in 2048 BS. He has been working as the principal of the school for the last 16 years. He is one of the school's shareholders. He has completed his master's degree in English from Tribhuvan University. There are approximately 220 students in the school, ranging from Nursery to Grade 10. There are 27 teaching and 4 non-teaching staff in the school. The school has leased some land and has constructed ten-roofed classrooms.

Participant (**P2**): My second participant was 38 years old and the principal of NDV Secondary School (Pseudonym). The school was established in 2045 BS. He has been working at the school in the capacity of principal for the last five years. He is one of the school's major shareholders. He has completed his master's degree in English from Tribhuvan University. There are approximately 1,000 students in the school, from Nursery to Grade XII. The school has 70 teaching staff. The school has some land of its own, and some land has been leased. It has good school buildings.

My third participant (**P3**) was in his fifties. He is the principal of Dream School (Pseudonym), which was established in 2019. He has been leading the school his school for more than two decades. He has completed his Master's in Science from Tribhuvan University. There are 1,200 students in his school, which offers classes from nursery to grade 12. The school has its own land, several buildings, and also has a large playground.

My fourth participant (**P4**) was in his fifties. He is the founder and principal of the Modern School (Pseudonym), a school established in 2025, and one of its major shareholders. He has been leading the school for the last 7 years and has also received a doctorate degree in English from Tribhuvan University. There are 1,178 students in his school, which offers classes from nursery to grade 12. The school has leased some land with a few buildings and has also constructed teen-roofed classrooms.

My fifth participant (**P5**) was a female principal in her fifties. She has been leading a secondary-level school (Nursery – 12) named Jyoti School (Pseudonym) for more than seven years. It was established in 2044 BS. She has received a master's degree from an Indian University. There are approximately 700 students in her school.

She is not a shareholder of the school, but she has been appointed to oversee the school's academic affairs. The school has large buildings and a spacious playground.

All my participants were very experienced and dedicated educational leaders. They impressed me as most of them are deeply established and stable figures in the academic scenario of Dharan. They were very friendly and cooperative, sharing a high level of academic qualification, including a minimum master's degree. The varieties in their school infrastructure, student catchment areas, and diverse economic realities have shaped different school cultures. Their long tenures in the leadership roles, ranging from seven to over twenty years, indicate a group with deep, practical experience in school administration. They seemed to embody a blend of traditional commitment and modern ambition and are focused on steering their schools towards success with an optimistic attitude toward technology use in education. However, they still seem to be at the base in terms of knowledge and practice regarding ICT use in their schools.

Data Generation Procedure

A close and harmonious relationship was crucial for conducting the in-depth interview to collect the required information. Therefore, I developed a good rapport with the participants. Individual interviews were conducted at the participants' convenience, once they were at ease and prepared for a lengthy discussion. I conducted one-on-one in-depth interviews with each participant to gather the necessary data. The tentative time duration of the in-depth interview was about an hour. These interviews covered a wide range of aspects related to the research issue.

I conducted individual interviews to collect the required data from the participants. I developed a few guiding questions that suited the research topic. Furthermore, a few probing questions were used during the interview to prompt the talk and cover all facets of the research topic. With the participants' permission, the interview was recorded to preserve the conversation for future use. Some participants were consulted later due to the need to collect in-depth and rich information from them. Some shorthand writing (note-taking during the interview) and/or journaling were also done immediately after each interview.

Data Analysis and Meaning-Making Process

Qualitative research involves the process of understanding and deriving meaning from data collected from research participants. In this process, the researchers engage with the data, paying close attention to the variables that offer

potential insights into their research questions. For the data analysis in my research, I have adopted a simple narrative analysis, a method commonly used in interpretivist inquiry. For this study, narrative thematic analysis is adopted as it focuses on the textual content. After collecting enough required information from the participants, I organized the data in accordance with the research questions. More specifically, I took into account four fundamental components—coding, categorization, patterning, and thematization—while analyzing and interpreting the narratives. I extracted concepts from the raw data by coding them using various coding techniques. I linked codes to create a unit or category by categorizing them.

When I identified recurring units (patterns) within the provided categories through patterning, I developed themes that represent related patterns by thematizing. I then responded to each research question by writing each theme as a subheading, and I inserted the narrative as supporting evidence under each subheading. I developed stories and narratives/narratives and conducted a narrative analysis that aligns with my research study. The tale was then addressed in relation to the theory, other pertinent literature, the context, and my own reflexivity (Creswell, 2016).

Quality Standards

In-depth interviews were conducted to ensure quality standards. The gist of the participants' opinions was maintained throughout the data interpretation. To maintain the trustworthiness of my research, I interviewed participants more than once when necessary. I always considered credibility, transferability, and dependability as these attributes helped me maintain trustworthiness in my research, as it was major tools to ensure the quality of the study and its findings, which would make it notable to an audience (Schwandt, 2001). I used only such field text or notes that could help me explore the authentic and real experiences of the participants. I was courteous and used polite language with the participants while collecting the field text/notes. I spoke less and empowered my participants to discuss in-depth during the interviews. I considered temporality, sociality, and place during the study, as these concepts were helpful in understanding the participants' experiences and behaviors, which significantly affected and shaped their perception of the research topic.

Temporality

Understanding the process is very important in a narrative inquiry because nothing is permanent and everything is in a state of instability. Hence, temporality in a narrative inquiry refers to the events and incidents taking place in the past, present,

and future. According to Haydon and Riet (2016), temporality is concerned with understanding the impact of time and how earlier experiences, existing situations, and future goals play a crucial role in shaping how experiences are narrated and understood. As a researcher, I attempted to explore the participants' perceptions and experiences of adversity and resilience, which have been shaped by their personal and professional experiences, as well as their visions for the future, while creating meaning from the narrative occurrences through their stories and reflections. As a researcher, I was aware that a friendly relationship with the research participant was important in order to get their stories, and their stories were revealed step by step over time, as Maggetti et al. (2013) rightly stated that the trustworthiness of the findings of any research hugely depends on the temporality as well.

Sociality

In research, analyzing sociality refers to examining how relationships and dynamics shape the narrative's content, style, and meaning. Additionally, it also refers to the necessity of focusing on the existential conditions, such as the environment and surrounding factors that are helpful for the collection of narrative texts. During the data collection, I was aware of the importance of personal and social interactions of my research participants. I was equally careful in the process of generating meaning from their personal stories and tried to understand how their perception, attitude, inquisitiveness, and professional obligations were influenced by each of their social interaction and surrounding measures to analyze their perception about ICT use in schools.

Place

In my research, I declared a place based on the context and research needs. To ensure the place was suitable, I obtained prior oral consent from my research participants, as selecting a suitable location is crucial for collecting genuine stories from participants. As per the participants' request, the in-depth interviews were conducted in their offices during school hours. As a researcher of narrative inquiry, I ensured that the research participants' stories were collected without any influence from the research setting.

Ethical Consideration

According to Creswell (2009), unethical practices pose a significant concern in research, as they are likely to tarnish the credibility of the research and its findings. Therefore, this study avoided unethical practices, maintaining the utmost regard for

honesty and sincerity in the research. As a narrative researcher, I prioritized ethical considerations throughout the inquiry, given the relational aspects of narrative research. I received a formal letter from the university and sent it to the research participants. Two principals, who had agreed to participate in my study as research participants, later informed me that they would be unable to attend the interview throughout the month, citing their busy schedules. Therefore, I selected other school principals to meet the sample size requirement for my study. I was cautious enough to anticipate any potential ethical boundaries that might arise during the course of this research. The identities of the participants and their schools are kept confidential; pseudonyms have been used instead for the participants and schools as part of ethical considerations, such as P1, P2, P3, P4, and P5 for the research participants. The research participants were also assured that the data they provided, including voice recordings and their transcriptions, would be kept confidential. I made every effort to avoid plagiarism by using proper citations and references, and I respected the autonomy of the participants, allowing them to withdraw at any time if they desired. Additionally, I strictly adhered to the ethical guidelines of Kathmandu University.

Chapter Summary

This chapter outlines the research methodology, adopting an interpretivist paradigm to examine the subjective, and multiple realities of private school principals regarding ICT integration. The philosophical foundation has covered the various aspects of narrative inquiry and their justification, including ontology, epistemology, and axiology. Moreover, the qualitative narrative inquiry design was adopted, and purposive sampling was used to select five experienced principals from different private schools in Dharan. Data was collected through in-depth, recorded interviews, which were then transcribed and analysed using narrative techniques. Trustworthiness was ensured through measures of credibility, dependability, and adherence to strict ethical protocols, including confidentiality and informed consent, as well as proper reference to the university's ethical guidelines, which were given high consideration throughout the research.

CHAPTER IV

PRINCIPAL'S PERCEPTION OF THE ICT INTEGRATION

In this chapter, I have attempted to examine and answer the first research question, which aims to explore how private school principals perceive the integration of ICT in private schools. School leaders of the 21st century must possess knowledge and understanding of integrating technology in education. Sheninger (2019) stated that the school principals' perception and willingness to lead the digital learning have a crucial impact on the effectiveness of ICT integration in schools. The data from interviews and field observations suggest that ICT is used in schools for a variety of goals. Observing, introducing, and managing technological innovation is often subjective, and the use of such technology and innovation in education may depend on various factors, such as the sort of ICT tool and the school's goals and motives. There is a thematic interpretation and presentation of field data. Various personal and professional factors contribute to how the participants perceive the ICT integration in education.

Value and Necessity of ICT Integration Education

ICT integration in education may be one of the highly discussed topics in recent years. A developing country like ours was just beginning to integrate ICT a few years ago. However, the sudden outbreak of the COVID-19 pandemic forced us to accelerate our efforts to adopt ICT in education. Although compelled to do so, schools managed to conduct online classes and began using ICT tools in their schools. It made them realize the urgent need of the time for accepting and practicing ICT in teaching and learning, and develop a positive attitude toward technology integration in education. During the interview, P3 stated,

This is the need of the time. The sooner we adopt it, the more effective our classes will be. Students are very eager and interested in ICT use in class, and sometimes they seem to have better technical knowledge than their teachers. ICT helps us connect to the world's information and updates. Once we are able to prepare, collect, and store teaching materials, they can be used repeatedly, which is a very positive thing for teachers. COVID-19 has forced all of us to use ICT in teaching and learning.

It is challenging for us to envision post-COVID classrooms without the use of ICT. Therefore, it is essential for institutional schools and their teachers to have a plan in place for the effective use of ICT in their classrooms. Earlier, teachers and physical books and resources were the only source of educational information to a great extent, but we soon came to realize that the advancement and innovation in the field of technology had made it possible for us the access a different and advanced pool of information from home, away from school, and also has changed the way of learning. If we do not maintain our pace and adopt ICT as an inevitable part of pedagogy, teaching and learning in the 21st century would be incomplete because ICT skills are one of the five major 21st century skills. *“Integration of ICT in education is expensive, very expensive. That's why it's also very challenging. However, nowadays, the 21st century demands ICT, multimedia, the internet, and more. Then we have to invest in ICT or multimedia”*(P2). This acknowledgement and understanding of the informant are positive signs that school leaders have recognized the need of the time and the significance of ICT use in modern pedagogy. However, a number of schools have been utilizing ICT in various ways to support instructional activities and administrative processes, keeping pace with the latest technical advancements and remaining competitive in the challenging environment of private schools.

The narration of the P4 is remarkable in regard to innovation in ICT. He narrated his experience of working as a school administrator for decades and the changes he has witnessed in the field of technology used in classrooms. He said that his shareholder partners were reluctant to invest in ICT, despite his repeated proposals. However, the impact of the coronavirus and competition among private schools made them realize that if the school did not adopt innovation and integrate ICT into education, it would lag behind.

The 21st century is the age of communication and technology, and they must update themselves to new technology; otherwise, it will be difficult. You will face numerous challenges if you don't do it; you have an obligation to implement or receive training about it. We have encouraged, and there is no sign of hesitation from our partners and teachers as well (P4).

This remark may be taken as a solemn realization of the informant about the need for transformation in education and the need for adoption of innovation in ICT in education. If educational institutions do not keep themselves updated and encourage ICT-based innovative practices in pedagogy, utilizing ICT, they may risk challenging

their existing status due to fierce competition among private schools and the demands of parents and students. Emphasizing the need for timely ICT integration in classrooms as a necessity of the times, Alemu (2015) asserts that the world is rapidly transitioning to digital media and information, and ICT integration into teaching methods has become increasingly significant and will continue to do so in the twenty-first century.

Principals' Own Role and their ICT Proficiency

Otto and Albion (2002) explored how school principals contribute to the effective implementation of ICT policies in educational institutions. Their research highlighted those principals play a crucial role in setting and communicating clear ICT-related goals for their schools. Therefore, it is essential that school principals engage in ICT integration in their schools, as they are leaders in their position and have the authority to influence other stakeholders. Such proactive involvement and initiatives regarding the ICT implementation will pave the way for transformation in school education. School leaders should be able to provide effective models, individual support, and intellectual stimulation to their teachers and advocate for a transformational leadership style.

To effectively advocate and practice transformational leadership in the context of ICT in education, school principals should be ICT-friendly and possess some basic ICT skills, enabling them to formulate and develop effective ICT strategies and lead the transformation. *"I am at a basic level in ICT skills. I haven't gone to the institute. Whatever I know, I learnt through myself. However, I know that in schools, there are many principals who don't know how to open an email, either. (P1)"* These remarks make me realize that the participant is aware of his own limitations regarding ICT and the lack of structured professional development and systematic ICT education. Such limitations hinder effective administration and the implementation of ICT policy when technology becomes more integral to school education. In this regard, Afshari et al. (2009) also support the above argument, stating that effective school leaders must possess not only administrative skills but also digital literacy to drive ICT-based reforms, enhance communication, and improve institutional efficiency. P3 stated,

I am actually dependent on my staff, and sometimes I feel that this technology should have been implemented from the very beginning so that I could do my own work a little more effectively. I am actually not fully involved in this technology use.

The participant principal seemed to be honest enough about his lack of and over-dependence on technical staff. It also indicates that the principal lacks confidence and the ability to lead ICT initiatives independently at his school. Regarding the over-reliance of school leaders on ICT, Flanagan and Jacobsen (2003) also found that many school leaders rely heavily on IT specialists and support personnel to execute technology-related projects, revealing deficiencies in their own digital skill sets.

