

Leveraging Technology in Education: Enhancing Listening Comprehension Proficiency in ESL Classes

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Abstract: Christian Louis Lange once remarked, "Technology is a useful servant but a dangerous master," a sentiment that rings true in the evolving landscape of education. The integration of technology has reshaped traditional teaching-learning paradigms, opening new avenues and platforms for educational opportunities. In this paper, we explore the transformative role of technology in enhancing listening comprehension proficiency among students. The study aims not only to underscore the significance of technology in the educational process but also to examine the factors influencing students' proficiency in listening comprehension. Embracing technology in distant teaching-learning experiences has become increasingly indispensable. Technology serves as a catalyst, empowering both educators and learners to navigate the digital landscape effectively. Numerous studies attest to the positive impact of technology and online platforms on students' learning outcomes, with increased interest and engagement observed over time. This paper delves into the utilization of technology in education, elucidating its multifaceted roles in the learning process. Furthermore, it examines the factors that shape technology utilization and proficiency, particularly in writing and listening comprehension. By shedding light on these aspects, educators can harness the potential of technology to create dynamic and interactive learning environments that cater to diverse learners' needs.

Keywords: utilization, technology, online platforms, listening comprehension.

1. Introduction

Technology has become an integral part in the teaching and learning process in the arena of education. Utilization of technology infuses virtual classrooms with digital learning tools, online platforms and create blended learning environments that leverage digital tools for writing and listening comprehension. Teachers in the same manner strive to customize learning tools and adapt to the needs of the learners in the digital world. Technology has the supremacy for continues learning that shepherd's models of connected teaching.

At present, technology has restructured education and the modality of learning while maintaining the quality of education and not compromising the listening comprehension of the individuals. Teachers' roles are improved, enhanced and advanced by the constant upgrading of strategies applicable for

distant learning. Substantial webinars and workable strategies for teaching are slowly developed and eventually applied in the process. It has been said that, "Information Technology" is the great enabler. (Plotnick, 1999, p. 3).

Technology allows teachers to become more collaborative and explorative in learning beyond the traditional practices in the virtual classroom. We affirm the role of technology in the process affecting the students' proficiency in listening comprehension. The utilization of technology is undeniably helpful in the implementation and integration of technology based in the distant teaching learning experience.

A. Role of Technology in Listening Comprehension

Listening comprehension is an important skill to learning the second language. It has been proven in various studies and researches that an individual learner who demonstrates L2 listening skills are able to demonstrate proficiency in speaking varied languages over time. Listening comprehension believed to be a skill that is integrative and, thus crucial in acquiring/learning a language, as well as of great help in getting other language skills (Ramirez-Verdugo, & Belmonte, 2007).

Listening comprehension when fully developed is considered as an active process where individuals tend to change words into thought with the aim of creating a meaningful word. Listening comprehension tends to have a long history, from the readings of analog, phonograph, through the era of the audio tape, and into the realm of digital (Wagner, 2007).

CALL (Computer Assisted Language Learning) and listening comprehension L2 skill training stand considered bound together for good (Vandergrift, 2007).

1) Listening Skills

The paradigm of the psycholinguistic contemplates listening comprehension typically in a sequential fashion (Ellis, 2001). In this case, the acoustic or input signal is first phonetically processed, followed by recognition of words, then the building of sentences by the listener, who then finally arrives at the discourse level. This stands as the view currently held by most researchers in the field of applied linguistics in explaining L2 listening comprehension (Guo, & Wills, 2005).

Special attention seems to be directed to certain L2 listening process aspects which could eventually lead to the improving

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of the listening capacity of learners (Gruba, 2004). Some researchers argue that video use might end up impeding comprehension, due to its supposed distraction potential. They tend to state that, video text's visual aspects can end up distracting the attention of learners from the input of audio, and may, thereby, prevent comprehension (Gruba, 1993).

Sufficient evidence tends to exist of the fact that L2 listening comprehension sound training needs to be included in any program of L2 thereby raising the question of what this training needs to consist. Most researchers firmly believe that such a training course's contents should aim at promoting input processing automatization, whatever the learners' L2 level (Grgurovic & Hegelheimer, 2007). As seems to be found with the case of university students who tend to be enrolled in translation

B. Background of the Study

The impact of technology to human life is undeniable. It is also encompassing as technological breakthroughs touch nearly every aspect of people's lives—from the way chores are done at home to the way work is rendered to the way people stay in touch with another. Technology even impacts the way people learn, ushering in “fundamental structural changes that can be integral to achieving significant improvements in productivity” (Office of Elementary and Secondary Education, n.d.).

