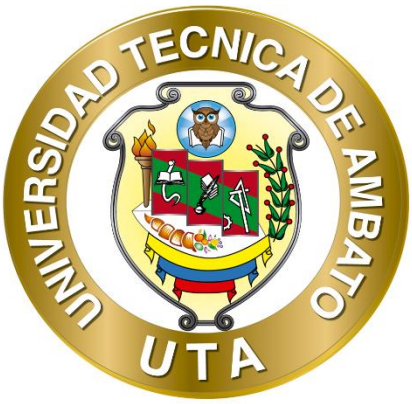

UNIVERSIDAD TÉCNICA DE AMBATO

FACULTAD DE CIENCIAS HUMANAS Y DE LA EDUCACIÓN

CARRERA DE IDIOMAS

Perfil de investigación previo al informe final de trabajo de graduación y obtención del Título de Licenciada en Ciencias de la Educación Mención: Inglés.

"Edu-Tech teaching strategy and the speaking skills"

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Tutor: Lcda. Mg. Lorena Fernanda Parra Gavilánez

Ambato – Ecuador

2020

TUTOR APPROVAL

CERTIFY:

I, Lcda. Mg. Lorena Fernanda Parra Gavilánez holder of the I.D No. 1803103520, in my capacity as tutor of the Research dissertation on the topic: "EDU-TECH TEACHING STRATEGY AND THE SPEAKING SKILLS" investigated by Ms. Sara Michelle Rugel Torres with I.D. No. 1805487418 confirming that this research report meets the technical, scientific and regulatory requirements, so the presentation of it is authorized to the corresponding organism in order to be submitted for evaluation by the Qualifying Commission appointed by the Directors Board.

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DECLARATION PAGE

I declare this undergraduate dissertation entitled “EDU-TECH TEACHING STRATEGY AND THE SPEAKING SKILLS” is the result of the author’s investigation and has reached the conclusions and recommendations described in the present study.

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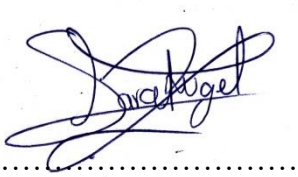

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DEDICATION

To the loving memory of my dear grandpa Antonio, whose great example taught me to be unbreakable and to take the courage to fight for what I mean to achieve despite the adversities. You have been, and always will be, such an exceptional inspiration for me and the ones who loved you.

We did it. I hope I made you proud.

Sara

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To God for His direction, blessings, and for giving me life and strength to fulfill His perfect will.

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To my sister, you have been such a great and unconditional supporter, thank you for giving me strength at the most difficult times.

To my grandma and the ones of my family who have always believed in me, thank you for being my driving force.

To my teachers for sharing their knowledge and wisdom; your dedication has been a great inspiration.

Sara

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ABSTRACT

TITLE: Edu-tech teaching strategy and the speaking skills

AUTHOR: Sara Michelle Rugel Torres

Nowadays, technology is commonly used to improve education at all levels, it means that combining its efficient use with professional learning can develop and reinforce collaboration in foreign language teaching. Edu-tech is all about linking theories, methodologies, tools, devices, strategies, procedures, programs and resources with learning content and with activities to be developed by learners. In this light, the main objective of this study was to determine how educational technology is used to develop the speaking skills of English language learners. This objective helped to analyze the usefulness of technological resources and identify the tools and activities managed in lessons. In addition, this investigation was aimed to compare the perceptions of teachers as well as learners about the use of technology for educational purposes. In the development of this research, a descriptive phenomenological methodology was applied. The participants were a total of 24: 23 students from the fifth semester of Carrera de Pedagogía de los Idiomas Nacionales y Extranjeros at Universidad Técnica de Ambato, as well as one teacher of this group. The data was collected by using a survey, applied to students; an interview, directed to the teacher; and four class observations. Through the investigation, it was possible to find out that the significant use of technology as well as technological resources for educational purposes, provided opportunities to expand communication interactions through the frequent application of web-based activities to develop speaking skills as well as a the reinforcement of pronunciation and vocabulary building.

Key words: Edu-tech, educational technology, speaking skills, technological resources.

CHAPTER I

THEORETICAL FRAMEWORK

1.1 Investigative Background

After a deep research through different sources about this topic, it was found that the use of technology and web resources has come to displace traditional tools and methodologies to catch student's attention and increase their motivation in learning. Consequently, in a research carried out by Cárdenas (2019) at a private school in Guayaquil, which points out that English language learners may face several difficulties while acquiring speaking skills because of the use of orthodox and traditional methods in English classes. In this research, the author applied a descriptive and synthetic investigation method to conclude that using multimedia resources in English language teaching really increases the opportunities and chances to achieve learning objectives and it also makes language learning more efficient and communicative. In addition, he argues that learner's motivation is one of the major issues in language learning and that it can be stimulated through the use of technological resources that students prefer and really like to us. It supports language learning and helps to reassure individual motivation not only in teachers but also in students, as they afford chances to experience authentic use of the language.

Similarly, Rivera (2018) states that the lack of adopting innovative teaching strategies highlights the necessity of increasing interest in learning a foreign language. Therefore, in this project the researcher proposed to create a learning environment for a group of students at a university in Tunja, including the use of technology in teaching sessions. The methodology used in this study was an action research, which is the one that emerges from the classroom itself, to deduce that

ICT (Information and Communications Technology) use plays a vital role in language learning since technology is an important source of motivation that helps to catch student's attention and producing a positive attitude towards learning unconsciously through a mean that they are pretty much familiarized with. The author states that in addition, technology has made teachers ponder about how to focus students' attention and how to increase their interest through the use of web sites where learners can scaffold their learning and foster critical thinking skills.

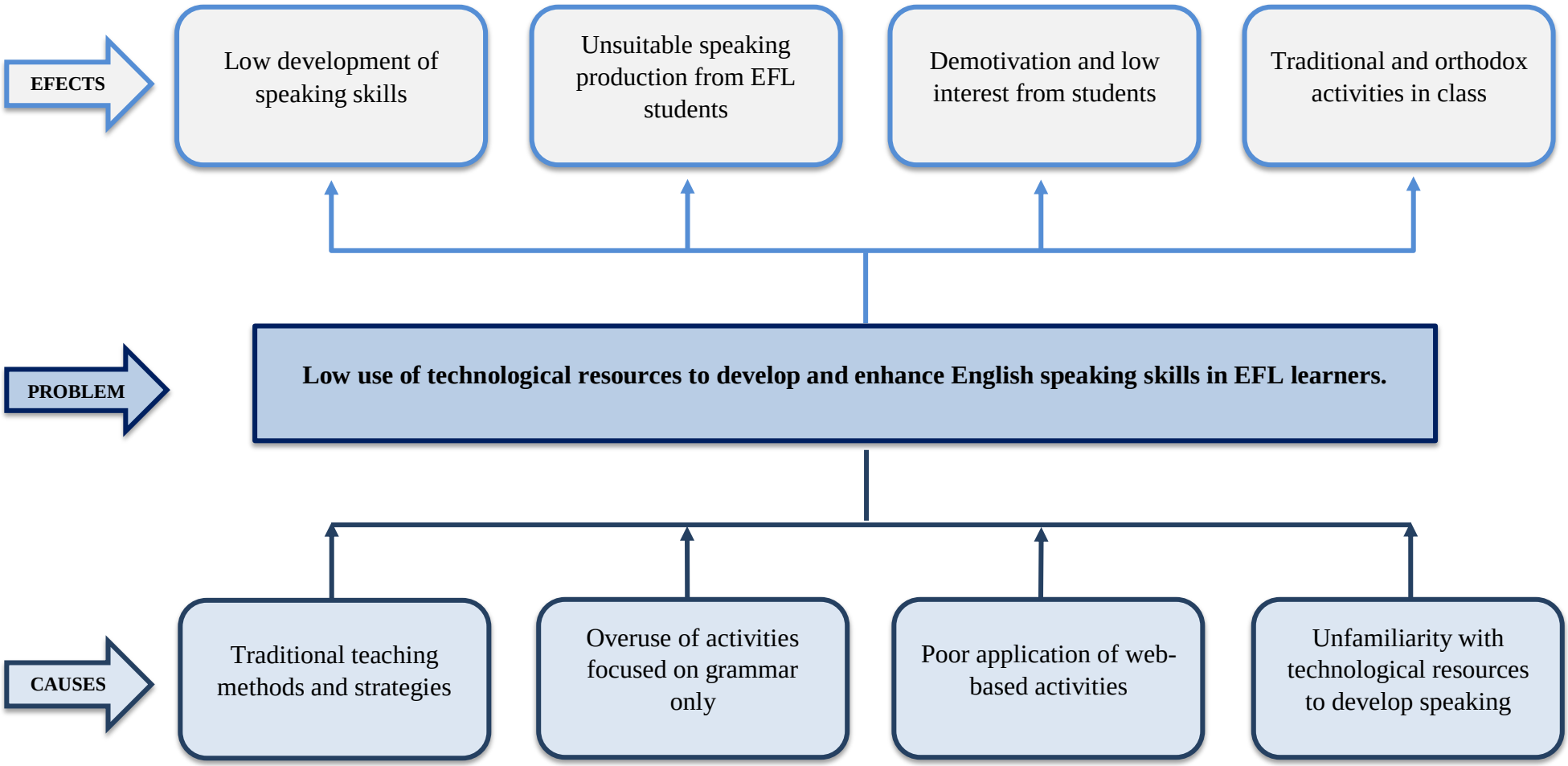
In the same way, Miller (2018) finds that teachers constantly face the challenge of having to foster an atmosphere that focuses on integrating emerging technologies into language instruction while training students for a world that is always going through technological advancements. He supports that when using technology to teach a language, student's language acquisition is reinforced through opportunities for authentic and collaborative work as well as engagement and concept development. In this study, the researcher applied an action research methodology in order to determine the impact and influence those technology-enhanced classrooms to provide appropriate teaching environments for delivering English language acquisition. He concluded that technology integration in classrooms encourages student's engagement, support and reinforces learning and additionally promotes independent learning through varied learning styles.

Likewise, Goretti (2020) remarks that consolidating technology meaningfully and viably for educational purposes is essential to enhance students' digital skills. This can be done through collaboration with others for academic purposes, managing information in digital formats, and digitally retrieving useful and pertinent information in daily life and training programs. Hence, teaches need to effectively and actively integrate technology as part of their teaching strategies as well as provide advanced experiences with technology in education. With support from teachers, learners need to invest time in studying and learning by using technology. This way,

consolidating educational technology into the academic approach can enhance students' digital skills, which can impact their professional performance at work in the future. The individual use of technology neutralizes academic outcomes and does not necessarily contribute to develop digital technology skills.

1.1.1 Critical analysis

Graphic 1: Problem Tree



Resource: Researcher
Elaborated by: Rugel, S. (2020)

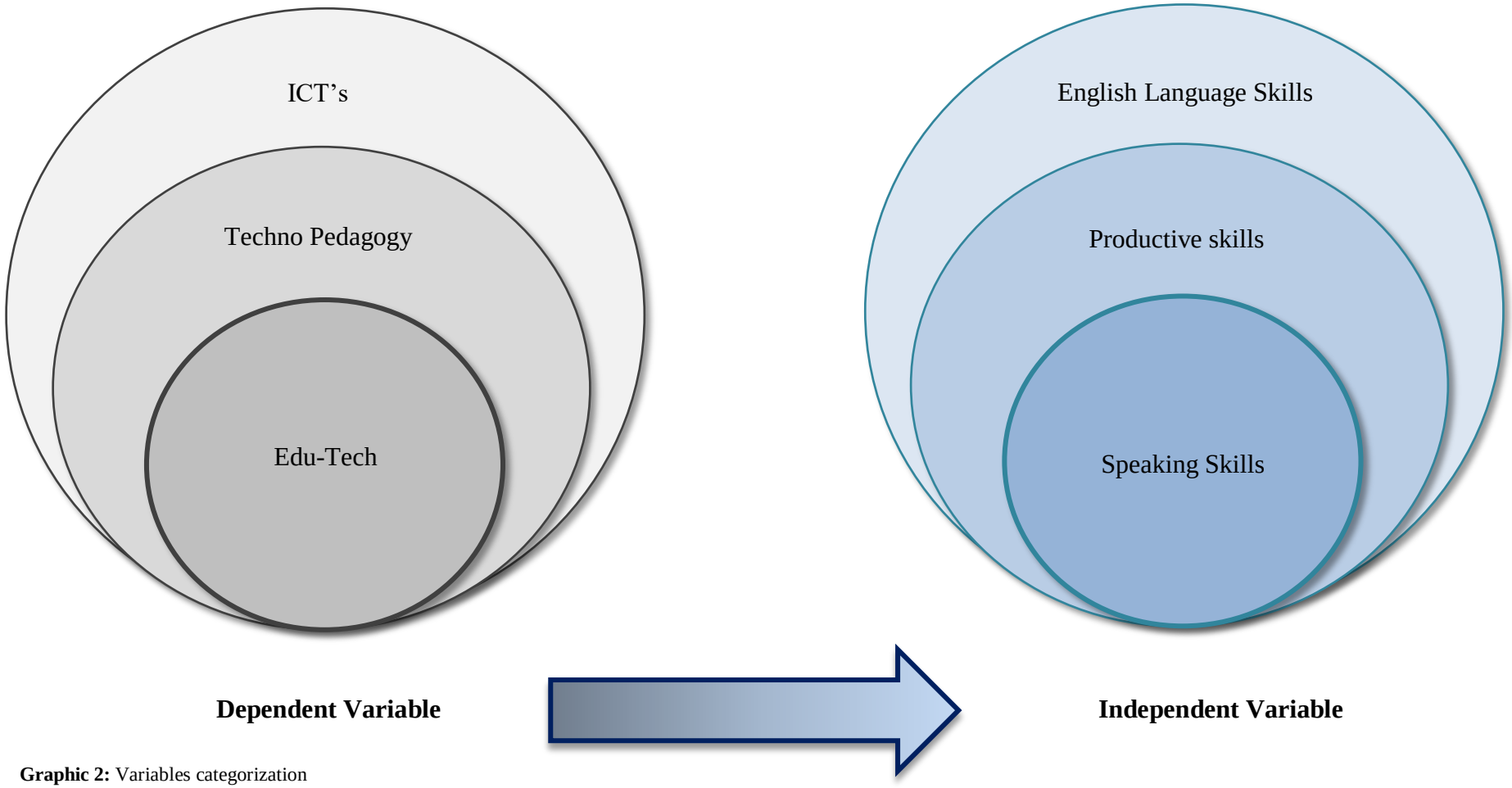
1.1.2 Problem formulation

How does the use of Edu-tech contribute to the development of English speaking skills in EFL learners?