Based on interviews with private school principals, it can be concluded that they perceive ICT skills as crucial for academic leadership in the present context; however, they often rate their own ICT proficiency as basic, highlighting a gap between the perceived importance and their actual skill level. In this connection, on self-rating, P5 said, *“ICT skill is very important. As a principal, we need to know what is happening up to date. I would rank myself maybe 2 out of 5.”* Summarizing, it can be concluded that private school principals are aware of their inefficiency in ICT skills, which may have limited their performance and involvement in ICT integration; however, they remain optimistic about increasing ICT integration in schools.

School Stakeholders’ Roles on ICT Integration

Effective ICT integration in schools requires a collaborative effort where the role of every stakeholder is important. School management, owners/shareholders, administrators, principals, teachers, students, parents, and government bodies should all pay due attention and play their respective roles positively in the integration of ICT. The participants have mixed perceptions regarding the roles of different stakeholders in ICT integration. Ali et al. (2009) also emphasize the need for a crucial and constructive role and support from school administrators, IT personnel, and other stakeholders as imperative factors for solving and leading various technical issues and integrating ICT tools effectively in the teaching-learning process. In this regard, school management/owners may be regarded as a key factor for effective ICT integration in private schools, as they have control over financial resources. Without their commitment and positive attitude towards investing in ICT infrastructure and maintenance, no initiative would be fruitful.

When the participants were asked about the roles of school shareholders/owners in ICT integration, they stated, *“My other shareholders friends are not fully aware of ICT’s importance (P2) and their primary concern is finance (P1)”*. These remarks by the school principals reflect the challenging situation they

may have been facing while trying to integrate ICT in their schools. While P4 and P5 sounded to have a bit comfortable situation with the school owners, as they would support him if they were convinced about ICT's importance and financial return. School owners/shareholders' lack of ICT knowledge and financial return motives appeared to be a significant challenge for principals in executing their ICT integration plans. Teachers are primarily responsible for integrating ICT into their classroom instruction. Regarding the teachers' readiness to initiate technology use, the principal participants have mixed views, as *some of the teachers regard it as an extra burden without extra remuneration (p4)*; however, the major hindrance in the process of ICT integration is that *'most of the teachers have received no formal training on ICT integration (p1)*. The teacher's role in ICT integration is the most crucial one. They are expected to be the digital facilitators, guides, and motivators. Their self-efficacy and positive attitudes towards technology will have a significant impact on the effective integration of ICT in classrooms (Adhikary et al., 2023). These remarks can be considered the major barriers to effective ICT integration in private schools, as schools should be able to motivate and lead teachers, addressing their justifiable concerns. A lack of professional development training and workshops regarding skill-based training deprives teachers of content and pedagogical knowledge, and they often feel that ICT is an additional burden.

Parents are the major stakeholders in the schools, and their roles are crucial for the effective integration of ICT in schools. However, it is often argued that parents are given less priority in private schools. Regarding the roles of parents in ICT integration in schools, the participants expressed a mixed perception, as most parents lacked ICT knowledge and provided inadequate monitoring and guidance. To achieve an effective integration of ICT in schools, collaborative efforts are necessary, where parents not only provide their children with devices but also offer them proper guidance and motivation (Gautam et al., 2024). P1 regards parents as *'a mixed and challenging group'* as *'some of them use messenger for communication, but most of them are uneducated and cannot monitor proper technology use'*. Besides a lack of understanding and effective guidance and supervision by parents, private schools seem to be facing challenges regarding financial constraints for expanding ICT facilities at schools. *'ICT integration required additional financial investment and parents often resist extra fees and hesitate to pay, and some of the parents outright oppose ICT, believing it to be 'nonsense (p4)*. It is evident that parents are the primary

source of financial support for private schools, and their resistance and hesitation seem to have impacted the management and implementation of ICT in the school, as technology is not free and requires substantial investment, with ongoing costs. Since some parents believe that ICT is ‘nonsense’, the school appears not to have effectively communicated to them why investment is necessary and how it will benefit their children’s learning outcomes.

Future Prospects of ICT Integration in Education

The future of ICT in education appears promising, and it is certain that ICT will continue to play an increasingly significant role in education in the years to come. The emergence of AI is expected to significantly alter the educational landscape in Nepal, as it has in other countries. It will create a new teaching and learning environment for students, teachers, and school leaders. According to Pelgrum (2001), students are now active knowledge holders and creative participants in educational activities rather than passive consumers of educational offerings as a result of the use of ICT. Additionally, he contends that ICT is not only the foundation of the information society but also a crucial instrument for implementing educational reforms that transform students into innovative knowledge workers. Talking about the future of ICT, P3 said,

I think without ICT, there is no future. It must be integrated into education. We must introduce and adopt technology as early as possible. But it costs. If parents and guardians cannot afford to pay, our school alone cannot afford to invest in and provide such a facility.

These remarks by the principal are a clear indication that schools must adopt ICT in education to meet the needs of the time, and school leaders should develop strategies that enable them to invest in technology and other required infrastructures. However, the private school principals are unsure how the funds for the investment will be collected if there is no positive support from the parents’ side, as not all parents may be financially sound, and many of them are unaware of their children’s digital literacy and learning.

The participant principal 4 acknowledges the digital shift in education, suggesting that physical books may become obsolete as all learning materials become available online or in digital formats, as he said.;

I think that in the future, there will be no need for books, because all materials will be readily available. But nowadays, students are very clever. If we give

them an assignment, they find answers on the net so easily, and they always bother to read the books from line to line, from top to bottom.

This remark implies a belief in the convenience and accessibility of digital resources over traditional textbooks. The participant recognizes that students are growing techno-friendly and resourceful in using the internet to find information quickly. However, the participant appears to be concerned about children and their over-reliance on ready-made solutions on the internet, as well as the tendency to duplicate answers without understanding or applying critical thinking skills, which is a sign of shallow learning. Covering the same concern, Beland and Murphy (2016) concluded that the presence and use of ICT devices (e.g., smartphones, laptops) in classrooms and for assignment purposes can significantly distract students, leading to lower academic performance. In addition to the future prospects of ICT integration in education, P1 sounded aware of the inevitability of change as he said,

After a few years, not all students will rely solely on books. I'm sure of that. Because their knowledge is being advanced. To mitigate this, we need to allocate additional financial resources. And nowadays, we are also doing little things for the website and other services. Therefore, we must continually improve our financial situation. We must ensure that they acquire a good understanding of computer knowledge. We will create high-quality software and coding, incorporating all the skills taught in school. Then only can we run the school after a few years. But now, it is okay.

The above remarks indicate that the participant is strongly convinced that the digital future is inevitable. He demonstrates a good understanding of the shift in pedagogical paradigms to a digital and technology-integrated environment, as well as the need for adequate financial investment to meet the needs and expectations of students, which, otherwise, will create huge challenges for private schools to sustain in the near future. However, he is aware of the financial insufficiency in these endeavors, which is identified as the most critical and pervasive barrier to effective ICT integration in education.

Chapter Summary

This chapter examines the perceptions of private school principals regarding ICT integration in private schools within the Dharan Sub-metropolitan City. The study reveals a complex interplay of recognition, challenge, and cautious optimism among the principals of private schools regarding the integration of ICT. They have a

positive perception of ICT integration and acknowledge it as an urgent and unavoidable need for 21st-century education. They also regard the COVID-19 pandemic as a crucial factor that compelled schools to adopt ICT and digital tools, albeit at a basic level. The principals seemed to have realized the need for ICT integration as a crucial means of creating effective, connected, and modern classrooms, in order to keep pace with technological innovation in education and meet the expectations of students and parents. However, the study clearly shows a huge gap between the principals' acknowledgement and positive perception about ICT integration and its importance, and the ground reality of actions taken. Although they have recognized the need for ICT in education, their own digital proficiency and ICT skills are in question, as most of them rate their skills as basic and are heavily dependent on their staff.

The principals have identified potential barriers to effective ICT integration, such as high financial costs, a lack of strong commitment and engagement from profit-oriented school shareholders, and the need for proper skill-based and pedagogy-based teacher training. They feel that parents and other stakeholders' less support for ICT promotion also hinders the effective ICT integration, as they lack digital literacy and are often reluctant to pay additional fees. However, they expressed their strong belief regarding the brighter sides of ICT integration and foresee that schools must have effective ICT integration in order to survive in the near future. They also emphasized the need for commitment and collaboration among all school stakeholders, including the local government, to overcome the existing hurdles and ensure that private schools remain more competitive and relevant.

CHAPTER V

ICT INTEGRATION STRATEGIES AND ITS INSTRUCTIONAL USE

In this chapter, I address the second research question of this study, which aims to explore the efforts made by private school principals to date in integrating ICT in their schools and the extent to which ICT is integrated into the teaching and learning environment in classrooms. According to Alenenzi (2023), a principal's roles as an academic and technology leader are vital for creating a collaborative culture, which also contributes to teachers' instructional use of ICT. Therefore, principals should be able to formulate ICT integration strategies in collaboration with major stakeholders and encourage teachers to implement such practices in the classroom as well.

Innovation and ICT tools

Innovation is defined as the introduction of new practices. When ICT is used in schools, it represents a relatively new practice compared to Nepal's traditional school education system, and its adoption is part of the "diffusion of innovation" process (Surry, 1997). The use of ICT in schools is perceived as an innovation in education; we have witnessed the a shift from stone slates (*Khari-pati*) to electronic slates (*E-pati*); laptops are replacing physical books; educational materials are available in the form of electronic text, audio-visual, graphics, and animated illustrations; assessments are created with an automated feedback system; there is an increase in paperless work; e-mails and web-based communication have emerged as powerful and swift tools. Innovations in information and communication technology have been revolutionizing academia worldwide.

Various ICT tools can be utilized in schools to facilitate communication, create content, and disseminate information to students. Several factors contribute to the effective use of ICT in the classroom, including the availability of ample physical resources, teachers' training, an appropriate school culture and climate, and teachers' positive attitude towards ICT use in the classroom. Different strategies and policies formulated by stakeholders concerned with ICT integration in education can significantly impact its implementation. ICT issues planners must consider these factors to support the teachers in the effective use of ICT. ICT-based innovative practices can be promoted in schools by establishing ICT rooms/labs.

The COVID-19 pandemic played a crucial role in forcing us to adopt technology as an inevitable tool in education, as well as in other areas of global social businesses. The spread of the COVID-19 pandemic was a global phenomenon that affected educational institutions worldwide, resulting in the near-total closure of schools and early childhood education. According to a report published by UNESCO (2022) projected that nearly nine million (8,796,624) students in Nepal were affected due to school/university closures in response to the pandemic. This led concerned stakeholders to seek alternative means of continuing teaching and learning as part of distance learning. It compelled school investors, leaders, and teachers to invest in and train their human resources in order to sustain themselves during such a catastrophe. It made them realize that the time has come to accept and contribute to the paradigm shift in education through the use of ICT. Physical classrooms have been replaced by popular online apps like Zoom, Google Classroom, and other portals. Different LMSs were brought into use to continue online classes. Consequently, there has been a significant shift in education with the emergence of e-learning, which involves conducting instruction virtually through digital platforms.

In the post Covid academia, ICT has emerged as one of the innovative means to foster quality, effective and techno-based tool and the basic ICT infrastructures developed out of compulsion during the Covid pandemic and the skill-based training regarding ICT that most of the teachers received have proved to be an added advantage for the teachers and its leaders and they have realized how effective teaching-learning can be if they use ICT for instructional purpose in their schools. P3, a principal in his fifties and having more than two decades experience in school leadership role said, *“If we utilize the latest information and technology in education, then teaching will undoubtedly be highly effective.”* He leans forward; his eyes alight with imaginable potential-personalized lessons. For him, ICT is a transformative promise to connect his students to a dynamic world rather than a mere tool. But his vision exists in stark contrast to the daily reality he administers as he continued, *“However, until now, we have not been able to do that sort of thing. Nevertheless, our aim is to introduce these things slowly and gradually.”*

This statement indicates that the participant has a positive perception of innovation and ICT use in the classroom, as well as the need for implementing it, despite a few hurdles. If we look at these remarks from technology acceptance model (TAM) by Fred D. Davis, it indicates that the participant intuitively knows and

advocates that the effective ICT integration in education helps in transforming education and has a strong perceived usefulness (PU) but several variables, as barriers to ICT integration has created a low perceived ease of use (PEoU), have prevented the effective integration. Emphasizing the significance and implications of ICT integration in education, Young (2003) argues that ICT integration is essential to education because it enables both in-person and remote learning, even in situations where teaching and learning are not possible in a traditional classroom setting. For Principal P1, Corona pandemic was not a shift but a rupture and his memory about that duration was not about policy change but full of a visceral feeling as he said, “*Since the Corona pandemic was unexpected and we never thought or prepared for such a situation, it was very tough for us to cope with the challenges regarding ICT.*” His story then turned inward, to a moment of self-assessment and reflection as he remarked,

I was, to some extent, familiar with a few online portals. During the lockdown period, I conducted short courses for them myself. I taught them for three or four days about Zoom and others. I am not an expert, but I shared what I know with them. After that, we haven't given any training to them.”

This confession, *I am not an expert*, is not a statement of weakness but the very cornerstone of his story as it reflects a leadership of solidarity, where authority did not come from perfect knowledge but from the courage to learn alongside his staff. The closing line of his narrative is stark, simple, and heavy with unspoken meaning that hints at exhaustion or his assumption that crisis-forged skills were enough. The skill-based training and workshops for teachers are essential for effectively integrating ICT in education. It helps teachers improve teaching skills and increases the effectiveness of their classes. Principals, as the primary leader of a school, should be able to help their staff become equipped with such skills and engage in strategic planning. In this regard, Pangenji (2013) stated that school administrators can introduce ICT by strategically planning it into the curriculum. However, the above remarks by P1 clearly indicate that, although the principal appears to be wary about ICT integration and claims to have made efforts, in practice, nothing remarkable has been done. Neither he nor it seems to have strategically planned for the ICT integration in education, nor has it provided skill-based training to its teachers. “*We have a computer lab with 35 computers, one audio-visual class with a projector, and smart boards (P3). Our teachers use free online resources and tools*

like Zoom and Messenger as per the need (P1).” These remarks suggest that the schools have been managed and are utilizing some ICT tools, but the management of these basic ICT tools indicates that these schools are still in the emerging stage and are attempting to progress to the application stage. The schools seem to be more focused on physical availability than on their effective use for instructional purposes. Technology use seems heavily dependent on the teachers’ individual willingness and ability to find free online resources, and there is no specified schedule for its mandatory use, as P1 stated, “*as per need*”. It also indicates that these schools lack a collaborative school-wide strategy for effective ICT integration in private schools. Moreover, this remark, as per the SAMR model, indicates that the school is in the early to middle stage of its ICT integration journey. The mentioned ICT tools and resources appear to be used to supplement physical classes and teachers’ physical demonstrations, and the use of online resources and tools can be seen as a step forward towards the augmentation level.

