Teachers' Knowledge about the use of ICT in the ELT Classroom
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Abstract

Information and Communication Technology (ICT) as a potential tool for enhancing the quality of education in Nepal and other countries. However, there is a lack of research examining secondary level English teachers' knowledge in the integration of ICT. In this study, we aimed to investigate teachers' knowledge in the use of ICT in secondary English classrooms. The study employed a quantitative method with a cross -sectional survey approach. It was conducted in Sudurpaschim province where the data were collected from 150 secondary English teachers through a questionnaire survey. The findings suggest that, to a large extent, secondary level English teachers have a largely inadequate knowledge of ICT and knowledge of ICT use in teaching. Based on the findings, we argue that it is crucial to improve English teachers' knowledge of both aspects, and more training courses for teachers' knowledge development are needed.

Keywords: ICT, english education, teacher education, teacher knowledge.

Introduction

In the present world, we all are living in the age of digital technology, which has been used worldwide to facilitate people getting access to education, science, business, and other sectors. In developed and developing countries, ICT is currently being used in education to support students to learn more effectively and help teachers to increase their knowledge and to complete administrative tasks in a perfect way. Many of the students have the world in their palm and education is no limited within the four walls of a classroom for them, it is available 'any time anywhere'. Education at present is more interactive among the learners, and the learners and the teachers than it was some years before. The remarkable change in methods of teaching and learning is that the blackboard and textbook-based traditions are being replaced by the interactive, whiteboard, web-based for some years now. According to Poudel (2018), teaching is dependent on the gradual integration of ICTs. With the progressiveness of ICTs usage among society, 21st-century teachers are expected to integrate technology into teaching languages in the classroom successfully. Undeniably, considering the expectation of the positive vibes and the complications (internal and external factors) that could contribute to teachers' expectations and motives to incorporate ICTs into their language classrooms is a vital aspect. Grabe and Grabe (2005, p.3) state " ICT can also play different instructional roles such as make the learners feel relax to learn the various topics and tasks and also make the learners active because they learn by applying the technology to a task somewhat than being directly instructed." This indicated there are a number of free websites that provide such an opportunity to teachers and the learners. Teachers may benefit from designing materials, preparing lesson plans and preparing effective strategies. Learners may get benefits to improve their listening, speaking, reading and writing skills. Moreover, the teachers and the learners of ESL and EFL countries get real exposure for teaching and learning English so they can build up their confidence which helps to reduce intercultural tensions by using different English teaching and learning website. Using ICT in the language classrooms has become an indispensable part of present-day pedagogy. Every country shows

its great attention to develop worldwide human resources on the base of e-learning. Government, researchers, school leaders, teachers, parents, and learners consider technology to be a significant part of education.

In Nepal, it is acknowledged that advancement in technology has an influence on the way people create, share, use and develop information in society and that young people must to be skillful in the use of ICT. English teachers show their great interest and motivation to use ICT in their classroom and professional development. However, there are several barriers, which stop them to use it, and the ICT tool is limited and focused on a narrow range of applications, mainly for personal purposes.

So, we can say that integrating ICTs can contribute to lifelong learning, perhaps most apparent in the use of internet, which represents a worldwide library and resource center where information can be accessed fast and competently: learners can thus benefit from a huge range of authentic language materials and resources which can be selected according to learning needs, aims, styles, strategies, and preferences.

ICTs in English Language Teaching and Learning

Information and Communication Technology (ICT) has been used in almost all fields of human life, including in education. The utilization of ICT in education has recently started to appeal to the potential and significant progress in language learning. It has become a major issue in the education world and has been used from pre-school through to university that could facilitate students and teachers in the teaching and learning process. For educational change and reform, ICT has been publicized as potentially powerful empowering tools. The computers play an important role in the learning process especially, in learning the language. As Hartoyo (2008) mentions in his book, a computer is a tool and medium that facilitates people in learning a language, although the effectiveness of learning depends totally on the users. In this era, ICT has been grown up not only from the quality but also the efficiency. They are moving fast without any limit from every product, ICTs are moving fast. The need of technological innovation has brought the communication revolution and rapid development of technological applications in teaching and learning. In Nepal, ICT has made contribution to improving language communication. Every school has implied the ICT to facilitate the teacher to teach the students in the classroom. Different kinds of applications that they use in the classroom improved and boosted the better lesson.