1.1.3 Research questions

- What are the different methods, tools and resources that teachers currently use to teach and develop speaking skills?
- What is the effect of including tasks and activities using apps and webpages in class?
- What is the perception that students and teacher have about using technology for educational purposes?

1.1.4 Fundamental categories



Graphic 2: Variables categorization
Resource: Researcher
Elaborated by: Rugel, S. (2020)

1.1.5 Independent variable

1.1.5.1 ICT

ICT (Information and Communication Technology) develops from scientific advancements produced in areas of information and communication technologies. ICTs are the whole collection of technologies that make possible the access, production, treatment and communication of presented information in different codes (image, text, sound, and so on.) The most representative element of new communication technologies clearly is the computer and more specific, the internet. As different authors argue, internet involves an important qualitative jump that changes and redefines the ways of relating the whole world with the human being as itself.

Information and communication technologies are defined as technological systems through where information is received, manipulated and processed by facilitating communication between two or more interlocutors. ICTs are therefore more than just computer and computer technologies, since they do not work as isolated systems, but in connection with others through a network. They are also more than just broadcasting technologies, since ICT systems not only foster the dissemination of information, but also allow interactive communication (Semerci, 2018).

The purpose of ICTs as a set of services, networks, software and devices, is to manage and sent information extremely fast from one place to another, thereby becoming a useful tool that not only has greatly improved the communication quality, but also had expanded infinite information and knowledge of competitive new services in a globalized world (González 2015).

Overall, information and communication technologies concern three basic mains: informatics, microelectronics and telecommunications that work not only in isolation but in interaction and interconnected to each other which allows getting new communicative realities (Belloch, 2013).

Arseven (2019), describes that he use of information and communication technologies is increasing and getting to be broad. Even though this increment and development contrast from country to country, each of them is endeavoring to expand the use of information and communication technologies to keep up with conditions getting to be more competitive. Information and communication technologies are broadly used in education as well as in many other areas such as industry, commerce, transportation and so on. Therefore, concerning the functions related to knowledge acquirement, they include:

a. Enabling communication, transmission of information and development of autonomous learning.

b. Optimizing thinking-wide processes, making people building up mental structures and new ways of thinking.

c. Organizing, classifying and analyzing information in terms of efficiency for a better management and a greater access from the society.

d. Creating new settings and methodologies for the teaching-learning process, such as the e-learning field, reinforcing metacognitive processes.

e. Generating new learning concepts for communities.

With technological developments, data updates and increases giving rise to a generation of greater knowledge. Hence, information becomes into a significant resource which availability is greater every time. Due to the current advancement, not only of science and research but also of the development of information and communication technologies, socialization and expansion of knowledge have been strengthened (Flórez Romero et al. 2017).

According to Saygıner (2018), the introduction of ITCs into the field of education has constituted fundamental changes in education. The whole interaction element provided by information and communication technologies has made learning and teaching activities much more interactive, meaningful and interesting as well. The role of ITCs in education is gaining importance since having a simple knowledge and skills to use technology had turned into a necessity for individuals as part of the society in which information and technology dominate and to develop society. Undoubtedly, it is the main point of education to gain knowledge and skills, and to achieve this purpose, it is necessary to set up the educational environment to provide opportunities for students to reach these innovations easily, and to develop teaching programs which is able support knowledge and skills about using information and communication technologies. Likewise, information and aptitudes of using knowledge and communication technologies effectively in learning ought to be considered as a fundamental competency in teacher's education.

Cabero (2016), states that ITCs can play an important role also into the learning process because of the number and potential of senses that can process and stimulate the retention of information. The author argues that multiple classic studies have shown how well it is remembered a 10% of what it is seen, a 20% of what it is heard, a 50% of what it is seen and heard and an 80% of what it is seen, heard and done simultaneously.

1.1.5.2 Techno pedagogy

Techno pedagogy is a discipline, as its name implies that combines technology and pedagogy, it is a set of concept and theories arranged to develop the teaching-learning proceedings based on mechanism performed by the brain in order to process, acquire and apply knowledge through the use of different techniques founded on creativity and innovation in electronic and mechanical

devices rooted in visuals and audio. In addition, it could be defined as a track of technology application in education (González, 2016).

With technology in the educational field, pedagogical mediation has also been integrated into virtual learning environments. Mamante and Gómez (2017) point out that "the rise of including techno pedagogy in the curriculum is the result of the effort to promote motivation and innovation and in response to globalization". The use of techno pedagogy has become increasingly frequent in the teaching process, especially at the higher level, where the benefits of digital technology are correlated and integrated to improve student competencies.

Techno pedagogy is also defined as the hybrid teaching method where ITC is applied into the teaching-learning process. "Pedagogy" is literally a reference to the art-science of teaching while "techno" means to handcraft as an art-skill. Thus, 'techno' and 'pedagogy' converges their meanings to interlace crafting techniques of teaching with the learning environment itself (Thakur 2015). Besides, it is the process of analyzing and managing the thoughtfully use of different digital tools to decide how, when, and why to use them. The aim of this procedure is to convert digital resources and tools into didactic materials and resources especially considering the great impact of using these tools into the learning process.

According to Jaramillo and Jaramillo (2016) techno pedagogy employs techniques based on creativity and innovation, as well as audiovisual electronic devices, in other words, it incorporates technology as a complement to learning activities and it truly brings to the fore a new teaching workload. Furthermore, Cacheiro, González y Sánchez (2015), argue that when technology enhance pedagogy, it promotes teaching-learning processes adaptation of the learner's personal environment. It contributes to a development that integrates knowledge analysis,

technological practice with multiple resources, and learner's cognitive abilities to reach a maximum optimization of the educational process.

Techno pedagogy is a method that emerges because of the need of perfect and refine the learning process, where the combine of technology and pedagogy is vitally essential for the process of gaining knowledge as well as for its application (Góngora and Martínez, 2017). It is the organization of knowledge, didactic materials and resources that, in case of virtual education, considers psycho-pedagogic elements to contribute to the meaningful learning of students. The main purpose of applying techno pedagogy is not only to establish standards towards achieving learning, but also to adapt and adjust strategies and resources for a certain study pathway.

According to Moramay (2019), techno pedagogy, can be defined as a group of concepts, ideas and practices associated with innovation and development in the area of education in the digital age. With techno pedagogy we seek to give pedagogical response to the impact of digital tools on the teaching-learning process. Techno pedagogy is the process of analyzing and managing the use of digital tools in a reflective way, so that you can decide how and when to use them, and for what. It involves transforming digital media and tools into resources for teaching purposes and paying attention to the impact of digital tools on learning. The technical approach comes only when we decide what we want to do, and we need the technical solution to achieve our objectives.

In addition, techno pedagogy is the process that involves analyzing the use of digital tools in a reflexive way in order to decide how and when and how to use it. It includes transforming technological resources and tools into material for educational purposes and to focus on and comprehend the impact that digital tools have on education. Each module or subject will require concrete methods, resources, strategies and techniques to be more effective, so that the teacher

should think about a design or techno pedagogy that considers specific didactics (Rodríguez, 2017)

1.1.5.3 Educational technology

Educational technology is a systematic way of design, development and evaluation of the whole teaching-learning process, in terms of specific objectives, based on investigations about learning arrangements and communication that could be able to coordinate human, methodological, instrumental and environmental resources to lead us to an effective education (as cited in Area Moreira, 2015). Additionally, Sinner (2015) suggests that educational technology essentially consists on applying human technology in class, which in general terms, pretends to carry on a psychological plan based on laws and devices to manage human learning.

Educational technology is defined as an array of programs, procedures, and tools all synthetized and oriented to develop educational processes in the gradual change from a rational way to put in force this process to the way of achieving learning goals. In addition, it connects technology and education as assuredly learning content to transmit to learners and it should be done in a truly easy way in order to be handy for students, therefore, it must be not only practical but also it needs to be able to engage learners to participate actively in the educational process (Murati 2017). However, it is important to point out that this teaching strategy encourages teachers to deal with different learning circumstances since the teaching process requires using different and numerous tools, methodologies and strategies for successful learning outcome achievement, educational technology helps to optimize the effectiveness of acquiring knowledge and easier application of educational content.

Technology can be considered as a language that expresses the ability of humans to use and combine process and means that enable to systematically solve problems that may arise.

In this light, educational technology is basically the language directly related with the solution of educational problems or issues involved in this process. Besides, in order to lead technology, act over the educational field, it should start from the learning process. It is all about linking theories, methodologies, tools, devices, strategies, procedures, programs and resources with learning contents and with activities that the teacher needs to carry out, assuming his previous knowledge and experience as educator.

New technologies development has provided great opportunities in supporting language learning at all levels of education, mostly by using Web 2.0, which involves information as a mean to be shared (González Otero 2016). It is true that nowadays, technology is commonly used to improve education at all levels, it means that combining its efficient use with professional learning can develop and reinforce collaboration in foreign language teaching. Nevertheless, in some countries the educational technology needs to be explored in deep in order to find out every single advantage and benefits that it provides in the teaching-learning process.

Rivera Barreto (2018), argues that technology is a great and implicit mean of producing positive results towards learning. Therefore, using technological issues and devices can not only elicit strong interest and motivation in students but also it can lead them to explore new academic experiences. In addition, educators should know how to manage and when to use certain online tools for specific purposes in order to suit a singular learning situation and to meet the learner's needs. Technology in education also allows teachers provide meaningful contexts for communicative competences and, in that way, engage students in authentic and real-world situations and experiences that support motivation and the learning process.

Educational technology lets the development and advancement of technological competences, which make learners to be ready to face challenges of today's world; additionally, it contributes

to vocabulary acquisition when students perform a given task and motivation also increases because of using technology while learning (Kazemi, 2014). Consequently, this suggests that if most of the students show positive positions in favor of technology in class as a strategy, the rest could be influenced and develops flattering results towards this innovative teaching method.

According to Kazemi (2014), newly released studies have shown that successful application of technology in education depends on teacher's attitudes and how they are used in class. Teacher's attitudes influence whether deciding to implement technology in classes or not, and in most cases, teachers have shown positive responses towards technological tools being incorporated into their teaching.

Educational technology has several conceptions, depending on the perspective of different theorists, it can be conceived as a model, discipline, strategy or, as a tool that a particular educational paradigm can make use of; in any case it has a close relationship with didactics. The relevance of this depend on its attachment to what is established in the current constructivist pedagogical and mainly to the enormous advantage of information mobilization, the emergence and development of individual and collective potentialities (Mendoza 2018).

Technology into the educational space enables workable use of interactive tools that help to keep active the learner's attention easily. Moreover, mobile applications and the Web 2.0 involve sharing different points of view to debate about ideas and other's thoughts, which contributes to the development of student's critical thinking skills in the right time that their brains are evolving. On the other hand, teachers can also take advantage and benefit to make their work more attractive and more efficient. Once applied "Edu-tech" as a teaching strategy most of the common daily activities in class can be optimized with the help of apps and technological devices, contributing to their continuous education as well (Murati 2017).

On the other hand, teachers can benefit a lot from the technological advances to make their work more attractive and to be more efficient. Many activities that are part of the daily routine of classes can be optimized with the help of applications and computer devices, allowing them to dedicate even more time to their own training, which in the long run will not only benefit them but their students. Certainly, using technology in the academic environment is not anything new, however the way that technology is used has changed a lot over the years, allowing greater flexibility, efficiency and utilization of educational resources and offering higher quality training to students (Stukalenko 2016).

The characterization of using technology requires specifying a typology about all the uses that helps to determine the different scenarios in which technologies are used. Based on that, Bruce and Levin (1997) divide four dimensions: a) technology as a tool of investigation; b) as a mean of communication; c) as a tool of support and construction of knowledge; d) technology used as learning tools of expression.

From the point of view of using technological tool in relation with educational and productive activities (Galvis 2018), refers to two classifications in educational settings:

1) Technology used as a digital resource, supporting teaching for improvement of learning processes.

2) Technology used in professional development, it is assumed to improve productivity: through the performance of everyday activities in an easier and faster way, extending personal abilities, interaction to communicate and cooperate with each other.

Another typology, deployed by Karsenti, Collin and Harper-Merrett (2015), classify Edu-Tech into three categories: 1) Technology as an enabler of learning, all the uses related to internet and

computers; 2) Technology used into the learning and teaching process: lesson planning, programs usage, software usage, use of projects based on ITCs; 3) other multiple uses: involves the use of technology that is not directly linked to teach: computer games, personal and social uses, among others.

According to Bruyckerke (2019), the most important benefits of using technology for educational purposes can be summarized as follows :

- Makes comprehension easier: The use of technological tools motivates and makes students more easily attentive. As a result, the contents are assimilated faster.
- Autonomy: They develop self-learning to form self-sufficient people capable of solving any real problem. The use of technologies is conducive to proposing case studies and participating in the administration and management of the contents. It is a methodology where students are taught to learn to learn, build their own knowledge.
- Teamwork: Technology generates interaction between students and promotes teamwork. In the professional field most of the projects that are developed are in team and require the collaboration of different professionals, to develop the capacity of teamwork already since children is fundamental.
- Critical thinking: The Internet and social media mean sharing views and opinions, debate is very important when brains are developing.
- Flexibility: Students can follow different rhythms in their learning by having additional content or support materials depending on their needs.

Sigalés (2018), states that the great tendency of teachers having an increasing interest in using technologies for educational purposes is based on conception and perspective of the whole teaching and learning process, it is suggested that there are two main slants:

1) Transmittal: technology is used for presentation and transmission of contents

2) Active: technology is used for generate investigation activities, individual, or autonomous, and collaborative work among students.

1.1.6 Dependent variable

1.1.6.1 English language skills

English language skills are abilities that cooperatively help to develop and improve the language mainly in how it is organized and composed. At the same time, these skills engage special categories of the language such as: grammar, phonology, lexis, functions, and so on. According to Pawlak (2018), language skills are defined as the way that language becomes active. In this sense, it is well known that Didactics have traditionally classified them according to the role they play in communication. English language skills are primarily divided into two groups of macro skills: productive skills and responsive skills; and additionally, each of them has a variety of aspects that complement understanding and development of language.