ICT Use for Classroom Activities

ICT integration in education refers to the proper use of various electronic devices, including computers, the internet, and communication networks, in teaching and learning. The primary purpose of such integration in schools is to enhance and transform classroom instruction. It also helps to enhance 21st century skills, such as critical thinking, digital literacy, and collaboration, and prepares learners for a world driven by technology. Roztocki et al. (2019) argued that information and communication technologies (ICTs) have altered the way people communicate with each other, find information, work, run businesses, interact with government agencies, and manage their social lives. The effectiveness of any class hugely depends on the ICT tools the teachers use and the training they have received regarding the effective use of those tools in a classroom setting.

Regarding the proper use of ICT in education, various ICT tools are employed in different classroom settings. ICT tools in education refer to various devices or objects used in information and communication technology (ICT) for teaching and learning. These tools include digital infrastructures like computers, laptops, cell phones, printers, scanners, software programs, data projectors, and an interactive teaching box. Principal leaders must value an ICT-integrated school culture and possess a thorough understanding of ICT in education in order to accomplish this. The

researcher aimed to investigate the practices of various private schools regarding the integration of ICT in classrooms.

Since school principals are the academic leaders of the educational system, it is crucial to examine their technological literacy and perspectives, as these reflect their planning, organization, and vision. Different schools have adopted various tools and communication networks within their institutions. *“When the teachers feel that they need to teach any special lesson to the students using audiovisual aids, they take them to the audiovisual room where the computer teacher fixes everything for us (P2)”*. This remark indicates that the school is at a very early and fragile stage of ICT integration for instructional purposes. The principal appears to be poorly informed about the various ICT tools that can be used in classrooms, and even the teachers seem completely dependent on the computer teacher to set up and operate the ICT tools in the physical classroom setting. If we look at this remark from the TPACK framework, we can see clear differences between technological knowledge (TK), pedagogical knowledge (PK), and content knowledge (CK). The teacher seems to have good CK and PK as s/he seems to know what to teach and how to teach, but lacks TK and requires help from a computer teacher. Abel et al. (2022) stated that some teachers lack the required digital proficiency to effectively search, compile, communicate, collaborate, and create digital content. Such a lack poses a significant challenge for schools to effectively utilize ICT in classroom activities. School principals should empower every teacher to be independent in utilizing digital tools, thereby enhancing the reputation of their schools and facilitating the effective use of digital tools for teaching and learning activities.

Regarding the current practices about ICT integration in the school, P1 stated, *We have a computer lab with a few computers where students are taken for practical sessions in computer subjects. It also has an internet connection. Sometimes, we assign homework to students via Facebook Messenger. Our teachers created a messenger group during the COVID pandemic; we use the same group for home assignments. But it is used only when needed.”*

Emphasizing the importance and use of ICT tools for classroom instruction, Kirkwood (2014) opined that ICT can be a valuable resource for learning for both teachers and students, as it provides them with opportunities to share their experiences and stay updated with the latest informative materials and theoretical advancements in education. The remarks can also be understood to mean that the principal does not

have a specific strategic plan or schedule for using ICT effectively in the classroom to enhance teaching and learning. In other words, the teachers in this school have limited and isolated access, as ICT seems to be treated as a separate skill rather than a tool for all learning. Technology is being used as an occasional supplement instead of as a core part of classroom activities. Moreover, this initiative also appears to be driven by individual teachers rather than as part of the school's policy and collaborative endeavors in ICT integration.

Regarding the ICT integration for regular classroom activities, P3, who is the senior-most principal among all the participants, stated, *"The Computer lab is used daily for computer subjects; other subjects use projectors occasionally. After COVID, teachers have reverted to physical teaching and are not using technology as much as before."* This statement reveals that the school is at a crossroads in its technology integration journey. The computer lab is being taken as a specialized classroom for specific skills, and other subject teachers use technology only as a means of visual aid. Since technology has not been utilized as effectively as it was during the COVID pandemic, this reversion to physical classes suggests that the school may have viewed technology merely as an emergency tool for classroom instruction, rather than a powerful and integral part of the pedagogical approach that is always needed. It is clear that the school has not been able to fully leverage the potential of ICT to improve and enhance differentiated instruction, as well as increase teacher-student engagement, across the school curriculum.

ICT Infrastructure and Accessibility

Access to technology is a crucial component of a meaningful, ICT-based teaching and learning process. In the classroom activity, both teachers and students play vital roles in utilizing technology. The most basic step towards effective technology integration is widespread access to the equipment necessary to run an educational computer program. Many students lack regular and reliable access to a computer. Inconsistent access to computers makes it very challenging for instructors to integrate technology into existing lesson plans.

Selwyn (2022) stated that having proper ICT infrastructure and accessibility enhances interactive learning, teacher-student collaboration, and access to global educational resources. Everything going on within the school is the responsibility of the school administration. The school administration plays a crucial role in constructing and purchasing ICT tools, teaching materials, and managing time to

develop lesson plans, among other responsibilities. Regarding the same issue, P4 stated. *“Our computer lab is well-facilitated with many computers. We sometimes take them to the lab. They watch videos regarding the topic and learn.”* This statement from the teacher informant led the researcher to conclude that the teacher lacks extensive knowledge about ICT integration in education. The teacher merely thought that watching videos on a computer is an example of the use of ICT in education. It further reveals that both teachers and students have limited access to digital tools, and this access is an occasional, rather than regular, part of learning, as they only get the opportunity to visit their computer lab ‘*sometimes*’. Such a limitation in accessibility also restricts learners' ability to become comfortable and proficient with technology. This indicates that the school is at the emerging stage, as observed from UNESCO's ICT integration stage, since it has managed a very basic ICT infrastructure. The computer lab and teachers seem to have just started exploring the positive outcomes of ICT integration.

Kadel (2005) noted that regardless of the quantity and quality of technology available in the classroom, the key to how ICTs are used is the teacher; therefore, teachers must have the competence and right attitude towards technology.” The effective use of ICT in education requires a high degree of emphasis on implementation. Sicilia (2005) states in his study that teachers complained about the difficulty of always having access to computers. He further mentioned the reasons, such as “computers had to be booked in advance and the teachers would forget to do so, or they could not book them for several periods in a row when they wanted to work on several projects with the students.” During the conversation in regard to the school's current status of ICT, P1 said,

We have one TV where we have added IPTV or something. So, through YouTube, our science teachers sometimes show them a demonstration. That is our AV room. If we had a smartboard, then it would be very easy for us, as well as for teachers.

Although the participant expressed a very positive view of ICT in education, based on these remarks, it can be concluded that the school has very limited and basic resources, and the participant is not well-informed about ICT tools and their use in the classroom. Since the school has only one IPTV, it is clear that teachers cannot easily interact with content or customize lessons as they desire. However, the participant's wish for a smartboard, to some extent, can be seen as a silver lining towards

improving teaching efficiency and student learning. From the lens of the SAMR model, it is clear that the school is using IPTV and YouTube to show videos related to class lessons, and these portals are being used as a direct substitute for teachers' live activities and demonstrations without any functional change. However, the participant's remark, "our *science teachers sometimes demonstrate them*," reveals limited accessibility to digital tools and content, even in this school, as in earlier ones. Here, technology is being used to replace the teacher's efforts in physical demonstrations in the science lab. There appears to be no specific schedule for teachers to incorporate ICT into their instruction and provide equal accessibility opportunities for all subjects, rather than making accessibility an occasional or event-based initiative. The lack of proper accessibility to ICT also limits students' learning capacity and their comfort level with technology. According to the UNESCO (2023) report, without proper ICT infrastructure, digital learning initiatives fail to achieve equitable learning outcomes, as it significantly limits meaningful access to digital tools and resources.

Skill-based ICT Teacher Training

The effectiveness of teaching and learning hugely depends on the tools teachers use and the training they have received regarding the effective use of those tools in a classroom setting. Regarding the proper use of ICT in education, various ICT tools are employed in different classroom settings. ICT tools in education refer to various devices or objects used in information and communication technology (ICT) for teaching and learning. These tools include digital infrastructures like computers, laptops, cell phones, printers, scanners, software programs, data projectors, and an interactive teaching box. Kadel (2005) emphasized that even with abundant and advanced classroom technology, teachers play the most crucial role in determining how ICT is utilized. Thus, educators must possess both the necessary skills and a positive mindset toward technology.

School leaders should be wary enough to provide skill-based training and workshops to teachers for effectively integrating ICT in education. It helps teachers improve their teaching skills and increases the effectiveness of their classes, which can be seen as a sign of transformational leadership. When the participants were asked about their initiatives and strategies for providing their teachers with ICT skill-based training, P1 said,

Really sorry for that. Most of the teachers who are doing they are doing so due to their own knowledge. During lockdown, I myself had oriented them for a few days on Zoom and other platforms. I'm also not an expert, but I share with them what I do know. After that, we haven't given any training to them.

This statement by the participant can be viewed as a humble acknowledgement of shortcomings and a gap in institutional support for the teacher's professional development. The participant seems to have adopted a reactive approach rather than a proactive approach to the shift in technological transformation. Such resource and training constraints might have made his teachers feel unsupported. However, this remark also makes me feel that the leadership is well-intentioned but under-resourced. Though the principal seems to be aware of the shortcomings, he seems to lack the means to address them fully. When we examine this principal's remarks in the context of the TPACK framework, it appears that the school is heavily reliant on the teachers' technological knowledge (TK) and pedagogical knowledge (PK) without adequate institutional support.

According to Bingimlas (2009), effective training helps teachers develop the necessary skills and confidence to integrate ICT into teaching and learning. When the school principals take initiatives and provide timely facilitation and skill-based ICT training to the employees, it enhances their confidence and competence. If school leaders fail to do so, teachers may hesitate to use technology due to a lack of proper ICT skills, which also creates a hindrance to promoting the effective instructional use of ICT. In this regard, P3 said, *"We have no problem in the skilled manpower case. We have an ICT expert in our school who trains and facilitates for the teachers as per their needs."* This remark demonstrates the school's transformative leadership and preparedness in a tech-focused educational landscape. The principal has come to realize the facilitative role ICT experts play, ensuring that teachers can effectively utilize ICT in teaching and administration.

Chapter Summary

This chapter has explored ICT integration strategies and their instructional use in private schools in the Dharan sub-metropolitan city. Based on the data collected from participants regarding the topic, the study reveals a significant gap between the recognized necessity of ICT integration in schools and its effective instructional use in classrooms, as well as its strategic implementation in the private school context. Private schools are found to be at a basic level in terms of ICT integration and its use

for teaching and learning. Although the COVID pandemic forced them to adopt digital learning tools, such as Messenger, Zoom, and Google Classroom, there has been no notable investment or progress since then. The study further finds that several factors have hindered the effective integration of ICT, such as insufficient ICT infrastructure, as most schools still rely on a few projectors, IPTV, and messenger groups instead of smartboards and other effective digital tools, including school SMS, LMS, and school apps.

Furthermore, schools lack any ICT strategic planning, and private schools, to a great extent, appear to lack digital leadership, as most principals lack ICT proficiency. Additionally, very little has been done to enhance ICT skill-based and pedagogy-based training for teachers working in these schools. Although the principals verbally endorse the value and need of ICT integration in schools for effective and engaging teaching-learning as per the needs of the time, their actions, initiatives, and observation of the available resources and facilities indicate that they have failed to formulate collaborative strategies, allocate resources, and invest significantly in ICT infrastructure and equipment, and human resource development. These lapses at the strategic level have limited the instructional use of ICT to basic and sporadic applications, primarily focused on video or messaging tasks. Thus, the full potential of ICT integration to enhance and transform classroom quality has remained largely unrealized in the private schools in this area.

CHAPTER VI

PRINCIPAL'S EXPERIENCE OF ICT INTEGRATION

The effective use of ICT in education presents opportunities and challenges. As with everything in the real world, it has both positive and negative sides. In this chapter, I address the second research question, specifically examining the opportunities and challenges associated with integrating ICT in education. The aim of the questions was to explore the opportunities and difficulties that research participants have been facing while integrating ICT for instructional use in their schools. The advancement in the field of information and communication technology has had a significant impact on the education sector, as it has on other areas. These tools and technologies have great potential to change the conventional educational setting. Hence, today's school leaders are likely to face a different set of challenges than their predecessors.

As far as the Nepali education system is concerned, the introduction and use of ICT in education have a relatively short history. Karki (2019) also supports this statement as he states that, while Nepal's ICT journey began modestly with the introduction of telecommunication services in 1913, it wasn't until the past decade that education policies truly prioritized it. Today, especially in these challenging times, educators and stakeholders recognize the importance of these technologies more than ever. In the current academic context, ICT has not only altered teaching approaches but has also redefined the responsibilities of school leaders, teachers, and students in education.

Opportunities of Integrating ICT in Education

The introduction and integration of ICT in education brought numerous opportunities to both community and institutional schools. This study demonstrates that institutional schools have numerous opportunities to enhance their operations through proper planning and ICT integration. Since the expectations and faith of parents and students are higher in institutional schools, as they believe these schools embody quality and advancement in terms of infrastructure, technology, and pedagogy, the school principal should capitalize on these opportunities with proper cooperation and collaboration with all stakeholders. Moreover, in the context of Nepal, effective integration of ICT tools and resources in regular classrooms provides

very important opportunities to increase student engagement and to improve teaching and learning, as ICT provides space to incorporate interactive multimedia resources that can contribute to varied learning styles and make the instruction more engaging and effective (Phunyal, 2024). Since parents pay different types of fees in private schools, it is obvious that they want private schools to have proper technology facilities—such as computers and reliable internet—so their children can learn digital skills that will help them succeed in today’s job market.

