

**Practices and Challenges of Virtual Teaching at Community Schools**

**A thesis submitted to the Department of English Education  
In partial fulfillment for Master of Education in English**

**Submitted by  
Sharada Joshi**

**Department of English Education  
Tribhuvan University,  
Kirtipur, Kathmandu, Nepal  
2023**

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**2023**

**T.U. Regd. No.: 9-2-263-123-2014**

**M.Ed. Fourth Semester**

**Exam Symbol No.: 7428135/2074**

**Date of Approval of the**

**Thesis Proposal: August 2, 2022**

**Date of Submission: May 17, 2023**

## Declaration

I, hereby, declare that this thesis is absolutely original and has been prepared for the academic purpose. I am responsible for any issues concerning ethical consideration and plagiarism.

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**Dedication**

*Affectionately Dedicated*

*to*

*My Mother: Saraswati Joshi*

*My Father: Nav Raj Joshi*

*for their unconditional love, support and encouragement*

*to bring me in this academic position.*

## Acknowledgements

I would like to express my sincere gratitude to my thesis supervisor **Mr. Bhim Prasad Wasti**, Reader, Department of English Education, Tribhuvan University, Kirtipur for his invaluable guidance, constructive suggestions and constant encouragement throughout this journey. I am very much grateful to **Dr. Gopal Prasad Pandey**, Reader and Head, Department of English Education, Tribhuvan University, Kirtipur for his constructive suggestions and guidance in this research. Likewise, I would like to thank my thesis expert **Prof. Dr. Binod Luitel**, Professor and Chairperson, Faculty of Education, Tribhuvan University for his constructive feedback.

Similarly, I would like to express my sincere gratitude with due respect to **Prof. Dr. Anjana Bhattarai, Prof. Dr. Bal Mukunda Bhandari, Prof. Dr. Tara Datta Bhatta, Dr. Renu Sing** of Department of English Education for their academic support during my study. In the same way, I am equally, grateful to the faculties **Dr. Purna Bahadur Kadel, Mr. Ashok Sapkota, Dr. Ram Ekwel Singh, Mr. Guru Prasad Poudel, Mr. Resham Acharya and Mr. Khem Raj Joshi** of Department of English Education for their direct and indirect suggestions, inspirations, feedback, guidance and support during my study.

Furthermore, I am thankful to the respondents who provided their genuine response as data for this study. I am equally grateful to the entire faculties of the **Department of English, Central Campus, T.U. Kirtipur** for their invaluable insights, continuous support and encouragement to conduct this research. Similarly, I am very much thankful to **Mrs. Madhavi Khanal**, administrative staff of Central Department of English Education and CRC Librarian for their continuous and kind help providing books and theses at the time of need.

I would like to extend my sincere gratitude to my uncle **Mr. Dhandev Joshi** for his support, inspiration and encouragement to bring me in this academic position. At the last but not the least, I am duly thankful to all the authors, editors, researchers, and scholars whose works have been cited and visited for the completion of the study.

**Sharada Joshi**

## Abstract

The present study entitled **Practices and Challenges of Virtual Teaching at Community Schools** aims to explore the practices of teachers for online-virtual teaching at government schools of Nuwakot district. It also aims to find out the challenges of virtual teaching through the study. Furthermore, research aims to suggest some pedagogical implications of the study. The research adopted the mixed research approach to carry out the investigation under survey research design. The sample population for the study were the teachers working in the community schools of Nuwakot District. The sampling procedure was random sampling. The researcher applied a set of questionnaire with close ended and open ended questions as tools of data collection. The data collected via both open and close ended questionnaires from the sample population has been genuinely appreciated that helped to complete this research work. The study found practice of virtual teaching less effective due to various challenges as like: lack of sufficient technical devices, internet access issues, digital literacy issues, poor school infrastructure, lack of training, and lack of technical as well as administrative support from the schools to the teachers. No any school ran the online virtual class fully even during the lockdown days. So is the case found even at present day in the selected government schools.

This thesis consists of five chapters. The first chapter deals with the introduction of the study along with the background of the study, statement of the problem, objectives of the study, research questions, significance of the study, delimitations of the study and definition of the key terms. The second chapter consists of review of related theoretical literature, review of empirical literature, implications of the review for the study and conceptual framework. Similarly, the third chapter is about methodology and procedures consisting of research design, research tools, sources of data, data collection procedures, data analysis procedures and ethical considerations. Furthermore, the fourth chapter is about results and discussions along with the analysis and interpretation of the data and findings. Moreover, the fifth chapter presents the conclusions and implications related to the policy level, practice level and further research of the study on the basis of the findings. At the last but not the least, the references and appendices are included on the research.

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**List of Abbreviations**

CDC	:	Curriculum Development Center
CEHRD	:	Center for Education and Human Resource Development
COVID	:	Corona Virus Disease
DNF	:	Digital Nepal Framework
E-devices	:	Electronic Devices
ICT	:	Information and Communication Technology
MOEST	:	Ministry of Education Science and Technology
NEP	:	National Education Policy
SLFD	:	Students' Learning Facilitation Directory
TCF	:	Teachers Competency Framework
T.U.	:	Tribhuvan University

## **Chapter 1**

### **Introduction**

This is an introductory chapter of the study on **Practices and Challenges of Virtual Teaching at Community Schools**. This chapter consists of background of the study, statement of the problem, objectives of the study, research questions, significance of the study, delimitations of the study and the operational definitions of the key terms.

#### **Background of the Study**

Online education has been developing across the world as an alternate of conventional face to face education system. Rao et al. (2011) states that virtual teaching is a powerful way to connect learners. In the recent past, worldwide lockdown and closure of the educational institutions made this online education system develop widely across the countries. Before the pandemic as well, the developed countries were practicing online education. Amid the pandemic it became a buzzword. It didn't last with pandemic. Nepal also started familiarizing education system with new advancement of ICT. Digitalization initiated in education sector of Nepal via smart classrooms, and online learning platform,(DNF,2076). Though, as a developing country, there are numerous challenges for Nepal to practice virtual teaching at school level.

Amid the pandemic government of Nepal proposed online teaching as an alternate of physical classes. Murders (2017) states that online education is flexible and convenience alternate of conventional education system. Due to its flexible and interactive nature virtual teaching is in practice in educational institutions across the country. Though effectiveness is another topic of discussion. To what extent online education really be an alternate of physical classes in rural areas is another topic of discussion. All the educational institutions of our country are not well managed and structured to run the online classes. ICT Policy (2015) as cited in (DNF,2076) seeks to enhance the Nepali society into knowledge and information based society by developing digital literacy.

Similarly, the National Broadband Policy announced in 2016 developed the framework for stimulating broadband access and availability across the country

(DNF, 2076,p.12). But the grass root reality is different than said in the reports and policies. The majority of the government public schools' infrastructure is poor even today. Though some of the model schools standing even better than private schools in terms of management and result. Teaching itself is a challenging job. Teaching online is much more challenging in the rural context as like ours. Shikalepo (2020) argues that in order to deliver high quality teaching and achieve optimal learning, schools must develop, attract and retain good teachers. For that, working conditions play an important role to deliver high quality teaching. (Abdiaziz and Abdigani,2013) as cited in (Shikalepo,2020), state that working conditions, working hours and facilities, legal rights and responsibilities and workload affect directly and indirectly to the effectiveness of teaching.

Education is a prerequisite of development. Without quality education, it is impossible to transform other sectors. Everybody has right to gain quality education. The sudden spread of Covid across the world, countries started to deliver the education via virtual mode. Meanwhile, to ensure the right of education, government brought an education directory (SLFD,2077). That proposed virtual teaching as an alternate way of delivering education. There was no pre-planning to practice virtual teaching at schools. However, learning from the international practices, in no time private schools initiated online teaching as an alternate of physical classes. During that time, majority of government public schools remained closed.

ICT Policy, (2015) has stated that at least 75% of the population will have digital literacy by the end of 2020. It has further states 90% of the population will have access to broadband services by the end of 2020,(p.9). But the grassroots level reality is different. Providing education via online mode in rural public schools was and still is challenging due to various factors such as lack of technical devices, internet connectivity, and skilled teachers. Bhatta & Khanal (2018) adds that most of the people at rural areas face internet issues that is low or no internet service. These factors have created the digital divide in the society. These common obstacles of developing and underdeveloped countries have hindered the online education to be the best alternate of the physical classes, even today. Prayudha, (2022) adds supporting (Bhatta & Khanal,2018) that unsupportive infrastructure is major issue for online teaching at remote areas.

The pandemic triggered educational institutions to pursue creative new approaches in a short span. This made the grand shift in teaching pedagogy which is appreciated as a silver lining of a dark cloud. Research (Prayudhha,2022) argues that to teach at government schools is more complex than in urban schools via virtual mode. However, this new pedagogy has revolutionized the millennia old chalk and talk approach. To continue the classes using Microsoft Teams, Zoom, Google classroom and other online platforms without any training is challenging. Shikalepo (2020) mentions teacher training very crucial to develop the competent teachers. He adds further, citing (Hammer, Hughes, McClure, Reeves & Salgado, 2005) it is an important determinant for successful teaching as well. Teachers and students have experienced this grand shift differently across the world. This shift has allured many researchers to conduct the researches on different aspects of online virtual teaching. Here I have outlined to research on practices and challenges of online virtual teaching at rural government public schools of Nuwakot district.

### **Statement of the Problem**

Online education offers wide spectrum of education and training opportunities to the students and teachers. To boost up the personal and professional skills related to teaching and learning teachers must know about online learning technology. (TCF,2072) has emphasized on the knowledge of ICT as one of the eight competencies teacher should have with. Without ICT skills Virtual teaching is impossible. Some students and teachers are attracted to online classes because of the accessible formats than traditional classes. While a few others are even not willing to taking the classes. (Bhatta & Khanal,2018) says that the age factor has created digital divide: youth are interested while aged people are not much interested to learn modern techniques. Though, virtual teaching is accepted as a paradigm shift in teaching and learning system.

Online education is advertised as anytime-anywhere learning, however still developing countries like Nepal are lagging behind to practice online teaching. (DNF,2076, p.26) states that digital initiatives in education aim to develop manpower to capture new economic opportunities utilizing enhanced teaching and learning environment. This enhances the use of digital technologies to support teaching and learning experience, and improve educational outcomes. Though, virtual teaching was

not practiced during lockdown in majority of government schools. (Kumar et al.,2020), reveals the poor infrastructure, and low participation of the students as the challenges of virtual teaching at rural schools. (Shikalepo,2020) adds the challenges of teaching online as poor working conditions, inadequate training, and incompetent teachers. However, the research about practices and challenges of teachers in virtual teaching in our context has not been done yet.

So this is the new research issue in our context. Online teaching is boon of recent scientific development, despite the challenges to practice it at rural schools. Despite the increasing role of digital technology, digital education is yet to find its place in Nepali education system with more than 90% of the schools in Nepal not having digital connectivity and ICT devices (DNF,2076,p.42). I personally faced many challenges to practice virtual teaching at government school. This encouraged me to explore the practices and challenges of virtual teaching. Teachers' personal practices and faced challenges in online teaching expose the hidden reality of virtual teaching and its effectiveness. There for, to explore practices and challenges of virtual teaching at rural government public schools of Nuwakot District, I have selected this area of study.