Listening and reading comprehension are receptive skills that involve a physical and interpretative process of analysis. As well as productive skills: speaking and writing, are defined as abilities to produce the language and communicate messages instead of only receiving information (Smith 1990).

Amongst the four language skills of English, reading and listening are part of a sequential process belong to linguistic comprehension whereas writing and speaking are both related to linguistic production. In these two aspects of communication, writers, speakers, listeners and readers are all interconnected not only at psychological and cognitive levels but also they are connected in terms

of information transfer process. According to Nan (2018), the four language skills set up a system where they have a stronger impact being they are integrated upon one another:

a) *Relationship between listening and reading:* Both take information actively through connecting that information with their sense of prediction, empirical and schematic knowledge that includes surface understanding and deep comprehension. When students read, they expand their knowledge useful for improving listening comprehension. Lots of reading enables learners to gain more input by exposing themselves to a variety of linguistic material to increase their background knowledge and enhance linguistic and non-linguistic schematic knowledge.

b) *Relationship between writing and speaking:* First, speaking indirectly activates writing. "Oral acquisition of language also can help the improvement of writing." (Zhu 1997) More speaking can allow learners to be more familiar with linguistic material because what is often used in speaking would be used in writing as well. Second, more speaking can race writing since speaking is limited in time, therefore it helps to develop the ability to use the language, while producing it fluently and speeding up thinking skills.

c) *Relationship between listening and speaking:* Speaking is an explicit process while listening is an implicit process, but the more input of linguistic material, the more fluency, accuracy, and variety of output will be. In addition, listening contributes real linguistic context and suitable language for oral communication.

d) *Relationship between reading and writing:* Stotsky (1983) supports that good readers tend to be good writers. Both skills use identical knowledge about language: knowledge about organization, structure and content stored in our mind, so that learners can understand

features of language written texts to then expressing and transmitting information as well through writing and repeating this cycle reading to be able to write.

The development of any of the four skills essentially depends on the development of the rest of them to finally deliver an improvement of overall languages abilities. Consequently, in order to develop language abilities entirely, learners should be exposed to approaches that try to integrate all skills or focus on more than one only skill at a time (Berninger and Abbott, 2019).

Likely, according to Angelini (2019), these four language skills are also called the “LSRW” skills, and she states that it is ideal to teach them in the same order as they are acquired as the L1. When a child is born, he starts listening, and it is followed by imitation of sounds he has been hearing all this while. Speaking happens as an attempt to articulate what has been listened to. After getting the basic preparation in listening followed by speaking, then the child is introduced to a script. He starts 'identifying' the symbols-shapes-codes-letter of the language itself. Once he is able to recognize and differentiate between them, the crayons come and pencils follow. He is turning literate by drawing the language on a paper. This sequence is visibly a coherent arrange of learning communication skills.

1.1.6.2 Productive skills

Productive skills of the English language concern with producing and performing the language. Describing, explaining, expressing points of view, giving arguments, discussing, defining, summarizing, interpreting, and evaluating opinions, presenting topics, asking questions, and so on, are language functions corresponding to the speaking skills. Meanwhile the representative functions of writing are: outlining information, note taking, filling tables, charts, graphs, forms, and so on (Kristmanson, Lee, Pascoal, and Ramoniené, 2015).

Jaramillo Urrutia and Medina Gutiérrez (2017) define productive skills as vital forms of communication used not only to convince and influence other people but also to share feelings and ideas. As previously mentioned, productive skills or also called active skills, refer to the net transference of information that language users produce whether in written or spoken forms. The receptive skills support the productive ones, passive knowledge such as reading and listening, represent a platform to active implementation of grammar structures, vocabulary words and phonetics of a foreign language. This presumed background spreads to any language ever known and this should also justify that productive skills are inseparable from the receptive ones since learning a foreign language, receptive skills commonly come first and then practical application of productive skills should come immediately next, because the learning process cannot be complete if any of them is missing.

Both productive skills require a variety of teaching methodologies and approaches according to student's needs since the development of these abilities could represent pedagogical difficulties as well. Speaking and writing are of great practical importance due to the fact of being observable evidence of language acquisition. The more the writer or speaker produces the language appropriately and coherently, the more effective are proves of the learner's language acquisition progress. Besides, teaching productive skills is of vital importance because spoken and written communication are essential abilities to share thought, ideas and information (Golkova and Hubackova, 2016).

Productive skills are also known as active skills, some speaking situations are partly interactive and in communication the writing is clear and lucid. Writing represents an absolute variety of classrooms procedures while providing learners of physical evidence of learning outcomes, achievements and improvements. It is useful for grasping structure and vocabulary and also it

enhances the other language skills. Writing and speaking, both support an exceptional way of supporting learning and finding out new ways of expressing thoughts through the constant use of multiple brain functions at the same time for a single spoken or written activity. Every single act of writing is seen as an act of reading and reading itself as a sort of writing as well (Sreena and Ilankumaran, 2018).

Even though productive skills share some similar features, according to Cassany and Sanz (1998), there are also certain characteristics that differentiate speaking from writing skills that are represented in the following comparison chart:

Table 1
Characteristics of speaking and writing skills

Speaking	Writing
1. The receptor catches the message by listening.	1. The receptor gets the message by reading.
2. Spontaneous/immediate communication	2. Elaborated/deferred communication
3. Short-lived communication	3. Long-lasting communication
4. It uses lots of non-verbal codes such as body language and facial expressions.	4. The only code is written (although it can be used schemas, images, graphics and some others visual resources)
5. There is interaction during the speech: Oral language is negotiable among the interlocutors.	5. There is no interaction during this composition: Writer is not able to know the real reaction of the reader.
6. Oral code is supported by the extra linguistic context.	6. Written code is independent from the context. The author creates the context while writing the text.

Source: Cassany and Sanz (1998)
Elaborated by: Rugel, S. (2020)

Speaking and writing skills are certainly different with different purposes. Written language is permanent and requires of a specific plan, as well as rigorous rules that must be studied while speaking is fleeting and ephemeral however it also involves structures and identical elements.

It is believed that these are segregated skills and they both are related to each other in diverse ways of production (Cleland and Pickering, 2016). Though several experts trust in the diversity between these active skills, writing can be profitable for the progression of both writing and speaking proficiency, that is, the theoretical dissimilarities among speaking and writing have not worked as impediments in contributing one to the other.

Writing and speaking have special discrepancies, however they are pretty much independent (Jordar, 1997). A convenient perimeter is required for learners to be motivated to compose and produce the language being conscious of the learning objectives and sensible expectances of what they aim to produce, whether written or spoken. They can enhance their active skills in addition to their social interplay skills by integrating both skills, due to the fact that oral and written abilities share similar strategies. Hinkel (2018), states that learners really need to acquire a proper level of linguistic foundations to be able to master a variety of grammatical and lexical skills required to produce language.

1.1.6.3 Speaking skills

This is one of the two productive skills, it is based especially on oral communication, and it means that this ability focuses on producing the language rather than receiving it. In addition, speaking skills involve the use of speech to communicate messages and ideas to other people (Spratt, 2011). Productive skills refer to a learning outcome of the English language, where the expression is induced communicative of thoughts and opinions orally or written.

Since speaking is more frequently used than writing, its main purpose is to socialize individuals. Spoken language is processed in real time and the speaker as well as the listener have limited time to process and produce the message due to the fact that oral speech is variable and spontaneous; additionally, generally supported by non-verbal language such as facial expressions and body language (Lesáková, 2018).

Definitively, it is well known that when it refers to oral expression, it covers a proper and accurate use of not only grammar but also vocabulary of the language. Furthermore, taking into account the audience or person whom the message is being directed to, the whole information will be transmitted and understood in all clarity.

The dominance of this skill is more complex than it seems at first look, due to involving the use of paralinguistic features such as intonation, pronunciation, voice modulation, tone, etc.

Furthermore, there are some features concerned with speaking: accuracy, fluency, and comprehensibility. Richards (1992), states that ***accuracy*** involves an ability to deliver grammatically correctness of sentences, not only in grammar but also in pronunciation and vocabulary. He also establishes a scale for assessment of accuracy:

a) Vocabulary

b) Grammar

c) Pronunciation

In addition, ***fluency*** is the ability to communicate and share ideas reasonably and quickly without having to pause and stop too much while speaking; it is the feature that delivers speech nature and normalcy. Besides, Thornbury (2015) sets a criterion for assessing this field:

a) Independence

b) Length

c) Lack of hesitation

Furthermore, this author explains that appropriacy is not possible at all, but it is the extent to which an expression and grammar pattern is adequate and natural in a certain situation.

According to Brown (2016), there are five basic types of speaking:

- *Imitative:* It is based merely on phonetic levels of the oral production, prosodic features (intonation, rhythm), lexicon and grammatical properties of the language.
- *Intensive:* Based on the production of small phrases of oral language emphasized in grammatical, lexical and phonetic relations.
- *Responsive:* It is related to the interaction based on conversations, short questions or comments.
- *Interactive:* Based on two types of interaction, transactional language (to interchange specific information) and interpersonal exchanges (to keep social relationships).
- *Extensive:* Related to oral expressive productions such as oral presentations, speeches, role plays, etc.

The main goal of teaching speaking skills is to communicate accurately. Foreign language learners should have the capability of making themselves understood while they use the language orally. Consequently, another goal lies in avoiding misunderstanding in the message caused by flawed grammar, vocabulary. Teachers can use activities based on language output, language input, and communicative output in order to help leaners develop communicative effectiveness.

Even though there are three more skills in the English language, speaking is the most useful and competent one among the others since most of communication is done through speech. Parupalli

(2019) suggests that speaking skills are the most vital communication method since speaking skillfully provides speakers with several different advantages. The most noteworthy ones are:

- To actively participate in pare or group activities in class.
- To develop critical thinking
- To perform well in speeches
- To give presentations for all purposes
- To develop and express personal judgments
- To keep over understanding and reasoning very sharp
- To communicate effectively
- To interact with others in different environments
- To boost up speech knowledge

Since there are several advantages of speaking skills, more emphasis and priority should be given to them as they are pretty useful for the whole development of the EFL learners' performance. Therefore, multiple techniques, strategies and approaches to develop these skills should be integrated and applied to construct learner's oral communication, which is one of the most important features in this contemporary academic world.

Martin (2016) claims that speaking level of fluency measures proficiency in language, consequently learner's abilities to convert ideas and thoughts into words are found essentially more important in academic fields since without developing good speaking skills, learners tend to suffer lifelong negative consequences. Speaking English successfully plays an essential role in developing and increasing reading and writing skills, as Rivers (1981) remarks, when we write and read, we employ what we know of the oral language we have heard.

In order to develop speaking skills in students, Hadfield (2018) suggests that teachers should adopt several teaching strategies and activities. English teachers could introduce some fun and fresh activities focused on language to get the students to speak in class; those activities should be chosen based on student's level and necessities. On the other hand, Broughton and colleagues (2016), divides speaking activities into:

a) Controlled oral work

It includes dialogue, which can also be used for controlled, guided and free work as well; and it is useful for all levels: from beginners to advanced.

Controlled oral work can be supported by drills, which is choral and individual listening to repetition of teacher's model pronunciation.

b) Guided oral work

Its aim is to give learners a limited freedom and to make them practice what they have learned and in addition, making mistakes is part of the learning process. Some activities for this work are: role plays, model dialogues, discussions, debates, simulations and communication games.

c) Free oral work

In this activity learners will be able to produce the language by expressing themselves through the stimulus of teachers creating situations to make students be entirely active and involved in communication. Some of those stimuli can be: pictures, videos, audios, texts, games or puzzles which motivate and prompt learners to perform oral speeches.

Zulfiqar (2019) describes some characteristics of successful speaking activities they are students talk a lot, participant is even, motivation is high, and language is of an acceptable level. Each characteristic is explained below:

- *Students talk a lot:* Being students to success in speaking is let them talk a lot as much as possible with their classmates and make them feel active during the development of the task.
- *Participation is even:* In the classroom all the students have the chance to share or express their opinion; it is not dominated by one talkative participant. It means that the whole classes are involved in the acquisition and development of this skill, therefore all of them have the same chance and period of time to speak in class.
- *Motivation is high:* Motivation is relevant in the language acquisition. Active classes encourage students' interest to speak. It appears by giving them interesting topics in which they explore their opinion through classroom interaction.
- *An acceptable level of language:* Learners express their opinions in utterances that are relevant, having the ability to comprehend others and with an acceptable level of language accuracy in which involve pronunciation, grammar, fluency, and comprehensible. Students try to use speaking correctly in real communication.

1.2 Objectives

1.2.1 General objective

To determine how Edu-tech, as a teaching strategy, contributes to the development of the English speaking skills.

1.2.2 Specific objectives

- To recognize the different methods, tools and resources that teachers currently use to expand learners speaking skills.
- To analyze the effect of including tasks and activities using apps and webpages in class.
- To identify the perception that the teacher and students have about using technology for educational purposes.

CHAPTER II

RESEARCH METHODOLOGY

2.1 Resources

2.1.1 Population

The present research worked with a population of 24 individuals, 23students of the fifth semester of Pedagogía de los Idiomas Nacionales y Extranjeros, who were considered as a whole for the present project. In this sense, the investigation got needed information through surveys applied to the students of this group. Furthermore, one teacher, from the same career, was considered to this research for an interview.

Table 2
Population

Description	Number	Percentage
Students from first level	23	99%
Teachers	1	1%
TOTAL	24	100%

Source: Direct research
Elaborated by: Rugel, S (2020)

2.1.2 Instruments

A survey

For the accomplishment of this research, three instruments were used. The first instrument was a *survey,* as a tool of collection of primary information about the criteria that students have about the use of Educational Technology.

All these questions were resultant of an operation of both variables of this project: Edu-tech, and the speaking skills. In addition, this survey had a total of ten items, five multiple choice questions

where they also were allowed to write by themselves their answer according to the situation; and five Likert scale questions of frequency (always, often, sometimes, rarely and never). According to Bertram (2018), Likert scales are psychometrics instruments where the surveyed have to state agreement or disagreement about an argument, item or query which is made through a neat and one-dimensional scale.

Since classes were virtual, the survey was applied via online through the use of "Google Forms". The survey used is showed in annex N° 1.

An interview

The second instrument was an *interview* that was useful to know about the perception and perspective that the teacher had about the use of "Edu-tech" in teaching English.