Enhancing Teaching-Learning Processes

School principals, as the primary academic leaders, should take the initiative to adopt innovative approaches that incorporate a proper blend of technology, tailored to meet the academic needs and demands of the time, which will ultimately increase learning outcomes by motivating students to learn. Pangen (2013) also believes that teachers and principals of schools with an ICT-friendly environment have found that teaching with ICT contributes to increasing student motivation in learning. For this, the principal’s encouragement and support to teachers will play a crucial role in adopting blended learning approaches that utilize various ICT tools, such as interactive boards, school apps, and e-libraries.

It’s very important and also very effective, as teachers feel very comfortable and find it easy to teach using multimedia-based classes. Students can also learn very quickly, rather than relying on a traditional teaching method, such as using a whiteboard. So teaching using multimedia is very effective (P2).

This remark can be taken as a reflection of the enhanced teaching comfort and increasing student engagement and learning speed. The use of ICT in teaching and learning helps reduce the teacher’s burden of content delivery and makes lessons more engaging and dynamic. Multi-media-based classes help make learning more interactive, visually appealing, and interesting. The principal participant seems to be shifting from the traditional method towards embracing and integrating ICT in his school. However, during my observation and interview, I did not find any of the research participating schools having their own school app or a Learning Management System (LMS) to enhance their teaching and learning processes. The story of the P3 seems somewhat optimistic. He has tried using a few computers and smartboards for the teaching-learning process. He stated, “*Whenever the students get to use computers for learning, and also learn using the smart boards, they are actually enthusiastic and inspired.*” According to the Technology Acceptance Model (TAM), the participant’s

motivation for technology adoption is strong. Here, technology is not resisted but embraced as it is accepted to be easy to use and highly useful. It also shows that the students' perceived ease of use (PEoU) is good, as they find it easy and accessible to use technology whenever needed.

Administrative Efficiency and Monitoring

Institutional schools in Nepal are highly acclaimed for their academic excellence, better facilities, and disciplined environment, compared to many community schools. Generally, it is believed that institutional schools have strong school management and efficient administration, which is more result-oriented and action-oriented. As a result, the outcomes of institutional schools are far better than those of community schools. ICT integration in schools will help the school principals to enhance their administrative efficiency.

Speaking about the benefits of ICT integration for school principals, Mekewa et al. (2013, as cited in Abubakari et al., 2023) argued that educators and school administrators should embrace and incorporate ICT in their schools for administrative and monitoring purposes in addition to instructional ones. This practice will enable them to run the school efficiently and carry out other activities, such as implementing digital attendance systems and utilizing school management software. Moreover, this endeavor will enable them to be more productive in administrative tasks such as reporting, record-keeping, and decision-making. Since institutional schools practice regular assessments and feedback, the School Management System (SMS), Learning Management System, and school Enterprise Resource Planning (ERP) systems, along with other tools, will greatly help institutional school principals run their administration very effectively. In regard to the advantages of ICT for school principals, P4 stated,

A school principal can be compared to the captain of a ship, as well. Every principal must create new plans, communicate with parents and teachers, and manage the administration. With proper ICT use, we will be able to run the administration effectively and keep an eye on everything. But we should be perfect in ICT use.

Based on this view, it appears that the participant is very optimistic about integrating ICT in his school to run his administration effectively. Based on my observation of his school, I found that he has not yet utilized any school apps, software, or an ERP system. However, he has an AV room, a small room with a few

computers and internet access, which he claims is their digital library and IT room. Effective ICT integration enables school principals to monitor, record, and analyze data on a daily basis, which helps them review and refine their academic and administrative strategies to excel and effectively cope with future challenges. It is also an opportunity for school leaders to make data-driven decisions and track student performance, thereby increasing and improving the school's teaching strategies.

Parental Engagement

Proper and effective use of ICT in schools can bridge the gap between schools and parents, guardians, and other stakeholders. ICT enables faster, more transparent, and inclusive communication. Different digital tools can help school administrators foster stronger relationships, encouraging effective and productive parental involvement in schools, which will ultimately benefit students, schools, and society as a whole. In order to highlight the importance of ICT integration in schools for increasing parental and community support and engagement, Vodopivec and Tretjak, (2020) argued that ICT integration can be one of the important strategies for increasing and strengthening cooperation and partnership with parents as it can facilitate more flexible matching of information, supports more flexible working arrangements, and also allows them to participate in their children's education more quickly, sensibly and actively. Moreover, if schools integrate ICT effectively, parents can stay updated on their children's academic progress, development, school events, and activities by using digital platforms, including SMS, mobile apps, and school websites. As most parents find it difficult to visit schools due to their busy schedules, which creates difficulties in in-person interactions, ICT will help narrow the gap between the community, parents, and school.

In recent years, the rise of dual-income households, where both parents work full-time, has been observed in urban areas. Such parents find it very challenging to manage time for in-person visits to schools to obtain information regarding their children's scholastic and co-scholastic activities, including various programs and strategies offered by the schools. Though the very basic use of a digital tool by a principal for parent communication, P1 stated:

We have made a messenger group for each class. If I have important news to share with the guardians, I'll send it to them in a letter. But it is just the things to share; then I use that. And most of the guardians are also feeling comfortable sharing their feedback with us. Sometimes, when students are

absent, they ask for homework, especially junior students, and our teachers click and send it via Messenger.

Although it is a very basic use of ICT for communication, the principal seems to have taken the initiative for speedy and convenient means, such as creating and using messenger groups for routine updates and assignment distribution. It helps to reduce delays and ensures that concerned parents and other stakeholders receive real-time updates. Such free digital platforms also provide parents with the opportunity to express their concerns and offer advice to the school authority. These endeavors enable school principals to create opportunities for fostering trust and collaboration between home and school, ultimately leading to successful school leadership. However, according to the SAMR model, the school appears to be making the most common use of ICT as a mere tool for direct substitution, without any functional modification. This is evident in the school's practice of using Messenger to send assignments and notices to students, replacing traditional methods such as paper, ink, or boards. Highlighting the importance of parental involvement, Castro et al. (2015, as cited in Putri & Saharudin, 2025) in the child's learning process, ICT integration increases parental involvement that may include academic expectations and achievements, homework supervision, support and participation for school activities, and making parental involvement essential part of the student's learning (Castro et al., 2015). In other words, ICT integration in schools also fosters parent-school collaboration as the use of ICT tools such as SMS alerts, WhatsApp, Messenger groups, and school portals enhances mutual trust and collaboration among school leaders, teachers, and parents.

Challenges of Integrating ICT in Education

Most parents and students have high expectations for the institutional school in the context of Nepali society. They believe that these schools will help their children develop the necessary qualities so as to face future challenges and compete globally. In other words, institutional schools are expected to contribute more to the holistic development of the children compared to community schools. As far as the use of innovative pedagogy and technology is concerned, they believe that institutional schools adopt modern teaching methods, utilizing sophisticated infrastructure and innovative educational technology.

Meeting the diverse expectations of various stakeholders is a significant challenge for school principals. Principals of private schools in this area seem to be

facing several challenges that easily outnumber the opportunities for effective integration of Information and Communication Technology (ICT) in their schools. The effectiveness of ICT integration in schools in Nepal is frequently questioned due to the high operational costs, the absence of a proper ICT policy and strategy, inadequate implementation, supervision, and a lack of ICT-friendly curricula (Poudel, 2022). Some of the literature has shown that, despite private schools investing in ICT infrastructure, other issues, such as high maintenance costs, frequent power outages, and insufficient digital pedagogical skills among school leaders and teachers, significantly limit their effective use in the classroom.

Limited Infrastructure and Resources

Infrastructure and resources play very significant roles in the effective integration of ICT in any sector. As far as schools are concerned, the school management and leadership should manage the minimum ICT requirements to cope with the dire need of ICT use in education. However, during the study, the researcher observed very limited infrastructure and resources regarding ICT integration in the private schools of Dharan. On the one hand, parents and students have high expectations of private schools in terms of infrastructure and resources, and the schools also seem to boast about having sophisticated and modern infrastructures in their advertisements.

In an article, Joshi (2017) emphasized that adequate ICT infrastructure, including computers, internet, software, and electricity, is essential for effective ICT integration in education. Private schools have managed ICT-related activities by funding themselves to manage the required ICT instruments and tools. However, the researcher's observation shows that the private schools in Dharan have numerous challenges to manage for proper ICT integration in their schools. When the participants were asked about the ICT infrastructure and resources, most of them indicated that their computer lab was the major infrastructure of ICT in their schools. They informed

We have computer classes, it is just a class only and we are not using computer internet in our computer lab (P1), we have a smart board in computer lab, not in other classes (P3), we have a projector but not other types of facilities (P4), so far we have not started the smart classes (P5).

The above remarks by the private school principals vividly demonstrate that private schools in this area rely largely on basic computer labs and projectors as their

ICT infrastructure, which limits the scope and quality of ICT integration and presents a crucial challenge for effective ICT integration in schools. Moreover, during my observation in those schools, I also got to know that none of the schools have SMS, LMS or their own school apps. According to UNESCO's ICT integration model, the above-mentioned principals' schools are in the emerging stage because their ICT infrastructure is basic, underutilized, and not yet connected to the internet.

Financial Constraints

Remarkable financial investments play a crucial role in the effective integration of ICT in education. Investing in ICT appropriate tools, labs, software licenses, and regular maintenance can be expensive. As far as private schools are concerned, they rely completely on student fees, and a remarkable investment in ICT can be challenging, as it may lead to significant annual fee hikes. Regarding the financial barriers and other obstacles for ICT in private schools, P4 argued:

Generally, the parents who have sent their kids to this school are either from the middle class or from the lower class. There is the matter of finance, and the parents hesitate to pay an extra charge for ICT. And they say it is very difficult for them. After this, due to the time of post-corona, the parents are handicapped financially also, so it is their obligation.

The principal's remarks highlight critical financial and socio-economic challenges hindering ICT integration in his school. Since not all private school students belong to well-to-do families, collecting reasonable fees or extra fees for ICT may be a matter of conflict and may also lead to an increase in dropout rates, ultimately limiting the school's financial investment in ICT integration. Moreover, the post-pandemic financial strain has also been a barrier to limiting parents' extra paying capacity. Although Aryal and Pandey (2022) claimed in their study that private schools have better ICT tools, investment, and strategies, and have exploited the advantages of ICT compared to public schools, the participants in my study have a different story to tell. They argued that the major financial barriers they are facing these days are high initial costs for hardware purchase, including maintenance and upgrade expenses, which for many private schools is a matter of significant struggle. He also stated that since there is no financial aid or subsidy from the government for the purchase of such tools for private schools in Nepal, it may lead to unequal ICT integration.

The story of a principal participant is also supplemented to the earlier remarks of the participant regarding some of the school shareholders who are purely investors but not educators, and are not aware of ICT in education, as he remarked:

Same thing. We are more, so not all are involved in the school. Only a few stakeholders are directly involved. They encourage to do. However, the problem remains the same: managing finances effectively. And some of them, those who know nothing about this, only think about finance. So, they may find it difficult. That's why we are not upgrading it. That is the problem. So, all the stakeholders are also not aware of these things. They are not aware of these things (P1).

This remark can be interpreted as an expression of frustration on the part of the principal regarding ICT integration in schools, as he appears to have been facing several challenges while attempting to integrate ICT in his private school. The lack of proper support from some shareholders, who are either unaware or disengaged in digital education and ICT-related decisions, created challenges for a school principal in formulating and implementing ICT in schools. As not all the shareholders may have a sound educational background, they may be only profit-oriented. Adhikari (2019) also stated that, although private schools seem to deliver higher-quality education, most are operated like profit-oriented business firms. This, to some extent, seems relevant in the case of my research participants, who have multiple owners. These shareholders appear to be solely focused on cost-cutting without recognizing the educational value and the need for ICT integration and its long-term benefits, making it a more challenging task for the principal to justify investment.

Limited ICT Skills among the Principals

School leadership plays very vital role in navigating the direction and priorities of the schools. ICT integration in education helps the school leaders not only enhance their administrative efficiency but also remarkably improve the teaching-learning process. If school principals have developed a certain level of ICT skills, it eases their journey to digital leadership. However, most of the research participants have very basic and limited knowledge and skills regarding ICT. Some of the participant principals informally requested that the researchers explain ICT to them before starting the interview. Hills (2017, as cited in Bakare, 2023) stated that ICT-literate school heads or principals can perform diverse and crucial roles, including school planning, organizing, leading, and controlling. Additionally, such school leaders can

be highly productive for the school community, as they can promote smart classrooms, e-learning platforms, and digital tools and resources. However, one of the major challenges in ICT integration in private schools is the lack of ICT skills and knowledge among school principals.

For a School principal, it is a must nowadays, but myself not able to be involved in it thoroughly, and I am actually dependent on my staff, and sometimes I feel that this technology use should have been done from the very beginning so that I could do my own work a little bit effectively, that is what I feel. And still, I am not actually fully involved in this technology use (P3).

This remark by the participant principal can be interpreted as a combination of acknowledgement, regret, and dependency regarding his ICT skills in his leadership role. Such dependency may have arisen from a lack of confidence, inadequate training, or unfamiliarity with technology. Although the principal participant appears to regret not adopting or prioritizing ICT skills earlier in his professional life, he hasn't taken any proactive steps to bridge this skill gap. It can also be taken as an institutional challenge in adopting technology and integrating ICT in education. As school principals are compared to captains of the ship, steering their schools, such gaps in ICT skills can create a significant challenge for the effective integration of ICT in schools. If we analyze this remark from the technology acceptance model (TAM), the participant seems to have realized the importance of ICT in education as s/he stated 'it is a must nowadays'. Although it indicates a high level of perceived usefulness (PU), the participant's perceived ease of use (PEoU) seems very low as s/he are not being involved in technology use, and it has resulted in dependency on other technical staff.

During the interview with another principal participant, who is also a member of the private school organization in the city, he ranked himself 3 out of 5 and stated:

If the principal is not an expert in ICT, they cannot implement it in their school. Otherwise, it will be a great problem. (Laughter). I am in touch with many principals and I have seen them struggling with very simple technical issues. To the best of my knowledge, in the case of Dharan, no more than 25% of the principals are skilled in ICT.

