Perception of Teachers on Using ICT in Classroom in Context of Kailali District

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Abstract

This paper aims to present perception of teacher on using ICT ((information, communication and technology) in classroom in context of Kailali district. For the purpose of the survey, ten teachers teaching in secondary level were selected and questionnaire was used to collect data. The findings of the research show that even though majority of the teachers are equipped with electronic gadgets like laptop and desktop computers and have access to the reliable internet both in school and at home, they cannot use ICT in their teaching because of lack of sufficient knowledge about web-based and game-based teaching tools and they have not received training related to ICT use in the classroom teaching.

Keywords: ICT, teachers' perception, teaching learning process, Kailali district

Introduction

In the 21st century, the term "technology" is an important issue in many fields including education. This is because technology has become an important means of transforming knowledge (Ghavifekr & Rosdy, 2015). And nowadays, the role of ICT is widely accepted, and its presence has basically transformed the practices and procedures of all forms of venture within education, business, governance and personal life (Rana & Rana, 2020). Technology in teaching and learning process has gone through innovations and transformed our societies that has totally changed the way people think, work and live (Grabe & Grabe, 2007).

Integration of ICT in education system refers to the use of computer instruction along with internet and web-based tools that incorporates in teaching learning process. Over last few years, the use of Information and Communication Technology (ICT here after) has become a major driving force in transforming education throughout the world. ICT in education has been identified as an innovative and effective means of teaching and learning. It has been integrated in the teaching-learning activities and has been noticed that the integration of ICT in education does promote autonomous learning (Smeets, 2005). Recently, the usage of ICT in education has increased rapidly in Nepal. The latest educational policy of the Government of Nepal has also stressed and emphasized on using

ICT in schools, colleges and universities. The curriculum documents have also suggested teachers to integrate ICT in their classrooms for teaching and learning processes. However, the present system of offering teacher education program needs to be enhanced by adopting technology-enhanced learning and effective management practices. ICTs have the capabilities to bring several benefits to teachers and students such as shared learning resources, shared learning spaces and promotion of cooperative and collaborative learning; they also provide a base for autonomous learning.

The use of ICT in teaching requires competencies on part of the teacher and has indeed made the profession more challenging experience and retains knowledge for a longer time. According to the UNDP (2001) statistics (as cited in Gebremedhin & Fenta ,2015), almost 80% of the teachers in developing countries, like Nepal, feel that they are not prepared to use the technology. The integration of information and communication technologies into curriculum is a crucial process in ensuring the quality education (Hue and Ab Jalil, 2013).The School Sector Development Plan (SSDP 2016-22) has envisioned for implementing and expanding ICT assisted teaching/learning process in all schools.

However, the use of ICT in the context of Nepal, especially in the context of Kailali district is superficial. Although, Kailali is considered as an educational hub of whole Sudurpashchim Province the use of ICT in education seems quite passive there. Salehi (2012 as cited in Joshi, 2019) mentions, "Although ICT is of paramount importance in teaching and learning, teachers faced with some barriers like lack of technical skills, lack of knowledge of integration of ICT in teaching and learning" (p.41). Similarly, teachers are lacking dense knowledge on strategies of using ICT in classroom. This may be because of the lack of baggage on it, lack of pre-service and in-service training and so on."While studying about usage of ICT at Education level, the Teachers' level of perception about ICT, and their level of utilization are to be measured to go for further researches to enhance quality of education" (Venkataraman & Manivannan, 2021, p. 109).

Therefore, the study will mainly explore the teachers' perception of using ICT in teaching and learning process. The study has following research question:

1. What are perceptions of teachers on using ICT in classroom for teaching-learning activities?

The study is a mini research based on single method and tool. The study was delimited to only Kailali district and based on ten secondary level teachers' perceptions on using ICT in the classroom.

Literature Review

The purpose of this chapter is to provide a comprehensive review and synthesis of literature related to the present study. Throughout this section,

theories as well as researches related to ICT in Education are considered in order to get insights and to make the study more practical.

