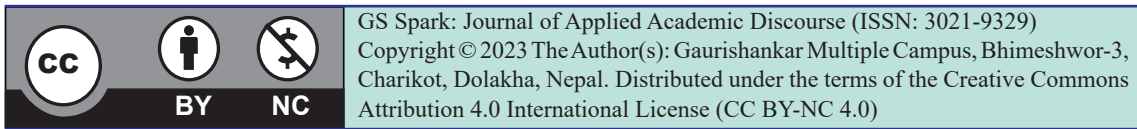Research

Adaptation of Digital Technologies in Secondary Level Education for Teaching English

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I N F O

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A B S T R A C T

The government of Nepal's educational policy of Information Communication and Technology (ICT) emphasizes the need to adopt digital technologies such as the internet website, computers application, and ICT equipment in the context of secondary-level education for the efficiency of school education. This review paper examines the adoption of digital technologies in teaching and learning activities in secondary-level education in Nepal. This review and interview based paper addresses the challenges and opportunities that secondary-level English teachers faced during the process of teaching and learning process. It examines two possible explanations- first, the proper adoption of digital technologies in the field of education opens the way for opportunities for teachers and students, and second, teachers and students faced different challenges regarding the proper adoption of digital technologies which hinders effective and successful learning.

It is argued that a sustainable way of implementing the ICT policy needs to be developed to mitigate the challenges raised during the process of adopting digital technology in education and provide adequate training to the teachers at the secondary level for the proper adoption of digital technologies. The adoption of digital technologies in secondary-level education in Nepal has both challenges and opportunities. A sustainable way of implementing the ICT policy needs to be developed to mitigate the challenges raised during the process of adopting digital technology in education and provide adequate training to the teachers at the secondary level for the proper adoption of digital technologies.

Keywords: digital technologies, secondary-level education, information communication and technology (ICT), challenges, opportunities

Introduction

Twenty-first-century education aims to provide modern pedagogical and technological knowledge and skills through the proper adaptation of digital technologies such as digital machines, the internet, website, ICT equipment, and different computer applications in secondary-level education (Kesh Rana & Rana, 2020). However, the lack of financial resources in the educational sector has made it difficult to manage the infrastructure of technologies and provide proper training to teachers and other stakeholders, which directly supports the adoption of technologies in education (Clark-Wilson, Robutti, & Sinclair, 2014).

The adoption of digital technologies in twenty-first-century education is an essential aspect of teaching and learning to improve the teacher's pedagogical practices, which also helps to promote effective ways of time management in the classroom (El-Sofany & El-Haggar, 2020). The proper adoption of digital technologies includes the use of the internet and other important digital tools and equipment in education, which helps teachers as well as students to produce instructional materials and gives easy access to online learning/teaching resources, making it more applicable in the field of teaching and learning (Arkorful, Abaidoo, & learning, 2015). They also stated that the adoption of digital technology makes the content available on the internet with the readiness of links to related knowledge resources.

Digital resources are very easy to use in terms of validity and reliability in different types of research activities. In the present context, the adoption of digital technology in the classroom enables teachers to adapt different classroom activities such as group division, peer work, focal group discussion, action research, etc. (Ahmadi & Reza, 2018). Moreover, learners are getting many authentic materials from digital technologies, which motivates them to learn. Technology is an essential part of the teacher's professional development through which teachers can enhance different professional skills and knowledge by adopting digital technologies

(Ahmadi & Reza, 2018). Children are very clever in the process of learning through the adoption of digital technologies, so technology becomes an integral part of the learning experience. There have been changes in classroom teaching besides the teaching methods because the traditional chalk-and-talk method is sufficient and effective to increase the learning outcomes of the students (Ahmadi & Reza, 2018). Similarly, the proper use of digital technology also creates a peaceful and interesting learning environment inside the classroom. Ahmadi & Reza (2018) presented that digital technologies have some benefits in the process of teaching and learning such as learners can play an active role with the help of digital technologies to retain more knowledge and skills, follow-up discussions involve more information where learners become more independent, and learners can process new learner-based educational materials to increase their learning skills.