### **Objectives of the Study**

The main objectives of this study were as follows:

- i. To explore the practices of virtual teaching at community schools.
- ii. Find out the challenges of virtual teaching at community schools.
- iii. To suggest some pedagogical implications based on the finding of the study.

### **Research Questions**

The following were the research questions of the study:

- i. What are the practices of virtual teaching at community schools?
- ii. What kind of challenges do teachers face in community schools to run online virtual classes?
- iii. What are the pedagogical implications of the study?

## **Significance of the Study**

This study is significant for the novice and experienced teachers to know about the practices and challenges to implement virtual teaching at community schools. Going through this research, teacher can ready themselves for the challenges that come on the way of practicing new pedagogy. Not only that, this research is helpful to the students to know about the challenges that teachers face while helping them. In addition, this study develops positive attitudes towards hardworking teachers who go through personal and professional problems in order to deliver the light of education evenly among students. Along this, this research could help to raise the awareness among school administrative staffs and other stakeholders about teachers' challenges.

Likewise, this study would be significant to the policy makers and educationists to develop the plan and policy for rural government schools to maintain equality in education. (DNF,2076) states that the low digital literacy has been widening the digital divide among teachers. In this scenario, this study provides academic guidance and suggestions to the teachers to develop their digital skills and mitigate the challenges of virtual teaching. Finally, this study is helpful to the researchers who want to explore the hidden reality of online teaching at rural public schools and conduct further research in this area. More importantly, on the practices and challenges of virtual teaching at public schools, no one has yet researched at the Department of English Education. So, it is a guideline for those who want to research in this area as well.

## **Delimitations of the Study**

The study has following delimitations:

- i. The study was limited to the practices and challenges of virtual teaching at community schools of Nuwakot district.
- ii. Only forty teachers working at community schools were selected via random sampling method.
- iii. The research tools were limited to open and close ended questionnaire.
- iv. Responses of the teachers teaching at community schools were the primary data of the research.

## **Operational Definitions of the Key Terms**

The key terms that are used in the study are listed and defined as follows:

**Community schools.** Here this refers to the government aided public schools of Nuwakot district.

**School teachers.** Here school teachers refer to the teachers working at rural government schools of Nuwakot District.

**Challenges.** Challenges here refers to the problems and obstacles that school teachers faced in their professional life in order to run the online classes.

**Virtual teaching.** Virtual teaching is a process of tutoring in an online networked environment. There can be synchronous and asynchronous environment.

**Survey design.** Here it refers to the technique of collecting data via open and close ended questionnaires from the teachers working at rural government schools.

## Chapter 2

### Review of Related Literature and Conceptual Framework

This chapter deals with the review of theoretical literature, review of empirical literature, implications of the reviews for the study and conceptual framework. A review of literature is a detailed study of existing literature related to the topic of the research. (Khanal,2076), adds that review broadens the mind of the researcher providing the ideas about the ways to conduct research. Here I have reviewed the journal articles, scholarly papers, theses, dissertations and research works that have helped me to find the research gap and methodological aspects. Many articles, papers and studies have been published and presented home and abroad to explore the practices, and effectiveness of virtual teaching. In Nepalese context as well, research papers and journal articles have been presented and published on the area of challenges of online-virtual teaching.

#### Review of Related Theoretical Literature

The literature review is an act of reviewing the articles and studies. Review is a written summary and critique of related studies. Plethora of researches have been carried out on the same field but the ways of conducting research and issues vary to each other. As Cresswell,(2012) cited in (Rauteda,2022) defines literature review is a written summary of journal articles, books and other documents that need for the proposed study. The review of related literature guides the researchers providing new insights for the further journey. Multitudes of studies have explored how to maximize the effectiveness of online classes and boost the positive impacts and experiences of students. Sharma (2020) presents the debate concerning the effectiveness of online education in comparison of traditional classroom that is still going on in education.

**History of online education in Nepal.** The history of online education in the world goes back to the decade of 1950s (Acharya, et al,2079). Our own recorded history of online education is the initiation of distance mode of education by Pokhara University for the first time. Acharya, et al.,(2079) further state that Distance and Open Education Policy (in 2063/9/20 BS) and Open University act (in 2073/3/30) were approved by government of Nepal. After the earthquake of 2072, virtual classroom was initiated. It became a milestone for further development of open and

alternative education in Nepal. Establishment of Nepal Open University in 2073 widened the equitable access of learners to higher education via distance learning mode. Moreover, the lockdown of recent past revolutionized the teaching mode. From school to university level, teaching shifted to online virtual mode across the country then.

After some time, government of Nepal in coordination with ministry of education approved the Students' Learning Facilitation Directory on 19th Bhadra 2077 BS, (Acharya, et al, 2079, p.982). It helped to develop the online education as an alternate of conventional face to face classes. Before this initiation of government, some of the well-equipped schools of city areas had initiated teaching via online mode. But majority of the government schools of rural areas remained closed due different challenges then. Amid the lockdown, (SLFD, 2077) notified all the local levels and government schools to re-start the teaching following alternative ways. It also appealed to the schools to find out the situation of their students and re-start teaching. Khanal (2020) adds here that many have no access for online education in the remote village areas. However, government of Nepal initiated teaching and broadcasting through radio and FMs as well to address need of the students having no access to internet and computers for online classes. Some schools started online classes then.

Without much preparation, virtual teaching was initiated as a pandemic pedagogy by many educational institutions then. (Shikalepo, 2020) states, online classes are offered as alternatives to traditional instruction. Though quality and outcomes of virtual teaching is debatable. Some educators believe that online education shows tremendous potential as an innovative and creative pedagogical method, while others find online teaching unsuitable replacement of face-to-face classroom. (Rao, et al., 2011) shared that to continue the teaching and learning process even in the lockdown situation, schools and colleges shifted themselves into the online mode. Not only during the pandemic period, even beyond the pandemic, online is under practice in education sector.

(TCF, 2072) highlights need of ICT knowledge on teacher. But the digital literacy situation is pitiable among government school teachers. Acharya et al. (2079) presents that among 26,454 public schools, only 51.5% i.e. 13559 schools have

facility of computer. They further said that among them as well only 8676 schools have been using ICT in teaching and learning, citing (Economic survey 2078/79). Online teaching itself is a boon of science and technology at 21<sup>st</sup> century but the corresponding factors such as feasibility, effectivity and availability of e-devices determine how beneficial it is in rural school areas.

No doubt, planning and preparation gives the good result. Skilled manpower, supportive infrastructure, availability network, e-devices are the core components that must be for online teaching in schools. But the reality of our government schools is different than we think sitting at the center. NEP (2076) has focused on development of digital literacy among teachers to make them fit to adopt the computer based teaching methods. For the professional development, teachers need to be energetic, enthusiastic and familiar with technology of 21<sup>st</sup> century. Then only teaching and learning can be effective via virtual mode in government schools.

Still majority the government schools of rural areas are facing obstacles related to internet access, technical devices and power supply in the rural areas. Research (Mahat,2021) also shares the challenges of online teaching faced by teachers as technical problem, poor internet quality and lack of IT trainings to run the virtual classes smoothly. The shift from traditional face-to-face teaching and learning to virtual teaching and learning was and still challenging in the developing countries like Nepal. Supriana & Suwardi (2007) adds that virtual teaching system is closely related to its high price thus making it unsuitable for education at rural setting,(p.1).

The policies and plans of the Government of Nepal are directed to integrate ICT tools to transform traditional models of teaching realizing the necessity and importance of online education (Paudyal,2020). During the Covid pandemic, schools and universities in Nepal switched into online classes to continue the teaching and learning. Paudyal, (2020) further argues that this pandemic made to accelerate technology-based learning in academic institutions, developing online teaching and learning infrastructure. (Khanal,2020) mentions that to transform conventional mode into virtual mode in a short span is very challenging.

**Shifting to online-virtual mode in a short time span.** The worldwide lockdown gradually changed the thought of teaching and learning. (Mondol &

Mohiuddin,2020) states that millennia old chalk and talk methods failed during the lockdown. Everything became uncertain about the disease, medicine, vaccination campaign and teaching learning system.(Khanal,2020) adds further that the concerned bodies started thinking about all possible teaching learning methods and software tools.

Acharya, (2078) cited the (DNF,2076), shows that only 60% have access of internet in Nepal. Anyway, Nepali education has made a grand shift towards adapting innovative technology currently despite the personal and professional challenges. Existence without being exposed to the Internet has become hard for individuals and institutions. This situation has forced the concerned bodies of education such as: curriculum planer, developer, education providers and receivers to modify the usual practices and adapt new education culture updating self with innovative technologies (Khanal,2020).

Slowly and gradually schools are initiating the virtual learning. Still the institutions are working to fully develop themselves for online learning. To adopt the grand shift was definitely a challenge for many. Mondol & Mohiuddin (2020) says having no other options and alternates during the pandemic many schools shifted into virtual mode and became familiar with the new normal. Still some are struggling to develop the infrastructure for online mode.

Online teaching is not only for pandemic period. It is anytime anywhere learning if it could develop fully among the school institutions. Kumar, et at.,(2020) states further that different types of software and apps have been developed by software engineers to facilitate the online teaching. (Dans, 2020) says the platforms that have been used mostly in the schools for online classes are Microsoft teams, zoom and Google classroom. These platforms have served students many opportunities and possibilities. Some of the platforms that have been mostly used for virtual classroom in Nepal are Microsoft Teams, Zoom, Google Classroom and so forth (Gurung,2021).

**Platforms and tools used for online-virtual teaching.** Microsoft Teams is a chat based collaboration platform having the system of document sharing and online meetings. Free version of Microsoft Teams allows up to 300 users, unlimited

searching of old messages, and 10 GB of storage for files and documents (Dans,2020). Teams also allows creating several chat rooms with different themes, but with participation in a single option by students.

Zoom is another recognized tool in the field of webinars. (Dans,2020) also says that is a platform for videoconferences, audio conferences, and web conferences that allows it to be used by users with internet access, and enables sessions guided by the user who creates or directs them. This option allows teachers to schedule meetings, set reminders, record class sessions, share screen, and show a virtual board that allows writing and drawing. In addition, Zoom has a chat box, that makes it possible for students to ask questions (whether public or private), and enables the management of participants. The free version of this tool allows group meetings of up to 100 participants for 40 minutes, and 1 to 1 meetings with unlimited time.

Google Classroom is a free educational blended learning platform (Dans, 2020). It is anchored to the Google apps that allows working with Google Docs, Gmail, and Google Calendar. Its access helps students and teachers organize homework, foster collaboration, assist for communication, and create virtual classrooms.

(Acharya,et al,2079)adds here that besides these online applications, Nepal government has managed the classes via distance mode for the school students who do not have access of internet and computer technology. To address the need of students living at the remote areas where electricity and computers are not available (Acharya, 2078), CEHRD has also developed the education program named Learning Portal.