Technology, in particular, is now used in both teaching and learning, with both educators and students having access to digital learning tools that include, among others, computers and laptops, as well as handheld devices such as tablets and smartphones. These digital tools help in a variety of ways as well, with the most notable benefits being as follows:

Digital tools expand course offerings by covering more lessons or teaching materials.

- They enhance teaching-learning experiences by, for example, providing a component of interactivity.
- They build 21st century skills such as digital literacy.
- They support learning 24 hours a day, every day.
- They increase student engagement and motivation.
- They can accelerate learning.
- They can arouse students' curiosity driven by engaging content.
- They enable teachers to craft personalized teaching opportunities and customized learning strategies (Office of Elementary and Secondary Education, n.d.; American University School of Education, 2020).

This overarching impact of technology also translates well in teaching English as a Second Language (ESL), where the use of technology has resulted in mostly positive outcomes. Diallo (2014), in her review of related literature on the use of technology in teaching ESL, concluded that technology is “an effective and efficient tool in helping [English learners] become proficient in English.” Diallo further concludes, based on literature, that “technology tools help [English learners] become more proficient English speakers because of the efficiency and the rich learning environment technology represents when compared to traditional teaching methods characterized by learning complex rules of English syntax and

grammar in a stressful environment.”

Pazilah, Hashim, and Yunus (2019), who define technology implementation in education as “the process of determining which electronic tools and which methods from implementing them are the most appropriate responses to give classroom situations and problems,” suggest the same thing, but with a caveat: Utilizing technology in ESL teaching can yield positive benefits, like motivating students and providing a more interesting classroom environment, but only under strict supervision by the teacher—so as to keep the students from getting distracted.

Technology has long been used in education, as when computers are used to present audiovisual materials or when students use a multitude of software to create presentations and accomplish tasks such as homework. Even “newer” technologies, like video conferencing and the use of learning relationship management systems, were already being used increasingly. But as the American University School of Education (2020) and Gorenko (2020) point out, the COVID-19 pandemic only highlighted the important role of technology in teaching and learning, and accelerated the need to adopt innovation in the education sector.

But whether in the context of the pandemic or not, it is clear based on existing literature that technology is advantageous in terms of teaching ESL, especially given how technology has become so ingrained in the day-to-day life of today's students, who are, in turn, likely very familiar already in using the many digital tools available to them and are comfortable in using said tools (University of Louisiana Monroe, 2021).

This is why Amin (2019) advises ESL teachers to leverage technology by doing the following:

- Define specific objectives that technology-aided learning hopes to achieve.
- Pool together the necessary resources—or in this case technologies that will help in the attainment of these objectives.
- Find out students' expectations and adjust the use of technology to meet said expectations—and accomplish the objectives set.

Knutson, on the other hand, emphasizes the need for ESL teachers to find the best ways possible to leverage innovations in the teaching of English. Some of these ways include:

- Utilizing the appropriate applications (known also as “apps”) to complement traditional teaching methods.
- Assigning technology-aided activities that can boost students' English-learning skills.
- Using videos and similar materials (cartoons for children, for example, and documentaries and news broadcasts for older students) to expose learners to natural English speech.
- Using collaboration tools to facilitate interactions with English-speaking peers and to give interactive opportunities to practice English speaking in real-life contexts (as in interviews or online discussions).
- Leveraging gamification to engage students.
- Supplementing instruction with online language-

learning tools and other software and apps that address students' specific needs.

While there is mounting literature that suggests the efficacy of using technology to enhance ESL teaching, most have focused primarily on technology's overall impact on the course itself and in the way it enhances the teaching-learning process. Very few studies, however, have investigated the effect of technology on the individual aspects of ESL, including in terms of the listening comprehension component. This lack of investigation on the impact of technology on affecting the listening comprehension of ESL students leaves a gap that needs to be further explored.

This study particularly aims to investigate what impact, if any, technology has in enhancing students' proficiency in listening comprehension in the context of ESL education. Understanding the potential role technology might play in enhancing students' listening comprehension would then help ESL teachers leverage innovation to help their students become better, more critical listeners. This ability is especially critical in effective ESL education given the indispensable role of listening in sustaining effective communication, both in daily life and in academic contexts (Yildrum, 2016).