The above-mentioned remarks, which are not only from a school principal but also a member of the private schools organization, vividly suggest that if school principals lack ICT skills and expertise, it creates significant barriers to integrating

ICT in schools. Chang (2012, as cited in Quidasol, 2020) argues that school leaders who are ICT-friendly and possess technology leadership skills will have a significant impact on teachers' ICT literacy and their teaching effectiveness, as they can encourage and guide them to integrate technology into their instructional practices. However, the study shows that many private school leaders lack adequate training in ICT, which hinders the effective adoption of technology in classrooms. Therefore, it can be said that the school head or principals must have ICT proficiency; otherwise, even if the school has a well-planned ICT policy or strategy, it fails to translate into practical implementation.

Lack of Support from Governments and School Shareholders

Supports from all three levels of government play a crucial role in promoting ICT integration in schools. Their initiatives in various ICT-related policies and plans facilitate the integration of ICT in schools. Nepal Educational Policy (2019), School Sector Development Plan (SSDP), One Laptop Per Child (OLPC) program, Digital Nepal Framework (2019) have been remarkable in emphasizing digital literacy and ICT integration in schools, including strengthening the ICT infrastructure and human resource management. Additionally, following federalization, local governments have become more active in supporting schools through budget allocation, teacher training, and digital classroom initiatives.

However, private schools in Nepal have not been receiving significant support from all levels of government for integrating and promoting ICT in schools, and these plans, acts, and policies seem to have left community schools in poverty. Since most of the private schools have multiple founders and shareholders, not all of them may be highly educated, belong to the educational sector, or may be intensely financially profit-oriented. Such people in the school authority can be a hindrance to the principal's plans for ICT integration and financial investment. During the interview, all participants reported that their schools have not yet received any kind of support from any level of government. Regarding the similar issues, P1 said in a whisper, *"From the local government, we are getting no help. From the shareholders, I said it is partial. But those who are involved in the school field are encouraging me to improve."* P2 also sounds to have added to it as he said, *"Local government, they are not supporting private schools at all. Most of the school partners don't know about IT, ICT, and ICT demands extra financial support."* Adhikary and Dahal (2021) in their research also revealed that, although private

schools recognize the importance of ICT in enhancing teaching and learning, financial limitations, costly infrastructure, and a lack of skilled human resources, as well as government support, badly affect the effective implementation of ICT in private schools in Nepal. Whatever they are to do, they are to be completely dependent on themselves and the fees they collect from the students, which many principals claim has hindered the effective integration of ICT in their private schools.

Parents are among the most significant stakeholders in the school community. Their roles also play a pivotal role in the effective integration of ICT in schools. They are expected to be engaged and involved in school activities and cooperate with the school community for the all-round development of their children. However, most parents appear to lack digital literacy. As far as ICT integration in the schools is concerned, the participant principals have mixed experience, ranging from cooperative to resistant and unaware. In narrating his experience, P4 presented one of the major challenges, not related to policy or pedagogy, but regarding the characters of the parents he encountered. His voice grew quiet and deliberate as he presented the scenario of his everyday struggle. He presented them as ‘perpetually angry, impossible to please and extremely critical at all times’. Regarding the support from the parent community, he said, *“There are different types of parents. Some parents always show signs of anger. Some parents can’t be satisfied. Some parents always point out the negative points. They neglect their duties and responsibilities.”* This remark indicates frustration and a sense of obstruction, as the principal believes that some parents are also barriers to the school’s technological progress. The principal seems to be facing much resistance from the parents’ side. It may be because the parents are not aware of the importance of ICT for their children, or are not satisfied with the school’s strategies and endeavors. However, such a lack of support from parents, who are the most important stakeholders, demoralizes the school leaders. Moreover, parents failing to undertake their responsibilities as second teachers to supervise their children and maintain close connection and collaboration does not simply refer to failure in their roles, but also creates huge barriers to any school’s progress and technology integration.

Chapter Summary

This chapter examines the lived experience of private school principals during the integration of ICT in their schools. The principals have different experiences about the opportunities and challenges of ICT integration in their schools. The

participant principals have observed increased student motivation and engagement in learning through the use of multimedia and interactive tools. They are convinced that ICT can offer them better opportunities for enhancing their administrative efficiency and help them make data-driven decisions. To some extent, they have experienced an improved community and parental engagement via freely available communication platforms. However, the stories of the participants' experience reveal that the above-mentioned opportunities are easily outnumbered by the multifaceted challenges. According to their experience, insufficient ICT infrastructure and resources, significant financial constraints, the reluctance of some shareholders/owners, a lack of ICT skills and awareness among school leaders, have been critical impediments to the journey of effective ICT integration in private schools in the area. In addition, a lack of initiatives and support from different levels of government has left the private schools to navigate the complexities and huge financial costs of effective ICT integration.

CHAPTER VII

INSIGHTS, DISCUSSIONS, CONCLUSION, IMPLICATIONS, AND REFLECTION

In this final chapter, I present my insights, discussion, and conclusions drawn from the in-depth study of the research so far. Similarly, the study has certain implications that would benefit the concerned stakeholders. Moreover, this chapter also includes the reflection of my M. Phil research journey.

Key Insights

In this modern era, technology is not merely a tool but a catalyst for empowerment, innovation, and connection. As far as the use of technology in education is concerned, ICT can play a crucial and transformative role, bridging gaps, democratizing knowledge, and nurturing generations of learners who, in a digital academia, are active creators rather than merely passive consumers of information.

Based on the narratives from the research participants and the interpretation of the collected data, I understood that a significant and complex disconnect exists between the private school principals' perception of the importance of ICT in education and the on-the-ground reality of ICT integration in their schools. All the principals in this study regarded ICT as an urgent and inevitable necessity for providing 21st century education, and this sober realization seemed to be accelerated by the COVID-19 pandemic. They further acknowledged that effective ICT integration in education helps to enhance student engagement, administrative efficiency, parental engagement, and communication, and were more optimistic about the future of ICT integration in education. Nonetheless, a significant gap exists between the recognition of ICT and its effective implementation in schools. The principal is expected to lead technology integration in schools, but they themselves lack digital proficiency, rating their ICT skills as 'basic' and exhibiting high dependency on their technical staff. Such shortcomings have created significant barriers on their path to confidently leading ICT initiatives and becoming a role model for their teachers. Moreover, this crucial lack of foundational skills at the leadership level, combined with the lack of proper support from other school stakeholders due to their profit-oriented motives, has resulted in a lack of effective strategic planning and vision for ICT integration in private schools in Dharan.

The private schools in this area appeared to be utilizing basic ICT tools, which are merely used to substitute for traditional core subjects and teachers' classroom demonstrations, but are insufficient to integrate ICT into classrooms and transform instruction. In addition to the individual skill gaps of school principals and teachers, several other barriers hinder the effective integration of ICT in private schools. Most crucial barriers for effective ICT integration in the private schools seems to be financial constraints, lack of needful support from profit-oriented school shareholders and owners, and zero government backing for private schools which has resulted into a severe limitations in ICT infrastructure and most the schools are relying on basic tools like projector, IPTV or a computer lab and still have not managed more advanced system like LMS, SMS, School App and sufficient smart classrooms. Moreover, the schools lack timely and effective pedagogy-focused ICT training for their teachers, leaving them unprepared to integrate ICT effectively into their classrooms.

In a nutshell, it can be said that a significant gap appears to exist between policy and practice regarding private schools, where principals recognize the urgency of ICT integration in education but lack the necessary ICT competency and strategic planning. The ICT infrastructure and ICT integration in these schools appear to be superficial and are largely at basic, emerging, and substitution levels. Teachers deprived of needful professional development and ICT-related training have resulted in their weak PK and TK. However, despite several challenges, the participant principals see clear opportunities and strongly believe that ICT is useful for enhancing classroom instruction, improving administrative efficiency, and promoting parental engagement.

Discussion

In this section, I have presented and discussed my personal impression of the key findings and their connection to the relevant literature related to the four major ICT models and frameworks mentioned earlier. These models and frameworks helped me interpret the data based on ICT integration and its stages, instructional use, and the prospects and challenges of ICT in schools.

When I observed the data of this study through the lens of the SAMR model, I found that the private schools in Dharan are still predominantly in the early stages of substitution and augmentation. Most schools are making the most common use of ICT and fall under the substitution level. In these schools, technology is being used as a

mere tool for direct substitution without any functional change; for instance, they are found to be using Messenger for sending homework and notices instead of using paper, board, or ink. Additionally, they are found to be using IPTV and projectors to show videos related to the class lessons as a direct replacement for the teachers' live activities and demonstrations. Though the COVID pandemic seemed to have forced the schools to adopt ICT for instructional and administrative use to a great extent, and most of the schools used their computer labs for practical classes and Zoom and Messenger groups for conducting online classes, these tools and endeavors only served as a direct substitution for the physical classes. Very few schools have made minor improvements in regard to ICT integration by attempting to implement some minor functional enhancements, as mentioned in the augmentation level of SAMR. Some of the principals reported that they use messenger groups to communicate with the parents. Such convenience and speed of digital communication allow real-time updates and feedback. Regarding the higher levels of the SAMR model, specifically modification and redefinition, a significant gap exists. Since modification levels expect technology to be used to redesign lesson delivery significantly, and redefinition levels require technology to be used to create new and previously inconceivable tasks, no schools in this research have made any notable improvements in effective technology integration. These schools still lack an LMS, a school app, and a data-driven administrative system.

UNESCO's ICT Integration Stages outline four progressively advanced stages of ICT integration: emerging, applying, infusing, and transforming. Based on the research participants' interviews, the data in this study clearly indicate that private schools in Dharan are slowly progressing to the second stage, applying the stage, although these schools have limited and sporadic ICT infrastructure. The data indicate that the instructional use of ICT in these schools is primarily basic and supplemental. The participants reported that they are using a computer lab, IPTV, a few projectors, smartboards, and messenger groups as tools of ICT in their schools; these tools are used for showing videos, sending assignments, and communicating with parents. These schools appear to be paying some heed, as mentioned during the application stage, as the participants have developed a new understanding of the contribution of ICT in teaching-learning activities, and some of the tools are being used to accomplish traditional tasks, such as administrative communication. However, effectiveness in the applying stage seems to be hindered by financial constraints, lack

of strategic planning, and skill-based teacher training. The infusing and transforming stages are higher stages of ICT integration, as the infusion stage demands integrating or embedding ICT across the school curriculum and ICT infuses all facets of teachers' professional lives. The transforming stage requires ICT to be an integral part of rethinking and renewing the school organization, with a learner-centered school curriculum that incorporates real-world applications. Thus, the infusing and transforming stages still seem to be a distant goal for the private schools in Dharan. In this regard, one of the major barriers to progression seems to be the school principals' own limited ICT skills and proficiency, as they themselves rate their skills as 'basic' and hugely depend on their technical staff.

When I observed the collected data from the lens of the technology acceptance model (TAM), I found that the private schools are aware of the need for ICT and perceive ICT integration as highly useful in modern times. So, they unanimously acknowledge the high perceived usefulness (PU) of ICT in their schools and regard ICT as an urgent and unavoidable necessity for their school's sustainability and the demands of the 21st century. However, a significant gap exists between their perceived usefulness of ICT and its actual integration in schools. Their perceived ease of use (PEoU) is affected by various factors, such as their low self-efficacy, as they lack ICT proficiency and hugely depend on their support staff. This dependency challenges their confidence and ability to lead an effective ICT integration endeavor in their schools. Financial constraints, limited ICT infrastructure, inadequate support from school shareholders and other stakeholders, and lack of teachers' ICT skills are also contributing factors in this regard. These barriers seem to have made the ICT integration process very complex and challenging for the private school principals. As a result, though the participants have a very positive attitude towards using technology and its usefulness in their schools, their perceived challenges have hindered their behavioral intention to use technology effectively.

The TPACK framework also helped me in this study. After analyzing the data through this framework, I observed a significant disconnection between the private school principals' understanding of the importance of ICT and their ability and efforts to enhance and contribute to effective ICT integration in their schools. The principals demonstrated their strong and coherent technological knowledge (TK) in their perception as they seemed to have acknowledged ICT as an urgent and unavoidable necessity of time, which is also about the sustainability of private schools in a

competitive world. However, their perceived technological knowledge (TK) sharply contrasts with their actual and self-rated 'basic' proficiency on ICT and heavy dependency on their technical staff. Such a lack of confidence and ICT proficiency in their TK adversely affects the effectiveness of their technological pedagogical knowledge (TPK). It further limits their understanding of how to integrate ICT effectively in the classrooms. Since these schools have neither taken nor provided their teachers with timely and effective training on ICT, the teachers are also not able to integrate ICT in their classrooms, which has resulted in limited and basic use of ICT for instructional purposes in these schools, such as showing videos on YouTube, showing PowerPoint presentations, and using Messenger for homework, etc. In addition, the above-mentioned challenges have adversely affected the participants' technological content knowledge (TCK). Some of the principals expressed their concern regarding the students hugely depend on 'ready-made solutions' available online and copy the same as assignments, showing their awareness that technology can reshape content delivery and assessment. Data from this study indicate that private school principals in Dharan have a very positive perception of ICT integration in education and greatly acknowledge the positive impact it can have on school culture and climate, as well as transform classroom instruction to meet 21st century needs. According to Wu et al. (2019), who conducted research in China regarding the impacts of principals' e-leadership on ICT transformation in schools, they found that there are interconnected pathways among government policies, principals' leadership, schools' technology strategies, and teachers' perception for instructional change and positive and improved student learning outcomes.

Nevertheless, financial constraints, school owners' profit-oriented motives, and parents' resistance appear to have created a vicious circle that hinders the effective integration of ICT in private schools in this region. Moreover, the principals' lack of effective strategies to use and to exploit technology meaningfully to deepen content understanding has also contributed to the barriers. Hence, there seems to be a foundational gap in the principals' TK, inadequate strategies for TPK, and several barriers, such as financial constraints, lack of support from stakeholders, and governments' backing collectively, seem to have created huge barriers for the principals to effectively infuse technology, pedagogy, and content in their schools.

Conclusion

This study reveals a profound and critical dissonance within private schools in Dharan, as all the participating principals have a forward-looking recognition of ICT's transformative potential, which coexists with the harsh reality of stagnation in its early stages of integration in their schools. Although the principals seem to be acutely aware of the urgency for ICT integration in their schools to ensure 21st century education, they are lagging far behind due to various barriers that prevent their perception from transforming into meaningful action. It seems to me that the core of this impediment lies at the leadership level, as the principals themselves lack proper ICT skills and digital proficiency, which is evident in their self-assessed 'basic' level. They are highly dependent on their technical staff, which greatly undermines their confidence and capacity to lead and foster ICT integration in their schools. In addition, financial constraints, no government support, the profit-oriented motives of the school shareholders and owners, and parents' reluctance in paying additional amounts for ICT have also contributed to creating a landscape where ICT adoption and integration are sporadic, with limited ICT infrastructure and basic ICT tools, and the strategic planning for ICT integration is missing.