Virtual teaching is boon to education. However,(Kumar,et al.,2020) presents lack of social interaction, connectivity issues, unavailability of technical devices, delayed response of inquiries, low participation of students as mostly common stressing factors faced by teachers in online teaching. He further states that no teacher training, poor infrastructure and connectivity are also the common issues for the teachers. So is the case of developing countries like Nepal where online education system has just been developing. Mahat (2021) says that the frustration with the technology due to lack of expertise to operate the device for virtual class is another

serious issue teachers. Despite the challenges, flexibility in terms of class size, length of sessions, timings have made online teaching develop even beyond the pandemic.

**Strengths of practicing online-virtual teaching in schools.** Online teaching is no longer a poor substitute of conventional classroom. (Oyedotun,2020) defines online teaching as anytime anywhere learning that offers wide variety of opportunities to widen the area of knowledge and create faster communication. (Chettri, et al.,2020) adds further, it opens the door to have an access of global education. Recent development of online system shows that online classes have been developing the ICT friendly society.

In context of Nepal as well shift to online mode is a grand revolution in the teaching field. This grand shift has improved millennia old chalk and talk pedagogy. It has made easy access to knowledge. Murders,(2017) argues that online courses save time. Students can work at their own pace and submit the assignments at the times convenient to them. (Sharma,2020) also says that the flexibility of class time, self-paced study, and familiarity with the instructors are the contributing factor for the development of online education in Nepal. In general, online education is helpful to develop technology friendly and competent manpower that helps to adjust in this era of science and technology,(Paudyal,2020).

***Challenging factors for virtual education in rural schools.*** Technological advancement has brought grand shift in the field of teaching and learning. But, the developing nations across the world have little access or no access to the technology and connectivity networks (Sharma,2020). Due to which many students are left behind in online classes. Rural government school teachers don't have easy access of internet. Poor economic condition of the society affects the participation of students in classes. Chettri et al.(2020) adds the obstacles for e-learning of developing countries as connectivity issues, lack of equipment and proper training. The unplanned and rapid shift to online, lack of proper training to the teachers and insufficient connectivity in the rural schools are shared as common challenges, (Kumar, et al.,2020).

(Pazurek-Tork, 2013) argues that online courses are more demanding and require more discipline. The more engagement, the better teaching and learning. So it

should be cared by teachers in teaching sessions. Though, it is a challenge for teachers to engage students in online classes. Other than these, teachers staying all the day in front of computers or gadgets for online classes feel alienated from the family and homely environment. It could have a negative side effect on the teachers. (Susanti, et al.,2020) adds that communicating effectively, guiding students and reporting individual learning, engaging students with content, ensuring content accessibility, meeting students' needs, and scaffolding the students are the major issues for teachers during online sessions for teachers.

The family support to the students is one of the determinant of successful online teaching. Lack of instructional clarity, delayed and insufficient responses in online discussions are the other limitations of virtual teaching. More monologues and less dialogue, no sense of belongingness during online sessions are monotonous for teachers and students both as I personally faced during Covid days. Despite these limitations, online education has benefits as well if gadgets and networks consciously used for learning purpose (Mondol & Mohiuddin, 2020).

School environment and infrastructure plays a vital role to practice the online teaching. Besides this, students' access to internet and availability of devices determine the effectiveness of online teaching and learning. (Sarvestani et al, 2019) mentions that to get technical support at the school is a challenge. Sharma, (2020) adds here that pandemic enforced the teachers and other stakeholders to redefine and think beyond the face to face classes. His study reveals that the acceptance level of digital pedagogy is not high in Nepal. Research recommends that both teachers and students should motivate and train self to use digital technology. Along this, educational institutes need to prepare all its stakeholders for the shift in teaching and learning. Readyng the students and teachers for the shift is a challenge for our context as well. (Mondol & Mohiuddin, 2020) shows the challenges of developing nations to adopt the sudden shift in teaching due to the unavailability of technology and basic infrastructures necessary for virtual mode in his study.

(Oyedotun, 2020) shows how the pandemic forced for sudden transition in many sectors. Study argues that sudden transition to online pedagogy has brought inequalities and challenges, and some benefits as well in the developing countries. Author names to those challenges and inequalities as a new reality in the educational

sector. Due to the sudden lockdown and pandemic, educational institutes and administrators had to convert the traditional classes to online formats. There was no preparation before to run the online classes. Government authorities and health personnel ordered for the closures of educational institutes. A few days passed in an uncertainty. Then, institutes started exploring all other possible ways for teaching and learning. The alternate developed named online teaching. Without much preparation, it came in practice having no other possible ways in a short span during pandemic. The pandemic is no more now but virtual teaching is flourishing day by day.

Tyler-Wood et al.(2018) says that positive attitudes bring good vibes and good vibes make both teachers and students engage in teaching and learning. Engagement is must in teaching and learning. (Cigdemoglua, et al.,2020) investigated the experiences and the impressions of instructors as first-time users of an LMS- specifically the Moodle system in one private university of Turkey. The study revealed that the more instructors used the tool, the more beneficial they found using the tool. Study shows that the new instructor who has little experience need additional basic training to deal with the new reality and challenges.

Küçükler (2020) states that the pandemic suddenly brought the change in the mode of teaching and learning. The closure brought a new discussion among the stakeholders about the alternative solution of physical classes. Meanwhile the online education emerged as alone and only solution. Author further argues that online mode has been fostering the formal education in schools and educational institutions. (Sharma, 2020) argues that online system is a revolution in the field of education and a silver lining in the dark cloud of pandemic that we all accept.

As mentioned in (Abuhammad, 2020) barriers of learning in online classes are: lack of parents' knowledge to handle distance learning techniques and materials, failing to send the assignments, join classes, and attend exams. Other barriers such as: children lacked computer proficiency. In the above study, some parents raised the issue of financial barriers such as internet is not free and low quality internet connection. In Nepalese context as well, there are many barriers encountered by students, teachers and parents. Study of (Karki, 2021) reflects lack of technology and connectivity along with electricity cut off issue as a challenges to practice online teaching.

## **Review of Related Empirical Literature**

Review of previous related research, theses and dissertation is crucial part to conduct research. It provides ideas about overall rigorous research journey. Some of the reviewed literature related to my study are as follows;

Bowers, et al.(2010) state that the rapid growth of online education has expanded opportunities for students and challenges for teachers. Research on ‘Resolving Instructor Challenges in the Online Classroom’ adds that traditional ways of handling students, keeping records, and developing instructional material now require a new mind set and insufficient technical knowledge for online teaching. Most shared challenge of online education is course preparation and clear-consistent communication practices. Study shoes that to enhance the online classroom instructors must be resourceful in the use of technology. Despite the challenges it has benefits as well. Authors further mention that online teaching offers opportunities to try new techniques in the classroom and makes familiar with new technology.

Tyler-Wood et al. (2018) examined the impact of a new School technology on teachers and students in rural Middle Schools. In the research ‘Implementing New Technologies in a Middle School Curriculum: a Rural Perspective’ surveys were administered among 24 teachers and seventh grade students. Findings suggested that new school technology does not ensure teacher understanding or student learning. For new school technologies to be successful, significant planning, teacher training, and resources must be in place. Then only the implementation of new technology could be effective in the school. Findings show that planning is must before implementation to be the practices effective in schools.

Phyak et al. (2019) has studied on ‘The Existing Situation of Digital Literacy and Use of ICT in Public Schools’ aiming to identify the existing situation of ICT and asses the digital literacy of teachers in public schools. Study has adopted both qualitative and quantitative approaches to collect data. Questionnaire, FGD, classroom observation have been used to collected data. 126 teachers from 42 schools were selected via purposive sampling method. It showed that almost all schools have some sorts of digital devices however they are not adequate. Study showed that model schools have more sophisticated ICT tools but other schools do not have. Only very

few teachers have ICT skills and noticeable percentage of teachers have 'never' used digital applications for teaching purpose. The motivation to use ICT is found among young but not among experienced teachers.

Researcher further shows that unavailability of digital devices, lack of knowledge, heavy workload, textbook-based teaching approaches, and no ICT training as a major challenges of online teaching. Other issues such as lack of subject-specific ICT-trainers, poor internet connectivity, unavailability of materials in the Nepali/local languages, and no meaningful support and incentive system to the hardworking teachers are revealed in the study. Study suggests to government to equip schools with ICT tools and necessary digital devices to practice virtual teaching at government schools.

Similarly, Bozkus (2020) has researched to identify the problems experienced by teachers on the topic 'Examining the Problems Faced by Teachers'. Here, survey design is used. Data are collected via online questionnaire from 4657 teachers working in Şanlıurfa province Turkey. Researcher states that teachers often experience problems related to their personal rights, respect, and workload and education system. As age increases, there are more problems in personal rights, workload, and working climate. On the other hand, less problems in the education system and vocational education as they develop the professionalism along with the passage of time. Teachers working in kindergarten have less problems in all dimensions compared to other teachers. High school teachers are more respected than primary and secondary school teachers.

Study further mentions that pre-service and in-service training to teachers should be provided as need and practice to increase the professionalism. Research further suggests to reduce the heavy workload to gain quality education. Professional training should be given that helps teachers to understand the student's problems, abilities, and characteristics. Study also shows that unhealthy communication and interaction cause disconnection, conflict and inefficiency that should be reduced at school. The research has suggested to reduce the workloads of teachers and eliminate the negativities that cause teachers to experience stress at school.

Another research by Jan (2020) 'A phenomenological Study of Synchronous Teaching during the Covid 19: A case of an international school in Malaysia' aims to explore the issues faced by parents and learners during the synchronous leaning and teaching. Two students and a few parents were selected purposively. They were interviewed in a natural setting to collect the data. This research shows that the online classes were undeniable during the pandemic but the teaching and learning procedures were the same even in the virtual classes as before in physical classes. Study reveals that individual difference was not cared much during the online sessions. Study suggests to bring many more reformations in online teaching system to address the need of individual students in online teaching.

Khanal (2020) has conducted a phenomenological study research on 'Lived Experience of Online Teaching during the COVID-19 Pandemic: Implications for Curriculum and Teaching'. This has explored the lived experiences of 4 school teachers working at two different private schools of Kathmandu valley during Covid situation. The difficulties and excitements of the participants are gathered via informal interviews. Transcribing the data conclusions are brought. The initial days' frustration and challenges of teachers to deal with the sudden change in teaching mode and gradual development of skills to operate e-devices are presented here. Study shows that the teachers gradually learnt to deal with the technological challenges and run the classes smoothly of virtual mode. Researcher suggests to ensure the access of ICT resources to both teachers and students, provide sufficient training and digitalize curricular materials for the effective implementation of virtual teaching and learning.

Naik & Rao (2020) aim to gain insights into the effectiveness of online teaching and challenges faced by teachers and students in the study 'Challenges of Online Education in Rural Karnataka'. Through the survey, 724 students and 20 faculty members of Karnataka were asked questions. The respondents of the study reveals that the main challenge the rural students face due to poor data connectivity and lack of Laptops/Desktops to access the online classes. Despite the government plans to connect all the students in the online classes, proper internet access, poor wireless mobile network, power cut offs have been disrupting the new mode of teaching and learning. That is why it is still doubted that online teaching is a best alternative of the physical classes in rural schools.