Review of Related Theoretical Literature

Information and communication technology (ICT) denotes the use of computers, the internet, and different electronic delivery devices such as radio, television, and multi-media projector for communicating information, message, ideas and knowledge (Joshi, 2019). It is currently being used widely in education to assist students to learn more effectively by providing teachers with access to a wide range of new pedagogy (Dhital, 2018). Likewise, UNESCO (as mentioned in Khan, 2020) defines ICT as "a scientific, technological and engineering discipline and management technique used in handling information, its application and association with social, economic and cultural matters"(p.50). In education, ICT offers many opportunities to improve its equity, and enhance its quality and efficiency (ADB). It also has a direct impact on building the capacity of teachers to enhance quality of teaching and learning. Similarly, it provides opportunities for students to monitor and manage their own learning and hence, develop their lifelong learning competencies. It is an innovation in classroom teaching because the infusion of ICT has really brought about a shift in paradigm (Joshi, 2019). No matter whether in developed or developing country, ICT has become indispensable in today's education system. Since ICT provides both students and teachers with more opportunities in adapting learning and teaching to individual needs, society is forcing schools aptly respond to this technical innovation (Ratheewari, 2018, p. S45).At the same time, it has brought about an increasing interest in ICT teacher training because they enable the acquisition of specific abilities, knowledge and experiences for the teaching professional (Hammond et al. 2008). However, the effective use of ICT in the classroom also depends upon the different factors like time, institutional support, infrastructure and attitude of the teachers.

Purpose of ICT in Education

The general purpose of ICT in education is to support and enhance teaching and learning process and empower students as well as teachers in education process by surfing and using vast resources available on the internet. On this, Atmanegara et al. (as cited in Joshi, 2019) assert, "The use of technology is the way to get information related to the study and also as the effective communication tools used in teaching and learning process". ICT has brought new dimension in education. By integrating ICT into the classroom, students develop ability to learn more effectively, collaborate with each other, and explore resources available from all over the world.

The Ministry of Education, in the ICT Master plan (2013-17), considers the use of the ICT in education as essential strategies to achieve the broader goals of

education. There are many benefits of using ICTs as educational tools. ICTs help students visualize abstract ideas and make it easy to find reliable information (Qing, 2007, as cited in Bas, Kubiatko & Sunbul, 2016). Along with this, teaching learning activities embedded with ICT motivates students in active participation in learning. It is seen that the ICTs are important for educational process, so the teachers should play the main role in the adoption and integration of ICTs in teaching-learning process (Bas, Kubiatko & Sunbul, 2016, p 177).

Ibrahim (2010, p.212)) mentions about the impacts of ICT on education as: The ICT put forward an influential base for efficient education. Now, we need the modern technology for a better blended method of delivery to create apt teaching techniques to enhance the process of learning English language. ICTs are very motivating because they help the learners to learn the language which is carefully designed to meet the prescribed goals. Thus, we can say that ICT has significant positive impact on ELT. Some positive impacts of ICT tools in teaching learning process as proposed by Ibrahim (2010) are as follows:

a. Availability of materials: ICTs have become an important source for the different academic material from where students can get access to the varieties of learning materials that suit them. The students can learn different subject matter in their own pace due to availability of materials any time.

b. Autonomy: Use of ICT in teaching learning process focuses on students centered method which makes the students feel free to practice and complete their task at their own pace without being forced by others.

c. Authenticity: ICTs provide the authentic learning environment since the learners can interact with each other across the globe and are very motivating for learning.

d. Helps teachers: ICTs help teachers prepare, produce, store and retrieve their teaching materials easily. The availability of different rich texts, different topics, and exercises help in teachers' time management. It helps teachers carry out classroom teaching with great enthusiasm by involving learners in different collaborative tasks.