C. Objectives of the Study

The objectives of this study, "Leveraging Technology in Education: Enhancing Listening Comprehension Proficiency in ESL Classes," are as follows:

1. To explore the overall impact of using technology in teaching ESL.
2. To investigate how the use of technology affects listening comprehension in the context of teaching ESL.
3. To know if technology use can enhance students' proficiency in listening comprehension.
4. To provide guidelines on how to best utilize technology in relation to improving students' listening comprehension.

D. Research Questions

Given the background of the study and its stated objectives, this investigation is looking to answer the following research questions:

1. How is the use of technology affecting the teaching of ESL?
2. What is the overall impact of using technology in teaching ESL?
3. How does the use of technology affect listening comprehension in the context of teaching ESL?
4. Can the use of technology enhance students' proficiency in listening comprehension?
5. What are the best practices in terms of utilizing technology in relation to improving students' listening comprehension?

E. Research Gap

Majority of studies related to the use of technology in education focus only on the advantages of using technology in ESL classes and fail to discuss its drawbacks, disadvantages,

and problems as encountered by both teachers and students. There is also a dearth of studies discussing the impact of technology in ESL students who have low digital or technological skills because majority of the respondents are technologically literate and have high digital skills. Additionally, there is a limited number of studies presenting data on how technology integration can impact listening comprehension in particular.

Among these gaps, though, the one this investigation aims to fill specifically is the last one, which pertains to how technology integration can impact listening comprehension. This is in part due to the increasing role technology is playing in human activities in general and in education in particular. It is also in part due to the importance of listening in English speech and communication as a whole.

2. Review of Related Literature

Teachers must be persuaded of the value and utility of technology in enhancing learners' learning while teaching English as a second language (Ahmadi, 2018). This implies that instructors need assistance and training in order to integrate technology into language instruction (Anitha, 2019; Loganathan, 2020; Alelaimat, 2020; Pasternak, 2016; Altavilla, 2020).

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The paradigm of the psycholinguistic contemplates listening comprehension typically in a sequential fashion (Ellis, 2001). This stands as the view currently held by most researchers in the field of applied linguistics in explaining L2 listening comprehension (Guo, & Wills, 2005). Special attention seems to be directed to certain L2 listening process aspects which could eventually lead to the improving of the listening capacity of learners (Gruba, 2004). Sufficient evidence tends to exist of the fact that L2 listening comprehension sound training needs to be included in any program of L2 thereby raising the question of what this training needs to consist. Most researchers firmly believe that such a training course's contents should aim at promoting input processing automatization, whatever the learners' L2 level (Grgurovic & Hegelheimer, 2007).

Studies also found that when technology is utilized correctly, it may provide many benefits to both instructors and students (Ammade, 2018). It is a resource that ESL learners may utilize since it helps them overcome learning difficulties (Diallo, 2014; Ahmadi, 2018) and discover effective and meaningful ways to apply what they have learned. Furthermore, studies have shown that the use of technology plays an important role in language learning because it allows learners to learn at their own pace (Alqahtani, 2019; Ferlazzo, 2019) aids in self-understanding (Parvin, 2015; Words Worth, 2020; Flanagan, 2020), does not eliminate interaction with the teacher (Sbrebnaja, 2020), and creates high motivation in learners for the effective learning of language skills (Nawaila, 2020).

Furthermore, numerous studies have concluded that ESL learners should utilize technology to improve their language abilities since it plays an important part in fostering learners' creativity and providing them with new, pleasant, and exciting ways to study the language (Anglin, 2017; Yunus, 2019). Many researchers also claimed that technology facilitates interaction between teachers and students (Nomass, 2013; Stockwell, 2013; Hazarika, 2017), provides comprehensible input and output (Gunuc, 2018), assists students in developing thinking skills (Shyamlee, 2012), makes learning and teaching more student-centered (Hazarika, 2017), promotes learners' autonomy and confidence (Baker, 2015; Itler, 2015; Riasati, 2013; Wahi, 2018), and increases learners' motivation to effectively learn a foreign language (Singh, 2018).

In the process, new roles for teachers and learners are emerging as the nature of classroom language learning changes (Richards, 2015; Lestari, 2020; Warschauer, 2000; Chapelle, 2013). Rather than being defined by the content of the textbook and by the activities and materials that the teacher has selected for teaching, online and technology-supported learning provides limitless opportunities for new modes of learning – learning that draws on multiple modalities (Pozza, 2020) and that takes learners out of the classroom and into a world without walls. Changes in the ways people learn also require changes in the ways teachers teach and that schools operate (Tamilarasan, 2019; Mallick, 2020; John, 2018; Smart, 2008). However, for technology to be used effectively, investment is needed not only in the technology itself and the means that schools need to provide for it to function effectively (John, 2021), but equally important, investment in the training and support teachers need in order for them to be able to make the best uses of technology in language teaching (Rahmati, 2021; Erben, 2021; Rwodzi, 2019; Cutter, 2015; Li, 2020).