Dayagbil, et al.(2021) on the research ‘Teaching and Learning Continuity Amid and Beyond the Pandemic’ aim to explore the challenges and issues in teaching and learning continuity at public higher education in the Philippines. Study has employed an exploratory mixed-method. Data has been collected from 3, 989 students and faculty members. Personal narratives also used to develop themes of the study. Limited or no internet connectivity has been shown as a prime issue. Unprepared shift, poor infrastructure, ICT issue are mentioned other issues. So is the case of many institutions in developing nations. Authors have suggested to analyze the curriculum and instruction, student engagement, and technological infrastructure to deal with the shift. Along this, institutions need to follow flexible teaching and learning modality by developing the curriculum, capacitating the faculty, and upgrading the infrastructure to continue amid and beyond the pandemic. Study suggest to asses and modify the strategic plan and actions to respond to the uncertain and changing scenarios.

Likewise, Gurung (2021) has conducted research entitled ‘Challenges Faced by Teachers in Online Teaching during Covid Pandemic’ that aims to study various challenges faced be teacher and satisfaction level on online teaching. Data has been collected data via structured close ended questionnaire. Random sampling method has been used to select respondents i.e. 430 teachers working in Maharashtra. Research shows 81.3% of the respondents were novice, 3.9% were used to and rest of the 13.9% faced challenge with online technology and had difficulty to adopt the shift. Study finds the challenges faced by all teachers in online teaching as reaching to the students in the remote area and teaching numerical subjects. Author mentions other problems as problem of electricity and network, poor infrastructures, and low motivation level of students.

Author further states the challenges as electricity cut downs, disturbing voices, discontinued class, lack of technical and software knowledge on students, monitoring discipline issues and poor family economic condition that cannot afford e -devices for the children. Despite all the challenges numbers of respondents were satisfied with online teaching and ready to face many challenges to make learning feasible for the students. Finally, study has suggested to the management of the educational

institution to provide proper training to teachers about learning software that enables them to teach and guide students effectively and efficiently.

Likewise, Das et al.(2021) in their descriptive and explanatory qualitative study has aimed to explore the challenges of online learning in rural areas. The qualitative investigation on ‘Online Learning: Challenges for Education in Rural and Remote Areas’ was conducted on two students, two parents, and two teachers in rural areas. Qualitative data from respondents was analyzed. Online teaching-learning has been challenging due to multiple factors such as lack of technical gadgets, poor network connectivity, and electricity problems. Lack of previous experience in online teaching is found major issue. Parental literacy and student interest are other issues. Stress has been experienced by parents, students, and teachers due to the sudden transition.

Study further states that virtual teaching and learning is not satisfactory in remote rural government schools due to various reasons. Unavailability of the network, lack of resources to buy the necessary gadget and data, power problem, inadequate knowledge, not helpful home climate, and lack of direct contact between student and teacher are presented as a challenges of students in online teaching. For the improvement of the situation caring and training is must which is recommended in the study.

Similarly, Dimaculangan, et al. (2022) carried a research that has aimed to explore the different teaching strategies and challenges encountered by math teachers in synchronous online classes. On the research ‘Narrative Study of Teaching Strategies and Challenges Encountered by Teachers in Synchronous Online Classes’ to collect the personal narration of teachers, online in-depth interview is used. Nine Junior High School math teachers of a private academic institution in Southern Luzon are the respondents. Study shows that teaching math via digital pedagogy following students centered technique is a challenge due to infrastructure and IT skills of teachers. Findings of the study suggest to enhance teachers’ knowledge and skills in digital pedagogies and follow student-centered techniques. Research further suggests that institution should train to the teachers about the strategies to deal with the new reality, then only they can deal with challenges of synchronous teaching.

Mathew, et al. (2022) have researched on 'Challenges of Online Teaching in India: A Qualitative Approach'. This study has explored the obstacles faced by teacher in online teaching in India. Though, the online teaching is a much-habituated concept in developed countries, it is new in developing countries. To explore the personal challenges online teaching, semi-structured interview and telephonic interviews are conducted among 54 teachers from schools and colleges. Prominent challenges faced by facilitators in an online platform as presented in the research are: engaging the students in an online setup, and lack of sufficient infrastructure. Moreover, students' behavior, knowledge, and health are reported as other concerning issues. To address the obstacles faced by teachers, some ways are recommended as empowering students, using students centered pedagogy, and enhancing external support from management, government, and the parents. Authors conclude that training issues should be addressed to help teachers and the learners feel more comfortable with new normal.

Prayudha (2022) in his study aims to describe the practices and strategies applied by teachers in teaching English at rural school. This study 'High School English Teacher Online Teaching in Rural Place: Practices and Strategies' is a qualitative study followed by descriptive approach. The two English teachers teaching at junior high school of remote village are the population here. Data was collected through questionnaires via Google form and interviews via WhatsApp. The results of the study shows the obstacles that teachers face such as; the lack of internet access, knowledge of technology, poor economy of community and students' low motivation in learning. Thus, study has suggested to the government to improve the facilities and infrastructure in rural schools for effective virtual teaching.

In nutshell, these literatures have provided valuable insights for my research. Reviewed studies have broadened theoretical knowledge and helped to develop the conceptual framework for this research journey. From the literatures reviewed above, I knew about the new trends of developing research objectives, methodology, data collection tools and analysis procedures.

## **Implications of the Review for the Study**

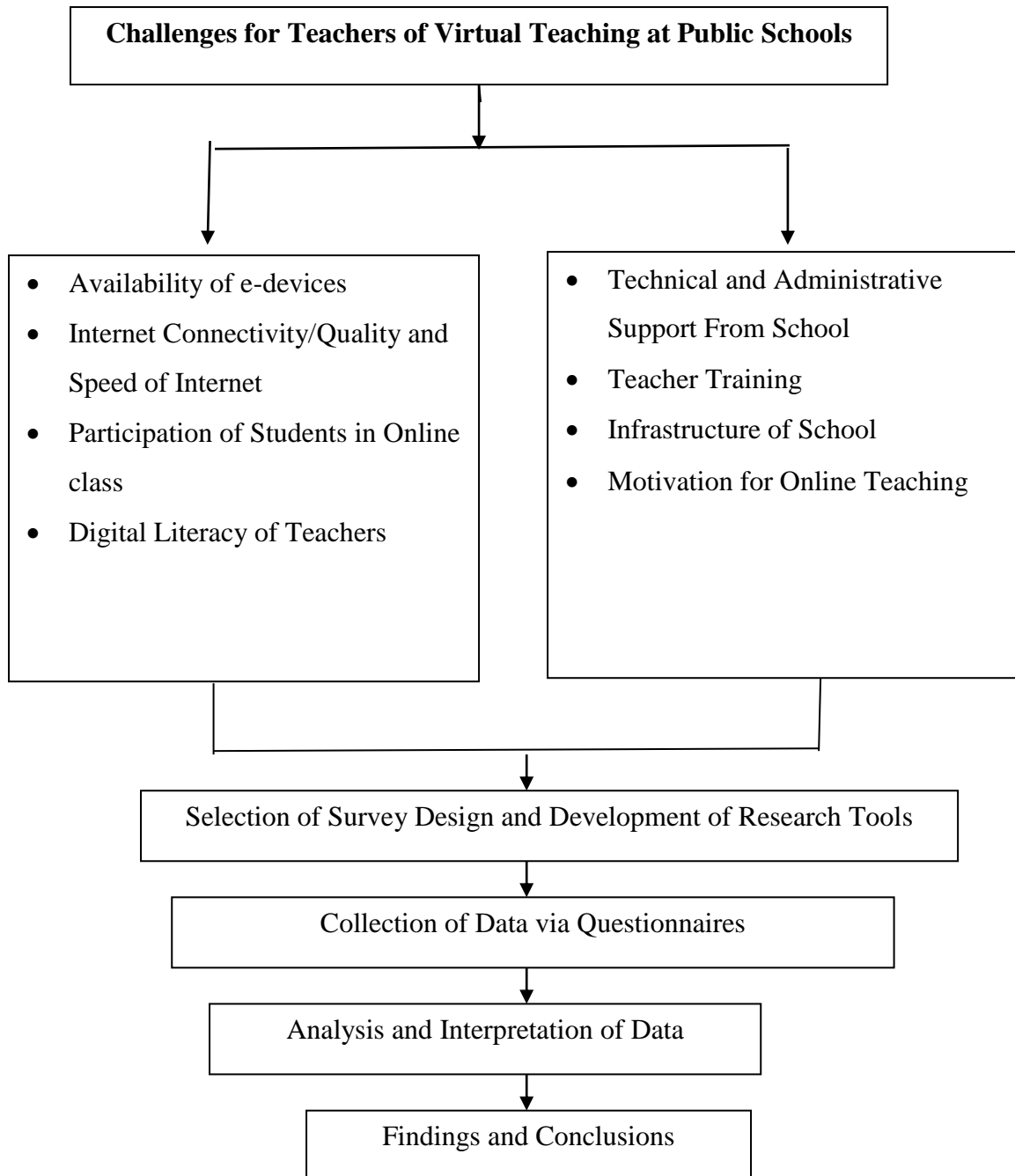
Literature review is an integral part of the research process. Review makes a valuable contribution to almost every operational step in the research,(Kumar,2012) as cited in (Rauteda, 2022). All of the above mentioned research works gave me insights about theoretical knowledge and helped me to find out the gap between what has already been found out and what are yet to be explored. Furthermore, research works were useful to develop the methodological concept for the study. After reviewing the researches, I developed knowledge about the practices of online teaching, its effectiveness and challenges across the world. In general, reviewing works gave ideas about rigorous journey of research from selection of issue to developing framework, data collection and analysis procedures. It has provided me insights to derive the findings of overall research. Reviewing literature is time consuming and frustrating, but it is rewarding at the end. For this study, I have reviewed the theoretical literatures to gain theoretical understanding of the field. The article (Chettri et.al., 2020) supported me to broaden the theoretical knowledge practices and challenges of virtual teaching in remote areas. Similarly, paper by Pazurel-Tork (2013) helped me to widen the knowledge of the virtual teaching.

Here I have also reviewed the empirical literatures of related field to have better conceptual understanding about research problem, to get the methodological insights, and to broaden my knowledge. I have benefited in different aspects from these research studies. Regarding the reviewed literatures above, (Das, et al., 2021) assisted me in the selection of the research problem and Khanal (2020) helped to contextualize it with the Nepalese scenario. Likewise study, (Das, et al., 2022) and (Gurung, 2021) further supported me in the development of objectives. Similarly, the study conducted by (Bowers,et al, 2010); (Mathew,et al., 2022) and (Phyak et al, 2019) helped me to develop the theoretical and conceptual understanding in the field. The study carried out by Naik & Rao (2020) and Tyler-Wood et al.(2018) were very much helpful to me to develop the conceptual framework. Moreover, the research studies by (Bozkus, 2020); (Gurung, 2021); (Phyak,et.al, 2019) provided me clear guideline to construct the questionnaires following new research trends in the field of virtual teaching. They also supported me to select the survey research design. Furthermore, Dimaculangan et al.(2022) assisted providing insights to analysis the data in this research study.

Thus, this study is different from all above reviewed researches in terms of objectives, research problem, methodology and area. Though, the ideas have been taken from many researchers in order to get methodological insights, and build theoretical understanding in the field. All the reviewed works have supported me to make my work more reliable and informative and conduct research smoothly.

