

## Barriers to Technology Integration in Teaching English as a Second Language among English Educators in Pakistan

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**ABSTRACT** – The integration of information and communication technology is becoming a must for today's English as a second language teaching. Of late, worldwide situations and proven effectiveness have made technology integration necessary for educators to move with the flow. However, technology integration for English as a second language teaching environment among English educators in Pakistan is questionable. Therefore, this study aims to find out the barriers English language educators face in integrating technology in their teaching environments in the country. The study employed a mixed-method research design to collect data via an online questionnaire and interview protocols. The samples consist of 39 tertiary-level Pakistani ESL educators who responded to the online survey, and eight were chosen as interviewees. The findings revealed the unavailability of technology resources and lack of computer knowledge and skills training as part of the educators' professional development as the core barriers to the technology-integration teaching in the country. The study calls for rigorous development and implementation of technology-based facilities and resources from the local authorities to be made available for the educators to incorporate in their English language teaching environments. The research also advocates for more intensive upskilling technology-based training for the educators as part of their continuous professional development programmes.

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## INTRODUCTION

Educators are likely to know about the importance of technology in education because of students' needs. The factor could be one of the reasons for significant methodological and organisational changes in teaching and learning that have occurred during the last three decades. The use of technology is frequent in developed countries, and it has also become the norm of their routine life. However, technology cannot be effective without educators who know about it and are familiar with its implementation to achieve educational goals (DeCoito, & Richardson, 2018). Therefore, the impact of such a use of technology is not measured effectively in many developing countries. Consequently, Pakistan has minimal improvement regarding technology in teaching practices.

ESL teaching in Pakistan does not frequently use technology (Ahmed, Islam, & Hassan, 2020). Traditional language teaching methods are still in use despite the promising technology-based teaching and learning applications (Omar, 2014) in educational environments. Somro et al. (2016) conducted their study in Sind, Pakistan, claiming that the institutions in the area were still running educational programs using outdated techniques. Due to some barriers, Chohan et al. (2018) also identified the educators' disinclination to include technology in their teaching practice. They have had issues integrating technology in teaching due to inadequate technical and technological knowledge and skills, lack of time (Tarus et al., 2015), and the unavailability of specialised tools (Singhavi & Basargekar, 2019). Though there is evidence on the use of smartphones, mobile and tablet technology-integrated devices to change ways in educating learners (Chohan et al., 2018), computers, television, radio, and projectors are still the essential tools used in the country educational fields (Mahmood et al., 2021). Computers help students learn (Fu, 2013), and technology-based teaching is a functional approach to language teaching. It is a learner-centred method in its essence (Hani, 2014).

Several studies on educators and students' perceptions on the use of ICT in language classrooms have been conducted in Pakistan (Khokhar & Javaid, 2016). Specifically, the urgency is to investigate barriers obstructing the use of technology for teaching the language in Pakistan (Aziz & Hamzah, 2020). Knowledge and information about the obstacles to integrating technology can help stakeholders make policies to remove hurdles in technology-integrated teaching of English for the development of ESL in Pakistan. Hence, this study aims to find out the following questions which are:

1. What barriers do English educators face in integrating technology into ESL teaching in Pakistan?
2. What are the perceived ICT and computer competencies of ESL educators in Pakistan?
3. To what extent do ESL educators integrate technology in their language teaching?

## LITERATURE REVIEW

### Barriers to Technology Integration in ESL Teaching

Technology incorporation has become a part of our daily life, including teaching and learning ESL. Nonetheless, the use of technology is rare due to different obstructions educators face in integrating technology in the learning of English as L2. Khan et al. (2012) carried out their research in Bangladesh, which pointed out lack of resources as a significant barrier in integrating technology for teaching a language. Hechter and Vermette's (2013) study in Canada focused on the lack of resources as a substantial barrier against using technology in educational settings. Batane and Ngwake (2017) also reflected on the importance of the availability of technology resources for the possible implementation of it in L2 teaching. The availability of technology resources helps use technology and innovation in teaching and learning English as an L2 (Bao, 2018). A survey by Chohan et al. (2018) revealed that lack of tools, power outages and unavailability of training are the inhibitors to effective implementation of technology in teaching English in Pakistan. To add, recent research by Mahmood et al. (2021) specifically highlighted the importance of teaching aids like computers, printers, and projectors in Pakistan's technology-integration ESL teaching environments.