Denzin and Lincoln (2015) stated that an interview is a conversation; the art of making questions and listening to answers, and furthermore, it is a technique greatly influenced by personal characteristics of the interviewer.

It was a qualitative and non-structured interview; qualitative because it allowed the collection of detailed information as the person who informs orally share with the researcher what concerns a specific topic or event (Denzin and Lincoln 2015).

This interview was done via online by using the video conferencing tool "Zoom"; the interviewed was asked a total of seven open questions (subsequent of an operation of variables) aimed to make a contrast and comparison between students' and teacher's perspectives about this issue. It was managed in such a way of making the question and straight followed by the answer of the interviewed.

The questionnaire as well as the transcription of this interview is presented in annex N° 2.

Observations

Finally, the third tool employed to collect information was a total of four *class observations* aimed to perceive teacher's as well as student's behavior necessary to know the real setting that they all had to manage in class when using technology for educational purposes.

These observations were direct and non-participatory; in this type of observation the researcher just sits on the fence of the phenomena studied, as a passive spectator who is limited to register evident information, with no interaction neither implication (Denzin and Lincoln 2015).

The four observations were carried out through the use and support of a check list observation form that consisted on eleven items adapted from a checklist for identifying exemplary uses of technology and interactive media for early learning originally done by Michael Robb, Rita Catalano, Tanya Smith and Fred Rogers in 2014 for purposes pretty similar to this investigation. Those items focused on analyze different aspects such as selection, use and integration of resources as well as evaluation and assessment of activities using technology for educational purposes. This checklist is showed in annex N° 3.

Table 3
Instruments and participants

INSTRUMENT	PARTICIPANT
Survey	Students
Interview	Teacher
Observation	Researcher

Source: Researcher
Elaborated by: Rugel S (2020)

1. **Type of instrument**

1.1 Survey

OPERATIONALIZATION OF VALIABLES

Independent variable: "Edu-tech"

Table 4: Operation independent variable – survey

CONCEPTUALIZATION	DIMENSIONS	INDICATORS	BASIC ITEMS	TECHNIQUES AND INSTRUMENTS
Also known as educational technology, it essentially consists on applying human technology in class, which in general terms, pretends to carry on a psychological plan based on laws and devices to manage human learning (Sinner, 2015).	• Technology	• Web sites • Mobile applications	How often do you use technological devices in class? (Smartphones, laptops, tablets, projectors, etc.) How often do you develop web-based activities in class? (Online forums, online educational games, online quizzes, virtual assignments, etc.) What apps or websites are used to develop the lesson?	• **Technique** Survey • **Instrument** Questionnaire

	• Education	• English language leaning • Teaching methodologies, strategies or techniques	How often do you use technology to provide opportunities to expand your communicative interactions beyond the classroom? What types of activities do you do by using technology during class? How do you use technology during the lessons?	

Source: Theoretical framework
Elaborated by: Rugel, S. (2020)

Dependent variable: Speaking skills

Table 5: Operationalization of dependent variable – survey

CONCEPTUALIZATION	DIMENSIONS	INDICATORS	BASIC ITEMS	TECHNIQUES AND INSTRUMENTS
This is one of the two productive skills, it is based especially on oral communication, and it means that this ability focuses on producing the language rather than receiving it. In addition, speaking skills involve the use of speech to communicate messages and ideas to other people (Spratt, 2011).	**Content** **Production**	• Verbal information • Written information • Graphic/visual information • Interaction • Practice	How often do you think that lessons focus on exclusively developing speaking skills? Autonomously out of classes, how often do you use technological apps that allow you to develop speaking skills? What sub-skill do you think you have developed the most through the use of technology in class? What apps or websites do you use in class to develop/improve your speaking skills?	• **Technique** Survey • **Instrument** Questionnaire

Source: Theoretical framework
Elaborated by: Rugel, S. (2020)

1.2 Interview

OPERATIONALIZATION OF VALIABLES

Independent variable: "Edu-tech"

Table 6: Operationalization of independent variable – interview

CONCEPTUALIZATION	DIMENSIONS	INDICATORS	BASIC ITEMS	TECHNIQUES AND INSTRUMENTS
Also known as educational technology, it essentially consists on applying human technology in class, which in general terms, pretends to carry on a psychological plan based on laws and devices to manage human learning (Sinner, 2015).	**Technology**	• Web sites • Mobile applications	What apps or web sites do you use to develop your lessons? How do you select the webpages and apps that you use in your lessons? Do you make your students develop web-based activities in your lessons? If yes, how?	• **Technique** Interview • **Instrument** Questionnaire
	Education	• English language leaning • Teaching methodologies,	What teaching methodologies do you apply in your lessons? Do you think that your	

		strategies or techniques	student's English speaking skills could be improved through the use of educative applications and web pages? If yes, how?	

Source: Theoretical framework
Elaborated by: Rugel, S. (2020)

Dependent variable: Speaking skills

Table 7: Operationalization of dependent variable – interview

CONCEPTUALIZATION	DIMENSIONS	INDICATORS	BASIC ITEMS	TECHNIQUES AND INSTRUMENTS
This is one of the two productive skills, it is based especially on oral communication, and it means that this ability focuses on producing the language rather than receiving it. In addition, speaking skills involve the use of speech to communicate messages and ideas to other people (Spratt, 2011).	**Content** **Production**	• Verbal information • Written information • Graphic/visual information • Interaction • Practice	Do you focus some of your lessons on exclusively developing speaking skills? If yes, how? Would you name some of the apps or web sites that you use to help your learners' developing their speaking skills?	• **Technique** Interview • **Instrument** Questionnaire

Source: Theoretical framework
Elaborated by: Rugel, S. (2020)

2. Validation of data collection instruments

The validation of the instruments for this project was qualitative and validated by judges or experts. Hurtado (2017) argues that this is a technique based on theoretical correspondence between items of the instrument and concepts of an event. It is meant to corroborate the consensus with researcher and experts regarding to the purpose of each item.

Previous to the application of the survey and interview to students and the teacher respectively, two teachers, from the same career, were asked to validate these instruments of data collection. A rubric was presented to these experts to examine and validate the instruments; this rubric had a chart where the judges had to indicate each item as “relevant” or “no relevant” and the corresponding observation of it.

After this validation, some corrections were done in order to improve the questions in both instruments. These adjustments suggested by the experts allowed the modification and correction of a couple of details to make the questions clear and precise. This validation is evidenced in annex N° 4.

2.2 Methods

Research approach

This research was mixed: qualitative and quantitative; qualitative since its focus is related the most to a subjective and inductive interpretation; and quantitative because data collection was also done by using surveys and it included the use of statistics in order to get precise results.

The method of the qualitative research is the collection de data based on the observation of natural behavior, interviews, and open answers to the posterior interpretation of senses. Qualitative investigation leans to the expansion and generalization of knowledge and the

collection of information. According to Maanen (1983), this investigation looks for explaining, predicting, describing or exploring the nature of links and relation between not structured information and variables.

On the other hand, the quantitative research is considered as the result of tangible, rigorous and accurate data which suggests that this information had been collected through systematic processes that could easily be contrasted by not only one researcher since it holds a considerable precision (Bryman, 1988).

Methodological approach

This project is a phenomenological research since it is the systematic investigation of subjectivity. In short, it attempts to know the different senses that individuals have based on their experience. The most important is to learn the interpretation process that people go through when defining their own world perception and how they act in consequence. The researcher tries to understand other's new perspectives in order to subjectively describe, comprehend and interpret this new data.

2.2.1 Research modality

Bibliographical research

Bibliographical research concerns both sequential and systematic processes of compilation, selection, evaluation, categorization, and analysis of virtual and physical empiric material that will be used as a methodological, theoretical and conceptual source for a certain investigation (Rodríguez, 2013).

This project was based on information collected from sources such as journals, academic articles, books, magazines, and previous investigation projects as well. Each of them from different authors who made good quality researches that contributed with strong relevance to this research.

Field research

The special techniques in field research try to compile and evidence all in organization of information related to the issue chosen as the object of study (Baena, 2017).

This project was based on the reality that students, from Carrera de Pedagogía de los Idiomas Nacionales y Extranjeros from Universidad Técnica de Ambato, went through when using "Edu-Tech" or Educational Technology to develop their English speaking skills.

2.2.2 Level of research

Exploratory

According to Cazau (2016), the exploratory research, as its name implies, explores a research matter or problem not greatly studied in order to become more familiar with phenomena relatively novel. Therefore, it avails to identify concepts or promising variables, and even to recognize potential relations between them.

This level of research allows enhancing the knowledge about a phenomenon to define better the problem to research when studying what type of factors and variables could be related to the phenomenon in question.

This project applied this level of research because it allowed obtaining real data by inquiring about the development's reality of the productive skills in English learners.

Descriptive

This research involves systematic observation of the subject matter and to catalog the information that is observed to be used and replicated by others. The main objective of this type of research is to get accurate data that can be applied in statistic averages and estimations that truly reflect real facts (Cazau, 2016).

It was a descriptive research because, through this level, different characteristics of the issue studied had been evidenced in order to describe the variables of this research through direct observation of the current situation about the use of technology for education.

2.2.3 Paradigm

This project has a *constructivist* paradigm as it is described as an approach that states that people construct their own knowledge and understanding through experiences and reflecting those empirical events (Honebein, 1996), that is, people learn through experience.

In this paradigm, the researcher needs to reflect in the study, the different points of view of the participants involved. Since the cultural context is fundamental, the information must be collected in the right place where people do their daily activities; inductive logic is applied, from the specific to the general. The main goal of this paradigm is to describe, comprehend and interpret perceptions and significances as products from the participant's experiences. The investigator and individuals are all involved into an interactive process.

2.2.4 Data collection plan

The investigation proceeding is based on three main instruments of data collection in order to compare and analyze information obtained from different sources.

1. A survey

2. An interview
3. Class observations

First, a *survey* was applied to students in order to get information about what technological resources they were using to develop a lesson, what tasks and activities they were meat to do by using educational technology, the apps and websites they managed to achieve a learning outcome, and finally, to know about their perception about the speaking skills they consider they have developed by using this strategy.

Table 8
Information Collection Plan

Basic questions	Explanation
Why?	To achieve the objectives of this research.
Whom?	Teacher and learners of fifth semester from Carrera de Pedagogía de los Idiomas Nacionales y Extranjeros from Universidad Técnica de Ambato.
Which aspects?	"Edu-tech" teaching strategy and the speaking skills.
Who?	Sara Michelle Rugel Torres; the researcher
When?	Period: April – August 2020
Where?	Universidad Técnica de Ambato – Facultad de Ciencias Humanas y de la Educación.
What instruments?	Survey, interview and observation.
How often?	Once
Which situation?	During the regular schedule of classes (virtual education).

Source: Researcher
Elaborated by: Rugel, S. (2020)

Secondly, an *interview* was conducted to a teacher who was currently training this group of students, in order to obtain information about what teaching methods, strategies, and techniques being used with learners; the technological resources and tools that the teacher was using to

develop a lesson, and in addition, the different apps and websites used to teach English and develop the learner's speaking skills.

Finally, a total of four *observations* were carried out by the researcher in order to know the real setting that students, as well as teachers, are in through the use of "Edu-tech" to develop speaking skills in class.

2.3 Hypothesis statement

Null hypothesis

The use of Edu-tech does not influence the development of the English speaking skills on EFL learners from fifth semester of Pedagogía de los Idiomas Nacionales y Extranjeros from Universidad Técnica de Ambato.

Alternative hypothesis

The use of Edu-tech provide opportunities to expand the development of the English speaking skills on EFL learners from fifth semester of Pedagogía de los Idiomas Nacionales y Extranjeros from Universidad Técnica de Ambato.

CHAPTER III

RESULTS AND DISCUSSION

3.1 Analysis and discussion of the results

3.1.1 Data analysis methods

The characteristic of allowing multiple answers to questions that involve the relation between the study variables lead to carry out the construction and analysis of contingency tables to establish if the use of Edu-tech enhances the development of the English speaking skills on EFL learners.

3.1.2 Analysis and interpretation of results

3.1.2.1 Student's survey

Question 1

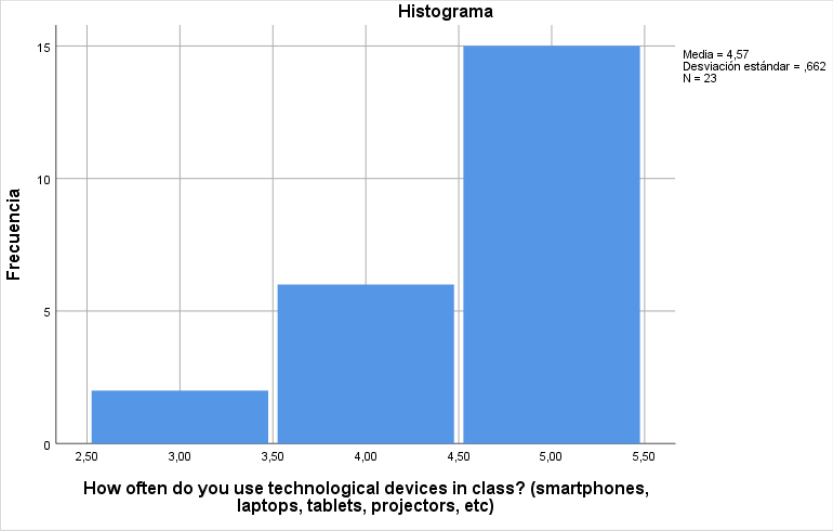
How often do you use technological devices in class? (Smartphones, laptops, tablets, projectors, etc.)

Table 9: *Technological devices use*

		Statistic
Mean		4,5652
95% of confidence interval	Lower limit	4,2788
for mean	Upper limit	4,8516
Desv. Deviation		,66237
Minimum		3,00
Maximum		5,00
Range		2,00
Asymmetry		-1,288
Kurtosis		,625

Source: Student's survey
Elaborated by: Rugel, S. (2020)

Figure 1: *Technological devices use*



Source: Student's survey
Elaborated by: Rugel, S. (2020)

Analysis and interpretation

The results indicate a mean tendency of 4.57 that could vary between 4.28 and 4.85. This states that people surveyed use technological devices "very often" in class. Leptokurtic distributions of data reveal that this tendency is truly sharped, and, the negative skew of 1.29 justify that most of the surveyed chose the option above the mean, it means, "always". Finally, standard deviation of 0.66 states a dispersion relatively low, regards to be assert that there is a very frequent use of technological devices such as smartphones, laptops, tablets, and so on, in classes.