Challenges of ICT in Education

Because of complex nature of ICT, whenever there is a discourse on the integration of ICT in education, a very firm image of barriers get erected in our minds (Shrestha, 2018). Ghavifekr, Kaujappan, Ramasamy & Anthony (2016) identify following key challenges regarding teachers' use of ICT tools in classroom.

a. Limited accessibility and network connection

It is widely experienced challenge while using ICT in Education especially in the context of Nepal where there lack sufficient ICT infrastructure like well equipped computer labs, laptops, projectors, likewise poor network connectivity,

irregularity in power supply and lack of power backup. Several research studies, as mentioned in Ghavifekr, Kaujappan, Ramasamy & Anthony (2016) indicate that lack of resources, including home access, is one of the major challenges that prevent teachers from integrating new technologies into education. It is a day dream to integrate ICT in education without good network connectivity.

b. School with limited technical support

Good technical support is the backbone of implementation of ICT in any sector, since it is obvious that there may arise several technical problems while using ICT. So, without good technical support in the classroom and whole school resources, teachers cannot be expected to overcome the obstacles preventing them from using ICT (Lewis, 2003 as mentioned in Ghavifekr, Kaujappan, Ramasamy &Anthony, 2016).

c. Lack of teachers' competency and effective training

To use the ICT in classroom effectively, teachers should have sound operative knowledge of different ICT tools. According to Ertmer (as mentioned in Shrestha, 2018), the major barriers of using ICT in classroom can be the users' lack of confidence and knowledge about using it. Shrestha (2018) further says that it may be playing a more crucial role than any other obstacles. Many researches in this field has shown that teachers in Nepal still do not feel comfortable to use ICTs tool in classroom as they lack skills related to use ICT in the classroom. Recent researches how that the main problem with implementing new ICT in education was the insufficient amount of in-service training for teachers (Ghavifekr, Kaujappan, Ramasamy and Anthony, 2016).

Policy and Provision of ICT in Education of Nepal

In order to keep up with the innovation in ICT, Government of Nepal has adopted different initiative and policies for the adaptation of ICT in education. National Education Policy 2019 has adopted policy to develop the infrastructure of school and educational technology by integrating information and communication technology as an integral part of the education system and to make the teaching-learning process information technology friendly. Likewise, the fifteenth plan (2019/20-2023/24) has also included policy related to ICT in education. The policy ensures quality in all levels of education through a curriculum based on the development of human resources, infrastructure, technology, and life. For the achievement of the policy, it aims to develop digital learning materials to assist the teaching learning process, especially for English, Mathematics, Science and technical subjects.

School Sector Development Plan (SSDP 2016/17-2022/23) has adopted the policy of using ICT as medium of teaching and learning process. According to SSDP 2016/17-2022/23, a long-term goal of education in Nepal is to provide citizens with the knowledge and skills they need to work for the development of

the country and to integrate Nepal into the global community. Ministry of Education realizes the use and knowledge of ICT essential with the expanding role of information and communication technology in all areas of life. Thus, MoE aims to provide students with the necessary ICT skills and use ICT as an important tool to a) improve classroom delivery; b) increase access to learning materials; and c) improve the effectiveness and efficiency of educational governance and management. For this, MoE has introduced ICT into the school sector by establishing computer labs with internet in selected schools. Similarly, Teacher Competency Framework 2015 has also included ICT as an integral part of teaching-learning activity and included ICT skills as one of the competencies needed to be a teacher.

Earlier, ICT in Education Master Plan (2012-2017) has planned to establish ICT labs with internet connectivity. The long term goal of Master Plan is to promote use of ICT in Education and contribute for access to quality of education for all. The policies and provisions related to ICT have focused on the use of ICT tools in educational process. Many schools and universities of Nepal have started to use ICT tools to facilitate in teaching and learning process.

Teachers' Perception on Using ICT in the Classroom
Teachers are important agents who actually bring those policies and planning in the classroom. The success of the any program in education largely depends on the readiness of the teachers. Teachers' perception is the major predictors of the use of new technologies in instructional setting. Teachers' attitudes towards ICT shape not only their own ICT experiences, but also the experiences of the students they teach (Lin & Yunus, 2012). Ward, Gristein & Keim (2015) describe perception as "the process of recognizing, organizing, and interpreting sensory information" (p.73). Besides that the teacher's input will also crucially affect the impact of ICT use on students' teaching (Cox & Marshall, 2007). With the educational technology, it is easier for teachers to prepare their lessons, deliver them and receive feedback (Rana & Rana, 2020). According to Zhao & Cziko (2001), there are three conditions necessary for teachers to introduce ICT into their classroom. They are; a) teachers' belief in effectiveness of technology, b) teachers' belief of the use of technology will not cause any disturbances and c) teachers' belief on their ability to control the technology (as mentioned in Lin & Yunus, 2012).