Educators' knowledge and skills are other barriers to incorporating technology for L2 teaching. Ertmer et al. (2012) asserted knowledge and skill as the apparent barriers in modifying the educators' attitudes and beliefs in adopting technology in their teaching. Buabeng-Andoh (2012) found a similar situation in Ghana. The lack of knowledge and skill is the source of the educators' refusal and neutral behaviours towards integrating ICT in their teaching practices. Mingaine (2013) opined the role of educators to be a crucial element in using technology for teaching; hence, they need to possess sufficient ICT skills to be able to integrate technology in their instructional activities. Saeed (2015) and Zamani et al. (2016) also concurred on the need for adequate knowledge and skill in using technology by the individuals responsible for successfully integrating technology in teaching the language.

Kimmons and Hall (2016) indicated that most educators are willing to integrate technology into their teaching. Still, as Vatanartiran and Karadeniz (2015) remarked earlier, the educators could not do so because they lacked the required knowledge and skills to integrate into their teaching contexts. Factors like educators' beliefs and attitudes are the other vital barriers obstructing technology integration in educational settings (Teo & Zhou, 2017). Abbasi et al. (2021) conducted their study in Pakistan which also focusses on the importance of attitudes as a good predictor for integrating technology in teaching English as L2 in Pakistan. Christopher (2016) and Saxena (2017) also highlighted the lack of knowledge and skill to be the inhibitors for the successful incorporation of technology. Closer to the study hometown, Ali and Azhar (2018), in their study in Balochistan, Pakistan, supported the importance of educators' familiarity with technology in teaching English. Notably, the educators are aware of the plausibility of technology integration in enhancing the effectiveness of L2 teaching. In other words, lack of relevant knowledge and skills are detrimental to implementing technology, innovation, and creativity to teach the language.

In addition, barriers like resources and access to technology can hinder educators' effective incorporation of technology in their teaching practices. Even if educators opt to use technology in their teaching practices, the incorporation of technology is affected by lack of access. Unal and Ozturk (2012), who carried out their study in Turkey, identified unavailability of ICT tools, shortage of ICT-based resources, insufficient time, and lack of training as barriers that impede the use of technology by educators in their classrooms. Chien et al. (2014) highlighted lack of time, improper infrastructure, and unavailability of finance as the main inhibitors educators face in using technology in language teaching practices. Lack of infrastructure includes limited computer supply and improper internet access, which have affected the willingness of educators to adopt technology in their teaching practices.

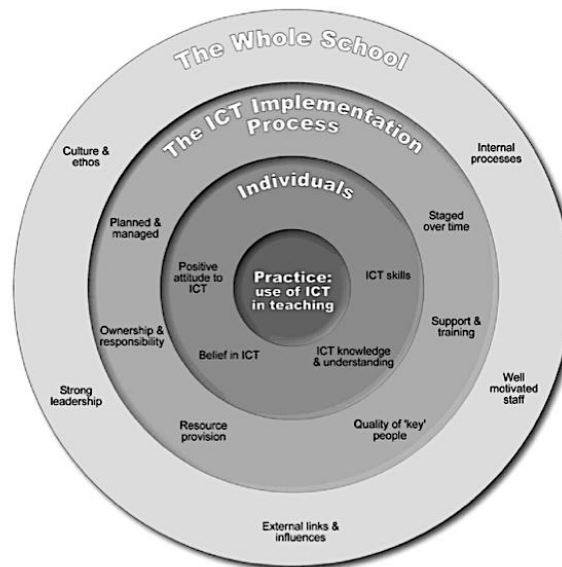
Moreover, the educators' lack of training has also affected technology integration. Apart from limited resources, Iftakhar (2016) and Maduabuchi and Emechebe (2016) recognised that the educators' incompetency in using technology is the scarcity of specific training in updated technologies as the main barrier in technology-based English in Pakistan. Nonetheless, the unavailability of technology tools, knowledge and skills remained the dominant barriers to technology incorporation in the teaching and learning environments (Rosa & Vital, 2017). These findings pointed out the influence of internal and external obstacles on how the educators situated their pedagogy: technology as a tool rather than an embedded part of the learning process (DeCoito & Richardson, 2018). The literature echoed Lawrence and Tar's (2018) admission that insufficient technological resources, lack of ICT training, and inadequate competencies were the main barriers to integrating technology into classroom environments.