Question 2

How often do you use technology to provide opportunities to expand your communicative interactions beyond the classroom?

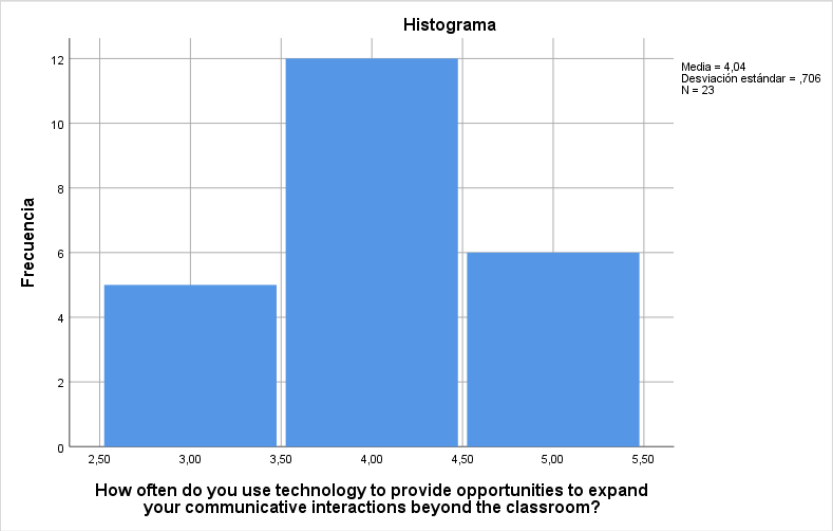
Table 10: *Technology to expand interaction*

		Statistic
Mean		4,0435
95% of confidence interval	Lower limit	3,7383
for mean	Upper limit	4,3486

Desv. Deviation	,70571
Minimum	3,00
Maximum	5,00
Range	2,00
Asymmetry	-,061
Kurtosis	-,820

Source: Student's survey
Elaborated by: Rugel, S. (2020)

Figure 2: *Technology to expand interaction*



Source: Student's survey
Elaborated by: Rugel, S. (2020)

Analysis and interpretation

The data displayed above show that the mean tendency is 4.04 which could also oscillate between 3.74 and 4.35. It means that the students involved in this survey "often" use technology to provide opportunities to expand communicative interactions beyond the classroom. According to the leptokurtic distributions, the tendency is not marked at all and it fluctuates between the options "sometimes" and "always". Likewise, the negative skew of 0.061 states that a slight majority of respondents selected the option that is above the mean, that is "always". Lastly, the standard deviation of 0.71 suggests a relatively low dispersion; therefore, it is quite certain to

establish that there is a frequent use of technology aimed to provide opportunities to expand communicative interactions beyond the classroom.

Question 3

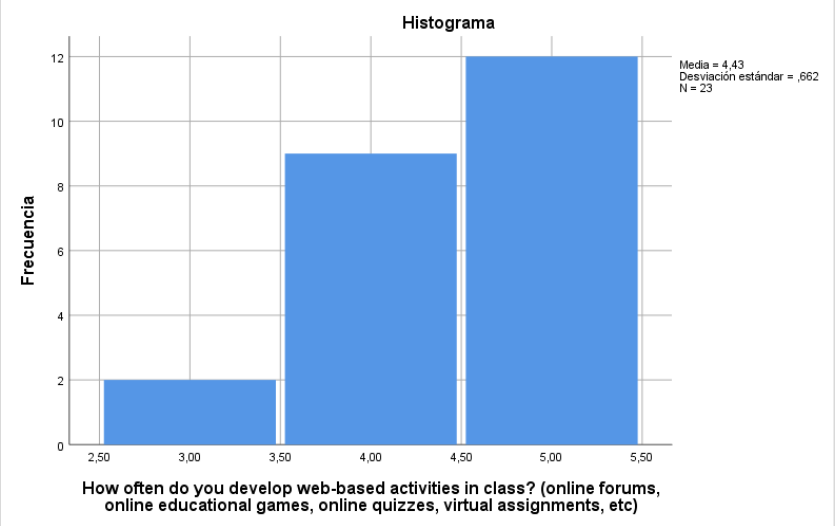
How often do you develop web-based activities in class? (Online forums, online Educational games, online quizzes, virtual assignments, etc.)

Table 11: *Web-based activities in class*

		Statistic
Mean		4,4348
95% of confidence interval for mean	Lower limit	4,1484
	Upper limit	4,7212
Desv. Deviation		,66237
Minimum		3,00
Maximum		5,00
Range		2,00
Asymmetry		-,767
Kurtosis		-,347

Source: Student's survey
Elaborated by: Rugel, S. (2020)

Figure 3: *Web-based activities in class*



Source: Student's survey
Elaborated by: Rugel, S. (2020)

Analysis and interpretation

According to the data obtained, the mean tendency of 4.43 could range between 4.15 and 4.72. These results demonstrate that students "very often" develop web-based activities in class. Leptokurtic distributions show that this tendency is not very strong and it shifts among the options "sometimes" and "always". At the same time, the negative skew from 0.767 states that most of the surveyed students selected the option which is above the mean, it means, "always". Eventually, the standard deviation of 0.66 denotes a relatively low dispersion, therefore it can be said that there are a very frequent development of web-based activities in class such as online forums, online educational games, online quizzes, virtual assignments, and so on.

Question 4

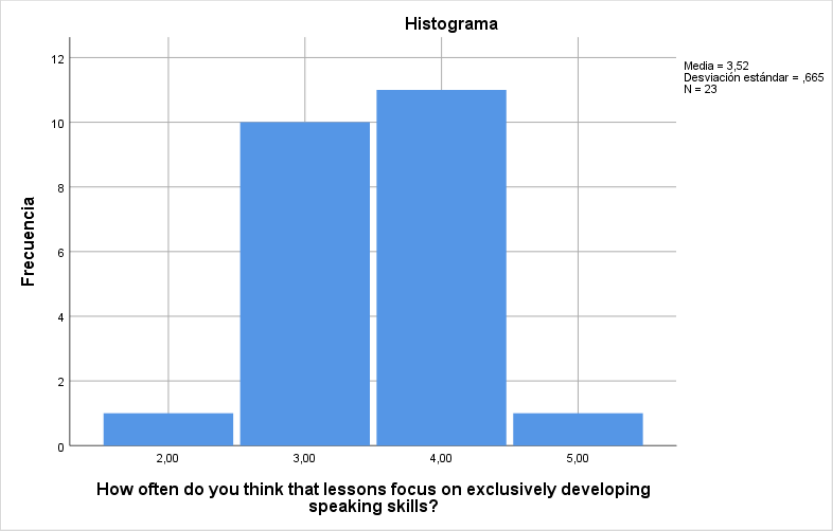
How often do you think that lessons focus on exclusively developing speaking skills?

Table 12: *Classes focused on speaking*

		Statistic
Mean		3,5217
95% of confidence interval	Lower limit	3,2340
for mean	Upper limit	3,8095
Desv. Deviation		,66535
Minimum		2,00
Maximum		5,00
Range		3,00
Asymmetry		-,086
Kurtosis		-,035

Source: Student's survey
Elaborated by: Rugel, S. (2020)

Figure 4: *Classes focused on speaking*



Source: Student's survey
Elaborated by: Rugel, S. (2020)

Analysis and interpretation

The arithmetic mean showed in the table above is of 3.52. Considering a confidence interval of 95% which could vary between 3.23 and 3,81. It means that an important number of students pointed that "sometimes" lessons exclusively focus on developing speaking skills; meanwhile there is another significant group that indicated that lessons "often" have this particular focus. Leptokurtic distribution of data reveals that this tendency is slightly marked by the "often" option. In addition, the negative skew of 0.086 is in line with the histogram lightly moved to the left, in other words, there is a small majority of students that chose for the option "often". Finally, the standard variation of 0.66 is fairly low. All of these results show that lessons are frequently focused on developing speaking skills.

Question 5

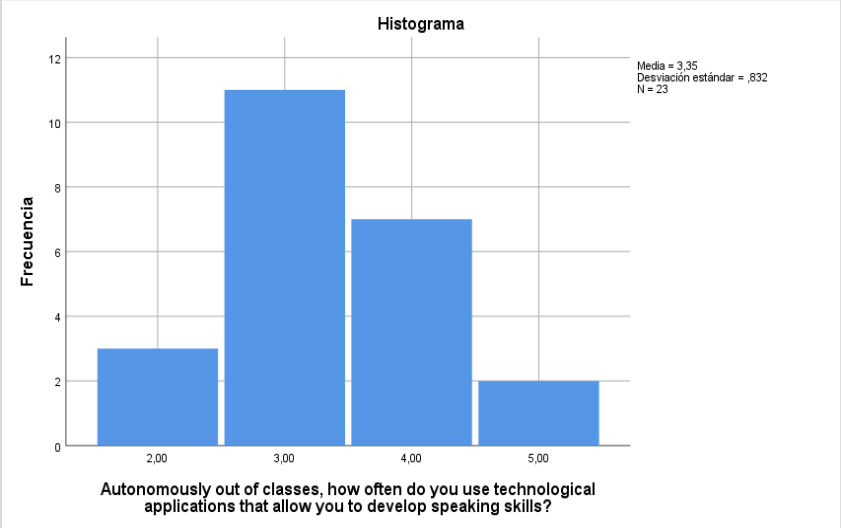
Autonomously out of classes, how often do you use technological applications that allow you to develop speaking skills?

Table 13: *Technological applications to develop speaking*

		Statistic
Mean		3,3478
95% of confidence interval	Lower limit	2,9882
for mean	Upper limit	3,7075
Desv. Deviation		,83168
Minimum		2,00
Maximum		5,00
Range		2,00
Asymmetry		,273
Kurtosis		-,182

Source: Student's survey
Elaborated by: Rugel, S. (2020)

Figure 5: *Technological applications to develop speaking*



Source: Student's survey
Elaborated by: Rugel, S. (2020)

Analysis and interpretation

The results obtained present a media of 3.34. The confidence interval at which this average varies ranges from 2.99 to 3.71. This indicates that surveyed people "sometimes" use technological applications that allow them to develop their speaking skills. The platykurtic distribution of data reveals that this trend is not very marked and fluctuates between the options "sometimes" and

"often". Likewise, the positive asymmetry of 0.273 explains that most respondents chose the below-average option, it means, “sometimes”. Finally, with standard deviation of 0.83 it can be said that it is not very common for students to, autonomously, use technological applications out of classes to develop their speaking skills.

Question 6

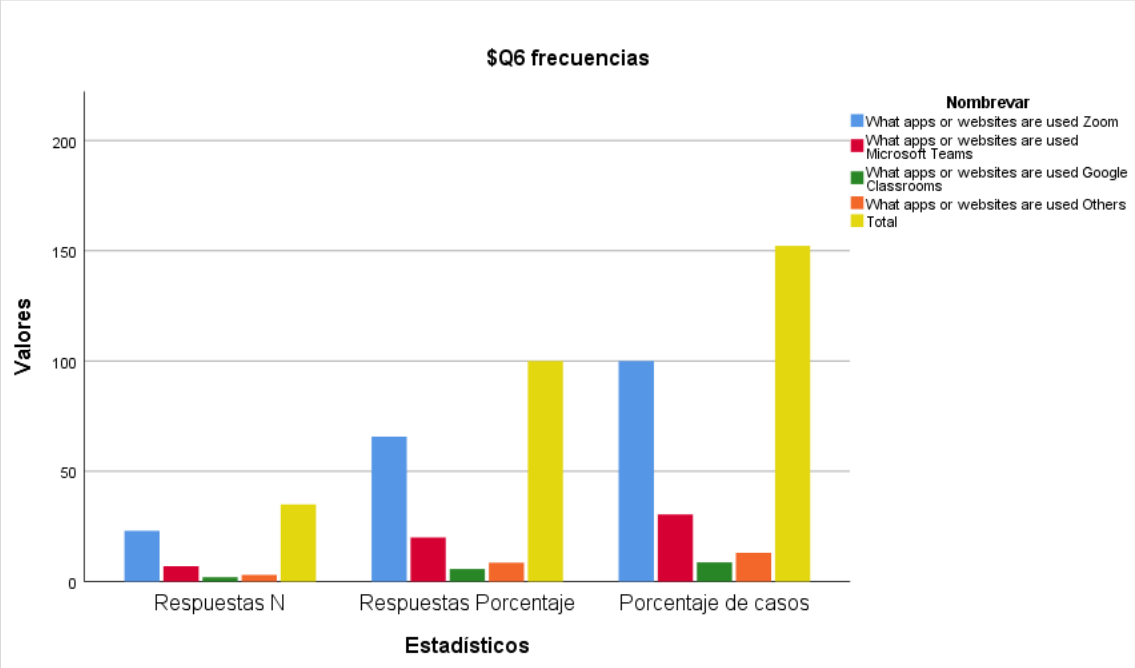
What apps or websites are used to develop the lesson?

Table 14: *Apps and websites to develop lessons*

	Answers		Percentage of cases
	N	Percentage	
Zoom	23	65,7%	100,0%
Microsoft Teams	7	20,0%	30,4%
Google Classrooms	2	5,7%	8,7%
Others	3	8,6%	13,0%
Total	35	100,0%	152,2%

Source: Student’s survey
Elaborated by: Rugel, S. (2020)

Figure 6: *Apps and websites to develop lessons*



Source: Student’s survey
Elaborated by: Rugel, S. (2020)

Analysis and interpretation

100% of surveyed students stated that they use Zoom to develop lessons, 30.4% Microsoft Teams, 8.7% Google Classrooms, and 13% other apps. This places the Zoom platform as the most widely application used, as it has a weight of 65.7% among the options chosen by the people surveyed.