The proper use of digital technologies has changed the methods of teaching from teacher-centered to learner-centered modern techniques such as the communicative approach, action research, task-based approach, and so on. Moreover, it also helps to determine the role of teachers as a facilitator and guides to the learners (Ahmadi & Reza, 2018). The number of participants is also increasing in the classroom with the proper adoption of digital technologies in the field of education. Many researchers stated that digital technologies can be used as instructional tools in the teaching and learning process. The researchers further continued that the proper adoption or application of digital technology in education opens a new area of knowledge and provides an instrument that has great potential to change the existing scenario of education (A. P. Gilakjani, J International Journal of English Linguistics, 2017). Digital technology in the field of education can improve the quality and standard of teaching and learning and management aspect of educational institutes and so help raise standards, therefore, these technologies are at the heart of education in the present-day world (Livingstone, 2012). In Britain (Becta, 2009a, b),

Europe (Korte & Housing, 2006), the USA (Office of Educational Technology, 2004), and elsewhere, the present-day world has seen steady connecting of digital and networked technologies in the teaching-learning process with the widespread use of an interactive whiteboard, virtual learning environment, educational computer games, different computer applications, software engine, and so many other technological equipped devices and tools (Livingstone, 2012).

Problem Statement

The proper use of digital technologies in the classroom leads to the active participation of the learners in the learning process by facilitating the process of information perception and memorization of educational materials (Lazebna, Prykhodko, & Studies, 2021). For instance, if the lesson contains a large number of illustrative materials, the proper use of computer presentation and PowerPoint adoption in the classroom motivates the learners and successfully delivers the learning content to the students. Moreover, different research works had shown that there is long-term memorization of learning contents through the use of digital technologies in the classroom. In Nepal, a recent study found that 90% of teachers are willing to adapt digital technology in the educational system (Status of Nepalese Education Institution on Technical Adaption in COVID-19 Pandemic: An Index Based Analysis, Academia.edu). However, the proper adoption of digital technology in the field of education has both positive and negative aspects. Due to the lack of proper infrastructure and professional skills for the teachers and students related to the technologies in education, it can create different challenges regarding the proper application of digital technologies (García-Martínez, Fernández-Batanero, Cobos Sanchiz, & Luque de La Rosa, 2019). Due to the lack of proper training in digital literacy, consistent practices of online learning enabled them to develop some level of confidence in using digital technologies in teaching and learning activities (Timperley, Wilson, Barrar, & Fung, 2007).

Research Objective

The objective of research is to assess adoption of digital technology in secondary level education based on English Teacher's Perception.

Literature Review

The literature review highlights the importance of Information and Communication Technology (ICT) in teaching and learning strategies. Akpabio et al. (2017) suggest that the proper use of ICT resources may offer language teachers and students an innovative way of teaching and learning strategies. However, Nguyen (2021) argues that the experience of English Language Teaching regarding the use of ICT may demand many skills and changes from the teacher's side such as the teacher's teaching and learning skills. A. P. Gilakjani & Sabouri (2017) focused on the teachers' views regarding the use of ICT in English Language teaching and Learning have a significant role in ICT integration and adopted attitude in the classroom which focuses on the use of great resources for both teachers and students in teaching and learning process and they are also positive about the learner's attitude of ICT knowledge and skill.

The implementation of educational rules, regulations, and guidelines for the promotion of Nepal Nepalese education system faces different challenges, especially in the implementation of ICT-related equipment and tools (Karna Rana et al., 2022). The lack of proper training in digital literacy for teachers and students can create different challenges regarding the proper application of digital technologies (García-Martínez et al., 2019). However, the proper use of ICT in English language teaching and learning significantly developed the four language skills effectively and meaningfully for the learners, hence, listening, speaking, reading, and writing (T. Kumar et al., 2022a). The use of ICT in the language learning classroom motivates the learners and makes the classroom more effective (Bhatti et al., 2021).