Different ICT integration models and frameworks also vividly show the extent of the gaps in perception and practice. Through the SAMR model, it is clear that technology use in the private schools in Dharan is predominantly limited to Substitution and Augmentation levels, as technology is simply used as a direct tool for replacement without any functional change or redesign. As per UNESCO's ICT integration stages, the private schools in Dharan are slowly progressing from 'Emerging stage' to 'Applying stage', where the higher order stages, such as 'Infusing' and 'Transforming', remain at a distance. Similarly, TAM indicates that the principals' perceived usefulness (PU) is high, but their perceived ease of usefulness (PEoU) is low, as it is hindered by their own low ICT proficiency and other crucial practical challenges. Such differences are further highlighted by the TPACK framework. It shows a lack of proper alignment between the principals' theoretical technological knowledge and their ability to effectively integrate technology with pedagogy and content for classroom activities, as the teachers are also left unprepared.

Besides having a positive perception and mere recognition, principals and school stakeholders should seek targeted interventions that directly address the digital

capacity building of school principals and contribute to fostering a shared vision beyond profit motives. Private schools can also utilize the opportunities to adopt cost-effective solutions, as there is a growing availability of several open-source educational platforms, educational software, and reasonably priced ICT tools. Developing collaboration and partnerships with different tech companies, as well as participating in and being involved in ICT training and programs conducted by the government or non-governmental organizations, may also contribute to narrowing the skills and technology gaps among private school administrators and teachers. To overcome obstacles related to financial constraints, technology, and training-related issues, stakeholders, including school administrators, educators, parents, and policymakers, must work together.

In nutshell, it can be said that the promise of integrating ICT as a catalyst for empowerment, connection and transformation in education has remained largely unfulfilled in the context of the private schools in Dharan and without addressing the foundational issues such as principals' digital leadership, strategic ICT plans and investment, and comprehensive teacher training, the full potential of ICT to transform teaching-learning in private schools will remain unrealized and such schools will fail to transform students from passive consumers into active creators of knowledge in modern digital world.

Implications

The findings of this study may have significant implications for various stakeholders in private schools, including principals, shareholders, teachers, educators, parents, policymakers, and private schools, particularly in the context of ICT integration in private schools in Dharan. The study highlights the need for school principals to acquire and develop digital capabilities, transforming themselves into ICT-friendly leaders. This enables them to lead ICT integration in their schools and develop plans and strategies to motivate and unite all stakeholders, focusing on and contributing to effective ICT integration in private schools. School principals can be empowered to effectively implement and integrate ICT in private schools by their school shareholders, who should focus more on long-term investment and return rather than immediate financial returns.

School shareholders and school administration can explore phased investments in developing and integrating ICT in schools, including ICT infrastructure, starting with essential tools such as smart classrooms, learning management systems (LMS),

and freely available ICT resources. Moreover, principals can create a culture that encourages innovation and provides the necessary support, such as technical assistance and opportunities for teachers to collaborate. Such an environment enhances teachers' confidence and effectiveness in incorporating ICT into their teaching practices. Furthermore, this study emphasizes that private school administrators and organizations can consistently and collectively advocate for policy-level support from local, provincial, and federal governments to ensure equitable access to ICT resources. Private school principals can try to foster collaboration among the private schools in the area to share best practices and resources, which can create a more sustainable ecosystem for ICT integration. Additionally, the public-private partnership (PPP) model can serve as a stepping stone for private schools to initiate and promote the use of ICT in their institutions.

Establishing feedback loops involving principals, teachers, students, and parents can ensure that ICT tools and practices align with the educational goals and expectations of all stakeholders, tailored to the current needs. Different ICT policies and frameworks may be revised, and private schools should also be considered crucial stakeholders for ICT integration in the Nepali academic sector. Additionally, a subsidy for the purchase and use of ICT-related tools and technology should be considered. Local and provincial governments can also include the principals and teachers of private schools in ICT-related training and workshops to help them develop digital skills, plans, and policies. Such government bodies can also monitor and evaluate the private schools' ICT practices and infrastructure to track their progress, investment, and help them refine their implementation strategies. In addition, private school umbrella organizations and various levels of government may take initiatives and consider the urgent need for digital competency and pedagogical training for their school leaders to minimize the gaps seen in practice.

Considering and acting upon the above-mentioned implications may enrich the broader discussions on ICT integration in private schools and offer practical insights and effective ICT use.

A Reflection of My MPhil Research Journey

After successfully completing my Master's in Educational Leadership and Management from Kathmandu University with a CGPA of 4.0, I was eager to pursue my M. Phil is from the same university. However, I was quite confused about the program to choose because some of my friends suggested going for the ELT program,

as I had done my Master's in English from Tribhuvan University. I consulted my facilitator, the then HOD of Education Leadership and Management and as per his suggestion, I got enrolled in the educational leadership program. As I hold a leadership position in a large and reputable school in Dharan, and having recently taken on the role of principal, it was challenging for me to spare enough time for online classes every evening. The deadline of assignment submission, different group assignments, research-based tasks, and virtual seminars were very challenging for me during the semester. Many times, I thought of quitting my M. Phil's journey as my new responsibility required that I be solely focused on my profession and enhance the school's glory and academic achievement. Nevertheless, despite all these obstacles, I completed the semester with better grades, thanks to the support and encouragement of course facilitators and my course cohorts.

During the third semester, we were expected to choose our research topic and prepare a research proposal. From the very beginning, I had thought of conducting research on the area of school leadership and ICT, as I had faced numerous challenges during the COVID-19 pandemic in running academic activities, and many schools had halted their classes for an extended period. When I consulted with my facilitators, they helped me finalize the topic and research paradigm. As I was curious about what private school principals think about ICT integration and what has been done in this area so far, I was advised to conduct a narrative inquiry. As we had already taken a regular course and additional support sessions on research methodology during the semester classes, it helped shape my research proposal. After due guidance and support from the then, and the course facilitator, I submitted my final draft of the proposal with numerous corrections and successfully defended it.

I was very excited as I thought that I had almost completed my M. Phil, as I had set a six-month timeline for all my research work to be completed. But the things didn't go as I had anticipated. Moreover, as there was no compulsion to attend any regular classes at the stipulated time, I found myself reluctant to give enough time to the research work, and my constant procrastination led to my lagging behind in this journey. However, my family responsibilities, professional commitments, and almost 12 hours of duty at the schools were also significant barriers to this endeavor. I contacted my research supervisor numerous times, and every time I spoke with him, his clear guidance and some harsh remarks refueled my efforts, and I started to accelerate for several weeks. I was in touch with a few friends who were also carrying

on their research. As per the nature and need of my research, I contacted the purposively selected participants. As I knew them personally and professionally, they were eager to participate in my study, although one of them was unable to do so due to a sudden decision to leave the station, and I had to request another friend to be a research participant.

The most remarkable part of the research was conducting in-depth interviews and listening to their stories of ICT integration in their schools. I could relate to several instances, as I was also having a similar situation as a principal. It took almost two months to interview all five participants, as their schedules and mine often didn't match, which significantly slowed my research journey. After the in-depth interview, transcribing, analyzing, and interpreting the data, along with relevant literature reviews, were Herculean tasks for me. However, my research supervisor's constant guidance, supervision, and instructions, along with his availability at any time I needed his assistance, have helped me progress and complete my research journey thus far. During this research journey, I realized that private school principals should significantly transform themselves into transformative and digital leaders and should formulate ICT strategies and policies by seeking support and collaboration from all the major stakeholders in order to effectively integrate ICT in schools so as to keep pace with the times and needs, and expectations of the students and parents.

REFERENCES

- Abel, V. R., Tondeur, J., & Sang, G. (2022). Teacher perceptions about ICT integration into classroom instruction. *Education Sciences*, 12(9), 609. <https://doi.org/10.3390/educsci12090609>
- Abubakari, A., Inusah, M., & Abdulai, A. (2023). The effects of information communication technology on administrative efficiency of Tamale Technical University. *American Journal of Industrial and Business Management*, 13(05), 394–417. <https://doi.org/10.4236/ajibm.2023.135025>
- Adhikari, R. (2019, May 10). Private vs public schools. *The Himalayan*. <https://thehimalayantimes.com/opinion/private-vs-public-schools>
- Afshari, M., Bakar, K. A., Luan, W. S., Samah, B. A., & Fooi, F. S. (2008). School leadership and information communication technology. *The Turkish Online Journal of Educational Technology*, 7(4), 82–91. https://www.researchgate.net/publication/285640055_School_leadership_and_information_communication_technology
- Ahmad, T., Ma, H., Ali, N., & Khan, A. B. (2024). Perceptions of stakeholders regarding use of ICT in teachers' professional development: A qualitative study. *Asian Journal of Education and Social Studies*, 50(9), 220–227. <https://doi.org/10.9734/ajess/2024/v50i91582>
- Akbaba-Altun, S. (2006). Complexity of integrating computer technologies into education in Turkey. *Journal of Educational Technology and Society*, 9(1), 176-187. https://www.researchgate.net/publication/220374383_Complexity_of_Integrating_Computer_Technologies_into_Education_in_Turkey
- Albirini, A. (2006). Teachers' attitudes toward information and communication technologies: The case of Syrian EFL teachers. *Computer Education*, 47(4), 373-398. <https://doi.org/10.1016/j.compedu.2004.10.013>
- Alemu, B. M. (2015). Integrating ICT into teaching-learning practices: promise, challenges and future directions of higher educational institutes. *Universal Journal of Educational Research*, 3(3), 170-189. <https://doi.org/10.13189/ujer.2015.030303>

- Alenezi, M. (2023). Digital learning and digital institution in higher education. *Education Sciences*, 13(1). 33. <https://doi.org/10.3390/educsci13010088>
- Alharahsheh, H. H., & Pius, A. (2020). A Review of key paradigms: positivism VS interpretivism. *Global Academic Journal of Humanities and Social Sciences*, 2(3), 39-43.
https://www.researchgate.net/publication/338244145_A_Review_of_key_paradigms_positivism_VS_interpretivism
- Ali, W. Z, Nor, H. M, Hamzah, A. & Alwi, N. (2009). The conditions and level of ICT use in Malaysian smart schools. *International Journal of Education and Development using ICT*, 5(2), 21-31. <https://www.learntechlib.org/p/42320/>
- Anderson, J. (2010). ICT Transforming Education: A Regional Guidelines. UNSECO. <https://unesdoc.unesco.org/ark:/48223/pf0000189216>
- Ariel, N., Millikovsky-Ayalon, M., & Kimchi-Feldhorn, O. (2023). “Watching the backstage of your mind”: Redesigning learning how to learn. *Education and Information Technologies*, 28(8), 9709–9730. <https://doi.org/10.1007/s10639-023-11580-4>
- Aryal, S.P. & Pandey, U.S. (2022). Information and communication technology use is the best way to increase the knowledge among the students of secondary level in Nepal: A case study of Chitwan district in Bagamati Province. *International Research journal of Management Sociology & Humanities*, 13(6), 433-442. http://www.irjmsh.com/Artical_details?id=17883
- Bakare, O. O. (2023). Principals' information and communication technology literacy and digital tracking of secondary school activities in Osun State. *Journal of Science, Technology and Mathematics pedagogy*, 1(2). 202-215. https://www.researchgate.net/publication/375451251_PRINCIPALS'_INFORMATION_AND_COMMUNICATION_TECHNOLOGY_LITERACY_AND_DIGITAL_TRACKING_OF_SECONDARY_SCHOOL_ACTIVITIES_IN_OSUN_STATE
- Beland, L., & Murphy, R. (2016). Ill Communication: Technology, distraction & student performance. *Labour Economics*, 41, 61-76. <https://doi.org/10.1016/j.labeco.2016.04.004>
- Benini, S. (2014). Is ICT really essential for learning? Perceptions and uses of ICTs for language acquisition in secondary level environments. In S. Jager, L. Bradley, E. J. Meima, & S. Thouësny (Eds), *CALLDesign: Principles and*

- practice; Proceedings of the 2014 EUROCALL conference*, Groningen, The Netherlands (pp. 23-28). <https://files.eric.ed.gov/fulltext/ED565101.pdf>
- Bhandari, L. P., Dahal, N., Awasthi, J. R., & Dhungana, S. (2025). Technology-mediated task-based language teaching: a systematic review. *Cogent Education*, 12(1). <https://doi.org/10.1080/2331186X.2025.2560051>
- Bharti, N. R., Pomal, N. K., Ahmed, N. M., & Singh, N. C. B. (2024). Transformative impact of ICT on education: Leveraging technology and communication to enhance teaching and learning. *Feedback International Journal of Communication*, 1(3), 131–141. <https://doi.org/10.62569/fijc.v1i3.39>
- Bhattarai, S., & Maharjan, S. (2020). Determining the factors affecting on digital learning adoption among the students in Kathmandu valley: An application of technology acceptance model (TAM). *International Journal of Engineering and Management Research*, 10(03), 131-141. <https://doi.org/10.31033/ijemr.10.3.20>
- Bingimlas, K. A. (2009). Barriers to the successful integration of ICT in teaching and learning environments: A review of the literature. *Eurasia Journal of Mathematics Science and Technology Education*, 5(3). <https://doi.org/10.12973/ejmste/75275>
- Castro, M., Exposito-Casas, E., Lopez-Martín, E., Lizasoain, L., Navarro-Asencio, E., & Gaviria, J. L. (2015). Parental involvement on student academic achievement: A meta-analysis. *Educational Research Review* 14.33-46. <https://doi.org/10.1016/j.edurev.2015.01.002>
- Sanchez, J. J. C., & Aleman, E. C. (2011). Teachers' opinion survey on the use of ICT tools to support attendance-based teaching. *Journal Computers and Education*, 56(3), 911-915. <https://doi.org/10.1016/j.compedu.2010.11.005>
- Clandinin, D. J., & Connelly, F. M. (2000). *Narrative inquiry: Experience and story in qualitative research*. Jossey-Bass.
- Creswell, J. W. (2009). *Research design: Qualitative, quantitative, and mixed methods approaches (3rd ed.)*. Sage Publications. https://www.ucg.ac.me/skladiste/blog_609332/objava_105202/fajlovi/Creswell.pdf
- Creswell, J. W., & Poth, C. N. (2016). *Qualitative inquiry & research design: Choosing among five approaches*. Sage Publications.