Teachers' knowledge in ICT

Knowledge is a particularly important component of teachers' ICT attributes (Van Braak, 2001). A lack of teacher knowledge or competencies related to the use of ICT for educational purposes has been identified as the major barrier to effective ICT implementation (Bingimlas,2009). For example, Williams, Coles, Wilson, Richardson, and Tuson (2002) claimed that knowledge and competence were required for teachers at an early stage of ICT development. It is, however, important to note that focusing on teachers' technical competence alone is insufficient to achieve successful technology implementation (Lloyd, 2010).

Cox & Graham, 2009 stated that the TPACK theory has been used to examine teachers' knowledge with regards to the use of educational technologies in more developed Western nations. However, the applicability of this framework to English teachers who live in a different cultural and economic environment is unknown. Since Saudi Nepal has taken major steps towards ICT implementation in education, there is a strong need to investigate teachers' knowledge and implementation of ICT in classroom practices and the factors that might influence their implementations. Therefore, to have a better understanding of where English teachers stand in the implementation of ICT, the TPACK theory was adopted in the present study.

The theory assumes that teacher use of ICT has a relationship with their TPACK, that is, teachers having "strong" TPACK will be more successful with the implementation of ICT in their classrooms. It, therefore, seems reasonable to analyze the effectiveness of ICT implementation from the perspective of the TPACK theory (Joshi et al., 2021). This study assumes that the more TPACK a teacher has, the more effectively ICT will be implemented in their classroom.

Likewise, different types of technology and e-devices such as the internet, computer, blogs, Facebook, and other e-tools are applied by the teachers and students in the field of ELT. They help language teachers to make their professional life easy and language learning very effective and help the English language teachers and learners to know the worldview about English language teaching and learning. ICT helps to know the different methods of ELT as well. Lack of availability and usability the use of ICT is challenging in the ELT classroom in Nepal. This study mainly centralizes its focus on the use of integrating ICT in the secondary English Language Classroom and to explore teachers' knowledge, perception, and their practices in the implementation of ICT in English language teaching and try to draw some possible conclusions.

Aims and Research Question

The aim of this study was to investigate secondary Level English teachers' knowledge about ICT and the use of ICT. This study addressed teachers' knowledge into two domains: knowledge of ICT and knowledge of ICT use in teaching. Specifically, the study seeks to answer the following research questions:

What knowledge do secondary level English teachers have about ICT and its use in teaching?

Research Design

The study adopted a quantitative approach, as it is considered to provide more reliability, validity, objectivity and generalizability to the findings. More specially, a questionnaire can be administered to a large number of participants. As it has been argued, if the researchers collects data based on a representative sample of the population, by employing a quantitative approach, they are more able to generalize statements made about the topic being examined.

Data Analysis

Socio-demographic characteristics (n=150)

Tables 1 shows that equal number (33.33%) of the participants are from three districts Kailali, Achham and Bajhang. With respect to sex 98% are males and only 2% are females. Under qualification 20.7% participants have bachelor's degree and 79.3% of them have master/MPhil qualification. Under experiences 14% have less than 5 years experiences, 44.7% have 5-10 years experiences, 20.7% have 11-15 years experiences, 16% have 16-20 years experiences and only 4.7% participants have more than 20 years experiences. Around two-third (68%) of the participants have temporary and one third (32%) have permanent job. Around two-third (62%) participants have digital devices and more than one-third (38%) of them have not any digital devices where digital devices represents laptop or laptop under this study. Around one-fifth (19.3%) of the schools have poor condition of the digital resources where as that rate is only 3.3% under very good condition and 42% institution have in good condition. Additionally, the teachers who took any ICT related training is only 18.3% whereas 81.3% of them did not take any types of training.