### Theoretical Framework for ICT Implementation

The study uses a theoretical and instrumental framework by Tearle (2004) to propose educational transformations in implementing ICT in Pakistan. The theory focuses on several factors in technology incorporation: internal and external factors (Figure 1). Tearle (2003) suggests that internal factors such as educators' attitudes and motivation influence the educators' successful integration of technology in their teaching practices. Other factors for the successful incorporation of technology are external, namely educators' competence, availability of resources, and administrative support. Therefore, this study adopted the model to identify the potential barriers to the implementation and integration in the zoomed-in setting, an ESL teaching environment in Pakistan.

In this study, the importance of integration lies in the changes it can cause in teaching the language. Classroom activities are carried out using technology in a physical, virtual, and blended environment (Doe, 2016). The use of technology enables educators to flexibly design their lessons and address the teaching problems that may not be identified through a traditional approach. Technology-based teaching includes several teaching and learning activities that enhance

students learning (Wang, 2019). Modern educators also adapt rapidly changing technology innovations to innovate their teaching (Ciğerci, 2020) practices.



**Figure 1.** Tearle's Model of Influences on ICT implementation (taken from Tearle, 2004).

It is also believable that incorporating technology in teaching and learning can foster creativity and innovation. Creativity occurs when learners are engaged in critical thinking in taking an independent role in learning which, could also be a factor that motivates educators to improve their pedagogical and technological knowledge (Bedr, 2019). Teaching creatively involves using imaginative approaches to make learning effective, whereas teaching for creativity requires efforts to make learners think creatively. Creativity in teaching promotes student-centred learning (Arifani, 2019), in which students believe actively and are directly involved in learning. Hence, this study highlights the significance of technology-based teaching for independent and constructivist teaching and learning. It also points out the issues to technology integration for the development of English as L2 teaching.

## METHODOLOGY

This study aimed to discover the barriers that ESL educators in Pakistan face in integrating technology in their language teaching. Therefore, a mixed-method approach was employed to collect the quantitative and qualitative data of the research. The quantitative and the qualitative data were triangulated to answer the three research questions. Triangulation enhances the richness and validity of the collected data (Mishra & Rasundram, 2017).

### Sampling

Thirty-nine (39) ESL lecturers and professors (21 male and 18 female) from the Abbottabad district voluntarily participated in the survey. Eight (8) of them volunteered to be interviewees of the study.

### Instrument

Two different instruments were applied for data collection, i.e., the online questionnaire and interview protocols.

### Questionnaire

The questionnaire was adapted from Mohammad and Shafeeq (2016) to suit Pakistan's technology-based ESL teaching context. Seven identified experts in the field validated the questionnaire's content. The reviews from the experts were added to the items in the Google form. The questionnaire has 39 items which are divided into four parts. The first part deals with the sample's demographics (items 1 to 11), and the second part is statements on limitations and required competency for technology integration (items 12 to 26). The third is about the educators' perceived ICT and computer competencies (items 27 to 34); the fourth is about the educators' current practices of technological applications (items 35 to 39). The questionnaire uses five-point Likert scales of frequency ranging from high to low and the yes/no option for the demographics data.