- David F. D. & Davis, F. (1989). Perceived usefulness, perceived ease of use, and user acceptance of information technology. *MIS Quarterly*, 13(3), 319–340.
<https://doi.org/10.2307/249008>
- Dias, L. B. & Atkinson, S. (2001). Technology integration: Best practices-where do teachers stand? *International Electronic Journal for Leadership in Learning*, 5(11). <https://tinyurl.com/mjtjvmfh>
- Diyal, S. B., & Pandey, R. (2022). Integration of ICT at secondary level school. *Innovative Research Journal*, 1(1), 28–41.
<https://doi.org/10.3126/irj.v1i1.51813>
- Fadia, O. (2023). *School principal's technology practices and its effect on teacher's technology integration* [Doctoral dissertation]. Indiana University of Pennsylvania.
<https://www.proquest.com/openview/3b2e49d10d9e5cd0e1da35b12e1c4bea/1.pdf?pq-origsite=gscholar&cbl=18750&diss=y>
- Flanagan, L., & Jacobsen, M. (2003). Technology leadership for the twenty-first century principal. *Journal of Educational Administration*, 41(2), 124–142.
<https://doi.org/10.1108/09578230310464648>
- Gautam P, Khanal G, Shrestha K.B., & Sapkota S. (2024). Internet addiction prevalence and associated factors among secondary-level private school students in urban Nepal: a cross-sectional study. *BMJ Open*, 14(11).
<https://doi.org/10.1136/bmjopen-2024-083967>
- Ghavifekr, S. & Rosdy, W.A.W. (2015). Teaching and learning with technology: Effectiveness of ICT integration in schools. *International Journal of Research in Education and Science (IJRES)*, 1(2), 175-191.
<https://files.eric.ed.gov/fulltext/EJ1105224.pdf>
- Graham, C. R., Borup, J. & Smith, N.B. (2012). Using TPACK as a framework to understand teacher candidates' technology use decisions. *Journal of Computer Assisted Learning*, 28(6), 530-546.
<https://doi.org/10.1111/j.13652729.2011.00472.x>
- Gyeltshen, L. G. (2021). Principals' technology leadership behavior and teachers' use of information and communication technology (ICT) in Bhutan. *Suranaree Journal of Social Science*, 15(2), 125-135.
<https://doi.org/10.55766/WIRG3818>

- Han, C. (2002). Leadership roles of a pre-school principal in the use of information and communication technology: A Hong Kong experience. *Contemporary Issues in Early Childhood*, 3(2), 293-297.
https://www.researchgate.net/publication/250149959_Leadership_Roles_of_a_Pre-School_Principal_in_the_Use_of_Information_and_Communication_Technology_A_Hong_Kong_Experience
- Haydon, G., & Riet, P. V. (2016). Narrative inquiry: A relational research methodology suitable to explore narratives of health and illness. *Nordic Journal of Nursing Research*, 37(2), 85-89.
<https://doi.org/10.1177/2057158516675217>
- Hunter, J. (2015). *Technology integration and high possibility classrooms: Building from TPACK*. Routledge. <https://doi.org/10.4324/9781315769950>
- Hwang, G. J., Chiu, L. Y., & Chen, C. H. (2015). A contextual game-based learning approach to improving students' inquiry-based learning performance in social studies courses. *Computers & Education*, 81, 13–25.
<https://doi.org/10.1016/j.compedu.2014.09.006>
- Hiller, J. (2016). Epistemological foundation of objectivist and interpretivist research. *In Music therapy research* (3rd ed., pp.100-127).
<http://ecommons.udayton.edu/books/53/>
- Joshi, D. R. (2017). Policies, practices and barriers of ICT utilization in school education in Nepal. *International Journal of Research in Social Sciences*, 7(2), 408-417.
- Joshi, S. (2023). TPACK and teachers' self-efficacy: A systematic review. *Canadian Journal of Learning and Technology*, 49(2), 1-23.
<https://doi.org/10.21432/cjlt28280>
- Kandel, G. K. (2022). Integration of information and communication technology in education: The opportunities and challenges. *Marsyangdi Journal*, 3(1), 82–90. <https://doi.org/10.3126/mj.v3i1.47954>
- Kadel, R. (2005). How teacher attitudes affect technology. *Learning and leading with technology* 39(5), 34–35. <https://eric.ed.gov/?id=EJ697309>
- Karki, H. (2019). A brief history of public education, information & communication technology (ICT) and ICT in public education in Nepal. *Deerwalk Journal of Computer Science and Information Technology*, 78-103.

https://www.researchgate.net/publication/332698627_A_Brief_History_Of_Public_Education_ICT_and_ICT_In_Public_Education_In_Nepal

- Khan, M. S. H., Hasan, M., & Clement, C. K. (2012). Barriers to the introduction of ICT into education in developing countries: The example of Bangladesh. *International Journal of Instruction*, 5(2), 61-80. https://www.e-iji.net/dosyalar/iji_2012_2_4.pdf
- Kim, J. H., & Latta, M. M. (2009). Narrative inquiry: Seeking relations as modes of interactions. *The Journal of Educational Research*, 103(2), 69-71. <https://doi.org/10.1080/00220670903323164>
- Kirkwood, A. (2014, 2014/09/02). Teaching and learning with technology in higher education: blended and distance education needs joined-up thinking“ rather than technological determinism. *Open Learning: The Journal of Open, Distance and e-Learning*, 29(3), 206-221. <https://doi.org/10.1080/02680513.2015.1009884>
- Krawchuk, J. S. (2022). *Relationships between school principals' perceived technology self-efficacy and the perceived ability to lead technological innovation in the Covid-19 pandemic era* [Doctoral thesis]. St. John's University. https://scholar.stjohns.edu/theses_dissertations/425
- Kumar, T., Shet, J., & Parwez, M. (2022). Technology-integration experiences in ELT classrooms as an effective tool: A theoretical study. *Journal for Educators, Teachers and Trainers*, 13 (1), 51–60. <https://doi.org/10.47750/jett.2022.13.01.006>
- Maggetti, M., Gilardi, F., & Radaelli, C.M. (2013). Designing research in the social science. Sage. <https://doi.org/10.4135/9781473957664>
- Maski Rana, K. B. (2018). *ICT in rural primary schools in Nepal: Context and teachers' experiences* [Doctoral dissertation]. University of Canterbury. https://www.researchgate.net/publication/324715393_ICT_in_Rural_Primary_Schools_in_Nepal_Context_and_Teachers'_Experiences
- Mezirow, J. (2018). Transformative learning theory. In *Contemporary Theories of Learning* (pp. 114-128). Routledge. <https://doi.org/10.4324/9781315147277-8>
- Ministry of Communication and Information Technology. (2019). *Digital Nepal framework: Unlocking Nepal's growth potential*. <https://www.digitaldevelopment.org/wp->

[content/uploads/2023/09/bEN_Digital_Nepal_Framework_V7.2March2019-1.pdf](#)

- Ministry of Education (MoE). (2013). *ICT in education master plan 2013-2017*. <http://elibrary.moest.gov.np/handle/123456789/253>
- Ministry of Education, Science & Technology (MoEST). (2019). *National education policy*.
<https://kms.pri.gov.np/dams/pages/view.php?ref=3882&search=%21collection1805&k=0e27cc7aaa#>
- Ministry of Education, Science & Technology (MoEST). (2022). *School Education Sector Plan, 2022/23-2031/32*. <https://share.google/gFLppcLKVnLoAH3Fa>
- Ministry of Education. (2016). *School Sector Development Plan, Nepal, 2016–2023*.
<http://elibrary.moest.gov.np:8080/bitstream/123456789/177/1/SCHOOL%20ECTOR%20DEVELOPMENT%20PLAN%20016-17.pdf>
- Mishra, P., & Koehler, M. J. (2006). Technological Pedagogical Content Knowledge: A Framework for Teacher Knowledge. *Teachers College Record*, 108(6), 1017–1054. <https://doi.org/10.1111/j.1467-9620.2006.00684.x>
- Newhouse, C. P. (2002). *Literature review: The impact of ICT on learning and teaching*. Specialist Educational Services.
http://adrianhicks.weebly.com/uploads/3/5/2/1/3521343/impactreview_of_ict_on_education.pdf
- O'mahony, C. (2003). Getting the information and communications technology formula right: Access+ ability= confident use. *Technology, Pedagogy and Education*, 12(2), 295-311. <https://doi.org/10.1080/14759390300200159>
- Otto, T. L., & Albion, P. R. (2002). Understanding the role of school leaders in realizing the potential of ICTs in education. *Paper presented at the society for information technology & teacher education, 13th international conference, Nashville, TN*.
https://www.researchgate.net/publication/230008199_Understanding_the_role_of_school_leaders_in_realizing_the_potential_of ICTs_in_education
- Pangeni, S. K. (2013). Use of ICT in schools: Exploring opportunities and challenges. <https://elibrary.ku.edu.np/handle/20.500.14301/218>
- Pelgrum, W. J. (2001). Obstacles to the integration of ICT in education: Results from a worldwide educational assessment. *Computers & Education*, 37(2), 163–178. [https://doi.org/10.1016/S0360-1315\(01\)00045-8](https://doi.org/10.1016/S0360-1315(01)00045-8)

- Perkins-Jacobs, M. V. (2015). *Principals' perceptions of technology implementation in high schools and their effects on leadership* [Graduate thesis]. University of Arkansas. <https://scholarworks.uark.edu/etd/1305>
- Phunyal, B. K. (2024). Teachers' experience of using ICT in the community schools. *GS Spark: Journal of Applied Academic Discourse*, 2(1), 32-36. <https://doi.org/10.5281/zenodo.14838359>
- Poudel, P. (2022). Challenges of using information and communication technology in teaching English in Nepal. *KMC Journal*, 4(2), 1-18. <https://doi.org/10.3126/kmcj.v4i2.47725>
- Puentedura, R.R. (2010, December 8). *SAMR and TPCK: A Hands-On Approach to Classroom Practice*. <http://www.hippasus.com/rrpweblog/archives/000049.html>
- Putri, R. R. & Saharudin, S. (2025). A systematic review on how parental involvement in ICT enhances digital literacy and language learning. *Jurnal Obsesi: Jurnal Pendidikan Anak Usia Dini*, 9(2), 529-544. https://www.researchgate.net/publication/390190209_A_Systematic_Review_on_How_Parental_Involvement_in_ICT_Enhances_Digital_Literacy_and_Language_Learning
- Quest, R. (2014). *Principal's perception on ICT implementation in secondary schools in the Khomas education region, Namibia* [Master's dissertation]. University of Namibia. <https://repository.unam.edu.na/server/api/core/bitstreams/13aadacd-35f3-40a8-bee2-52a111db200a/content>
- Quidasol, G. D. A. (2020). School heads technology leadership and its relationship with teachers and learners performance. *International Journal of Advance Research*, 8(07), 12-22. <https://doi.org/10.21474/IJAR01/11258>
- Rana, K., Greenwood, J., & Henderson, R. (2021). Teachers' experiences of ICT training in Nepal: How teachers in rural primary schools learn and make progress in their ability to use ICT in classrooms. *Technology, Pedagogy and Education*, 31(3), 275–291. <https://doi.org/10.1080/1475939X.2021.2014947>
- Rana, K., & Rana, K. (2020). ICT integration in teaching and learning activities in higher education: A case study of Nepal's teacher education. *Malaysian Online Journal of Educational Technology*, 8(1), 36–47. <https://files.eric.ed.gov/fulltext/EJ1239982.pdf>

- Rogers, E.M. (1995). *Diffusion of innovations (4th edition)*. The Free Press, New York.
- Roztocki, N., Soja, P., & Weistroffer, H. R. (2019). The role of information and communication technologies in socioeconomic development: Towards a multi-dimensional framework. *Information Technology for Development*, 25(2), 171-183. <https://doi.org/10.1080/02681102.2019.1596654>
- Schwandt, T. A. (2001). *Dictionary of qualitative inquiry (2nd ed.)*. Sage.
- Selwyn, N. (2022). *Education and technology: Key issues and debates (3rd ed.)*. Bloomsbury Academic. <https://doi.org/10.1007/s11159-022-09971-9>
- Shahi, D. K. (2022). Teachers' knowledge about the use of ICT in the ELT classroom. *AMC Multidisciplinary Research Journal*, 3(1), 1–10. <https://doi.org/10.3126/amrj.v3i1.55817>
- Sheninger, E. C. (2019). *Digital leadership: Changing paradigms for changing times (2nd ed.)*. Corwin.
- Shrestha, S. (2023, November 7). ICT in education. *The Kathmandu Post*. <https://kathmandupost.com/opinion/2018/11/07/ict-in-education>
- Sicilia, C. (2005). *The challenges and benefits to teachers' practices in constructivist learning environments supported by technology* [Master's thesis]. McGill University, Montreal. <https://escholarship.mcgill.ca/concern/theses/b5644r91j>
- Somekh, B., & Lewin, C. (2005). *Research methods in the social sciences*. Sage.
- Surry, D. W. (1997, February 12-15). *Diffusion theory and instructional technology* [Conference Presentation]. Annual Conference of AECT, New Mexico. <https://scispace.com/pdf/diffusion-theory-and-instructional-technology-2yoomo9mkz.pdf>
- United Nations Educational, Scientific and Cultural Organization (UNESCO). (2008). *ICT competency standards for teachers: Competency standard modules*. <https://unesdoc.unesco.org/ark:/48223/pf0000156207>
- United Nations Educational, Scientific and Cultural Organization (UNESCO). (2010). *ICT transforming education: A regional guide*. Asia and Pacific Regional Bureau for Education (Bangkok 10110, Thailand ed.). Bangkok. <https://unesdoc.unesco.org/ark:/48223/pf0000189216>
- United Nations Educational, Scientific and Cultural Organization (UNESCO). (2022). *COVID-19: Impact on Education*. UNESCO. <https://unesdoc.unesco.org/ark:/48223/pf0000380398>