Table 1 Socio-demographic characteristics (n=150)

Socio-demographic characteristics Districts	Categories	Frequency	Percentage
	Achham	50	33.3
	Bajhang	50	33.3
	Kailali	50	33.3
Sex			
	Female	3	2.0
	Male	147	98.0
Qualification			
	Bachelor	31	20.7
	Master/MPhil	119	79.3
Experience			
	Less than 5 years	21	14.0
	5 - 10 years	67	44.7
	11 - 15 years	31	20.7
	16 - 20 years	24	16.0
	More than 20 years	7	4.7
Employment Status			
	Permanent	48	32.0
	Temporary	102	68.0
Having digital devices			
	No	57	38.0
	Yes	93	62.0
Availability of digital resources in school			
	Poor	29	19.3
	Moderate	53	35.3
	Good	63	42.0
	Very good	5	3.3
Training status			
	No	122	81.3
	Yes	28	18.7

Objectives of the Study
The study have the following objective:
To identify English language teacher's knowledge about ICT.
Hypothesis
H_01: There is no significant different in the teacher's knowledge of using ICT in ELTL with respect to districts, qualifications, experience, employment status, availability of digital devices, availability of digital resources in school and ICT training status of english teachers.
Level 3.67-5 High, 2.34-3.66 Medium and below 2.34 Low
Findings of objective 1 (To identify English language teacher's knowledge about ICT)
Teachers knowledge in ICT usage in ELTL

Overall analysis of the Table 2 showed that level of knowledge in ICT usages in ELTL of English teachers is medium (Mean=3.54, SD=0.7). However, in sub-dimension wise results fundamental concept of digital devices found to be high (Mean=3.8, SD=0.65) and medium in remaining sub-dimensions as software and mobile application (Mean=3.34, SD=0.75), internet surfing (Mean=3.6, SD=0.77), hardware (Mean=3.59, SD=0.75), and

teaching and learning (Mean=3.55, SD=0.83). However, the level of the teachers in the knowledge of teachers found to be medium (Mean=3.54, SD=0.7).

Based on the item wise result, the level of knowledge found to be comparatively high in turn on and shutdown the computer/laptop (Mean=4.17, SD=0.6), use of basic of operating computer as use of keyboard, mouse etc. (Mean=4.07, SD=0.83) and operate a Tablet/Mobile device (Mean=4.09, SD=1.05) and poor in use of plagiarism software (Mean=2.69, SD=1.12) and use virtual classroom with Zoom, Teams, Google meet Google Hangout, etc. (Mean=2.69, SD=1.12). These result shows that the knowledge of ICT knowledge found to be medium in almost items so special training and skill enhancement programs are needed to the teachers and the training and skill enhancement programs should be focus on the knowledge of software and mobile application, internet surfing, hardware and teaching and learning.

Table 2 Teachers' Knowledge of ICT Use in English language Teaching and Learning
(SD = Strongly Disagree, A = Agree, D = Disagree, SA = Strongly Agree, UD = Undecided)

SN	Statement	Response					Mean	S.D.	level
		SD	D	N	A	SA			
	Fundamental Concept of Digital device								
	I can turn on and shut down the computer /Laptop	0.7	1.3	2.7	70.7	24.7	4.17	0.60	High
	I know basic of operating computer (using keyboard, mouse … etc.)	2.7	4.0	2.7	64.7	26.0	4.07	0.83	High
	I can organize files and folders in the Computer	4.7	12.7	6.0	55.3	21.3	3.76	1.07	High
	I can manage the files (save, delete, move create etc.)	6.0	26.7	8.0	43.3	16.0	3.37	1.21	Medium
	I can search for the saved data on the hard disk or compact disk	5.3	10.7	7.3	57.3	19.3	3.75	1.06	High
	I can print/photocopy of documents	4.0	12.7	3.3	58.0	22.0	3.81	1.05	High
	Total of Fundamental Concept of Digital device						3.8	0.65	High
	Software and Mobile Application								
	I know how to use the word processing software (e.g. MS Word)	2.7	11.3	5.3	61.3	19.3	3.83	0.96	High
	I know how to use presentation software (e.g. MS PowerPoint)	4.7	18.0	6.7	56.0	14.7	3.58	1.09	Medium
	I know how to use the spelling checker software e.g. Grammarly	4.7	21.3	10.7	50.7	12.7	3.45	1.10	Medium
	I know how to use the e-dictionary	5.3	10.7	7.3	57.3	19.3	3.75	1.06	High
	I know how to use the paraphrasing software	7.3	34.0	15.3	34.0	9.3	3.04	1.16	Medium
	I know how to use plagiarism software	10.7	44.0	18.0	20.7	6.7	2.69	1.12	Medium
	I know how to use the English grammar checker software	7.3	23.3	8.0	50.7	10.7	3.34	1.16	Medium
	I know how to use the pronunciation software	3.3	22.0	6.0	55.3	13.3	3.53	1.08	Medium
	I can design program (Adobe Photoshop, Flash, Paint, digital photos movies or other graphics)	7.3	26.7	11.3	41.3	13.3	3.27	1.20	Medium
	I can use a spreadsheet to plot a	11.3	27.3	10.7	39.3	11.3	3.12	1.25	Medium