So, for the effective use of ICT in the classroom, at first teacher should perceive positive attitude towards ICT and need to take it as an advance and necessary tools of teaching and learning of this century since the success of ICT in classroom depends largely on the teachers competency along with positive attitudes towards ICT.

Review of Related Empirical Literature

Because of rapid development of ICT in the field of education, teachers are urged to integrate the technology in their teaching (Lin & Yunus, 2012, p.120). However, successful integration of ICT in classroom teaching practice highly depends on positive perceptions of teacher on ICT.

Ndibalema (2014) in his study about teachers' attitudes towards the use of ICT as a pedagogical tool in secondary schools in Tanzania found that most of the African teachers had positive attitudes towards the usage of ICTs as a pedagogical tool however they did not integrate it in their teaching effectively because of low familiarity with ICTs usage as a pedagogical tool among them.

Sipila (2014) conducted a research on how information and communication technology (ICT) is integrated into teaching and learning, the level of digital competence of teachers, and what factors, in their view, could impede the use of ICT in schools. She found out that the teachers with advance ICT skills used ICT regularly in the class whereas the teachers who do not have access or skills to use ICT have inconsistencies in using ICT for the educational purpose.

Similarly, the study of Silviyanti & Yusuf (2015) focused on identifying EFL teachers' perceptions on the use of ICT in their teaching. The result shows that most of the teachers were found to have high motivation to use ICT because they believe that it is important in ELT as it makes learning enjoyable, interesting, and effective, among other constructive outcomes. However, many of them were reluctant to use ICT in their classroom and their motivation level was low. Their barriers were rooted from the lack of training and support, either financial or non-financial, from their work environment. This shows that along with positive attitude, teachers need technical support and appropriate training of using ICT in the classroom and make teachers prepare to face new challenges in education and technology that are present today.

Thapaliya (2014) studied English Teachers' perceptions and practices of Information and Communication Technologies in Kathmandu District, Nepal. The findings show that most of the teachers are motivated to integrate ICTs tool in their classroom since they can help to motivate the students towards the lesson and make the students more creative, analytical, and constructive despite some challenges while implementing them in the classroom. The challenges faced by the teachers were not only technical support but also pedagogical. If the challenges were addressed by the concern authority, the teachers would be highly motivated and build positive attitude towards integrating ICT in classroom teaching practice.

From the above mentioned researches, we can say that ICT in the education is an innovation in teaching learning sector. It is effective in teaching learning process than the traditional chalk and duster method since the use of ICT tools

and equipment in the classroom provides an active learning environment which is more interesting, collaborative and effective for both teachers and students. Thus, most of the teachers are motivated to use ICT in their teaching as they view that it is important in teaching learning process as it makes learning enjoyable, interesting, and effective, among other constructive outcomes. However, technical issues with the use of ICT in the classroom teaching practice emerge as important challenges among the teachers. The teachers with sound knowledge of ICT are more likely to be motivated to use them in the class room whereas the teachers with less competency and having no technical support are less likely to use ICT in the classroom.

Conceptual Framework

The following conceptual framework explains the main concepts graphically as well as their presumed relationship with each other. This is a set of coherent ideas and concepts organized in a manner that makes them easy to communicate. The conceptual framework is often regarded as an integral aspect of qualitative research, providing a structured approach to enhance rigor, credibility and trustworthiness (Ravitch and Riggan 2012, as cited in Straughair, 2019). Therefore, the study will be conducted with the following concepts as variables:
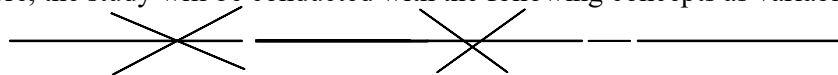

Figure 1. Conceptual framework of study
(Davis, 2003; Rogers, 2003 as cited in Ghavifekr & Rosdy)

The proposed framework includes different essential factors that are directly associated with the main aim of the study. This shows how knowledge on technology use affects the perceived usefulness and ease of use of ICT. The factors embedded in the conceptual framework have been meticulously interlaced so that the interrelationship among them constitutes to measure their effectiveness on ICT integration by teachers. However, intension to integrate ICT by teachers is the main variable that supports the key elements in the above framework such as ease-of-use, functionality, flexibility, accessibility and integration. In addition, the intention of teachers to use the technology is strongly influenced by their perceptions on usefulness of the system as well as perceived ease of use and determines their actual use of ICT (Ghavifekr & Rosdy, 2015). The proposed framework will guide this research in investigating the different factors behind the perception of teachers on using ICT in their classroom.