Question 7

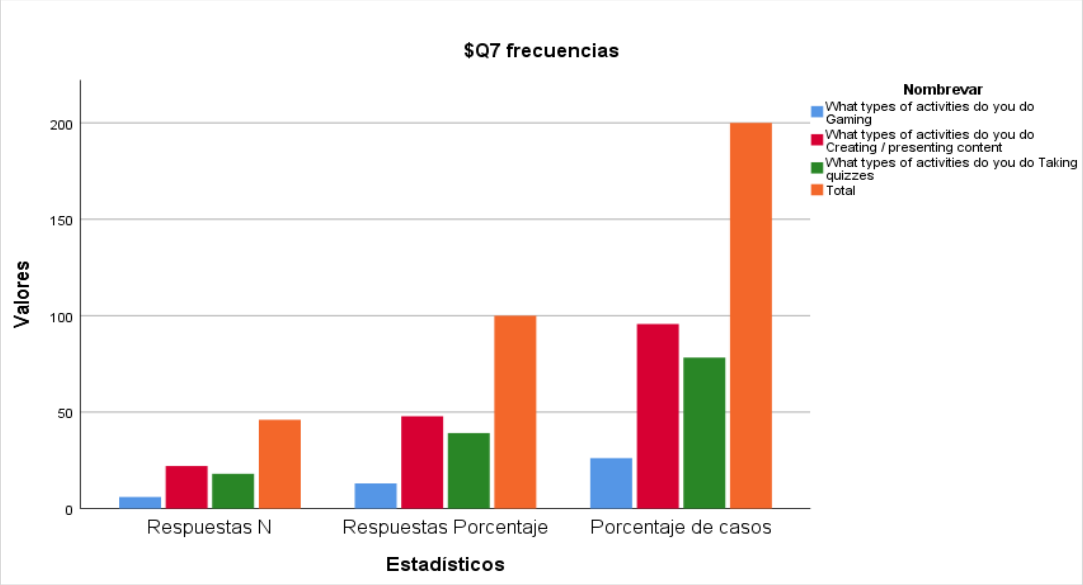
What types of activities do you do by using technology during class?

Table 15: *Activities using technology*

	Answers		Percentage of cases
	N	Percentage	
Gaming	6	13,0%	26,1%
Creating / presenting content	22	47,8%	95,7%
Taking quizzes	18	39,1%	78,3%
Total	46	100,0%	200,0%

Source: Student's survey
Elaborated by: Rugel, S. (2020)

Figure 7: *Activities using technology*



Source: Student's survey
Elaborated by: Rugel, S. (2020)

Analysis and interpretation

The 26.1% of people surveyed use technological resources in class for gaming, 95.7% use it to create and present content, and 78.3% to take quizzes. This indicates that technology in class is mainly used for creating and presenting content, inasmuch as it has a weight of 47.8% among the options chosen by the students surveyed. However, the taking quizzes through technological resources is also an alternative to take notice of, because, it has a representativeness of the 39.1%.

Question 8

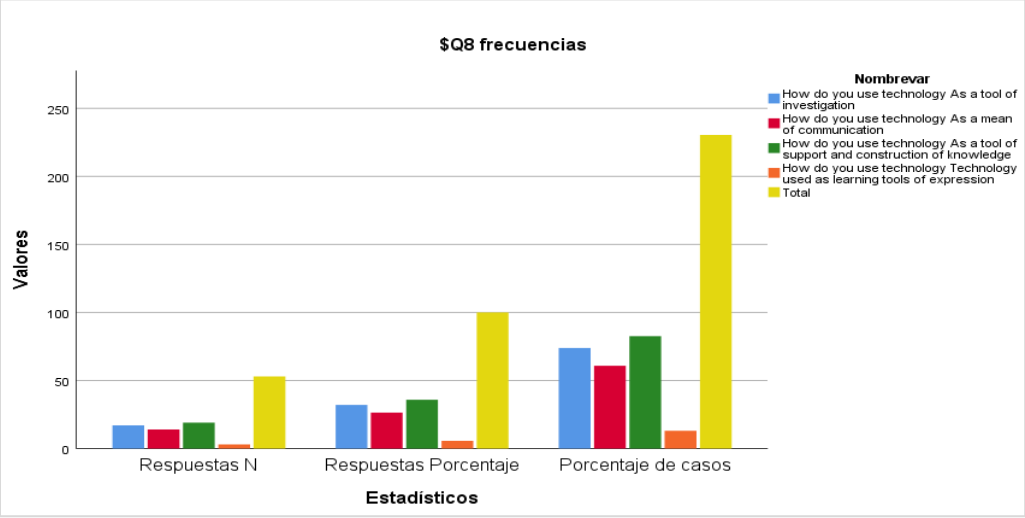
How do you use technology during the lessons?

Table 16: *Usage of technology in class*

	Answers		Percentage
	N	Percentage	of cases
As a tool of investigation	17	32,1%	73,9%
As a mean of communication	14	26,4%	60,9%
As a tool of support and construction of knowledge	19	35,8%	82,6%
Technology used as learning tools of expression	3	5,7%	13,0%
Total	53	100,0%	230,4%

Source: Student's survey
Elaborated by: Rugel, S. (2020)

Figure 8: *Usage of technology in class*



Source: Student's survey
Elaborated by: Rugel, S. (2020)

Analysis and interpretation

According to the results, 73.9% of surveyed students use technology as a research tool, 60.9% use it as a mean of communication, 82.6% as a tool to support and build knowledge, and 13% as a learning tool of expression. This indicates that the technology is mostly used in class as a tool to support and build knowledge, since it has a weight of 35.8% among the options chosen by the people surveyed. Nevertheless, it is not far superior to its use as a researching tool or as a mean of communication, because these also have significant weights with 32.1% and 26.4% respectively. This diversity clearly shows that technological means are used for different academic objectives related to learn English.

Question 9

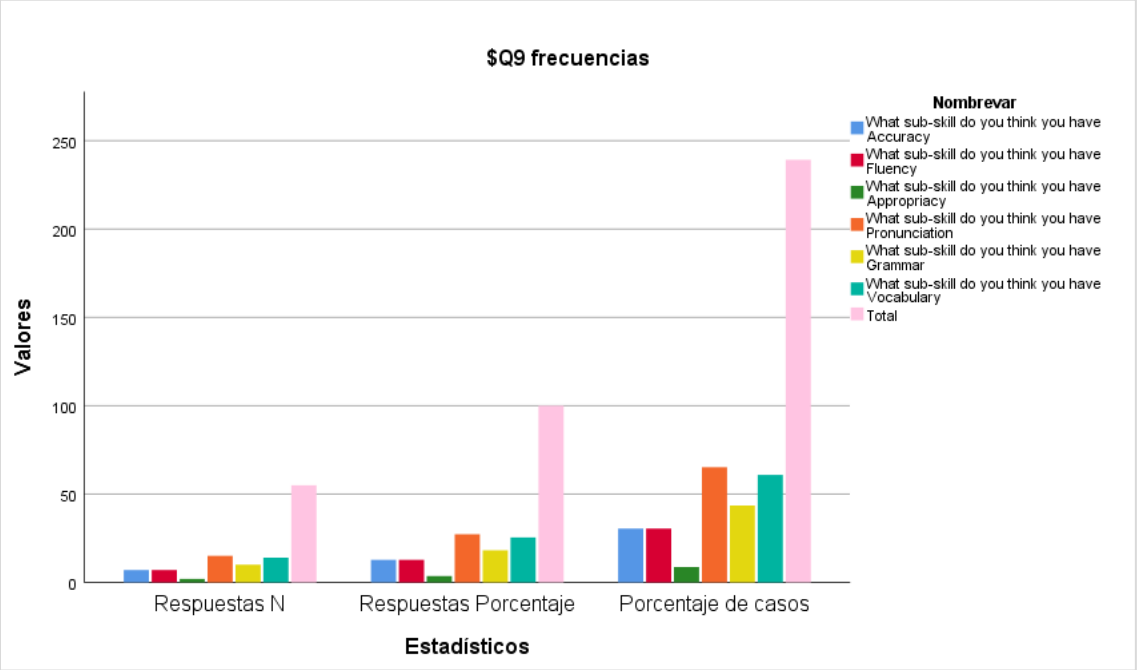
What sub-skill do you think you have developed the most through the use of technology in class?

Table 17: *Sub-skills developed through technology*

	Answers		Percentage of
	N	Percentage	cases
Accuracy	7	12,7%	30,4%
Fluency	7	12,7%	30,4%
Appropriacy	2	3,6%	8,7%
Pronunciation	15	27,3%	65,2%
Grammar	10	18,2%	43,5%
Vocabulary	14	25,5%	60,9%
Total	55	100,0%	239,1%

Source: Student's survey
Elaborated by: Rugel, S. (2020)

Figure 9: Sub-skills developed through technology



Source: Student's survey
Elaborated by: Rugel, S. (2020)

Analysis and interpretation

Based on the information obtained, 30.4% of respondents state that technology has helped them to develop accuracy, another 30.4% developed fluency, an 8.7% point that it helped them to develop appropriacy, 65.2% developed pronunciation, a 43.5% of students emphasize their enhance in grammar and a 60.9% of learners state that increased vocabulary. This shows that, according to the perception of the students surveyed, technology mainly helped them developing pronunciation and vocabulary, as they have weights of 27.3% and 25.5%, respectively.

Question 10

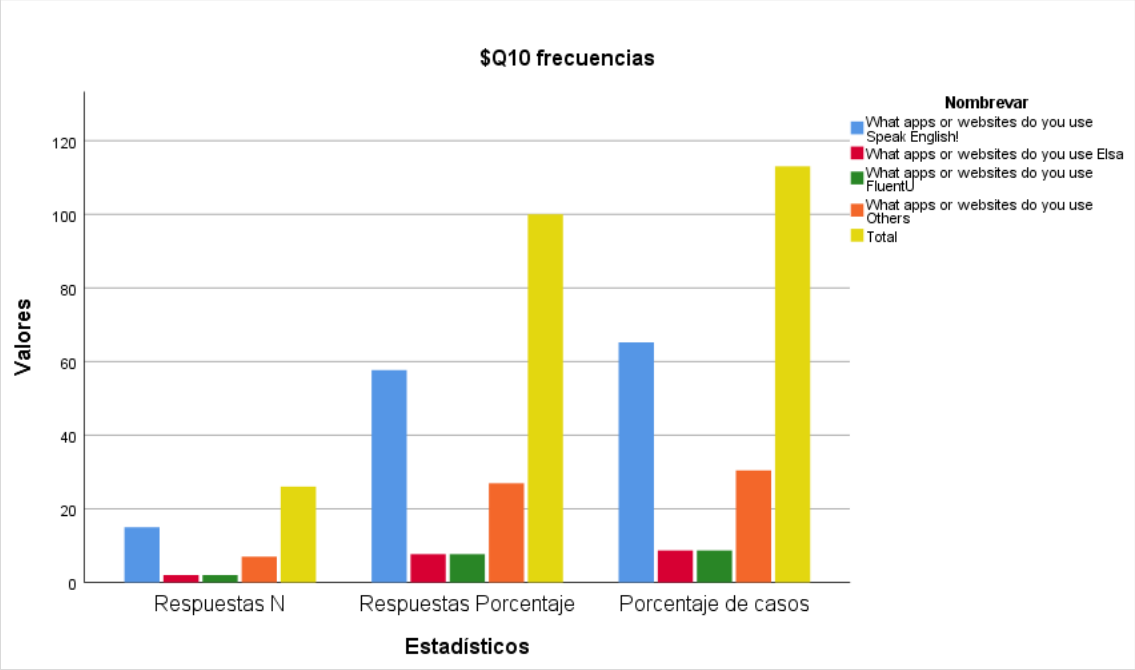
What apps or websites do you use in class to develop/improve your speaking skills?

Table 18: *Apps and websites to develop speaking*

	Answers		Percentage of cases
	N	Percentage	
Speak English!	15	57,7%	65,2%
Elsa	2	7,7%	8,7%
FluentU	2	7,7%	8,7%
Others	7	26,9%	30,4%
Total	26	100,0%	113,0%

Source: Student's survey
Elaborated by: Rugel, S. (2020)

Figure 10: *Apps and websites to develop speaking*



Source: Student's survey
Elaborated by: Rugel, S. (2020)

Analysis and interpretation

The 65.2% of surveyed students stated that they use "Speak English!" to develop or improve their English speaking skills, 8.7% use "Elsa", another 8.7% "FluentU" and 30.4% make use of other

websites. These results place “Speak English!” as the most used application, since it has a weight of 65.2% among the options chosen by the people surveyed.

Table 19: *Summary of frequency - survey*

	Never		Rarely		Sometimes		Often		Always	
	F	**%**	**F**	**%**	**F**	**%**	**F**	**%**	**F**	**%**
How often do you use technological devices in class? (smartphones, laptops, tablets, projectors, etc)	0	0,0%	0	0,0%	2	8,7%	6	26,1%	15	65,2%
How often do you use technology to provide opportunities to expand your communicative interactions beyond the classroom?	0	0,0%	0	0,0%	5	21,7%	12	52,2%	6	26,1%
How often do you develop web-based activities in class? (online forums, online educational games, online quizzes, virtual assignments, etc)	0	0,0%	0	0,0%	2	8,7%	9	39,1%	12	52,2%
How often do you think that lessons focus on exclusively developing speaking skills?	0	0,0%	1	4,3%	10	43,5%	11	47,8%	1	4,3%

Autonomously out of classes, how often do you use technological applications that allow you to develop speaking skills?	0	0,0%	3	13,0%	11	47,8%	7	30,4%	2	8,7%

Source: Student's survey
Elaborated by: Rugel, S. (2020)

3.1.2.2 Teacher's interview

Branched chart

Table 20: *Interview - Qualitative analysis*

Students	skills	learning	speaking	activities	assignment	classes	evidence	different
					online	learners	websites	applications
			interactive	knowledge		webpages	lessons	resources
		tools			students			
Technology	speaking					digital	Appropriacy	Content
			media	practice				
		develop			autonomous	display	fluency	participation
Teacher	lesson		communicative	questions				
		educator			collaborative	visual	evaluate	Progress

Source: Teacher's interview
Elaborated by: Rugel, S. (2020)

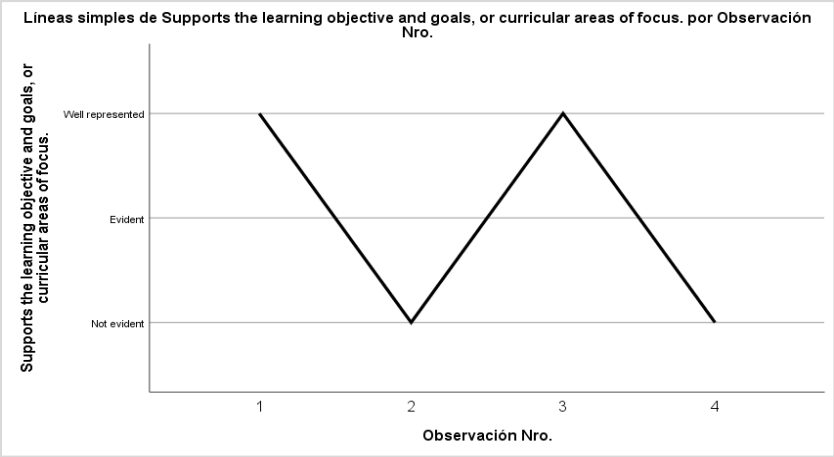
Through the use of the software "NVivo", aimed to assay and examine relationships in non-numerical data to produce an analysis purely qualitative, an interview with a teacher was used as subject of matter. It was the case of a teacher from Pedagogía de los Idiomas Nacionales y Extranjeros at Universidad Técnica de Ambato, who showed her position as professor using technology for educational purposes.