graph (MS –Excel)								
I can download and install software and mobile Apps	3.3	12.7	5.3	58.0	20.7	3.80	1.02	High
I can use virtual classroom with Zoom, Teams, Google meet Google Hangout, etc.	10.7	44.0	18.0	20.7	6.7	2.69	1.12	Medium
Total of Software and Mobile Application						3.34	0.75	Medium
Internet surfing								
I know how to use the Google site for authentic ELTL materials	6.7	16.7	7.3	57.3	12.0	3.51	1.11	Medium
I know how to use the sending and receiving SMS, email etc.	4.0	7.3	3.3	64.0	21.3	3.91	0.95	High
I know how to use Web-Based Applications (e.g. *YouTube,.*) in teaching and learning	4.0	9.3	2.0	66.0	18.7	3.86	0.96	High
I can edit text online	6.0	28.0	10.7	44.7	10.7	3.26	1.16	Medium
I can develop a questionnaire in online	9.3	23.3	10.0	48.0	9.3	3.25	1.19	Medium
I can search the information on the Internet	6.0	22.0	6.7	54.0	11.3	3.43	1.13	Medium
I can participate in social networks (e.g. Facebook, YouTube, Viber, Skype, WhatsApp)	2.7	10.0	3.3	63.3	11.3	3.89	0.94	Medium
I can download or upload curriculum resources from/to website or learning platforms for students to use	3.3	14.0	5.3	58.7	18.7	3.75	1.02	High
Total of Internet surfing						3.6	0.77	Medium
Hardware								
I know how to operate a Tablet/Mobile Device	5.3	4.7	4.0	47.3	38.7	4.09	1.05	High
I know how to operate and use multimedia in the classroom	4.7	13.3	4.0	59.3	18.7	3.74	1.06	High
I can use of digital camera	3.3	13.3	3.3	64.0	16.0	3.76	0.99	High
I can prepare digital materials to use with an interactive whiteboard	14.7	16.7	22.7	34.0	12.0	3.12	1.25	Medium
I can use of storage devices (Hard disk, CD-ROM, pen drive etc.)	6.0	29.3	11.3	41.3	12.0	3.24	1.17	Medium
Total Hardware						3.59	0.77	Medium
Teaching and Learning								
I can use ICT in teaching by employing collaborative learning	5.3	22.0	6.0	55.3	11.3	3.45	1.12	Medium
I can use ICT to represent English language communicating ideas.	2.7	18.7	4.0	60.7	14.0	3.65	1.02	Medium
I can use ICT to communicate English processes.	4.0	9.3	2.7	68.7	15.3	3.82	0.94	High
I can use ICT to solve English language problems e.g. spelling, meaning.	3.3	13.3	3.3	64.0	16.0	3.76	0.99	High
I can use ICT in teaching by employing direct instruction	5.3	22.0	5.3	55.3	12.0	3.47	1.12	Medium
I can use ICT in teaching by employing discovery learning	6.0	26.0	7.3	49.3	11.3	3.34	1.16	Medium