Technology has always been an important part of teaching and learning environment. It is an essential part of the teachers' profession through which they can use it to facilitate learners' learning. When we talk about technology in teaching and learning, the word 'integration' is used. With technology being part of our everyday lives, it is time to rethink the idea of integrating technology into the curriculum and aim to embed technology into teaching to support the learning process. That is to say, technology becomes an integral part of the learning experience and a significant issue for teachers, from the beginning of preparing learning experiences through to teaching and learning process (Eady & Lockyer, 2013). Solanki and Shyamlee (2012) and Pourhosein Gilakjani (2017) supported the view that language teaching method has been changed due to technology. The researchers continued that the application of technology helps learners learn on the basis of their interests. It also satisfies both visual and auditory senses of the learners. According to Lam and Lawrence (2002) and Pourhosein Gilakjani (2017), technology assists learners in adjusting their own learning process and they can have access to a lot of information that their teachers are not able to provide.

Developing learners' knowledge and skills pertinent to computer technology provides equity of opportunity, regardless of learners' background. Although learners have been born into

a technologically rich world, they may not be skilful users of technology (Bennett, Maton & Kervin, 2008). In addition, just providing access to technology is not adequate. Meaningful development of technology-based knowledge is significant for all learners in order to maximize their learning (OECD, 2010). In this study, the researcher will review some of the significant issues pertinent to the use of technology in the learning and teaching of English language skills. These issues are as follows: definition of technology, the use of technology in the classroom, previous studies on using technologies in improving English language learning skills, and recommendations for using technologies.

3. Methodology

The study obtained data through experimentation where members of controlled and experimental groups were given the same teacher-made test to measure listening comprehension proficiency. Both tests were facilitated online, but the difference—or the intervening variable—was that the controlled group took a purely text-based test, while the experimental group took the test with the aid of technology-enabled audio. The test, developed by the researcher, asked the respondents to answer comprehension questions about Edgar Allan Poe's poem, "Annabel Lee."

The teacher-made test is attached as Appendix A, and it aimed to answer the following questions. The results will then be used to answer the research questions as enumerated in Section D.

1. At what level do the participants perform in terms of listening comprehension skills?
2. How well do the participants perform in a listening comprehension activity when modern technology is used?
3. How well do the participants perform in a listening comprehension activity when modern technology is not used?
4. Is there a significant difference in the listening comprehension performance between the group that used modern technology and the group that did not use modern technology?

A. Respondents of the Study

The respondents of this study were grade 7 students of Colegio de Sta Rosa Makati, an exclusive all-girls school in Makati. They were chosen primarily due to the researcher's affiliation with the school, which made the students accessible to the researcher. This accessibility, in turn, made it easier and more convenient to facilitate the test. In addition, the respondents were chosen because the teacher-made test is suited for grade 7 students.

B. Sampling Plan

The study made use of neither scientific nor special planning to get samples. The researcher had determined that the teacher-made test was suitable for the grade 7 level, at which point Poe would have been already introduced, along with some of his notable works—including "Annabel Lee" in some cases.

Table 1

Question	St. Mary Goretti (Reading Only)	St. Bridget (With Audio)
When do the events of the poem take place?	23/26	26/26
Where do the events of the poem take place?	26/26	26/26
Who is the poem about?	26/26	26/26
Who is the speaker in the poem?	22/26	26/26
What is the relationship between the speaker and the subject of the poem?	26/26	26/26
What made life meaningful to the narrator of the poem?	25/26	25/26
Which lines prove the answer to number 6?	20/26	21/26
Which lines prove that Annabel Lee felt the same for the narrator?	22/26	21/26
What did the speaker say that caused the angels to be envious?	24/26	25/26
What lines prove the answer to number 9?	15/26	19/26
What does the speaker claim as the reason for Annabel Lee's death?	22/26	19/26
What killed Annabel Lee?	26/26	18/26
What does the speaker do each night?	25/26	23/26
Why does the speaker do the answer for number 13?	21/26	24/26
Which lines prove the answer to number 14?	18/26	19/26
How would you describe the writer's style and technique?	18/26	24/26

Having determined that the topic the test covers is most appropriate to grade 7 students, the researcher decided to give the test to all students in each of the two sections at Colegio de Sta Rosa Makati—St. Mary Goretti (SMG) and St. Bridget (SB)—since the class size of both is relatively small at 26 students each. This sample size is sufficient to yield reliable results.