### Semi-structured Interview Question

A set of semi-structured interview questions was used in the study to gather responses from eight interviewees. The participants were the lecturers and professors practising at different colleges in Abbottabad. The responses were transcribed, coded, and major themes were discussed in the qualitative analysis of the study. Triangulation of different strands of data was achieved through a comparison between the findings.

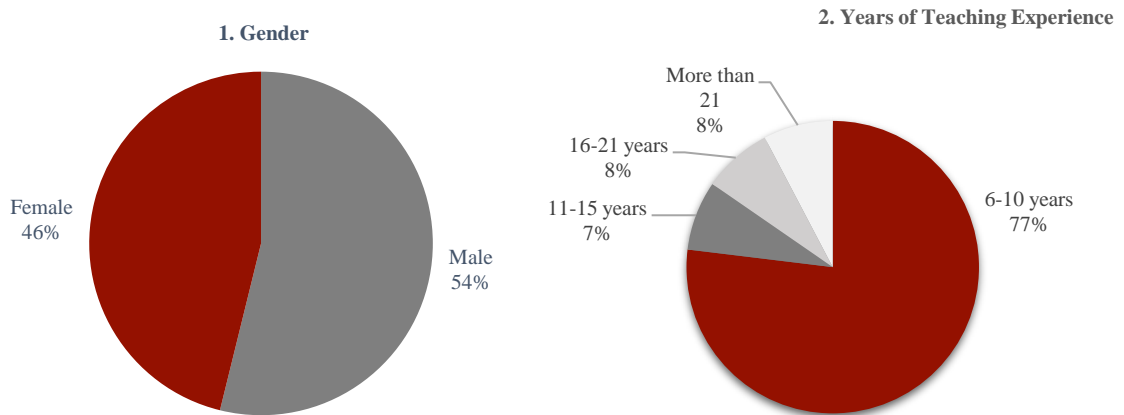
**Data Collection and Analysis Procedures**

Both the quantitative and qualitative data collection instruments were sent to the educators through the WhatsApp application with the help of gatekeepers based on the purposive sampling technique. A pilot study was carried out and had an overall Cronbach alpha of .89. The participants then had approximately two weeks to complete the questionnaire and answer the interview questions. Descriptive statistics were used to analyse the quantitative data using SPSS 22, whilst themes and codes were gathered and analysed as the qualitative data for the study.

**FINDINGS**

**Demographic Data for the Study**

The demographic data on gender and years of teaching experience as presented in Figure 2 reflects the actual population of English language educators in Pakistan. The educators had various teaching experiences from a minimum of six to more than 21 years. To add, Table 1 presents the percentages of ‘yes’ (ranging from more than 50% and close to 100%) were more than the ‘no’. The data show that most educators had access to technology tools and resources inside and outside their education institutions.



**Figure 2.** Summary of the Sample Demographics, i.e., Gender and Years of Teaching Experience.

**Table 1.** Sampling’s Access to Technology Tools & Resources

Item	Technology Tools & Resources	Sample (n=39)			
		Yes	%	No	%
3	Access to computer at home	31	79.5	8	20.5
4	Access to the internet at home	35	89.7	4	10.3
5	Have an email address	38	97.4	1	2.6
6	Have a computer with appropriate memory and speed	31	79.5	8	20.5
7	Access to the internet at your institute	27	69.2	12	30.8
8	Have a desktop/laptop with proper memory and speed	31	79.5	8	20.5
9	Computers at the institute are connected to other ICT tools	22	56.4	17	43.6
10	Access to printer	22	56.4	17	43.6
11	Access to scanner	22	56.4	17	43.6

**ESL Educators’ Barriers to Technology-integration in Teaching English**

Table 2 presents a low cumulative score (2.0705) of items 12, 15, 16 and 17 (2.0705), which reveal an unsatisfactory integration of technology in educational settings in Pakistan. Moreover, a low cumulative mean score (1.4974) of item numbers 13, 14, 18, 19 and 20 put forward knowledge and training as highly notable barriers to incorporating technology in Pakistan’s teaching and learning environments. Similarly, Items 34 and 35, with an average cumulative score of 2.92305, reflected on the instructional use of technology. The score revealed the educators’ moderate use of technology in their teaching practices during the term.

