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Application of ICT in the ESL Teaching of the Higher Education Sector: A Systematic Literature Review

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Abstract

Language teaching and learning are becoming more sophisticated with the application of technological innovations in the classroom. The research on applying Information and Communication Technology (ICT) in the ESL classroom in the higher education sector has increased during the past few years. The development of technology goes hand in hand with English language teaching. This study is a review in nature and aims to provide a comprehensive insight into the application of ICT in the ESL classroom, paying special reference to teaching and learning. The study is descriptive in review, and the data were collected from the research papers published and analysed qualitatively. Hence, the study employed a descriptive research design model. The findings suggested that ICT in ESL teaching supports interactive teaching and learning styles, providing opportunities for creativity with sophisticated materials that provide updated information on areas of learning. The paradigm shift of the learner from being a receptive participant to an active seeker of knowledge and the role of the teacher being an authoritarian to a facilitator were useful findings of the study. On the part of

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the learner, the self-regulated learning facility is encouraged by ICT-mediated teaching, providing ample freedom to the learner. Further, the use of ICT in the classroom helps to motivate students and create enthusiasm for the lessons taught through the engagement of students with commitment. In the case of assessments, ICT tools can be used effectively, extending freedom for the learner and facilitating the teacher to keep records of students' progress.

Keywords: ICT applications, English language teaching, ESL assessment, Internet, Pedagogy

Introduction

The enhancement of education through the emerging development of technology is a growing phenomenon today. In the context of teaching and learning, technology is engaging, facilitating both the teacher and the student. There is a growing consensus that technology is helpful for teachers and students (Paraiso, 2010; Silvernail & Gritter, 2007). The development of technology goes hand in hand with education; much of the diversity and enhancement in education today is attributed to technology. In the case of language education, both the teaching and learning process are enormously facilitated by the development of Information and Communication Technology (ICT), a branch of technology. ICT can be defined as a diverse set of technological tools and resources used to communicate, create, disseminate, store, and manage information with the facilitation of computers, laptops, the internet, broadcasting technologies such as radio and television, printers, scanners, multimedia, software programmes, and interactive teaching box.

In ESL (English as a Second Language), teachers specialize in helping non-native speakers of all ages and levels to learn the formal grammar, vocabulary, and pronunciation of spoken and written English while giving them confidence in the common usage of the language to communicate clearly and comfortably. To facilitate the teaching of English in the higher education sector, the use of traditional resources such as teachers, textbooks, blackboards, and perhaps the OHP (Overhead Projector) is inadequate, given the diversity of areas involved in ESL teaching. Furthermore, when teaching oral skills, teachers are confronted with challenges in creating an authentic learning environment and exposure in the form of input using only the

traditional resources available in the classroom. In turn, this limitation also affects students in their learning process. However, with the invention of ICT, ESL teaching and learning are facilitated as the technology could be used to create authentic English learning environments for students.

Purpose of the study

The study of the enormous contribution of ICT for the enhancement of education in general and ESP, in particular, is a growing phenomenon in the present world today. Therefore, exploring the avenues and recommendations of ICT-dominant pedagogy in English language teaching through the literature available in the specified field is the main purpose of the study. In the process of reviewing the literature, the following research questions are focused on:

1. What are the significant areas that have been considered important in ICT-based ESL teaching?
2. How has ICT enhanced teaching and learning in the ESL context?

In the following sections, the methodology used in the study, a review of the literature, findings, and conclusion are presented.

Methodology

The purpose of the study is to identify areas applicable to ESL teaching with the assistance of ICT through the literature. Therefore, this study is descriptive; data were collected from the published research papers, and the data was analyzed qualitatively. The study employed qualitative descriptive research design, a theory-based research method describing the research's primary subject matter. This type of research design uses data collection techniques like natural observation, case studies, and surveys to derive results.

Literature review

The review of literature in the study focuses on areas concerning ESL teaching and the assistance extended for learning and teaching with the help of ICT. The review in the literature section is based on the purpose of the study supported by the research questions.

The learning environment created by ICT in the language classroom.