Methodology

Survey design was used to carry out this study. Questionnaire was used to collect data from the selected respondents and descriptive method to analyze and interpret the data. Ten secondary level teachers teaching in different community schools of Kailali district were the sample population of this study. The

respondents were selected using convenience sampling technique. For the purpose of data collection, questionnaire (see appendix I) was used as a research tool. The questionnaire was designed in the Google form. The questionnaires were both open-ended and close-ended questions. The questions were categorized into 5 sub-topics: a) General information of the informants, b) Knowledge of technology c) Perceived ease to use d) Perceived usefulness, and e) Actual use in classroom. After preparation of research questionnaire, ten selected teachers from different community schools teaching in secondary level were contacted and told purpose of my study and requested to take part in the survey. Questionnaire was sent in form of Google form through email and Face book messenger and the forms were collected within a week for further analysis to get the findings of the research.

Findings

The result of the study is discussed into five sections: General information of informants, Knowledge on the technology use, Perceived ease to use, Perceived usefulness, and Actual use in the classroom.

According to the information received from the questionnaire 80% teachers have laptop and smart phone with them. Similarly, 40% teachers have desktop and 10% teachers have tablet. Likewise, all of them have internet access at home and at school as well. Most of them have Asymmetric Digital Subscriber Line (ADSL) connection and few have fiber optic broadband connection. 50% teachers reported to have good internet quality and 40% teachers have satisfactory internet quality whereas 10% teachers reported to have poor internet quality. Similarly, 60% of teachers reported that they have ICT lab in their schools whereas 40% teachers do not have ICT lab. Regarding the purpose of using internet, there were different views however most of them reported that they use ICT for searching and getting information and connecting with people, some of them use it for studying and teaching as well as for entertainment.

From the above finding, it seems that most of the teachers are equipped with the necessary devices and majority of the teachers have access to the reliable internet service. Majority of the schools are found to be equipped with ICT lab. Likewise, teachers use ICT for different purpose but only few of them use ICT for collecting teaching materials.

Knowledge on Technology Use

Regarding the knowledge of technology use in the classroom, 50% of the respondent said that they have technical knowledge of using ICT in the classroom where as 50 % lack knowledge of using technology in the classroom. 80% of the participants in the survey have not received any ICT related training. Only 20% of them have ICT training from different organizations. Those who have received training said that it was very useful training. On the game-based teaching tools, only 30% of the respondent said that they have knowledge of game-based

teaching tools whereas the majority of respondents (i.e. 70%) have no idea about the use of game-based teaching tools. However, all of them reported that they have necessary knowledge to use YouTube in their class. 40% of the respondents know about Google classroom and e-pustakalaya. Similarly, 30% of them know about pad let and 10% of them know about jam board, near pod and LMS.

From the above result, it can be said that majority of the teachers (i.e. 80%) have not received any kind of training based on ICT use in the classroom. It is obvious that training enhance the skill and knowledge of using ICT in the classroom. That may be the result why only 50% of the teachers have necessary skills to ICT in the classroom. Some may have learned to use the ICT for the teaching since they are keen to use it. Likewise, most of the teachers lack the necessary knowledge about game based teaching tools which are important to make the teaching and learning effective. Only few teachers have knowledge about Google classroom, e-pustakalay, pad let, jam board etc. which are very effective ICT tools to keep the students engaged in learning activities.

Perceived Ease to Use

Surprisingly, 100% respondents reported that they can operate computer and laptop but only 80% teachers can use office program satisfactorily and 20% of them find difficulty in using them. Similarly, 90% of the teachers can operate multimedia in the classroom but only half of total respondents can use web based application and lack regularity in using ICT in the classroom. 60% teachers can moderately use ICT in the classroom where as 20% teachers feel difficulty to use ICT in the classroom.