.	I can use ICT in teaching that enhances English language content and how it taught	3.3	16.7	3.3	60.7	16.0	3.69	1.04	High
.	I can use ICT to teach topics of English that are better learned when employing specific teaching approaches	5.3	22.0	4.7	58.0	10.0	3.45	1.10	Medium
.	I can use ICT to incorporate authentic tasks in the teaching of English language through project-based learning	6.0	24.0	6.0	55.3	8.7	3.37	1.12	Medium
.	I can use ICT to teach students to develop their English language problem solving through inquiry-based learning	5.3	20.0	2.7	60.7	11.3	3.53	1.10	Medium
.	I can produce a text using a word processing program	8.7	22.7	6.0	52.0	10.7	3.33	1.19	Medium
.	I can suggest students about internet surfing for English Language learning	2.7	14.0	3.3	64.0	16.0	3.77	0.97	High
.	I can suggest students about ethical issues in using digital resources	5.3	14.0	2.7	63.3	14.7	3.68	1.06	High
.	I can make a good blend of ICT tools in my face to face teaching.	9.3	21.3	6.7	48.7	14.0	3.37	1.23	Medium
	Total ofTeaching and Learning						3.55	0.83	Medium
	Total						3.54	0.70	Medium

Result of H_01 with respect to five dimensions of the knowledge of using ICT in ELTL (n=150)

Table 3 shows that significance results are found in fundamental concept of computer with respect to teachers teaching districts and ICT training status of the teachers in favor of English teachers of Bajhang districts and those who took ICT related training with their counterparts. In remaining case of fundamental concept of computer, software and mobile application, internet surfing, hardware and teaching and learning among remaining socio-demographic characteristics at 95% level of confidence since p-value is greater than 0.05.

Table 3 Significant results on digital skills with different socio demographic characteristics

Socio-demographic characteristics	Frequencies (%)	Fundamental concept of digital resources		Software and mobile applications		Internet surfing		Hardware		Teaching and learning	
		Mean Rank	p-value	Mean Rank	p-value	Mean Rank	p-value	Mean Rank	p-value	Mean Rank	p-value
Districts											
Achham	50(33.3)	73.49	0.05*	81.41	0.29	80.47	0.12	77.18	0.83	78.03	0.81
Bajhang	50(33.3)	86.66		77.07		80.92		76.90		76.05	
Kailali	50(33.3)	66.35		68.02		65.11		72.42		72.42	
Qualification											
Bachelor	31(20.7	68.58	0.32	71.81	0.60	69.13	0.36	75.45	0.99	67.84	0.27
Master/MPhil	119(97.3)	77.30		76.46		77.16		75.51		77.50	
Experience											
Less than 5 years	21(14)	66.43	0.73	79.10	0.70	74.24	0.81	71.26	0.29	69.74	0.85
5 - 10 years	67(44.7)	79.71		79.41		75.54		80.45		79.11	
11 - 15 years	31(20.7)	77.29		72.05		81.06		81.66		74.23	
16 - 20 years	24(16)	71.42		65.31		67.25		61.67		70.29	
More than 20 years	7(4.7)	68.50		77.50		82.57		61.00		81.71	

Employment Status											
Permanent	48(32)	78.58	0.55	76.29	0.88	77.50	0.70	73.66	0.72	80.21	0.36
Temporary	102(68)	74.05		75.13		74.56		76.37		73.28	
Having digital devices											
No	57(38)	72.26	0.47	68.21	0.11	70.30	0.25	72.54	0.51	68.54	0.12
Yes	93(62)	77.48		79.97		78.69		77.32		79.77	
Availability of digital resources in school											
Poor	29(19.3)	72.40	0.83	73.79	0.91	73.41	0.41	68.41	0.71	69.79	0.30
Moderate	53(35.3)	72.62		75.03		68.54		77.11		69.52	
Good	63(42)	79.27		75.60		81.92		76.36		81.73	
Very good	5(3.3)	76.50		89.20		80.50		88.70		93.50	
Training status											
No	122(81.3)	71.89	0.03*	73.80	0.32	73.55	0.25	72.80	0.11	72.93	0.13
Yes	28(18.7)	91.23		82.89		83.98		87.27		86.71	