The term language classroom in this paper involves the actions of teaching and learning processes involved. The involvement of ICT in the language teaching environment has given learners real-life contact and exposure to the cultures of the people and the countries where the target language is spoken. In the language classroom, using ICT, particularly email, blogs, video conferencing, and internet-supported resources, facilitates learners' interaction and communication with the target language by enabling them to use language in real-life contexts. ICT-supported teaching enhances interactive teaching and learning styles and provides opportunities for creativity in ESL settings. Through technology-assisted learning, children become more engaged in their own learning pace. The self-learning facility created by ICT-supported platforms provides learners with opportunities to engage in learning and evaluation tasks more independently with self-regulated freedom of learning. Further, Ghasemi & Hashemi (2011) assert that tasks done at home or school can be uploaded to a learning platform that enables teachers and students to make comments and celebrate achievement.

The increasing range of effective software available in the market supports the teaching and learning aspects. If such materials are chosen carefully and creatively, there is a provision for teachers and students to engage in creative tasks that are not possible with printed materials. In foreign or second language teaching, ICT has the potential to support non-specialist teachers through access to native speaker models of the target language, which can be used to support the acquisition of linguistic skills or extend a range of voices in the classroom. ICT use in the learning process is of great importance for university students (Oulmaati et al., (2017). Technology-based education helps transform the learning process from being highly teacher-dominated to more student-centered. Bilyalova (2017) recommends that this transformation will help increase students' learning gain and allow them to develop their creativity, problem-solving abilities, and communication skills.

Studies on the importance of ICT in foreign language teaching

Studies have been conducted to identify the importance of ICT in the foreign language classroom and the way it can be used to improve the efficiency of pedagogy and learning. The study conducted by Lim & Tay

(2003) showed that ICT tools are very useful in achieving the target objectives of the lesson. Bilyalova (2017) conducted a study to evaluate the importance of ICT usage in teaching foreign languages in universities. According to Bilyalova, teachers applying ICT to foreign language lessons should be aware of the fact that any educational technology should satisfy methodological requirements such as conceptuality, consistency, efficiency, flexibility, dynamics, and reproduction. Further, the study revealed that PowerPoint presentations, correspondence by email, training programmes on CD-ROM, and internet sources are the most effective types of ICT for the development of students' linguistic and communicative competence.

Studies on the attitudes of students related to ICT indicate comprehensive findings. The study conducted by Jung (2006) on the frequency of ICT use for general and English language learning purposes indicates that most of them spent three to ten hours a week making use of ICT, including computers, PDAs, electronic music devices, camcorders, and digital cameras. Caruso, Kvavik & Morgan (2004) undertook a study of 4,374 American students on their ICT use and their perceived benefits of ICTs to learning gains. The findings revealed that the learners spent a lot of time on communication and entertainment activities and then studying, such as checking emails (99.5%), surfing the Internet for pleasure (97.2%), and engaging in classroom activities (96.4%). As for the preference for ICTs in classrooms, the results indicated that the students preferred using ICTs moderately. On the other hand, when asked about the benefits of ICTs to learning, only 12.7% of the students stated that ICTs improved their learning process.

In Kullberg's (2011) study on Swedish teachers' and students' perspectives on the use of ICT in the English classroom setting, the students showed a more positive attitude to ICT than the teachers, and they would like to adopt computers more in the classroom. Finally, Kopinska (2013) analyzed Spanish EFL learners' attitudes to the use of technology after implementing an experimental ICT project in the classroom setting. The findings indicated that the students were fully aware of the usefulness of ICT to their English language learning, but they also said that they had little exposure to new technologies for the learning process.

In Sri Lanka, the study conducted by Premawardhena (2013) on the use of ICT in the foreign language classroom in Sri Lanka revealed that language learning has become a more effective, pleasurable activity for students than it used to be a decade ago. The traditional role of teacher dependence has shifted towards more learner autonomy, identifying and addressing one's own strengths and weaknesses in the relevant foreign language through web-based learning, access to authentic material, interactive exercises, and online teaching tools.

Use of ICT in the ESL Classroom

In English as a Second Language Teaching (ESL) classrooms, ICT resources enormously facilitate the pedagogy. Similarly, in the learning context, ICT provides the learner with a myriad of resources for learning. The present and past research indicates that using ICT in language classrooms assists in improving students' motivation and enthusiasm. It also helps students with sustainability for a longer period on the assigned task (Parchler, 1999). According to Raval (2014), the use of ICT in the language classroom can enhance the motivation, engagement, and commitment of the students. Moreover, the incorporation of ICT in the ESL classroom can help teachers to incorporate the teaching of all four language skills: listening, speaking, reading, and writing. Davies et al. (1997) are of the view that the integration of ICT in teaching assists teachers in focusing on enhancing the learning abilities of the learners. As Jayanthi & Kumar (2016) elaborate, the use of multimedia technologies, including CDROMS, videodiscs, DVD, and PowerPoint projectors, can assist in teaching plays, poems or prose, vocabulary, and grammar.