This shows that being able to use the computer and laptop along with multimedia does not necessary mean to be able to use ICT in the classroom. Most of the teachers in this research can use digital devices and multimedia but most of them are not comfortable using ICT for teaching-learning process.

Perceived Usefulness

The following table presents the data about the teacher's perception of usefulness of ICT in teaching learning process.

Table1. Perceived Usefulness

S.No.		S.A	A	N	DA
1	The use of ICT in classroom makes teaching effective.	80%	20%		
2	The use of ICT in classroom motivates the students to learn.	70%	30%		
3	The use of ICT in classroom promotes students' learning.	60%	40%		
4	The use of ICT reduces teachers' workload of preparing material for	20%	50%	10%	20%

Perception of Teachers on Using ICT

S.No.		S.A	A	N	DA
	his/her class.				
5	The use of ICT in classroom keeps students engaged in learning activities.	60%	40%		
6	The use of ICT in classroom helps teachers to control students' behavioral problems.	20%	30%	40%	10%
7	The ICT can be used to trace the record of students' performance.	40%	50%	10%	

From the above table about the perceived usefulness about the ICT in the classroom, it shows that the entire respondent agreed that the use of ICT in the classroom effective and motivate pupils to learn. They also agree that the use of ICT in classroom promotes students' learning. Similarly 70% teachers agree that the use of ICT reduces their workload of preparing material whereas 20 % teachers disagreed the statement and 10% remained neutral. Likewise all of the them agree that the use of ICT in the classroom keeps students engaged in learning activities. However, only 50% of them belief that the use of ICT helps teachers control students' behavioral problems. But most of them agreed that ICT can be used to trace the record of students' performance.

From the above discussion, we can say that most of the teachers perceived that ICT is useful in the classroom teaching and learning process.

Intention to Use

Regarding the intention to use ICT in the classroom, 80% participants responded that they want to use the ICT in their class room as they see many benefits of its implication in the classroom. Most of them think that ICT helps students engage in the learning activities, motivate students to learn and be creative and innovative. They also agreed that ICT makes the teaching learning easier. However, they also find some weaknesses of using ICT in the classroom. The main problem is that it is expensive to install and operate. Similarly, it is less effective where there is no internet or slow internet. There is also lack technical manpower and they cannot fix if some technical problem arise during the implementation of ICT in the classroom.

Confirmation on an Actual Use

Among the participants in the survey, 50% of the respondents reported that they use ICT in their classroom for teaching and learning process whereas rest of 50% respondents said that they do not use ICT in the classroom.

Although, most of the teachers believe that use of ICT in classroom enhances and motivates students in learning, only 50% of them actually use ICT for the teaching-learning process in their classroom. Rest of 50% teachers do not use ICT

in their classroom. It may be lack of proper skills and knowledge of ICT tools that can be used in the classroom.

Conclusion

The result of the data analysis showed that most of the teachers have access to the internet in their schools and at home as well. Similarly, majority schools have ICT lab established in the school and majority of the teachers agree that using ICT in teaching-learning process is beneficial for the students and it can motivate and facilitate students in learning process. Despite the positive attitude of majority of teachers towards using ICT in the classroom, only half of the respondent are found using ICT in the classroom for teaching-learning process. Other half respondents feel uncomfortable to use ICT for teaching in their classroom since they lack proper skill and knowledge of ICT tools that can be used in teaching learning process. The sticking point is that although majority of the teachers have laptop and desktop computers and have access to the reliable internet both in school and at home, they cannot use ICT in their teaching because of lack of sufficient knowledge about web-based and game-based teaching tools and they have not received training related to ICT use in the classroom teaching. It seems that the government basically focused on developing infrastructure like establishing ICT lab and etc but there is little focus on making the teachers able to utilize those equipment. Investment on infrastructure without skilled man power to utilize them is just waste of money. The success of ICT policy in education largely depends on skilled and motivated teachers. So, the government should provide necessary ICT related training to the teachers so that they can acquire necessary skill and knowledge about the modern ICT tools and techniques that can be used in teaching learning process for the effective use of ICT in the schools.

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