This analysis states that, according to the teacher interviewed, technology provides online tools to develop and enhance student's speaking skills since digital media and web-based activities support interactive self-directed learning and construction of knowledge often reflected in their language skills development in classes. In addition, technology is also a source of greatly useful tools for teachers to find websites and applications to develop lesson planning, create and project content, and didactic materials as well as present and display innovative warm-ups, wrap-ups and ice-breakers to keep learners motivated.

3.1.2.3 Class observation analysis

Item N° 1

Figure 11: *Learning objectives goals*

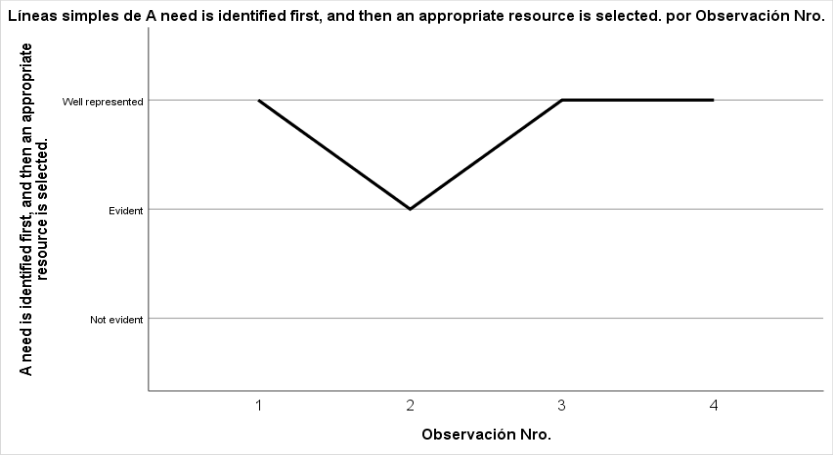


Source: Class observations
Elaborated by: Rugel, S. (2020)

The teacher presents learning objectives and goals, or focus areas of the academic curriculum, in a very variable way. Sometimes being "well represented" to the whole class, while at other times it is "not evident".

Item N° 2

Figure 12: *Suitable resources*

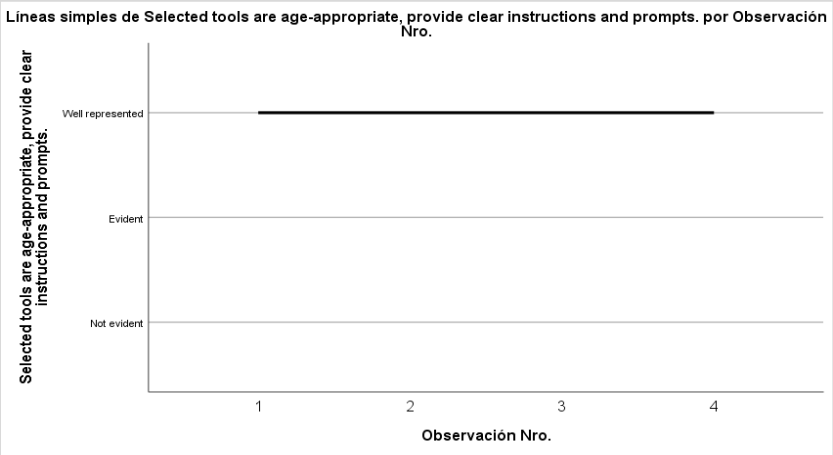


Source: Class observations
Elaborated by: Rugel, S. (2020)

It is pretty "evident" that, in class, a need is identified in order to select suitable web resources and technological devices before to start with the lesson.

Item N° 3

Figure 13: *Age-appropriate tools selection*

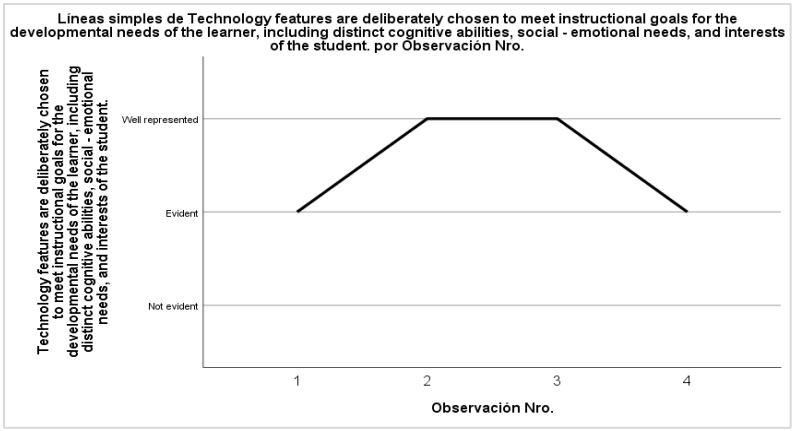


Source: Class observations
Elaborated by: Rugel, S. (2020)

Selection of suitable and age-appropriate tools is well represented since students reflect a good management of resources used in class. In addition, clear instructions are given and seem to be clear as any student demonstrates misunderstanding.

Item N° 4

Figure 14: *Technology features to achieve goals*

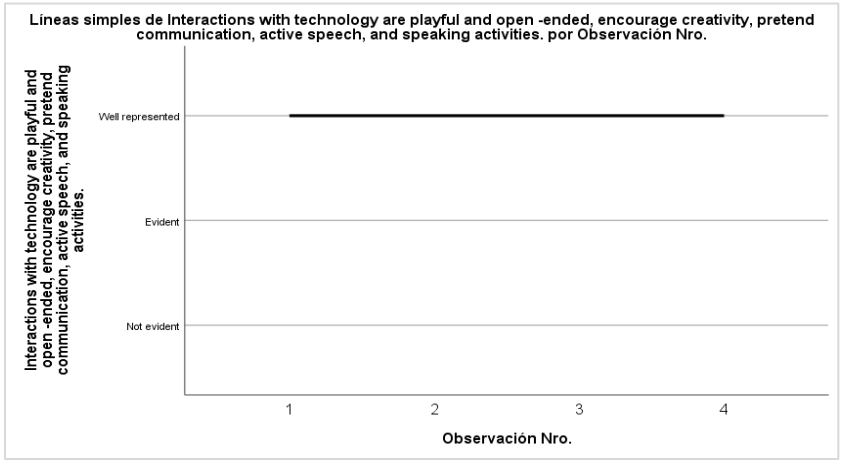


Source: Class observations
Elaborated by: Rugel, S. (2020)

It is "evident" that technology features, chosen by the teacher, are deliberately chosen to meet instructional goals for the developmental needs of the learner, including distinct cognitive abilities, social-emotional needs, and interests of the student.

Item N° 5

Figure 15: *Interactions with technology*

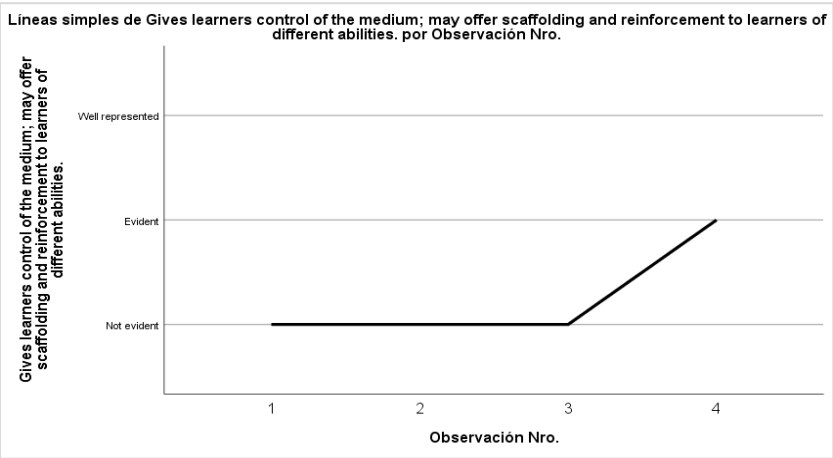


Source: Class observations
Elaborated by: Rugel, S. (2020)

Interactions with technology are well represented as playful and open-ended, encourage creativity, pretend communication, active speech, and speaking activities. Teachers' intention of making students participate communicatively is evident. She is constantly asking lots of questions in order to make learners participate during the whole lesson.

Item N° 6

Figure 16: *Scaffolding*

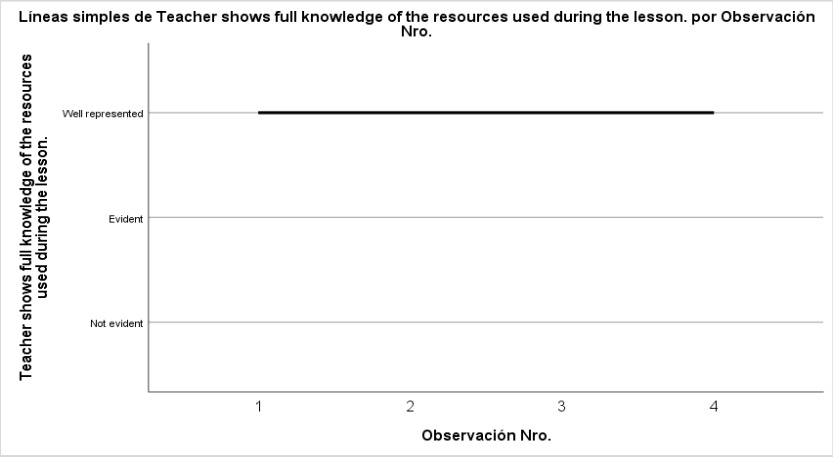


Source: Class observations
Elaborated by: Rugel, S. (2020)

Since lessons are online, it is not evident if the teacher gives learners control of the medium; may offering scaffolding and reinforcement to learners of different abilities.

Item N° 7

Figure 17: *Teachers management of technology*

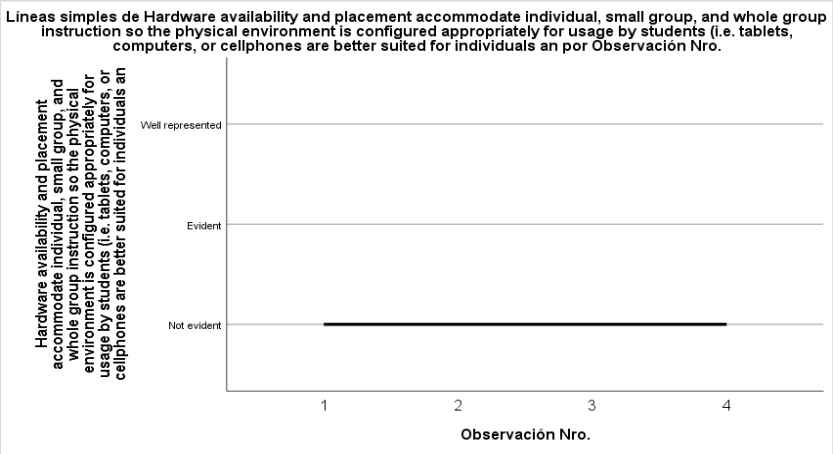


Source: Class observations
Elaborated by: Rugel, S. (2020)

Teacher's knowledge about educational resources online is well represented. The teacher shows great knowledge and management of every single resource and all of its features used during the lesson.

Item N° 8

Figure 18: *Technological availability and placement*

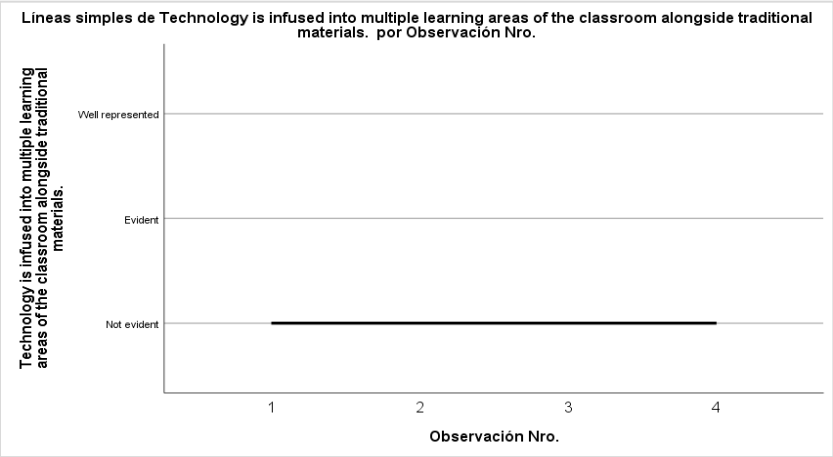


Source: Class observations
Elaborated by: Rugel, S. (2020)

It is not evident that the university offers hardware availability and placement for individual or group accommodation since classes are online. However, the physical environment seems to be configured appropriately for usage by students themselves.

Item N° 9

Figure 19: *Learning areas of classroom*

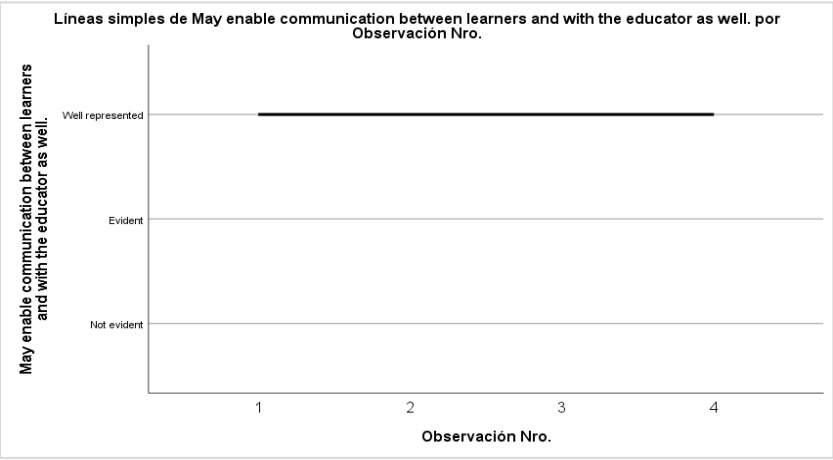


Source: Class observations
Elaborated by: Rugel, S. (2020)

Since these are virtual classes, it is not evident that technology is infused into multiple learning areas of the classroom alongside traditional materials.