Videos may provide students with a rich exposure to language in use and facilitate overall language development through motivational and enjoyable interactions. According to Canning-Wilson & Wallace's (2000) survey, learners prefer to learn through videos as they offer diverse environments for language acquisition. Videos can bring the outside world to students while stimulating and promoting language learning more than script textbook conversations. Wright (1976) has indicated that videos are effective and supportive teaching and learning material and are generally sensitive to learning interests. Katchen (1996) states that videos provide students with authentic target language input while altering students' motivation. Videos bring a variety of communicative situations to the language classroom,

depicting how people use language in diverse social contexts. Nasution (2019) introduces YouTube as a pedagogical tool for language practitioners and points out its advantages as an efficacious medium for enhancing foreign language skills.

Research done by Alfawaz & Ibrahim (2018) revealed that in language teaching, ICT enhances the process of teaching and provides various benefits such as materials for teaching and aids, activities for students, and improves classroom management.

ICT-supported ESL assessment

Assessment is always considered a key component in teaching and learning. ICT is playing a major role in making the assessment process easy for teachers. The application of ICT tools in ESL assessment is not a novel area in education. However, as Acharya (2015) points out, this practice of using ICT in English language assessment is rarely done. The virtual teaching environment and teaching practices were subject to radical changes due to the Covid-19 pandemic. The enormous benefits of ICT-supported teaching were recognized more than earlier, and the practitioners in education had to shift to an online mode of teaching and assessment. Hence, this transfer from virtual classroom to online mode brought a radical change in the degree of the use of ICT tools in education. Traditionally, the use of computers and other ICT tools was limited to printing the materials and projecting the prepared materials in the classroom, particularly in Asian countries. However, difficult circumstances, such as the Covid-19 pandemic, have urged teachers to use the online approach of language assessment.

Assessments in education fall under two major categories: summative and formative. Guyot (1978) defines summative assessment as the development or progress evaluation of a study programme and making judgments about the efficacy of learning at the end of a course. In the case of formative assessment, students' progress is evaluated continuously until the end of the study programme. In formative assessment, the teacher can keep track of student's progress using ICT tools such as Google slide and Blogger, which reduces the extra efforts of the teacher to maintain the physical portfolio, making it easier for the teacher to share information of assessment with the school, teachers, and parents.

Online testing uses the incorporation of interactive skills and effective formative feedback in language testing, as ICT has been publicized as a potentially powerful source that enables tools for educational change and reform. The ICT-embedded apparatus like computers, smartphones, tablets, iPads, laptops, etc., support language teaching. Technology in this era is a leading contributor to quality and efficiency. Further, technological tools can be used in language assessment in written form (electronic form filling) and oral skills (on-screen reading and discussion) using virtual communication tools such as video chatting, SKYPE, Facebook, etc. The manual assessment procedure is time-consuming and may be error-prone due to human limitations. However, the online test can be designed to conduct an interpreting test for candidates online, using a web-based synchronous cyber classroom, or through the internet from anywhere in the world.

ICT tools used in teaching and learning

Many ICT tools can be used in teaching and learning. These tools can be applied in different educational fields, such as science, mathematics, art, and even language learning. The use of ICT tools in ESL teaching benefits both the teacher and the learner, as most authentic materials can be accessed through the tools. ICT tools used in ESL teaching and learning can be divided into two types (Alkamel & Chouthaiwale, 2018): non-web-based and web-based. Non-web-based tools are radios, televisions, films, language labs, multimedia, and overhead projectors. Web-based learning tools include YouTube, email, blogs, Skype, mobile phones, Zoom, Microsoft Teams, and iPods.

Non-web-based learning tools

This section of the paper discusses the merits of using television and radio, films, overhead and multimedia projectors, and language labs in educational programmes in the form of non-web-based learning tools.