**Table 2.** ESL Educators' Barriers to Technology Integration in Teaching ESL

Item	Description	Mean	Std. Deviation
12	ICT resources accessibility	1.9744	.87320
13	ICT training courses	1.5383	.91324
14	ICT Knowledge and skills	1.4615	.64262
15	ICT Integration	2.3333	.83771
16	Use of computer at institute	2.7179	.55954
17	Access to appropriate software bank for teaching English	1.2564	.44236
18	Attending computer courses in preservice training	1.3590	.48597
19	Attending courses during in-service training	1.1795	.38878
20	Number of ICT courses during service	1.9487	1.57194
34	Using a computer as an instructional aid	2.9231	1.01007
35	Using computer during term	2.9231	1.03580
36	Using ICT to write an article	2.6154	1.06661
37	Using ICT to get informed in scholarly news	2.7692	1.03775
38	Using ICT to chat	2.7949	1.12810
39	Using ICT to receive a salary invoice receipt	2.5385	1.02202

The results from item 12 with a low mean score (1.9744) manifested limited resources as an obstruction the educators face in using technology to teach the L2. Items 36 and 37, with a cumulative mean score of 2.6923, also revealed the educators' average use of technology for research activities. Moreover, items 38 and 39, with a cumulative mean score of 2.6667, showed the educators' personal use of technology. This study found similar findings with Ahmad and Rafique's (2016), in which technology was commonly used for personal reasons rather than educational purposes. Nevertheless, the ESL educators' integration and the use of technology fell short of the expectations. It was affected by the barriers such as limited technology access, unavailability of technology training and lack of knowledge and skills (Chien et al., 2014).

Eight (8) interviewees responded to the interview questions about the barriers to technology incorporation in their ESL teaching. The majority of the interviewees (62.5%) expressed inadequate technical knowledge and skills as a severe barrier to integrating technology into their language teaching. Another three interviewees (37.5%) perceived a lack of resources as a significant barrier to using technology for teaching and learning English as a second language.

T3 as an interviewee points out lack of technological knowledge as a barrier on the part of teachers as follows:

"Less knowledge of ICT and non-availability of proper training at the institute"

Similarly T7 evince the lack of resources as barrier to the incorporation of technology as under:

"Lack of resources among teaching, lack of affective training facing technical problems in use".

### ESL Educators' Perceived ICT and Computer Competency to Integrate Technology

The quantitative data findings in Table 3 reflect on the educators' knowledge, competency and awareness of the utilisation of technology in teaching English as an L2. A high cumulative mean score of 2.8632 from items 21, 22 and 23 displayed an average level of competency of the educators towards integrating technology in their teaching practices. Item 24 had a high mean score of 3.5641, indicating a significant competency level of the educators in using PowerPoint to teach English.

**Table 3.** ESL Educators' Perceived Competency in Integrating Technology

Item	Description	Mean	Std. Deviation
21	Familiarity with hardware	2.6667	.83771
22	Familiarity with operational system	2.7179	.75911
23	Familiarity with Microsoft Word	3.2051	.73196
24	Familiarity with PowerPoint	3.5641	.75376
25	Familiarity with Excel	2.9744	.95936
26	Familiarity with the email applications	3.9744	.70663
27	Familiarity with sending files as attachments	3.9744	.70663
28	Familiarity with chat and social media tools	4.0513	.79302