Methodology

The research was conducted using a qualitative approach to identify the teacher's perception of

adopting digital technologies in education. The qualitative method used an explanatory method to describe the roles of teachers in promoting the use of digital technologies and the major challenges of using them in the teaching and learning process. The research design used a qualitative and descriptive research design. The data was collected through semi-structured interviews with 12 English teachers of 12 secondary-level community schools from Bhimeshwor municipality, classroom observation, and a study of documents such as school improvement plan (SIP), school reform plan (SRM), and the school annual report 2078. The participants were selected using quota sampling, and twelve participants, one secondary level English teacher from each school situated in Bhimeshwor Municipality in Dolakha district, were selected. The data was collected by conducting a semi-structured interview with the teachers, and the interviews were recorded on a laptop for evidence of research. The interviews were conducted in an academic environment, i.e., at school. The participants' names, including school names, were not given in the paper to maintain privacy.

Classroom observations and document analysis of school improvement plans, school reform plans, and school annual reports were also conducted. The data was analyzed using a thematic analysis approach.

Results and Discussion
Teachers' experience of adopting digital technology

The findings of the open interviews conducted with the teachers revealed that the proper use of digital technologies facilitates the teaching and learning process and supports the improvement of students' learning outcomes. Digital technologies are dynamic in nature and allow teachers and students to create an actual learning environment where they can share their issues and problems similar to previous study(Kesh Rana & Rana, 2020). However, the lack of proper development of infrastructure in schools poses a significant challenge to the adoption of digital technologies in education.

The teachers emphasized the need for digital literacy for both teachers and students, and the importance of training to improve their professional capacity regarding the proper use of digital technology in education. The quality of education was found to depend on the development of infrastructure related to digital technology, which requires coordination among administration, teachers, and students. The participants suggested conducting different kinds of capacity-building and career-development training in schools to improve the adoption of digital technologies in the classroom. The teachers also highlighted the importance of time management in utilizing digital technologies in the classroom. While mobile data can be an alternative to internet access, it is more expensive and not very common among teachers and students in schools. Some participants reported using mobile data in the classroom to search for information from the internet and other resources similar to previous study (Karna Rana, Greenwood, & Fox-Turnbull, 2020).

Major Challenges of adopting digital technology

The findings revealed that the lack of adequate equipment or connectivity, termed the access constraint, is one of the major challenges in the field of education, which creates problems in the implementation of educational technologies. Inadequate training for the teachers(Johnson, Jacovina, Russell, & Soto, 2016) and concerned stakeholders about the proper use of digital technology in the classroom is another challenge of adopting digital technology in education. The teachers expressed keen interest in adopting digital technology in teaching and learning process, but poor and unreliable internet service in the classroom and insufficient computers at school provide limited access to the teachers in using digital technology in the classroom, leading to frustration in their practices. Digital literacy for teachers, administration, and learners also creates challenges regarding the proper use of digital technology in the classroom as well as in the administrative section of the school.

The study participants commented that the quality of education depends on the development of infrastructure related to digital technology in education, which is only possible through coordination with administration, teachers, and students. They stated that different kinds of capacity-building and career-development training need to be conducted in the school regarding the proper use of digital technology in the classroom. The major focus of the participants is that teachers need to properly utilize their time to use digital technologies in the classroom. The lack of proper knowledge to operate digital equipment in the classroom may create problems for teachers, and some teachers from community schools do not have the capacity to install computer programs and software on their computers. Lack of proper digital equipment in the classroom, training to the teachers, unstable electricity, lack of internet, and so many other factors create problems regarding the proper adoption of digital technologies in the classroom.

The findings of this study suggest that the adoption of digital technologies in the field of education in the context of Nepal is more challenging than opportunistic due to the lack of proper development of infrastructure in the schools. The study participants emphasized the need for digital literacy for both teachers and learners regarding the proper use of digital technologies in the field of education. The study recommends that the administration of schools should conduct different types of ICT-based training to adopt digital technologies in the classroom, and the old-generation teachers should be motivated to adopt digital technology in their planning and teaching activities. The study also suggests that the government should provide adequate resources and infrastructure to schools to facilitate the proper use of digital technologies in the classroom.