*p-value≤ 0.05 (i.e. Significant)

Discussion

The findings of the study can be summarized under five headings, which are fundamental concept of digital resources, Software and mobile applications, Internet surfing, Hardware and Teaching and learning. The first shows that teachers' ability in ICT and their ICT use in learning-teaching process are fairly low. The most common uses of ICT are the Internet, e-mail, and word processing, though rarely used. The study also revealed that ICT use in classroom is limited, a finding which is attributed to the level of experience; and the most commonly used ICT types were determined as the Internet, e-mail, and word processing. Teachers' low levels of software use for educational purposes might be strongly influenced by their low levels of expertise and lack of knowledge and experience about how to use and adapt themselves to the program. As a matter of fact, this result is confirmed by the fact that teachers have a low level of ICT knowledge and those previously trained about computers had higher levels of use than those who did not receive any training.

Another finding demonstrates that teachers' level of knowledge of ICT is low as well. According to the results of the study, most teachers know how to use the Internet, email, word processing, graphics and presentation software. The low levels of knowledge on ICT might result from the fact that these technologies require technical knowledge. In relation to these results, another finding is that there is a significant correlation between the levels of knowledge about ICT and the use of ICT in education. This is an important finding as it shows that the higher the level of knowledge on ICT, the higher its level of use in education. Teachers with previous computer experience have higher levels of knowledge on ICT and their ICT use is more frequent. Teacher's levels of ICT use show that they use these technologies as information transmission-based tools. How teachers use ICT in teaching-learning process is affected by their teaching approaches

The majority of participants reported that their knowledge of word processor software (e.g., MS Word) was the highest one which then followed by their knowledge of presentation software (e.g., MS PowerPoint). The finding is not surprising since such software are widely available and commonly used on many occasions. It appears clear from this study that Secondary level English teachers' lack of knowledge of both ICT and ICT use might link to the deficiency of training programs as it was found by Mailizar (2018) that revealed that 35% of Secondary level English teachers had never participated in any ICT-related training course adopt new technologies than digital native and they need more professional development and training concerning ICT and its use in classroom.

Finally, this study suggests that it is crucial to provide Secondary level English teachers with knowledge of ICT and knowledge of ICT use in teaching through providing training courses emphasizing on connection of pedagogical and English language content of ICT integration rather than simply training on technical knowledge for the use of ICT resources. This has been strongly supported by research evidence in the literature (e.g., Koehler & Mishra, 2005).

For example, Koehler and Mishra (2005) argue that, when training teachers to integrate ICT in teaching, it is important to teach ICT in contexts that represent the connection between technology, content and pedagogy.

Conclusion and Recommendation

This study investigated secondary English teachers' knowledge of ICT and teachers' knowledge of ICT use in teaching. The results of this study revealed that, to large extent, Secondary level English teachers had insufficient knowledge of ICT and knowledge of ICT use in teaching. It revealed that , the level of knowledge found to be comparatively high in turn on and shutdown the computer/laptop , use of basic of operating computer and poor in use of plagiarism software) and use virtual classroom with Zoom, Teams, Google meet Google Hangout, etc. These result shows that the knowledge of ICT knowledge found to be medium in almost items so special training and skill enhancement programs are needed to the teachers and the training and skill enhancement programs should be focus on the knowledge of software and mobile application, internet surfing, hardware and teaching and learning

Based on the findings, we suggest several important points that need to take into account. For future research, it needs a further study to examine the development of secondary level school's English teacher's knowledge in the use of ICT for teaching a specific content of English language, such as grammar, story, essay etc. Furthermore, regarding practical implication, the study suggests that Nepali education stakeholders need to facilitate secondary English teachers in improving their knowledge of ICT and knowledge of ICT use in teaching. Particularly, the Nepali government needs to provide ICT training courses to improve not only teachers' technical knowledge of the use of ICT and their pedagogical and English language content knowledge of ICT integration.

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