### **Conceptual Framework**

Simply, a conceptual framework is a roadmap that gives a clear picture of our whole research. Kumar (2012) cited in (Rauteda, 2022) stated that conceptual framework is the basis of research problem which usually focuses on the sections. The main function of conceptual framework is to show the relationship among the various components of the study. The conceptual framework of the study “Challenges of Virtual Teaching at Government Public Schools of Nuwakot District” is presented diagrammatically as follows:



## **Chapter 3**

### **Methods and Procedures of the Study**

This chapter consists of the methodology adopted in the study including the design of the study, population, sample and sampling strategy, sampling procedures, sources of data, research tools, data collection procedures, data analysis procedures and ethical considerations.

#### **Design and Methods of the Study**

Research design is a plan and complete guideline to help researcher for the completion of the research. According to (Kerlinger, 2000) as cited in Dhami,(2018), research design is a plan and strategy of investigation to obtain answers of the research questions. To reach to the solution of any issue, there should be the systematic and scientific study.(Rauteda, 2022) citing Kotharir,(2004) says that research design is an arrangement of conditions for collections and analysis of the data. There are so many research designs namely survey, narrative inquiry, experimental, ethnographic, case study, phenomenological and so forth. Researcher select the appropriate design according to the research issue to achieve the goal.

For this research, I used the survey design. Survey is a research technique in which data are gathered by asking questions to the group or individual respondents. (KC,2021) mentions survey research, citing (Check & Schutt, 2012, p. 160) as ‘a collection of information from a sample of individuals through their responses to questions’. Open and close ended questionnaires are used as a tools of data collection in the survey design. (KC,2021) further adds that it is the method of collecting information by asking a set of pre-formulated questions in predetermined sequences in structured questionnaires to a sample of individual. (Khanal,2076,) presents the following steps of survey design:

- i. Developing the objectives and research questions
- ii. Defining the Population
- iii. Sampling
- iv. Constructing the Instrument
- v. Conducting the Survey
- vi. Processing the Data

## vii. Reporting the Findings

As mentioned above, I have followed the steps of survey design to conduct this study. This is the most commonly used method of investigation in education field. The data is collected at once which is economic and efficient. (Khanal,2076) adds, triangulation approach is also used to check out the authentic data collected via different research tools in survey design. It relies on large scale data gathering from a wide population. Sampling is must and sampling is normally random in survey. Findings are generalizable and applicable to the whole group/ study population. Data is gathered from open ended as well as close ended questionnaires. Here, in this study as well, I have used the both sort of questions developed in the google forms to collect data from the large sample population.

### **Population Sample and Sampling Strategy**

Population refers to the real or hypothetical set of people, events or objects to which the result of the research is wished to be generalized, (Kotahri, 2004) cited in (Rauteda,2022) and the sampling refers to the selection of some part of an aggregate or totality on the basis of which a judgment or inference about the aggregate or totality is made. To be specific, forty teachers working in community schools of Nuwakot district were the respondents of this study. All respondents were randomly selected. They were of different thirteen schools' belonging to two municipalities namely Belkotgadhi and Bidur, and three rural municipalities, namely Kakani, Shivpuri and Kispang. Their genuine responses were the data that were collected via open and close ended questionnaires developed in google forms.

### **Data Collection Tools**

Anything that becomes a means of collecting information for study is called research tools. In other words, (KC, 2021) defines, research tools are those instruments which are used to elicit the desired information required for the study. For the fulfillment of objectives of this study, I used both open and close ended questionnaires developed in google forms. Closed ended question were twenty in numbers and open ended questions were six in numbers. In close ended questions, options are provided there in the form while open ended questions seek the personal

beliefs, perceptions and understanding. The data collected via those forms was later analyzed and tabulated with discussion.

### **Sources of Data**

In this research, the responses have been collected through open and close ended questionnaires, published articles, online journals, theses and dissertations related to the research issue. They all are the sources of data in this study. Both primary and secondary sources were used here in this research.

**Primary sources.** Primary data are those which are collected afresh and for the first time, and thus happen to be original in character (Kothari, 2004) cited in (Rauteda,2022). First hand collected information for the study is called primary data. As the primary source of data, I used the information collected via questionnaire from the teachers working at community schools of Nuwakot district.

**Secondary sources.** Secondary sources of data are those which have already been collected by someone else and which have already been passed through the statistical process (Kothari, 2004) as cited in (Rauteda,2022). Such information is already available in publications, reports and researches. In this study, I have used the journal articles, books, and theses, previous studies as the secondary sources of data.

### **Data Collection Procedures**

A researcher follows the systematic procedures while collecting data. As a researcher, I initially prepared the questions and developed them into questionnaires at google form. Then, I separated open and close ended questions. After this I called a few respondents and shared about my research study, requested them to fill up the form and assured the confidentiality of their data. Then, I posted the link of google form in a Facebook group of teachers working at community schools of Nuwakot district. Then I told the purpose of my study to the respondents along the same link of open and close ended questionnaires. I requested to those teachers to forward the link of the google form to their colleagues as well. Thankfully they filled up the google form and submitted. In this way, it took two weeks to collect the data from the respondent teachers.

## **Data Analysis and Interpretation Procedures**

After collecting the required data from the respondent teachers, I categorized the data first based on the similarities of the responses. Then analyzed the responses on the challenges of virtual teaching to develop the common themes. After that, thematically I presented the data in tables and charts. In this procedure, dividing the responses of participants into different categories took time. Based on the similar category I developed generalizable themes that helped me to tabulate the data directly addressing my research questions.

## **Ethical Considerations**

Ethical consideration is one of the crucial aspects of the research. Dhami, (2018) states that ethical consideration is a matter of principled sensitivity to the rights of others. Before conducting a research, researcher must get an approval, and must obtain informed consent from the study subjects. According to the Collins Dictionary (1979) as cited in KC,(2021), ethical means ‘in accordance with principles of conduct that are considered correct, especially those of a given profession or group.’ Researcher should be sensitive to maintain the privacy of participants. We know that, sensitivity is the main principle in ethical consideration of any kind of research activity. Regarding the ethical consideration at first, I have given credit to all the authors and researchers whom I have reviewed and studied here. Similarly, I have asked for the consent of participants informing them about the study purpose. I have maintained the confidentiality and privacy of respondents as need in this research. I have not mentioned the name rather I have used the code for identification of the participant’s here. Furthermore I have conducted the research following APA format based on the proposed design and method.

## Chapter 4

### Results and Discussion

This chapter is mainly concerned with the analysis and interpretation of the collected data from the primary sources using Google forms. The data were analyzed and interpreted exploring the practices and challenges of virtual teaching at community schools of Nuwakot district. Forty teachers of thirteen schools were the respondents. Here I have presented the challenges first and then the practices of virtual teaching at the schools of Nuwakot district. They were of five local levels of Nuwakot district namely Belkotgadhi, Bidur, Kakani, Shivpuri and Kispang. They were asked twenty close ended questions and six open ended questions. All the teachers were working at the rural schools of the district. The link of Google form was posted on the Facebook group of teachers working at Nuwakot district. It was also sent via email to a few teachers. They were requested to forward the link to their colleagues as well. Data collected via close and open ended questions from the respondent teachers were categorized into different six themes.

- Availability of Technology
- Internet Connectivity
- Digital Literacy
- Infrastructure of School
- Teacher Training Opportunity
- Technical and Administrative Support System

#### **Challenges of Virtual Teaching at Community Schools of Nuwakot**

This section of the study deals with the thematic analysis, interpretation and tabulation of the collected data related to the challenges of virtual teaching. The real practice of virtual teaching and challenges faced by teachers at the community schools of Nuwakot district has been presented in tables and interpreted in different subsection. The data were collected via 40 teachers using 20 close ended questions.

**Availability of Technology.** Here as a researcher, I have analyzed and interpreted the data related to availability of technical devices at schools, with the teachers and students. Technical devices are the crucial element for the virtual online

teaching. They must be available to run and join the virtual classes. School infrastructure to run online virtual classes and teachers-students' access to technology is must to make virtual teaching practice effective.

***Status of available e-devices at government schools.*** Without teachers and students access to e devices, we can't even think of online classes. This data shows the challenge that teachers facing due to unavailability of sufficient digital devices.

**Table 1**  
**Status of available digital devices at schools**

SN	Available Digital Devices at School	Responses of Teachers				Total No. of Respondent Teachers
		Yes	No. of Respondent Teachers	No	No. of Respondent Teachers	
1	Laptop and Desktop	95%	38	5%	2	40
2	Internet/Wi-Fi	85%	34	15%	6	
3	Multimedia Projector	30%	12	70%	28	
4	Smart Board	12.5%	5	87.5%	35	
5	Microphone	30%	12	70%	28	
6	Digital Camera	2.5%	1	97.5%	39	

The above table shows that among 40 respondent teachers, 95 % have laptops and desktop computers at schools. But the number of e-devices vary school to school. But, only 85% responded as they have internet at school. This is poor situation. Without internet online classes are not possible. Moreover, only 30% have multimedia projector and only 12 % have smart boards at school. These devices are needed for virtual classes but microphone and digital camera are not sufficient found at the schools. For virtual teaching from school, microphone, smart board, projector and digital cameras are needed devices but they are not enough at government schools.

***Government schools teachers' access to e-devices.*** Half of the government school teachers don't have laptops and computers themselves. They must be familiar

with technology to run the virtual classes. But the reality is found different at rural government schools.

**Table 2**  
**Digital devices available to teachers**

SN	Digital Devices Available to Teachers	Responses of Teachers				Total No. Of Respondent Teachers
		Yes	No. of Respondent Teachers	No	No. of Respondent Teachers	
1	Laptop and Desktop	55%	22	45%	18	40
2	Smart phone	90%	36	10%	4	
3	Microphone	22.5%	9	77.5%	31	
4	Digital Camera	2.5%	1	97.5%	39	

The above table presents that only 55% of the teachers have personal computer devices. Rest of the others don't have personal computers. However 90% have separate mobile phones. But still 10% teachers don't have separate smart phone that support MS teams and Zoom. Only 9% have microphones at home and even less than that only 2.5% have digital camera at home to run the e-learning classes from home.

***Government schools students' access to e-devices.*** Majority of students of government schools don't have laptops and computers. Even some of the children who study at public school, they don't have separate smart phone to take online classes. Economic factor is directly connected with this fact.

**Table 3**  
**Digital devices available to students**

SN	Students Access to E-devices	Responses of Teachers				Total No. Of Respondent Teachers
		Yes	No. of Respondent Teachers	No	No. of Respondent Teachers	
1	Desktop	5%	2	95%	38	40
2	Laptop	7.5%	3	92.5%	37	
3	Mobile phone	85 %	34	15%	6	
4	None of the above	12.5%	5			

The above table shows the status of e-devices that students have. Data shows that only 5% of students have desktop computer and only 7.5% have laptop at home. However 85% of the students have access of mobile phone to take virtual class from home. According to the teacher response 12.5% of student s of rural schools don't have access with electronic devices to take online virtual classes.

**Status of Internet Connectivity.** Internet connectivity is must for online teaching. The situation of the rural areas is quite different than we think at the city centers. The data collected via close ended questions shows the poor situation of public schools to run online virtual classes due to poor and no internet.