Opportunities of adopting digital technology

The integration of digital technologies in the classroom has become a crucial aspect of modern education. According to A. P. Gilakjani, digital technologies are used for the construction of knowledge, indicating learners' understandings and beliefs(A. P. Gilakjani, J International Journal of English Linguistics, 2017). Digital technologies provide positive insights to the learners, allowing them to engage and cooperate with their peers to share problems and issues related to particular subject matters (Thomas & Palmer, 2014). The proper use of technology facilitates the teaching and learning process and supports increasing the learning outcomes of the students. However, the adoption of digital technologies in education is not without its challenges. The lack of adequate equipment or connectivity, termed the access constraint, is one of the major challenges in the field of education, which creates problems in the implementation of educational technologies((Fu & ICT, 2013). Inadequate training for teachers and concerned stakeholders about the proper use of digital technology in the classroom is another challenge of adopting digital technology in education.

During the open interviews conducted with secondary-level English teachers, the lack of proper knowledge to operate digital equipment in the classroom was identified as a problem. Some teachers from community schools do not have the capacity to install computer programs and software on their computers. Digital literacy for both teachers and learners creates challenges regarding the proper use of digital technology in the classroom, as well as in the administrative section of the school.

The research participants commented that the quality of education depends on the development of infrastructure related to digital technology in education, which is only possible through coordination with administration, teachers, and students. They stated that different kinds of capacity-building and career-development training need to be conducted in schools regarding the proper use of digital technology in the classroom. The major focus of the participants is that teachers need to properly utilize their time to use digital technologies in the classroom. The adoption of digital technologies in different instructional

activities offers an effective means to access a range of valid information needed for the teaching and learning process.

Ways of improving the adoption of digital technologies in education

The integration of digital technologies in the classroom can enhance the teaching and learning process, but it requires proper infrastructure and training for teachers to be successful(Raja, Nagasubramani, & Research, 2018). Teachers should have a keen interest in using digital technologies in their classroom teaching, and they should create tasks that involve the proper use of digital technology to encourage students to become familiar with it(Kali, 2014). The lack of adequate equipment or connectivity, inadequate training for teachers, and digital literacy for both teachers and students are major challenges in adopting digital technology in education (Rintaningrum, 2018). However, the proper adoption of digital technologies in the classroom can offer opportunities such as capacity enhancement, ease of lesson planning and practice, access to authentic materials, and the creation of a virtual group of teachers to share issues and challenges. Teachers and learners need to be aware of the significance of digital technologies in the present context of teaching and learning. The quality of education depends on the development of infrastructure related to digital technology, and different kinds of capacity-building and career-development training need to be conducted in schools. The increasing use of digital technologies in instruction, learning, and assessment can increase the quality of education and associate learning with real-life situations.

Conclusion

The adoption of digital technologies in the teaching and learning process is crucial for enhancing the capacity of teachers and learners to use digitally advanced tools and techniques in education. However, the study found that there is a gap between the challenges and opportunities of adopting digital technologies in the field of education, mostly in the teaching and learning process. The major challenges include the lack of infrastructure, inadequate number of digital devices, lack of digital literacy among teachers, and insufficient training on using digital technologies in proper ways. The lack of proper backup systems of electricity and stable internet services in most community schools of Nepal is also a significant challenge.

To promote the proper use of digital technologies in the classroom, it is necessary to manage the proper infrastructure and technologies in the classroom and provide proper training to enhance the capacity of teachers on digital literacy. Teachers should also have a keen interest in the use of digital technologies in their classroom teaching, and students should be encouraged to submit assignments in the form of soft files through email.

The study also revealed that the proper adoption of technology helps individual teachers to enhance their capacity related to technologies and makes the learning classroom interesting, enjoyable, and interactive to achieve the goal of education. The administrative section of education can also be managed and accountable through the proper use of digital technologies.

In brief, the proper adoption of digital technologies in the teaching and learning process is essential for enhancing the quality of education and associating learning with real-life situations. The challenges of adopting digital technologies in the classroom can be overcome through proper infrastructure, digital literacy, and training.

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