Finally, the determination as to which section would be the controlled group and which one would be the experimental group was done randomly. Both groups had equal chances of being assigned to each classification, but it was SB that was ultimately categorized as being the controlled group, leaving SMG to be the experimental group.

4. Results

The two sections were given the same test online, but the control group—SB—were aided by an audio of Edgar Allan Poe's poem, "Annabel Lee", while the experimental group were not given the same learning complement. Meaning, students from the latter were only asked to read the poem before answering the test, whereas students from the former were allowed to listen to the poem before answering the test.

All other parameters were the same, including the length of time the students were allowed to take, as well as the mode of taking the test (online). The results of the test are shown below. Cells shaded in blue indicate the section that had more correct answers for the given question. In question 1, for example, St. Bridget's students had more correct answers with 26 as opposed to the 23 correct answers of St. Mary Goretti's students. The cells shaded in yellow indicate the same number of correct answers for both sections. For instance, all 26 students from both sections got the correct answer for question 2.

5. Discussion and Recommendations

The results show—and seem to indicate—that students from St. Bridget, who were aided by an audio complement, fared better in the 16-question teacher-made test. St. Bridget's students scored higher than their St. Mary Goretti counterparts in 8 of the 16 questions, while the latter scored higher in only 4 of the 16 questions. The results are identical in the 4 other questions.

The difference in each of these eight questions, however, is

rather small—just one point in questions 7, 9, and 15 and three points in questions 1 and 14. The biggest differences are in questions 4 and 10 (four points) and in question 16 (six points). That makes for a 23-point difference in 8 questions, which would have been fairly significant if not for the four questions where students from St. Mary Goretti outscored their counterparts from St. Bridget (questions 8, 11, 12, and 13). Factoring in those four questions, St. Bridget's advantage is reduced to only nine points.

Nevertheless, these results do suggest a positive correlation between the use of technology (in this case, the use of audio) and improved listening comprehension—but barely. This is evidenced by the higher scores of the controlled group in 8 of the 16 questions. The test scores of St. Bridget's students are fairly high across the board as well, indicating good performance overall, which may be attributed in part to them having the added advantage of being able to listen to Poe's poem.

But the results are far from conclusive. There is some evidence that technology improved listening comprehension and overall academic performance, but the extent of this improvement is rather difficult to assess or ascertain. Complicating matters are the presence of factors that this investigation was unable to take into account, primarily the actual academic aptitude of each student, which would also impact test performance significantly.

Given these investigation's findings, it is within reason to suggest the following:

1. Technology can affect ESL education, and its impact can be positive or beneficial to students.
2. Technology can help enhance students' listening comprehension.

It is also important to note that this investigation is exploratory in nature and that it is not at all conclusive given the other factors that the study was not able to explore and account for. However, it does offer preliminary insight as to how technology can potentially make ESL education better for both the students and the teachers.

In light of the information provided, the data obtained, and the interpretation of such, the researcher, therefore, recommends the following:

1. That ESL teachers—the results of this study notwithstanding—continue to explore ways to

incorporate digital tools in the teaching of ESL, but following the recommendations of Amin (2019):

- Define specific objectives that technology-aided learning hopes to achieve.
 - Pool together the necessary resources—or in this case technologies that will help in the attainment of these objectives.
 - Find out students' expectations and adjust the use of technology to meet said expectations—and accomplish the objectives set.
2. That school administrators find effective ways to utilize not only in the context of ESL, but also in terms of overall academic teaching. Amin's recommendations can also be used in this context.
 3. That teachers make a more concerted effort to incorporate innovation to their teaching strategies regardless of the subjects they are teaching. Reason being is students' increasing reliance on technology in their day-to-day activities, which presumably include studying.
 4. That school administrators work hand-in-hand with teachers, students, and parents to establish best practices in the use of technology in education. This is to limit the disadvantages of technology use, like creating undue distractions for students.
 5. That further research be conducted to concretely find out the impact of technology in ESL classes. This study can be used as a starting point, but following the suggestions of Dr. Jay-Ar Racial, who validated the teacher-made test:
 - Add additional items to the test to further assess the students' listening comprehension.
 - Include other listening competencies that are appropriate to grade level of students.
 6. That further research be conducted to explore the impact of technology in education in general, and how it can be used to improve teaching and learning.

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