**Government school students' access to Internet.** The reality of the rural school areas is different. Wi-Fi is not purchased by all families. The mobile data packages are bought buy students. Moreover, the network quality is issue in most of the parts.

**Table 4**  
**Students' access to Internet**

SN	Students' Access to Internet	Teachers response		Total No. Of Respondent Teachers
		Percentage	No. of Respondent Teachers	
1	Only a few	40%	16	40
2	Around 50%	35%	14	
3	Around 75%	20%	8	
4	All	5%	2	

The above table shows that majority of school students don't have internet at home. Only 5% teachers said that all students have internet at home. But 40% teachers said that only a few percentage of students have internet access at home. This is also the number of high school students as said by teachers. This shows that it is one among major challenges of online virtual teaching at government public schools.

**Quality of available internet connectivity.** The quality of internet affects the virtual classes. The teachers working at high school where government has provided internet are somehow satisfactory with the quality but the random electricity cutoff issues has been shared by many teachers.

**Table 5**  
**Quality of available Internet**

SN	Quality of Internet [Indicators]	Teachers Response		Total No. Of Respondent Teachers
		Percentage	No. of Respondent Teachers	
1	Poor	32.5%	13	40
2	Satisfactory	42.5%	17	
3	Good	20%	8	
4	Excellent	5%	2	

Above table presents the status of internet and quality available at the rural school areas. Question was asked to the teachers about the quality of internet available at their school area and locality. Only a 5% responded and rated their internet quality as excellent. 20% rated the quality of internet as good. Other than that 42.5% respondents were satisfied but 32.5% of the respondents said that internet quality is poor. The poor quality affects the virtual classes.

**Digital Literacy of Government School Teachers.** Digital literacy is refers to the ability and skills to operate the digital devices. Without digital literacy, people can't be literate at present day world. In the field of teaching and learning digital literacy has become crucial. However this literacy is not found satisfactory among all teachers at the government school.

**Teachers rating own digital literacy.** The young generation teachers are found motivated to boost their digital literacy. They are found active to keep self-updated and motivated to learn than the experienced teachers working at government schools.

**Table 6**  
**Teachers rating their own digital literacy**

SN	Digital Literacy of Teachers [Indicators]	Teachers Responses		Total No. Of Respondent Teachers
		Percentage	No. of Respondent Teachers	
1	Non user	12.5%	5	40
2	Basic	47.5%	19	
3	Good	37.5%	15	
4	Excellent/Expertise	2.5%	1	

Among 40 respondents, 47.5% have basic skills of computer which is good. Besides that, 37.5% responded as they have good command on computer. Moreover that 2.5% said that they have developed expertise in computer use. This is satisfactory. However 12.5% still don't know how to use computers. This is the bitter reality of government schools. Experienced teachers are rarely found having interest to boost digital skills.

***Tasks teachers can do on computers.*** Computer skills is very essential at the present day world. The teachers working at government schools are gradually making themselves familiar with technology which is good but still 5% teachers don't know the basics of computer.

**Table 7**  
**Tasks teachers can do on computers**

SN	Works Teachers can do on Computer	Responses of Teachers		Total no of Respondent Teachers
		Percentage %	No. of Respondent Teachers	
1	Turn on and off the computer	92.5%	37	40
2	Use applications needed for online teaching	62.5%	25	
3	Create and design documents using word	37.5%	15	
4	Develop Power point presentations	42.5%	17	
5	Use excel	37.5%	15	
6	Organize zoom meeting	70%	28	
7	Use an email	85%	34	
8	Use an email to send documents to students	2.5%	1	

Teachers as a respondents were asked to check their computer literacy. This data shows that teachers are gradually developing their computer skills but not satisfactory. Among 40 respondents, 37 said that they are able to turn on and off the computer. Other 3 respondent even don't know to turn on and off the computer. Half of the teachers still don't know to use word, power point presentation and excel. The chart shows that basic training is needed to the majority of teachers of government school. Though 85% teacher know to use email, they haven't sent reading materials to their students. Only 2.5% teacher send softcopies of eBooks and reading materials to their students. This shows that the situation is still poor at government schools.

*Teachers' efforts to boost up computer skills.* Other than old generation teachers, majority of the teachers are interested to boost up their digital skills and

doing some efforts to learn computer and updating self with new technology. They are trying to be familiar with new pedagogies of 21<sup>st</sup> century.

**Table 8**  
**Efforts of teachers to boost up the Computer skills**

SN	Efforts made by Teacher to learn Computer [Indicators]	Responses of Teachers		Total no of Respondent Teachers
		Percentage %	No. of Respondent Teachers	
1	Bought computer and took class in an institution	17.5%	7	40
2	Purchased internet to use digital tools	57.5%	23	
3	Explored and attended ICT training opportunities	47.5%	19	
4	None of the above	25%	10	

The above table shows the teachers effort to boost up the digital skills. In the question what they personally did to boost their digital literacy. Out of 40, 17.5 % bought computer and joined computer classes recently. 57.5% said they purchased internet at home to learn how to run virtual classes. 47.5% said they explored and attended ICT trainings online. Bitter reality 25% didn't do anything to boost computer literacy.

***Status of school students' email ID.*** The rural government school students have less access to internet and e-devices. According to the respondent teachers, only a few high school students have created the email id and used it which is shown in the table below.

**Table 9**  
**Status of school students email ID**

Crested school students' email ID					
Indicators	Yes	No	Only a Few	Not Sure	Total no of Respondents
No of Respondent Teachers	5	8	20	7	40
Percentage	12.5%	20%	50%	17.5%	

Above data shows the concern of teachers about students email id. Respondents responded differently. Out of 40 respondents, 17.5% of the teachers were not sure about their students' email id. More than that, 50% responded as only a few students of their school have email id. Like that, 20% said all their students don't have email id. Only 12% responded as their students have email id. This shows that some of the school students even don't have created email id which is the basic for online classes

**Infrastructure of Government Schools.** For the online teaching teachers and students collaboration is not enough. There need to be the supportive infrastructure to run virtual classes. The well-equipped schools have made their teachers also computer friendly but the reality differs of those schools that don't have good infrastructure.

**Reflection of lockdown days' virtual classes.** The pandemic pedagogy is challenging many teachers at government school of remote areas which is reflected on the table. The data collected from the respondent shows that still many student stay out of school if government proposed virtual classes as an alternate of physical classes at rural government schools.

**Table 10**  
**Reflection of lockdown days' virtual classes**

Online Class run during the Lockdown days					
Indicators	Yes	No	Only a few days	Only for specific classes	Total no of Respondents
No of Respondent Teachers	14	6	7	13	40
Percentage	35%	15%	17.5%	32.5%	

Above table is about teachers' reflection of Covid period's online classes. Among 40 respondents, 6 teachers said that they didn't run any class. Seven teachers said that they ran classes only a few days, and 13 teachers said they organized classes only for specific classes targeting the SEE and BLE students. However, 14 responded as they ran online classes. This is the reality of the government rural schools in case of online virtual teaching.

**Applications used for virtual classes.** Teachers were asked to make reflection of the Covid pandemic days' their struggles to run the virtual classes. That shared that except the high school students, they could not connect with other students via virtual classes.

**Table 11**  
**Applications used for virtual classes**

S.N.	Apps used by teachers to run online class [Reflective Indicators]	Responses of Teachers and Percentage	
		Percentage %	No. of Respondent Teachers
1	Microsoft Teams	2.5%	1
2	Zoom	85%	34
3	Messenger groups	2,5%	1
4	First connected via zoom but later made Facebook messenger groups	2.5%	1
5	None	7.5%	3

On the question about use of application to run online classes, 85% said they used zoom. A few said that they used messenger groups to teach the students during the pandemic situation. This shows that a few high schools organized online classes during lockdown for specific classes as like 10 and 8 class only. Half of the teachers said that they tried to run online class but students didn't join and remained out of school contact throughout the lockdown days. This shows the poor reality of government schools and management team to virtual classes.

**Students' presence in virtual class.** As teachers recalled the lockdown days and government announcement to run virtual classes, majority of teachers were found not

happy with. That announcement of government to run online virtual classes could not be effective at rural government schools because of the low and no participation of students, poor infrastructure and connectivity.

**Table 12**  
**Students' presence in online class run by school**

Students Presence and participation in Online class						
Teacher 's perception [Indicators]	All	Almost all	Some of them	Only a few	None	Total no of Respondents
No of Respondent Teachers	1	4	20	13	2	40
Percentage	2.5%	10%	50%	32.5%	5%	

On the query about student's participation in online classes during the pandemic days, 50% teacher said some of the students attended the class and 32.5% said only few students joined classes. Only 10 % said almost all students joined classes. The school environment and student's level, family background and so many other factors are found to be affecting to the virtual online classes at government rural public school context.

**Teacher Training at Government Schools.** The responses are analyzed, tabulated and interpreted below on the basis of the above categories. The responses of the question 1, 8, 11, 16, 17, and 19 has been tabulated together as below. The analysis of the teachers responses show that majority of schools have computer labs. All the school teachers have crated their own email id. Moreover the data shows that all the teachers are more or less interested to boot their digital literacy. But the bitter reality is that teachers have not got the ICT related training to run the new online classes.

***Training opportunity to practice virtual teaching.*** Teacher training is very importamnt to initiate something new. Before practicing the online virtual teaching, it is essential to train the teachers to run it well. But the governemnt school teaches couldnot get that training from the local government as the need.

**Table 13**  
**Status of training opportunities to learn Virtual teaching**

S.N.	Indicators	Response of Teachers				Total no of Respondents
		Yes		No		
		Percentage	No of teachers	Percentage	No of teachers	
1	Teachers got ICT training	70	28	30	12	40
2	Teachers created e-mail ID	100	40	-----	----	
3	Teachers interested to boost digital skills	100	40	-----	----	
4	School has computer lab	97.5	39	2.5	1	
5	School has provided computer device	85	34	15	6	
6	Motivated to run virtual online classes	75	30	25	10	

Among the 40 respondent teachers of government schools, 30% teachers responded as they didn't get any sort of training to help them run the online classes. Neither the school nor the government officials helped them in need. This is one of the challenging factors. In the question about providing computers to the teachers to run online classes 15% said they didn't get. Teachers were asked question whether they are motivated to run online virtual classes. As the responded data, 75% teachers are motivated more or less to adopt new pedagogy. However 25% responded as they are not motivated for online teaching.

***ICT trainings conducted by the schools.*** As asked to the teachers about the ICT training programs conducted at school. Almost all teachers said 'no'. Expertise

sharing programs, visiting other school and training events are organized by the private schools but this is found lacking in majority of government schools. This is also proven by the data collected from the respondent teachers working at government schools.

**Table 14**  
**Status of ICT trainings conducted by Schools**

ICT Training Conducted by the Schools					
Teacher 's Response [Indicators]	Sometimes	Occasionally	Rarely	Never	Total no of Respondents
No of Respondent Teachers	8	3	11	18	40
Percentage	20%	7.5%	27.5%	45%	

As asked questions, 27.5% teachers said they rarely got ICT training at school. 20 % has mentioned they sometimes got training to boost ICT skills. 45% teachers said that they never get training and technical assistance from school. However 20% have said they sometimes get training at school. This shows that teachers lack support from the administration on implementing new pedagogy at school. The data related to trainings is not satisfactory.