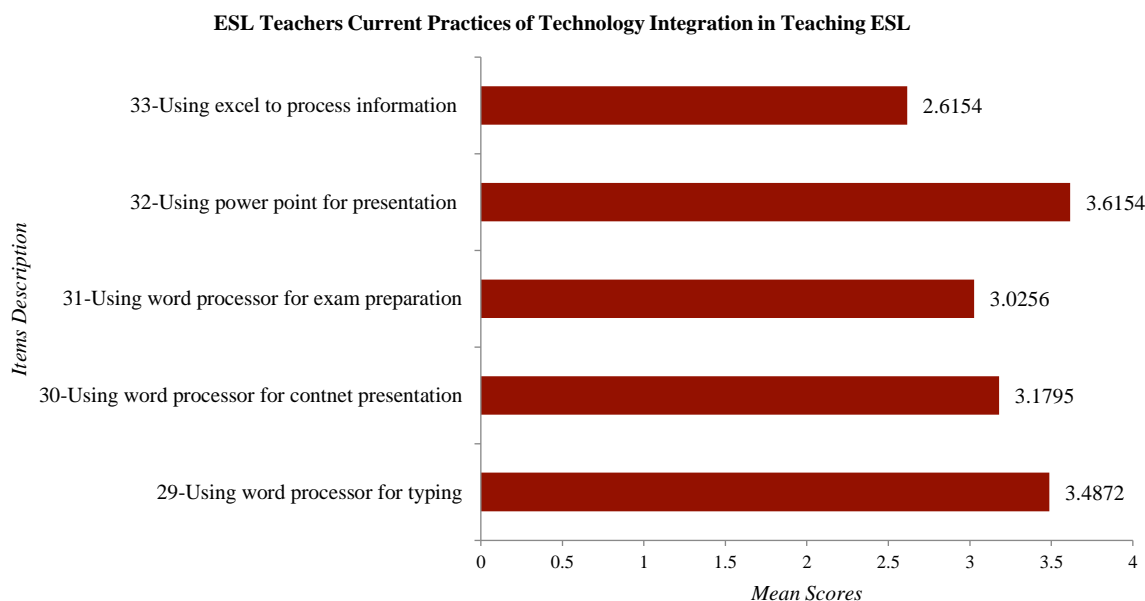
Moreover, item 25, with an average mean score of 2.9744, reflected on the intermediate competency level of educators in utilising technology for teaching English as an L2. Item 26 and 27 with high mean scores (3.9744 and 3.9744) reflected the educators' high competency in using emails and sending files as attachments to their students through these emails. Predictably, item 28 revealed the highest level of educators' perceived competency in using chat and other social



media applications. Though educators' highly perceived competency level in using social media and chat could seemingly be for teaching purposes, users of social media applications make use of them more for social than for an educational purpose (Ahmed & Rafique, 2016). Regardless, the educators' above average perceived competency levels for all the applications demonstrated the educators possess the essential knowledge and skills in technology and availability of access and resources for technology which needs to be expanded and optimised for L2 teaching and learning purposes.

### ESL Educators' Current Technology Integration Practices in Teaching English

The educators need to utilise technology to optimise their ESL teaching. Figure 3 presents ESL educators' current technology integration practices in their language teaching. Cumulative moderate mean scores (3.1025) of items 30 and 31 claimed an average use of word processors by the educators to prepare tests and present English content in an L2 classroom. Item 29 has a high mean score of 3.4872 for using Microsoft Word, which discloses a meaningful use of the technology application. Also, item 32, with a comparatively high mean score, reflects the importance of Microsoft PowerPoint presentation in teaching English. On the other hand, item 33 has an average score (2.6154) which sheds light on comparatively less use of excel for processing information in teaching scenarios of English as L2.



**Figure 3.** Mean Scores of ESL Educators' Current Practices in Integrating Technology in Teaching.

The interviewees' responses endorsed the quantitative results of the study on the current practices of technology integration in their teaching. Four (50%) out of eight interviewees utilised MS PowerPoint for teaching English as an L2. Another three (37.5%) out of eight interviewees employed Google scholars, social blogs, and social networks to teaching English. The interviewees revealed an effectual use of technology for teaching English in the Pakistani context. They subsequently urged for the more extensive implementation of technology to reach optimal service in ELT and learning.