- **Television and radio**

Both television and the radio as non-web-based learning tools offer easy access to useful programmes suited for teaching and learning. Learners' exposure to the language and the information become updated as the television and radio offer mostly current affairs. Through radio programmes, for instance, BBC Podcasts, teachers can make students

listen to lectures and speeches conducted by eminent and outstanding scholars. Apart from radio, television is another useful technological medium used by language teachers and students. Television provides a full audio-visual dynamic simulation, which is very much useful in language teaching.

- **Films**

Films are inventive learning materials in the hands of the teacher. They are most powerful and appeal to the students. They also heighten the interest of students and hold them in the retention of the learned materials. The story element in films motivates students to remember through the imaginative power of thinking. Language is not simply words and sounds but a combination of skills and paralinguistic features such as gestures, facial expressions, voice modulation, and pronunciation, all of which are amply found in films.

- **Language labs**

Language Lab software is a classroom-based solution that will be installed on the computer in the classroom, and the content can be accessible in the respective classroom system. In the language lab, students can use language-specific software installed on the computers. To learn the English language, one needs constant practice. This software works for the overall development of the learner and enhances the ability to listen, speak, read, and write. The software installed provides digital English Language Laboratory tools designed exclusively according to the needs of English learners. Further, it allows the teacher to monitor the activities of the students; thus, the teacher is the controlling authority and can guide the students. The teacher can conduct online tests and generate reports using the resources in the language lab. Language lab is exclusively result-oriented, enriching the English language learning process. Listening to the standardized materials could improve the student's pronunciation level. In recent trends, audio and videos, flash-based games, and the internet are included in the lab materials.

- **Multimedia and Overhead Projectors (OHP)**

Multimedia technology refers to computer-based interactive applications that use hardware and software, allowing people to share their ideas and information. It combines text, graphics, animation, video, and sound. As the popularity of English is expanding daily and worldwide, English teachers feel the need for change in their language teaching methods. Some teachers use the "leading edge of technological and scientific development" (Young and Bush, 2004), but most teachers still teach in the traditional manner. The utilization of multimedia technology can fully improve the students' thinking and practical language skills. This will ensure and fulfill an effective result of English language teaching. Despite some disadvantages of using multimedia technology in teaching, multimedia technology can be used effectively in English language teaching classrooms. Overall, non-native speakers of English as language teachers can teach English more efficiently if they use multimedia technology. Compared to multimedia technology, overhead projectors can be used in language teaching classrooms with less advanced technology.

The overhead projector is a very useful adjunct to other teaching aids. It is easy to operate and flexible, and the lecturer can work it himself/herself while facing the audience. Transparencies can be produced quickly and simply, and since they are large enough to be studied without viewing equipment, sets of transparencies can be kept in libraries for the benefit of students revising particular subjects.

Web-based learning tools

Web-based learning is a fast-developing area in education, and it can be identified as technology-based learning/distance learning/ online learning/e-learning. As Khan (2005) asserts, it provides opportunities to create a well-designed, learner-centered, affordable, and flexible e-learning environment. Web-based language learning has emerged as a popular term in the language education field. The studies on the application of web-based tools in language classrooms have increased in recent years. Lai & Gu (2011) point out that web-based technology has currently enabled language teachers to extend their teaching practice beyond the physical limitations of their language classrooms.

Table 1: Categories for Web-based Language Learning Tools (Ngo Cong-Lem , 2018)

WBLL groups		Educational use
1	Learning resource	General websites provide language learners with linguistic input materials, e.g., newspapers and video-streaming websites.
2	Blog	Web-based platforms for language learners to practice their language skills by posting written text, audio, or videos.
3	Communication tool	Online platforms for students to communicate via text, audio, or multimodal video-conferencing.
4	Project-Based learning tool	Websites with technology allow students to create their learning projects, such as digital story videos or presentations.
5	Learning management system	Web-based systems for online learning management, e.g., storing lesson materials and sending out or receiving learners' assignments.

Ngo Cong-Lem(2018) divides web-based language learning tools into five categories, namely, learning resources, blogs, communication tools, project-based learning tools, and learning management systems. Under learning resources, general websites that provide learners with linguistic input can be taken. Next, blogs are web-based platforms that provide resources for learners to practice language skills by posting written texts, audio clips, or videos. Communication tools can be identified as online platforms for students

to communicate via text, audio, and multimodal video-conferencing. Websites that allow students to create learning projects are identified as project-based learning tools. In the last category identified by Ngo Cong-Lem, web-based systems for online learning management, which include storing lesson materials and sending out or receiving learners' assignments, are considered.