**Technical and Administrative Support System.** Schools need to conduct training time and again to keep their staffs updated on the ongoing events, issues and on recently developed pedagogies. Such sharing expertise and knowledge system is essential at school. Such support system motivates teachers experiment new techniques in teaching. Motivating factors play the crucial role to practice online virtual teaching. Young energetic teachers are found self-motivated. However, the common demotivating factors found as a challenges of virtual teaching are as below.

**Challenging factors for virtual teaching.** Teachers' responses show that there are many challenges to run the virtual classes at the government schools. Lack of e-devices among students and teachers, poor and no internet access, lack of training to teachers, less supportive administration and guardians and low /no participation of students in the class. Besides these, economic condition of family at village areas to afford the devices and internet for class and lack of interest of stakeholders to improve

the school are the most challenging factor to practice virtual teaching at the government public schools as like Nuwakot.

**Table 15**  
**Challenges of Virtual teaching at community Schools**

Major Challenges of Online Virtual Teaching at Government School				
S.N.	Teacher 's Response [Indicators]	Response of Teachers		Total no of Respondents
		Percentage	Total no of Teachers	
1	Low participation of Students	7.5	3	40
2	No Internet Access	20	8	
3	Unavailability of E-devices	7.5	3	
4	All of the Above	65	26	

Out of 40 teachers, 65% teachers mentioned low participation, no internet access, unavailability of e devices as the major issues. Besides that 20 % teachers mentioned no internet access as the major challenge of the virtual teaching. 7.5% out of 40 teachers mentioned low participation of the students as the major challenge of the online class.

These above tabulated data show that there are multiple-intertwined issues to run online classes at rural public schools. Study has found that despite the challenges for virtual teaching at government schools, young generation teachers are self-motivated to practice it accepting the challenges.

### **Practices of Virtual Teaching at the Community Schools**

This section includes the presentation, analysis and interpretation of data collected to explore the practices of virtual teaching at the selected government public schools of Nuwakot district. Six open ended questions were asked to explore the virtual teaching practices at schools. Forty school teachers were asked questions. As I asked question, ‘What is your perception about online class?’ Respondent teachers have responded as below:

Respondent1: *“Online teaching is good but most of the rural area school may not have good internet access that create the problem. I informed all the students about online class and procedures and I used zoom app for virtual teaching.”*

This reveals that to practice virtual teaching at the rural schools is not as easier as we have thought. Young teachers are found having positive attitudes, and ready to try new way of virtual teaching. However as respondent said that it has been found hard to practice due to issues like internet. Similarly, another respondent 4 added the same view to the question:

*“Online teaching is not in reach of all students and teachers too. It can't cover all areas. We conducted online classes for few days for specific classes.”*

This shows that online teaching is not much in practice. Only targeting the SEE and BLE students they ran virtual classes for some days. That also could not be effective. So later they ended up that too.

On the same question respondent18 shared the perception as;

*“Online teaching is good but hard to run regularly. I think it may not perfect alternate because everyone don't have good internet access and ICT tools. Each parents can't afford for data but I am learning to use different apps for online class.”*

This data shows that teacher has not accepted online as a perfect alternate of physical classes. The knowledge of ICT, internet issues and economic aspect of the society has become the challenges to practice it. Another respondent39 supports the previous view and says:

*“Online is not good in rural government schools as like ours where students have no e-devices, no internet. I said to join messenger group to discuss about course but only few of class 10 joined. I can't say online is the best alternate of physical classes in our school context.”*

This tells that virtual teaching cannot be best alternate at this scenario in the public schools. Data shows it difficult to connect all the students via online virtual mode at government schools.

Second question to the respondent teachers was ‘How did you connect your students during pandemic?’ They responded as:

Respondent 7: *“Online teaching is good but in case of rural area as like ours it can't be good platform. For teaching only some class like class 10 has online classes in our school. Electricity problem, poor Wi-Fi, less participation of students because of these, we face many problem during online class. I am not much prepared for virtual teaching.”*

This data also shows that even during the lockdown days they could not run the classes. In other normal time they are not found ready to practice new techniques in the classes. Respondent revealed the challenges of virtual teaching at rural schools and accepted it's not for rural areas.

Another respondent 9 also shares the similar ideas as before;

*“...It's good but only in city area where internet access is available but in the case of my area it's very hard to run online class. At first, I plan then inform to all students. Then teach them how to use zoom app and we use this app. I don't think, it could be the best alternate of physical classes in my school because all teacher may have ICT tools and knowledge of apply but all students don't have the access of ICT and don't know how to use. Students may find expensive to use mobile data so everyone can't afford for online class.”*

This above data shows that young teachers are ready to practice virtual teaching by any means. Despite the multiple challenges, they try new techniques in the field of teaching even at remote schools. This shared positive insights among high schools teachers.

Third question asked to the respondent teachers was ‘what are the major challenges to run virtual class?’ they responded as below:

Respondent 21 shared the challenges encountered to run the virtual classes as:

*“...No access of internet for students, poor economic condition of students, poor management of school, ICT poor, mobile network problem, electricity cut offs, poor economic condition of students so only few have e-devices, low participation of students in class, less support from parents”.*

This revealed the bitter reality of government schools that has been hindering students learning as well. To practice the virtual teaching these basics should be available. But the respondent showed that it's hard to practice virtual classes in reality.

Similarly respondent 22 shares the similar issues to practice the virtual teaching at his school. As he answered:

*"...work organization and time management, most teachers are required to move to online teaching almost immediately with no training and tools. But technology shortage, connectivity, computer literacy, hard of hearing students, data privacy and insecurity are common problem".*

This reveals that virtual teaching and its proper practice at the government public schools out of valley is tough. Many barriers hindered the students and teachers to practice virtual teaching as an alternate of physical classes.

Fourth question was 'How supportive do you find your school in case of need of technical assistance?' Teachers responded as below:

Respondent 29 shortly answered as *"...our school doesn't support. I have learnt to run different desktop app at cyber on my personal cost."* This reveals that school's support and help is very essential to practice something but that is not found by teachers to implement the new technology at the remote areas.

Another respondent 30 added on the previous one as *"....we tried to connect students by calling and via zoom but not successful to do that. Online is not good for basic school as like ours. No students come in online class. Schools support is average. Online can't be best alternate of physical classes. Not much learnt but learning to teach online"*.

These above responses showed that government school schools support system to the teachers who want to implement new technology is no satisfactory. That hinders the working environment as well.

Then, fifth question asked to the teachers ‘Do you think online teaching could be the best alternate of physical classes in your school? Why or why not?’ They gave the responses as like:

Respondent 32 said, “...*online teaching is alternative tools for teaching, but it cannot be suitable for all. I think it depends on situation.*”

This reveals the uncertainty of virtual teaching and its practice at the government schools of rural areas. Unless teacher be sure of doing something that’s cannot be effective. Various obstacles shared by earlier respondents, have hindered the virtual teaching less suitable in remote rural areas.

Another respondent<sup>37</sup> writes supporting the views of previous one, “...*no absolutely not. Other option government should seek to address the need of rural school students. No or poor internet, lack of devices, low participation of students in online classes, frequent electricity cut off for 2/3 minutes at our village are the major challenges so online is not the best alternate.*”

This response also shows that teaching online at the government schools of remote areas and out of valley, is tough. Virtual classes can’t replace the traditional face to face classes and its need

Last but not the least, sixth question was ‘How prepared are you to run online class in case of need?’ they responded as like:

Respondent<sup>1</sup> answered very shortly “*I am prepared for it. I have laptop with good internet connection and I know the procedures for it.*” He is a high school teacher. Young teachers like him are self-motivated to practice the virtual teaching despite the challenges. To teach at high school via virtual mode is easier than teaching at basic schools as shared by respondents.

Similarly, respondent 5 says:

“...*it’s hard to get technical support in my school because few of us have some knowledge on ICT. I am not much prepared but I am learning to run online class in case of need.*”

Similar view is shared by another teacher respondent18:

*“...It’s good but hard to run regularly. I am learning to use different apps for online class. I think it may not because everyone don’t have good internet access and ICT tools. Each parents can’t afford for data.”*

These data present that young teachers teaching at high school are self-motivated to practice the virtual classes at any time despite the challenges. However, the experienced teachers those lack the knowledge of ICT basics hesitated even try the virtual classes.

All the above presented data showed that the practice of virtual teaching at the government public schools of Nuwakot could not be effective as it was thought. Even in the high schools, majority of the schools did not run the virtual classes except a few subject for some time. So is found the present day scenario. The young teachers are found motivated to practice new technology at teaching despite the challenges. Lack of technology, poor internet connectivity, low level of motivation, no training, lack of support system have been shared as the major challenges by the respondents to practice of virtual teaching.

### **Suggestive Measures of the Challenges to Practice Virtual Teaching**

Every problem has a solution. Teachers and other stakeholders seek the solution of the challenges that occur while practicing the online virtual teaching. Some of the ways of the challenges found through the study are as below:

- i. Teachers should develop interest to boost their digital literacy and keep self-updated and familiar with new technology.
- ii. Government should widen the internet connectivity in every nook and corner across country.
- iii. School should provide technical support to the teachers and encourage them to practice new technology in teaching.
- iv. Government local bodies must conduct the training, workshops and conferences for teachers to share the experiences.
- v. Support from the parents and guardians is must to practice virtual classes effectively.
- vi. Teachers should develop the habit to adopt the pedagogies of 21<sup>st</sup> century.

- vii. All the stakeholders of education should work collaborating to make online teaching effective in government schools.
- viii. It is very important to develop the ownership of parents towards schools.
- ix. Government should provide the internet facility and computer labs even at the basic schools. So that teachers could make themselves and students familiar with technology from the foundation level.
- x. The computer subject should be taught and learnt practically from the basic level at school.
- xi. The local government should help the teachers by motivating them to deal with local problem with local solutions that occur while practicing virtual teaching.

### **Findings**

Based on the response of respondents collected via google forms, many challenges have been found to practice online at rural government schools. After analyzing and interpreting the data, this study has come up with the following findings:

- i. Study found the online virtual teaching less effective at the government public schools.
- ii. It is found that all the schools don't have e-devices to run the online virtual classes. Basic schools don't have even needy e-devices. But high schools have computer labs, though they have been found less used for teaching and learning purpose.
- iii. All teachers are not found having personal computer devices. It is needy for virtual class. However, majority of school teachers have smart phones that easily support the apps to run virtual classes.
- iv. Access of technical devices to the students is crucial for virtual learning. Mobile phones are found accessible device among students too. But Laptop and desktop computers are rarely found in access of students at rural schools. Economic condition of family is found directly connected with this fact.
- v. Availability of internet is found one of the major challenges for virtual teaching. Majority of student don't have internet access for joining online classes at rural areas.