T6 as an interviewee professes the use of power point during the teaching of English in the following way:

"I use laptop, CPU, PowerPoint while teaching English language".

Likewise T3 also claims the use of different websites in teaching English as a L2:

"I use internet websites like Google scholar to gather data for my lectures"

## DISCUSSION

The most significant barriers as per the findings of the quantitative instrument of the study were a lack of technical knowledge and skills, limited access to resources and an absence of technology-related training for the educators to successfully enable them to use technology for teaching English as an L2. The data also demonstrated the inability of the educators in Pakistan to incorporate technology into English teaching due to the unavailability of hardware and software resources. Table 2 displays different uses of technology and the obstructions the educators face when integrating technology into teaching English as an L2.

Furthermore, Table 2 endorses the responses from the interviewees. The majority of the interviewees pointed out the lack of technical knowledge and skill to be an effective inhibitor to technology integration for teaching English. The second prevalent barrier that the interviewees mentioned was the scarcity of resources, followed by the lack of specific training on using technology for teaching English as L2. Inasmuch, these revelations align with Lawrence and Tar's (2018) in exposing barriers to technology incorporation for teaching English.

Table 3 presents the educators' moderate perceived competency in integrating technology to teach the language. The educators also have an average hardware competency, operational system use and word processor for incorporating technology in teaching. The study participants seem to be very competent in using social media skills. Nevertheless, being skilful in social media tools could be handy for entertainment rather than attaining educational objectives (Yunus et al., 2013). Millions of their users use social networks, but the emphasis is on social needs rather than the achievement of educational purposes (Ahmed & Rafique, 2016; Yunus et al., 2013). On the other hand, the platforms can provide an excellent chance for the educators to offer their students everyday learning experiences from the most competent people worldwide or prospects to interact with native speakers (Nussbaum-Beach, 2012).

Finally, the findings shed light on the different ways the educators used technology in their teaching of English. Educators used MS word processors for typing, presenting content, and preparing examinations. The educators also utilised PowerPoint for presentations and MS Excel to process information in their teaching. The study is similar to the research carried out by Abbasi et al. (2021) which also claims the use of different software such as PowerPoint by teachers in teaching English as L2 in Pakistan. Nonetheless, technology adoption among English educators in Pakistan would not fully achieve educational objectives due to the identified external barriers similar to ones revealed by Chohan et al. (2018).

## CONCLUSION AND RECOMMENDATION

This research focuses on technology integration barriers in teaching English as L2 in Pakistan. Particularly in teaching ESL, the findings substantiated that technology integration in Pakistan education institutions is not optimal. The educators face difficulties integrating technology for teaching English because of some external and internal hurdles like lack of technology resources and unavailability of different modes of technology, limited competency and lack of training. The significance of these factors as barriers to technology integration is similar to Tearle's (2004) instrumental framework for implementing change in ICT in education which is the theoretical model adopted for the study. The everyday use of technology can impact the development of L2 in Pakistan; unfortunately, its teaching environment is still incompatible with the rest of the world.

The results highlight the need for stakeholders to stipulate practical measures in upgrading the technological infrastructures and technical support for the educators' optimal use of technology in their teaching practices. Preservice and in-service ESL educators in Pakistan need to undergo technology-related training to increase their awareness of technological advantages and benefits for the country education system in the long run. Institutional and departmental levels training sessions are commended for providing the educators with continuous technical knowledge and skills in creating creative and innovative activities and materials to accommodate contemporary students' trends and interests. In other words, skilful technological tools utilisation for full-fledged ELT is indispensable to motivate creativity and innovation in ESL environments in the country.

Furthermore, the ESL educators' findings in integrating technology in their teaching have provided the basis to inform researchers and relevant policymakers in the country to effectively address the barriers. At the institutional level, the information is a well-grounded argument to establish a language resource centre for Pakistani ESL students to learn the English language actively. Lastly, the study highlights the vital needs for local contexts future research to enhance ELT technology's integration and implementation for more tangible learning outcomes.

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