In addition, some of the common technologies available for web-based education are YouTube, email, SKYPE, mobile phones, and iPods, and they provide ample resources for language learning.

The new role of the teacher

In the traditional language teaching methodologies, teachers were seen as students' main source of knowledge. Further, teachers taught facts from books and other materials available. However, in the present teaching trend, the teacher's role has changed from authority to facilitator. So, in the present trend of pedagogy, the teacher's prime role is to facilitate students to be skillful in selecting, accessing, evaluating, organizing, and storing. In ICT-assisted teaching, teachers have to play their part in facilitating a learning environment that will open learners' minds to new possibilities. Teachers must be knowledgeable of the impact of ICT on language teaching and initiate the required transformation of the traditional role of a teacher to a facilitator mode to enhance their new perspectives of teaching.

Further, they need to adjust their teaching process to suit this ICT-dominated educational environment. As Ghasemi & Hashemi (2011) point out, with the fusion of ICT in the language teaching classroom, the teacher must reflect critically on the context of learning (mediated by technology), the methods (different than those used in the classroom), the students, the teacher's own computer literacy (hardware, software and technical support needed), and other matters pertaining to digital literature. Yunus (2007) argues that to implement ICTs for effective language teaching, it is important to understand the factors that are rooted behind teachers' decisions regarding ICTs. These discourses reveal that teachers' role is shifting from teachers to learners in the sense that they require new competencies to be able to integrate ICT in teaching and learning the English language. They are required to upgrade their professional skills and knowledge in their pedagogical practices and curriculum design, development, and implementation to be able to integrate

ICTs in teaching and learning language effectively, efficiently, and successfully.

Berge (1996) and Warschauer, M. & Healey, D. (1998) listed several recommendations for teachers: pedagogical (use of discursive resources to facilitate learning), social (incentive of human relations among members of the group), managerial (establishment of general procedures for discussion and development of activities) and technical (transparency of technology for an adequate relation between the system, the software and the interface selected). As for teachers' roles, Holec (1981) listed a few considerations that teachers and lecturers must make to optimize the use of IT. Tools such as chat rooms, email, and web forums need to be designed to enhance interpersonal and social skills. As the teachers' roles change, they must ensure that a good learning environment always exists.

Findings

The breakthroughs generated by ICT have brought new and challenging opportunities to restructure the language teaching environment in the ESL context. The following points serve as an abridgment through the review of selected literature on the application of ICT in language teaching.

ICT in language teaching, particularly ESL teaching, supports interactive teaching and learning styles, providing opportunities for creativity with sophisticated materials that provide updated information on areas of learning. On the part of the learner, the self-regulated learning facility is encouraged by ICT-mediated teaching, providing ample freedom to the learner. The software programmes available in the market can be used to facilitate ESL learning with the help of technology. Further, such material provides exposure to the native speaker models regarding oral skills in second language teaching. Studies on the use of ICT have shown positive results in foreign language teaching and revealed that PowerPoint presentations, email, CD-ROM, and the Internet are effective teaching and learning sources for developing communicative competence.

The use of ICT in the classroom helps to motivate students and create enthusiasm in the lessons taught through the engagement of students with commitment. In the case of assessments, ICT tools can be used effectively to extend freedom for the learner and facilitate the teacher in keeping records of

students' progress. The review has identified two segments of ICT tools in language teaching: non-web-based and web-based learning tools. Finally, ICT-supported teaching encourages the conversion of the role of the teacher from authoritarian to facilitator, facilitating students to explore knowledge as active participants in the learning environment. Also, the literature on the study area has particularly stressed the importance of upgrading teachers' professional skills and knowledge in their pedagogical practices supported by ICT.

Conclusion

The study aimed to identify the diversity and the practicality of the application of Information and Communication Technology in ESL teaching, particularly in the higher education sector, through a literature review. In the 21st century, technology has gained prominence in education. It has been proved that technology-supported teaching and learning could yield extensive results in English language teaching. Hence, it is proposed that the ESL programs be taught and prospective curricula be designed by placing due recognition for technology.

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