- vi. The quality of internet is not satisfactory in hilly areas. More than the Wi-Fi, mobile data had been found in use but that is also poor in quality.
- vii. This study shows that still one fourth of the government school teachers don't have digital literacy. Except the young generation, majority of government school teachers are found having less interest to develop digital literacy.
- viii. Five percentage of the sample population mentioned themselves non user of computer and they did nothing to boost digital skills.
- ix. Teachers are found less concerned about creating email id and encouraging students for online virtual classes.
- x. Study shows that, 70% teacher can organize zoom meeting but still 30 percent don't have idea of running virtual classes. The number of teacher who can use powered point and excel is found even less than 20 percentage.
- xi. However, the lockdown period, willingly and unwillingly made the teachers somehow digitally literate. Around 20% purchased internet and explored the ICT training opportunities then. This is found as silver lining of dark period.
- xii. As found in the study, a few high school teachers ran online classes that is targeting the SEE and BLE students only. Rest of the students remained out of the school during lockdown. This show how challenging the online virtual classes are at the government schools.
- xiii. Study presents that a few teachers stayed connected with students during Covid closure via messenger groups as it was found familiar than zoom and MS teams. This shows the lack of training and support system at government schools to be familiar with new technology.
- xiv. The participation and presence of students in virtual class is not found satisfactory at the government schools because of the challenges such as poor/ no internet connectivity, lack of e-devices, poor economic condition, less supportive school, family and social environment.
- xv. Despite the challenges the study found that young generation teachers are interested and motivated to boost their digital literacy and ready to adopt the online virtual teaching.

## **Chapter 5**

### **Conclusions and Implications**

This chapter consists of findings, conclusions and implications related to policy, practice and further research related.

#### **Conclusions**

This study was aiming to find the practices and challenges of virtual teaching at government public schools with pedagogical implications. Survey design was followed to collect data from the 40 government school teachers working at Nuwakot district via random sampling method. Google form was used as a tool. Through the interpretation and analysis of the collected data, it revealed multiple and intertwined issues to run online classes at rural public schools. Though online virtual teaching has been developing as best alternate form of conventional physical classes throughout the world. Study found the practice of virtual teaching less satisfactory. Study showed the major challenges as lack of digital devices with teachers and students, poor/no internet connectivity and lack of training to the school teacher to run the virtual class. Low motivation and no interest to adopt new pedagogy has been found another major challenging factor. The study has also shown the economic condition of the family as a determining factor. All these factors have directly and indirectly affected the virtual classes.

Study has not only explored the challenges but also suggested the ways to deal with the challenges of virtual teaching at the government schools. As if possible the government bodies and school administration should help the teachers via training to adopt the new pedagogy. The technical assistance is very needy to the students and teachers. Moreover the teachers should develop positive attitude towards the new technology keeping self-updated with ICT. The practice of online teaching has been developing across the country. It's a silver lining of the dark Covid period. That's why all the government school teachers should familiarize themselves with technology and, make some effort to practice it at the school. If there is a will, there come the solutions. As like young generation teachers all government teachers should motivate self to adopt the new practices accepting the challenges. Then only,

challenges become the opportunities to learn and do something new even at remote government schools.

### **Implications**

On the basis of the analysis and interpretation of the collected data, and findings of the study, some of the implications applicable at policy level and practice level and future research level are presented as below;

***Policy Related.*** This research study has been believed that it would be useful for the policy makers to provide the insights that they need to take in consideration while planning for the alternate ways of teaching. Some useful implications related to policy level have been stated as below:

- The study found the practice of virtual teaching less effective at the rural government schools. This could help policy makers to know the grass root reality of virtual teaching.
- This study suggest the policy makers not to make the rules and regulation related to teaching and learning only observing a few well equipped schools of the city centers.
- There need to be collaboration among all the bodies of education sector before developing the policies and plan so, that could address the need of all areas within a country.
- Policy makers, curriculum designers, and textbook writers could know about the real challenges of virtual teaching at remote government. It would suggest them to develop the reading materials' soft copies making available offline as well.
- The data of the study could be useful to the MOE, CEHRD, and CDC to think while making further policies and plans of public education.

***Practice Related.*** Every research has certain kinds of implications. This study would be applicable to many people for different reasons. It has been believed that it would work as the guideline for the experts, textbook writers, teachers, and the students. It would be helpful in teaching and learning process as well. The practice related implications of the study have been mentioned as below:

- The findings of the study would be suggestions to the teachers to boost the digital skills and motivate self for virtual teaching.
- This study could boost teachers' confidence to practice the virtual teaching despite the challenges of rural public schools.
- It could motivate the teachers to promote and practice the virtual teaching.
- This study can be useful to know about the challenges faced by students and teachers to adopt virtual mode at the government schools.
- It could motivate the experienced teachers to rethink about use of ICT in the teaching and learning as like self-motivated young teachers.
- This study can be helpful to the other novice researchers as well to get idea of research design, method and sampling procedures.
- This study would be a guideline for the local bodies to develop and plan the training course to address the practical problems faced by teachers.
- As it is an academic work, it would contribute in the field of academia for further improvement of the virtual teaching practice at government schools.

***Further Research Related.*** No any research work can include all the things related to that area of study. Every research study has certain limitations and shortcomings. It is believed that no work is final in itself. So, there should be further researches on the same field from different angles. Some future research related implications of this study have been presented as below:

- This study has been conducted in the field virtual teaching, focusing on the practices and challenges faced by teacher at government schools of Nuwakot district. So the future researchers could conduct their research being specific to virtual teacher's challenges at the primary, basic or high school. Moreover researcher can study the challenges of teaching particular subject via virtual mode.
- This study was conducted on the field of virtual teaching following survey design, other researchers can conduct research employing other research designs.
- This study was limited to Nuwakot district, and only forty teachers were the respondents but future researchers could conduct research on larger sample.

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## **Appendices**

### **Appendix 1**

#### **Consent Form**

Dear Sir/ Madam,

These questionnaires have been prepared for the participants to draw data or information for my research work which is entitled as **Practices and Challenges of Virtual Teaching at Community Schools**. The study will be concluded under the supervision of **Mr. Bhim Prasad Wasti**, Reader, Department of English Education, T.U., Kirtipur. This study attempts to explore the practices and challenges of teachers of online virtual teaching at government schools of Nuwakot district. Therefore, I kindly request for your co-operation with genuine responses in all the questions. The responses will be extremely valuable to fulfill the objectives and to address the research questions of the study. I assure you that any of the information you provide will be kept confidential. Thank you for your valuable time and support!

Researcher

Sharada Joshi

M.Ed. 4th Semester, T.U.





18. Does your school conduct ICT related training to boost teachers' digital literacy?
- a) Sometimes                      b) Never  
c) Rarely                              d) Occasionally
19. Are you motivated for online teaching in rural government school?
- a) Yes                                  b) No
20. Which of the following is the major challenge for online teaching at rural school as like yours?
- a) Un-availability of E-devices                      b) No internet Access  
c) Low Participation of Students                      d) All of the above

*Thank You!*

### **Appendix 3**

#### **Open Ended Questionnaire**

1. What is your perception towards online teaching?

.....  
.....

2. How did you connect the students during pandemic?

.....  
.....

3. What are the major challenges for you to teach online?

.....  
.....

4. How supportive do you find your school in case of need of technical assistant?

.....  
.....

5. Do you think online teaching could be the best alternate of physical classes in your school? Why or why not?

.....  
.....

6. How prepared are you to run online virtual classes in case of need?

.....  
.....

#### Appendix 4

##### Representative Schools of Nuwakot Districts and Teachers

<b>S.N.</b>	<b>Schools Name</b>	<b>No of Teachers</b>
<b>1</b>	Shree Mahamaya Secondary School	<b>4</b>
<b>2</b>	Niranjana Higher Secondary School Belkotgadhi-10 Nuwakot	<b>3</b>
<b>3</b>	Kalika Secondary School, Belkotagdi Tigaun	<b>2</b>
<b>4</b>	Klyani Devi Secondary School, Belkotgadi 8, Jiling	<b>4</b>
<b>5</b>	Mahadev Ma. Vi. belkotgadi 07, Mahadevphant	<b>4</b>
<b>6</b>	Shree Birendra Secondary School	<b>2</b>
<b>7</b>	Shree Sundari Keurini Secondary	<b>3</b>
<b>8</b>	Shree Belkot Vhanyang Secondary School 1 Belkhotghadi	<b>5</b>
<b>9</b>	Shree Gyan Jyoti Secondary School	<b>4</b>
<b>10</b>	Shree Ranabhubaneswori Secondary School	<b>1</b>
<b>11</b>	Shree Tilleshwor Basic School	<b>2</b>
<b>12</b>	Shree Kshetrapal Basic School	<b>3</b>
<b>13</b>	Shree Kholekharka Basic School	<b>3</b>
	Total No of schools- 13	<b>40</b>

## Appendix 4

### Questionnaire filled up by Respondent

School: Mahamaya Secondary school

Municipality: Belkotgadhi

Teacher's name: A5

Teaching experiences (in year):4

Subject(s) you teach: English

#### Close Ended Questions

1. Does your school have computer lab?  
 Yes
2. What digital devices and infrastructures are available in your school?  
 Computer (desktop/laptop),  
 Internet (regular/Wi-Fi),  
 Multimedia projector,  
 Microphone
3. What digital devices do you have personally?  
 Computer (desktop/laptop),  
 Internet (regular/Wi-Fi),  
 Multimedia projector,  
 Microphone
4. Which of the following device do your students have for online class?  
 Mobile Phone,  
 Laptop
5. How many students of your school have access of internet to attend the online class?  
 Only a few
6. How do you rate the internet quality available in your school area?  
 Good
7. How do you rate your computer literacy skill?  
 Good
8. Have you created an email ID?  
 yes
9. Do you think all your school students have created email ID?  
 Only a few

10. Tick on the activities that you are able to do.
- ✓ Turn on and turn off the computer
  - ✓ Use applications needed for online teaching (ZOOM, MS Teams)
  - ✓ Create/design documents by using office software
  - ✓ Develop PowerPoint Presentation
  - ✓ Use excel
  - ✓ Organize Zoom Meeting
  - ✓ Use an email
11. Are you interested to boost your digital skills?
- ✓ Yes
12. Personally, what have you done to update your digital literacy skills?
- ✓ Explored and attended ICT-training opportunities
13. Did you run the online class during the pandemic?
- ✓ Yes
14. If yes, through which application did your school run the online classes?
- ✓ Zoom
15. How many students participate in online class during the pandemic situation?
- ✓ Almost all
16. The government has focused on development of ICT skills on teachers for professional development. Have you got an opportunity to take part in training?
- ✓ Yes
17. Has your school provided computers to teachers?
- ✓ Yes
18. Does your school conduct ICT related training to boost teachers' digital literacy?
- ✓ Occasionally
19. Are you motivated for online teaching in rural government school?
- ✓ Yes
20. Which of the following is the major challenge for online teaching at rural school as like yours?
- ✓ All of the above

### **Open ended Questions**

1. What is your perception towards online teaching?
  - Online teaching is very fruitful for students at pandemic situation
2. How did you connect the students during pandemic?
  - By using zoom meeting apps
3. What are the major challenges for you to teach online?
  - Network problem, devices, internet etc.
4. How supportive do you find your school in case of need of technical assistant?
  - Facilities of SIM cards for teachers and student
5. Do you think online teaching could be the best alternate of physical classes in your school? Why or why not?
  - Obviously at pandemic situation
6. How prepared are you to run online virtual classes in case of need?
  - By creating group for notifications and using Google cloud