- UNESCO. (2023). Global Education Monitoring Report 2023: Technology in Education – A Tool on Whose Terms? Paris: UNESCO.
<https://www.unesco.org/gem-report/en/publication/technology>
- Vodopivec, J. L. & Tretjak, M. G. (2020) Use of ICT in the process of cooperation with parents through student perspectives. *New Horizons in Subject-Specific Education: Research Aspects of Subject-Specific Didactics*.
<https://doi.org/10.18690/978-961-286-358-6.11>
- Walsh, K. (2002). ICT's about learning: School leadership and the effective integration of information and communications technology. *National College for School Leadership*. <https://dera.ioe.ac.uk/id/eprint/5077/1/walsh-ict-full.pdf>
- Wu, B., Yu, X., & Hu, Y. (2019). How does principal e-leadership affect ICT transformation across different school stages in K-12 education: Perspectives from teachers in Shanghai. *British Journal of Educational Technology*. 50(3), 1210-1225. <https://doi.org/10.1111/bjet.12766>
- Yang Q., Alias B. S. & Nor M.Y.M (2025). Principals' technology leadership and teachers' ICT integration: A systematic review on capacity building for quality improvement and sustainable education. *International Journal of Learning, Teaching and Educational Research*. 24(9), 221-234.
<https://doi.org/10.26803/ijlter.24.9.11>
- Young, S. C. (2003). Integrating ICT into second language education in a vocational high school. *Journal of Computers Assisted Learning*, 19, 447-461.
<https://doi.org/10.1046/j.0266-4909.2003.00049.x>
- Zamir, M.T. & Mohamad, S.N. Z., (2024). Technology integration in education: A review and analysis of SAMR model. *International Journal of Research and Innovation in Social Science (IJRISS)*, 8(03), 6195-6200.
<https://doi.org/10.47772/IJRISS.2024.803463S>

ANNEXES

Annex – I



Letter for the Field Work from KU

Annex – II
Field Visit Guidelines

Guidelines for interview:

- a. Title: “Principals’ Perception of ICT Integration in Private Schools of Dharan: A Narrative Inquiry”
- b. Purpose: This study aims to explore the private school principals’ understanding, beliefs, current practices and experiences of comforts and hardships while integrating ICT in their schools.
- c. Research questions:
 - How do principals perceive the ICT integration in the private schools?
 - What are the strategies for effective ICT integration in private schools?
 - How do school principals share their experience of ICT integration in private schools?
- d. Possible interview question/guideline:
Basic information (participant profile)

Name	
Gender	
Age	
Working institution	
Experience as a principal	
Number of students in the school	
Qualification	
Formal computer training /ICT training taken	

Specific information aligned to the purpose and research questions

Interview Site:

Interviewer:

Date:

Start:

End:

Research questions	Possible questions
How do principals	<ul style="list-style-type: none"> • What do you believe are the advantages and

<p>perceive the ICT integration in the private schools?</p>	<p>disadvantages of integrating ICT in education?</p> <ul style="list-style-type: none"> • What are the key factors that determine the success of ICT integration in education? • What are the roles of different school stakeholders on effective ICT integration in your school? • How do you envision the future of ICT integration in education?
<p>What are the strategies for effective ICT integration in private schools?</p>	<ul style="list-style-type: none"> • What are the practices being adopted regarding ICT integration in your school? • What is the status of your teachers' ICT skills? How far you have provided them with skill-based training? • How often your teachers integrate ICT while they are in the class? • How do you encourage your teacher to integrate ICT into their instruction • What are the ICT facilities and services available to the students and teachers in your school? • What strategies have you implemented to increase teachers' and students' engagement in ICT integrated lessons? • How do you address the drawbacks of technology use on student's learning and development?
<p>How do school principals share their experience of ICT integration in private schools?</p>	<ul style="list-style-type: none"> • What opportunities do you think ICT integration can have on effective teaching-learning and other aspects of your school? • What challenges have you encountered in implementing ICT integration in education, and how have you addressed them? • How have different stakeholders been facilitating or obstructing your efforts of ICT integration in the school?

Annex – III
Informed Consent Form

Informed Consent Form

Research study title: *Private School Principals' Perception on ICT Integration in Schools of Dharan Sub-Metropolitan City: A Narrative Inquiry*

This study is being conducted by Nilam Kumar Shrestha, an M. Phil scholar of Educational Leadership at Kathmandu University under the supervision of Asso. Prof. Sheshakanta Pangeni, PhD, of Educational Leadership.

Please read the details given in the form carefully - it tells you about your rights in this study. You have right to 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 as it has some important information like whom to contact if you have questions later.

What is this study about?

What the private school principals understand and believe about ICT integration, what they have done for it so far and what they have experienced during this endeavor.

Who are we asking to participate?

Any principal from private schools from Dharan Sub-metropolitan city.

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 you will give consent if you are ready for the further procedures. This will take you about 20 minutes.

- We would like to interview you. This interview will take about 40-45 minutes - we can do it here in your office or somewhere more convenient or comfortable to 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. I would like to observe your school facilitation today or within a week of your interview as per your convenience. During my observation, I will not disturb any class or activity and I will not share any information with anyone else. I will just observe the ICT related facilities and arrangements.

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. If you find it difficult to comprehend any question, you may ask the interview to simplify the question in other ways. You can also quit the study completely at any time. Your information could be accidentally 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 private school principals in Dharan Sub-metropolitan city are integrating ICT in their schools after going through the write-up.

Will it cost you anything to participate?

Only your valuable time (20 minutes for beginning, 45 minutes for the interview, and 30 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 Nilam Kumar Shrestha (9842055196) or email at nilamkatha@gmail.com or contact the study supervisor Assoc. Prof. Shesh Kanta Pangani, PhD (9860999362) or mail him at 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 your 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: 2080/06/18

Researcher's Signature: _____ Date: 2080/06/18

Annex - IV

Transcribed Data of a Principal Participant's Interview

Participant Name: Rabin: P3 (Pseudonym):

INTERVIEWER: Sir, now when we talk about ICT, since your school is one of the renowned schools in the area and you are quite experienced enough about it, what kind of ICT has been integrated in regular teaching learning, like in terms of infrastructures, human resources, and other kinds of infrastructures, maybe digital infrastructures, physical infrastructures?

PARTICIPANT: Regarding these matters, actually, we have computer classes from Class 2 onwards to the Class 12, and we have a highly facilitated computer lab, and we have used a smart board in that computer lab, and for other classes we use a projector according to needs. And regarding official work, we have manpower, who actually closely monitors this regarding information and technology, and he is mainly responsible overall for monitoring IT works.

INTERVIEWER: Okay, so you have got one sophisticated computer lab, and smart classes. Are you using smart classes as well as smart boards?

PARTICIPANT: Yes, in computer lab only, not in all classes. Other classes we just use a projector when we need.

INTERVIEWER: Alright, so there is good facility of internet as well in the smart classes?

PARTICIPANT: Yes, we have internet facility as well.

INTERVIEWER: Okay, so and what about teachers, I mean, how often do they use these kind of facilities? Is there a specific routine for ICT classes, or as per the need the teachers prefer taking them to?

PARTICIPANT: As per the teacher's need, and in special cases only, not in normal classes, they do not use frequently this projector. In case of, I think, very new things, which is, they think that whatever they teach physically may not be effective, in that case only they use such technology, otherwise they run the classes in a traditional way.

INTERVIEWER: Okay, it is completely up to the teacher when they think that it is the need, they take them to computer lab and use smart room and all?

PARTICIPANT: No, computer lab, every day it is used in computer lab case, especially teaching computer subject, they use that smart board, but other, in normal classes only, according to need, subject is sometimes take that projector and they teach visually.

INTERVIEWER: Okay, and sir, it is generally seen that when teachers have to put extra efforts like using this ICT classes and all, it takes extra efforts, extra time, so many a times we have seen that teachers are not quite interested to take their students to these kind of classes. So in such cases, as a principal, how do you encourage your teachers to use ICT in their teaching learning?

PARTICIPANT: Normally that we have not actually forced any teachers to do the teaching using this latest technology. It is actually being done in the interest of the teachers who are actually active and want to do it, they do, otherwise we take the classes in a traditional way.

INTERVIEWER: So there is no extra incentive, allowances or any kind of other benefits to the teachers to encourage?

PARTICIPANT: There is no any additional benefit for the teachers to take the classes like this way, we have not actually encouraged to do so.

INTERVIEWER: Okay, so do you think integrating ICT in education has benefits for students, teachers and all?

R3: Definitely, if we use this latest information and technology, definitely that teaching will be very, very effective. But till now we have not been able to do that sort of things, but our aim is to introduce these things slowly and gradually, so that is in our plan in the coming years.

INTERVIEWER: So as you said you are going to have this kind of things in the near future, in your opinion what challenges you are likely to face while implementing ICT in your schools?

PARTICIPANT: Only thing is economically it will be viable for us to introduce such things, in manpower case, we don't have that sort of problem, because we have the manpower to train our teachers, so that only thing is the investment is necessary for introducing such ICT program in our schools.

INTERVIEWER: So any plan to overcome this problem?

PARTICIPANT: Our plan is like at a time we cannot do it, but our aim is to introduce this from the senior level, like we have that smart board system, computer lab and computer, but in normal classes we have not actually installed, so our plan is

to install this from the senior section, like class 12, 1 year, next year class 11 like that we will do.

INTERVIEWER: And in your opinion what are the factors that really help you to effectively integrate ICT? What are the major factors which help you to effectively integrate ICT?

PARTICIPANT: That factor which encourages to introduce ICT program in school is the need of the time I think, is compelling us to do so, because even government are investing huge amount of money for government schools, and if private schools do not use such things, and definitely it will be very difficult to survive in this competitive world, that factors will compel us to introduce such technology as early as possible.

INTERVIEWER: So in terms of evaluation of the students, has there been any kind of specific provisions for ICT classes in your schools?

PARTICIPANT: That system actually we have not introduced officially, only thing is that subject teachers, they are actually incorporating this technology and they evaluate subject class wise, subject wise,

that is specially ICT case, other subject teachers normally they do not use, only the computer subject they use that technology and they evaluate according to Nepalese government curriculum.

INTERVIEWER: And how far are the students interested for this kind of classes?

PARTICIPANT: They are very interested specially in computer class, they actually get the opportunity to use the computer and they learn using the smart boards, and they are actually enthusiastic and inspired to study computers.

INTERVIEWER: We talked about ICT advantages as well, but what we have seen is it has got certain drawbacks, isn't it? So what we have seen is drawbacks of ICT on student learning and development, like because of it causes distractions, students become over reliant on technology, they do not put their own efforts, so how do you address this kind of drawbacks?

PARTICIPANT: This, I think, this is the real problem at this moment all the parents, guardians are facing, and only thing is we are suggesting our parents, cousins and our students, you should actually utilize it in a short period of time and it should be regularized, they should not actually use it for a long time, there is multiple disadvantages, as you mentioned distraction, another thing is it is very harmful for

their eyes also, for their brains, so many things we actually share these things with the students also, with the parents and we are trying to limit, we cannot actually completely ban these things, but proper use of ICT I think should be enforced as far as possible, and I think that will reduce, to some extent the misuse of such technology.

INTERVIEWER: Generally, schools efforts and students efforts may not be enough to effectively integrate ICT. In this connection, how do you collaborate with parents to ensure effective use of ICT at schools?

PARTICIPANT: At school case, I think there is no big problem in school case, only thing is that the student may actually cheat their parents, cousins at home and saying these things, so we have to study, do as per our teachers instruction and they may actually take this as an advantage and they may misuse, at school case there is no big problem.

INTERVIEWER: When it comes to investment in private schools, when we introduce new technology, add infrastructure, it adds to the financial burden to the parents, in that connection, what kind of support have you been getting from parents?

PARTICIPANT: Parents case, if we want to introduce this technology and if we charge extra things, I think they will not accept it, and what we have been doing is, according to time and facilities we have been providing, we are revising fee structure and that with revision of the fee structure, whatever new things we add should be managed, so that fee revision slightly disappoints parents and guidance, but we have to tell them that it is our compulsion to do so, so we have been increasing the fees according to the time needs, that way we are talking with the parents.

INTERVIEWER: In the coming future, in the near future, how have you foreseen the ICT in education, what will you have about ICT and how do you plan to effectively adopt it for future?

PARTICIPANT: I think in the future, without this ICT, I think there is no future, because everything will be now integrated in the system, so the only thing is our parents and guardian's financial status, will actually encourage us to introduce this technology as early as possible, because if parents and guardians cannot afford it, our school cannot actually invest itself and give such type of facility, so slowly and gradually I think this will be introduced in a full capacity, then only school can survive.

INTERVIEWER: So your school is preparing for this regard?

PARTICIPANT: Otherwise we cannot survive.

INTERVIEWER: Okay, so as a principal, what supports have you been receiving from the local government, your school management committee and particularly from parents for ICT?

PARTICIPANT: We have not approached the local government regarding these matters and normally government agencies do not support private institute, so we have not approached. Slightly our school is being run under the public education trust, that's why in a small capacity sometimes they help us and at the same time our school is being run by British Gurkha and they are the trustees and they are supporting the school in different ways, financially, their time they are giving for this school and parents and guardians, we give the service, I think to some extent they are also supporting for this school.

INTERVIEWER: How important is it for teachers to be equipped with ICT skills and what is the status in your school?

PARTICIPANT: It is actually, it is being implemented and very recently, two years back it was compulsory for us to use this technology for teaching learning. After this COVID, now teachers that practice what they used to do before, that is also not going well, they are actually again, they are taking the class physically, that's why to some extent they are not doing that enough what they used to before, but still they have some experience and if we compel them they can do it.

INTERVIEWER: Since you are working as the principal for more than two decades, you are one of the senior most principals in the city, in your opinion how important are ICT skills for school principals?

PARTICIPANT: School principal, it is a must nowadays, but myself not being able to involve in it thoroughly and I am actually dependent on my staff and sometimes I feel that this technology use was to be done from the very beginning so that I could do my own work a little bit effectively, that is what I feel. And still I am not actually fully involved in this technology use.

INTERVIEWER: We have almost come to the end, now when we talk about ICT integration, now it is the need of the time as well, so since you are in the principalship for so long, has there been any kind of typical story of struggle or success regarding ICT use in school, any such incident?

PARTICIPANT: In school case we have been able to do what school has to do and we are actually utilizing our manpower, so we feel that we are not behind the other institutes in the use of ICT in our school.

INTERVIEWER: Thank you, thank you so much sir.

PARTICIPANT: It's my pleasure sir.