Item N° 10

Figure 20: *Active communication*

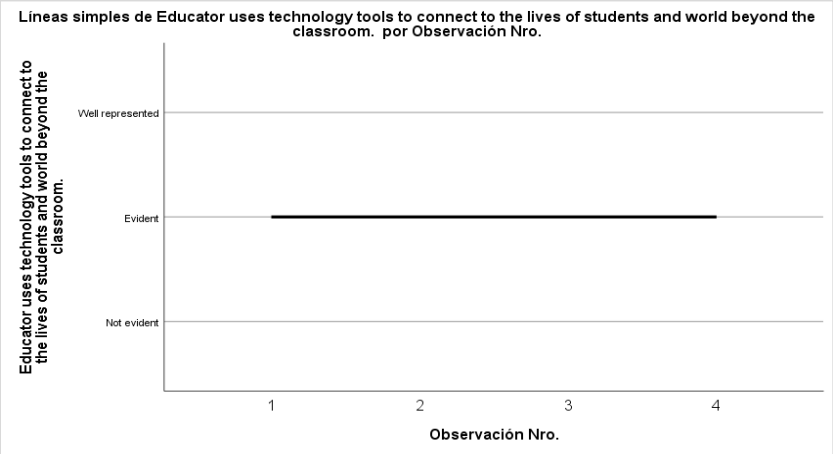


Source: Class observations
Elaborated by: Rugel, S. (2020)

It is well represented active communication between learners and with the educator as well in class. Teacher offers plenty of opportunities to make learners participate and communicate themselves.

Item N° 11

Figure 21: *Technology beyond the classroom*

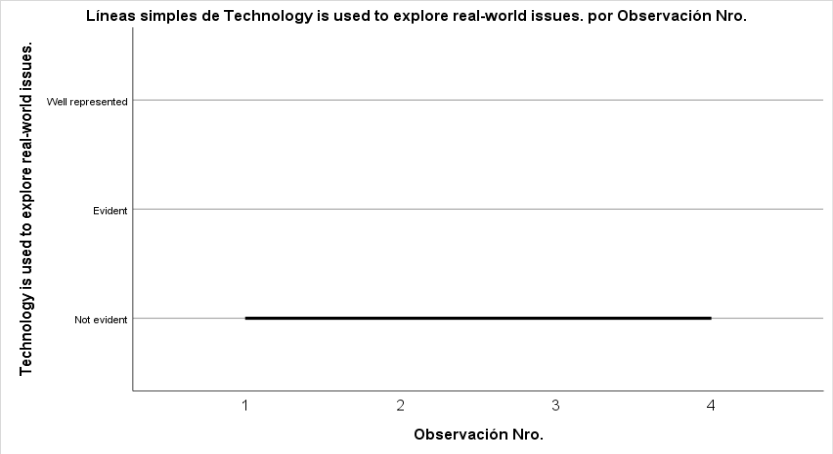


Source: Class observations
Elaborated by: Rugel, S. (2020)

It is evident that the educator uses technology to connect to the lives of students and world beyond the classroom. Teacher mentions a WhatsApp Group of the class where they can text to if any doubt or concern.

Item N° 12

Figure 22: *Exploring real-world issues*

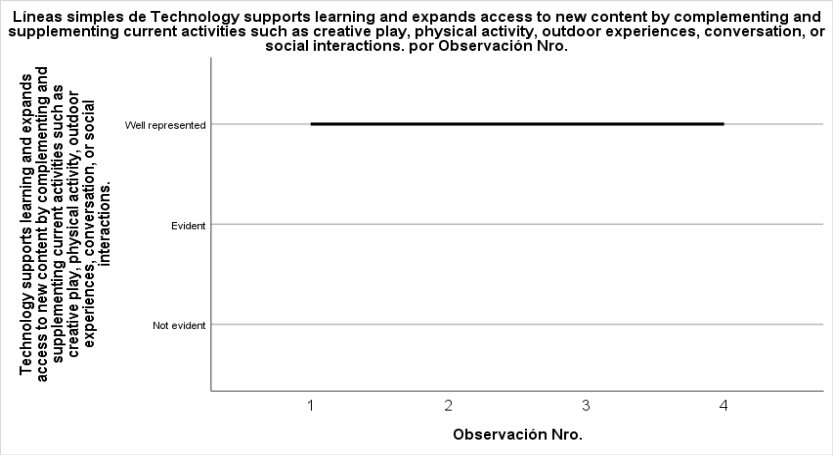


Source: Class observations
Elaborated by: Rugel, S. (2020)

There is not clear evidence that technology is used to explore real-world issues in class.

Item N° 13

Figure 23: *Access to new content*

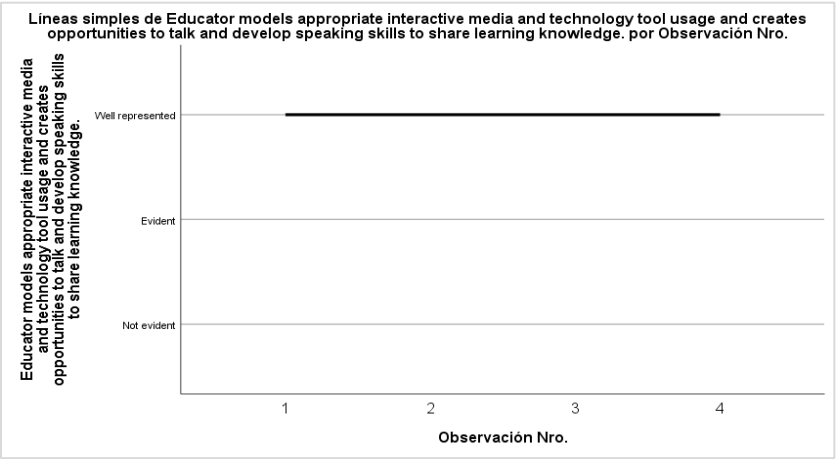


Source: Class observations
Elaborated by: Rugel, S. (2020)

It is well represented that technology supports learning and expands access to new content by complementing and supplementing current activities such as creative play, physical activity, outdoor experiences, conversation, or social interactions.

Item N° 14

Figure 24: *Modulation of interactive media*

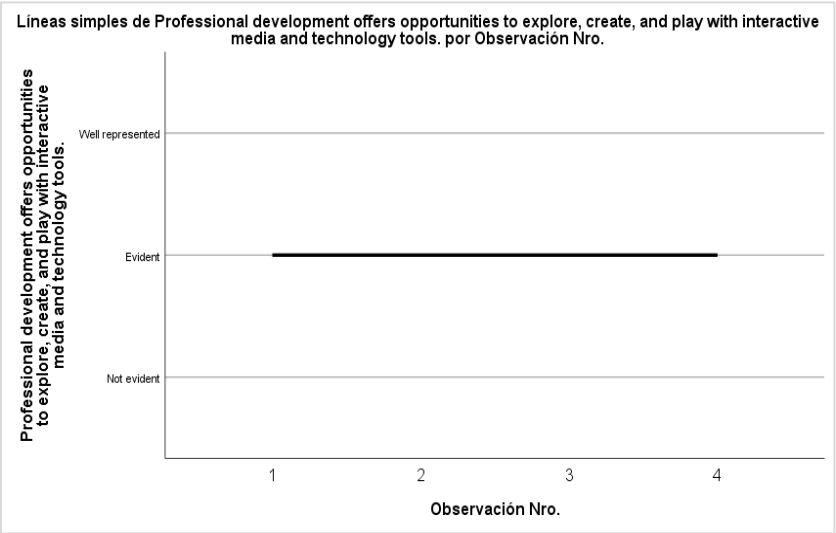


Source: Class observations
Elaborated by: Rugel, S. (2020)

Educator well represents appropriate modulation of interactive media and technology tool usage and creates opportunities to talk and develop speaking skills to share learning knowledge. Teacher constantly makes use of the "Breakout Rooms" from "Zoom" in order to make students plan and develop collaborative tasks.

Item N° 15

Figure 25: *Opportunities to explore, create and play*

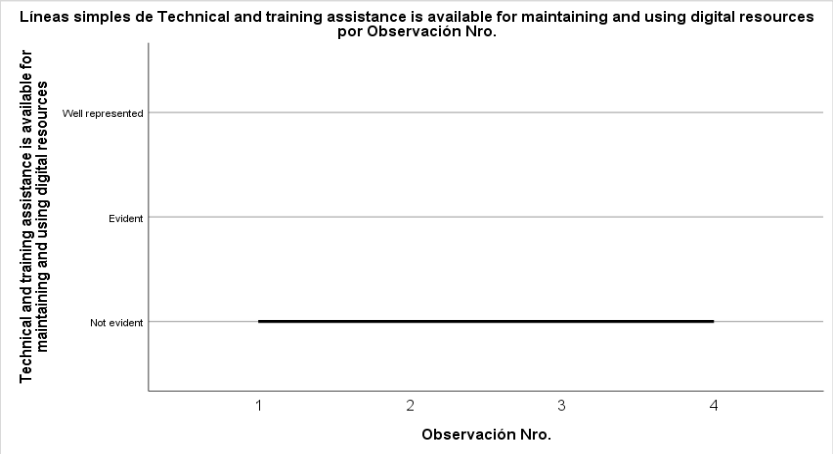


Source: Class observations
Elaborated by: Rugel, S. (2020)

It is evident that professional development offers opportunities to explore, create, and play with interactive media and technology tools. Teacher's management of online resources and technological tools reflects her professional development with those features.

Item N° 16

Figure 26: *Technical assistance and training*

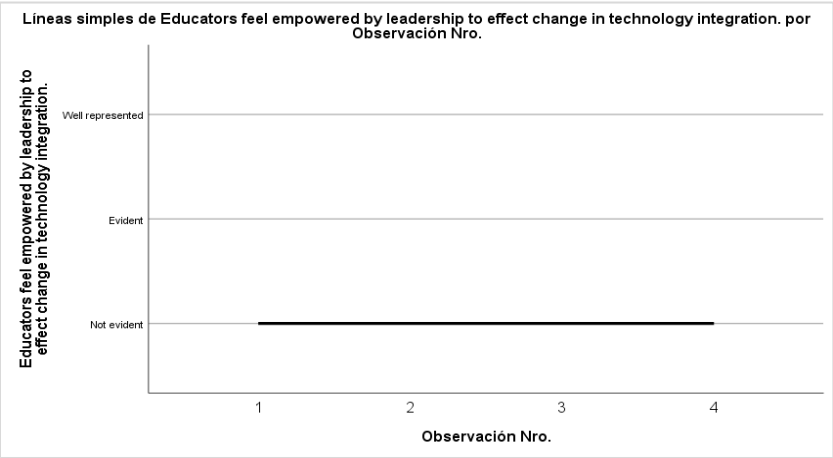


Source: Class observations
Elaborated by: Rugel, S. (2020)

There is not visual evidence if there is technical and training assistance available for the teacher to use digital resources.

Item N° 17

Figure 27: *Changes in technology placement*

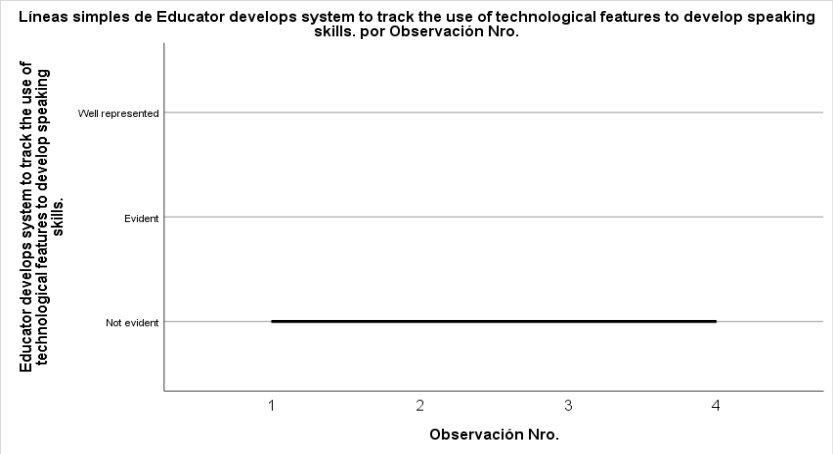


Source: Class observations
Elaborated by: Rugel, S. (2020)

It is not visually evident that educator feels empowered by leadership to effect change in technology placement integration since lessons are virtual.

Item N° 18

Figure 28: *Track of technological usage*

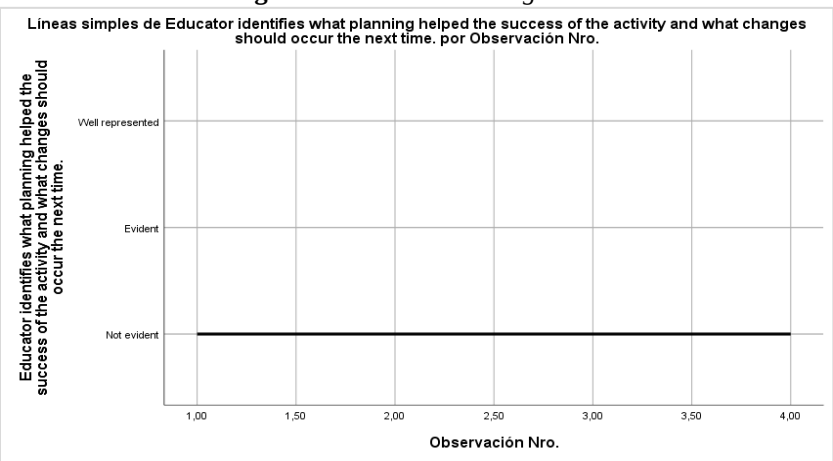


Source: Class observations
Elaborated by: Rugel, S. (2020)

It is not evident that teacher develops a system to track the use of technological features to develop speaking skills.

Item N° 19

Figure 29: *Assessment integration*

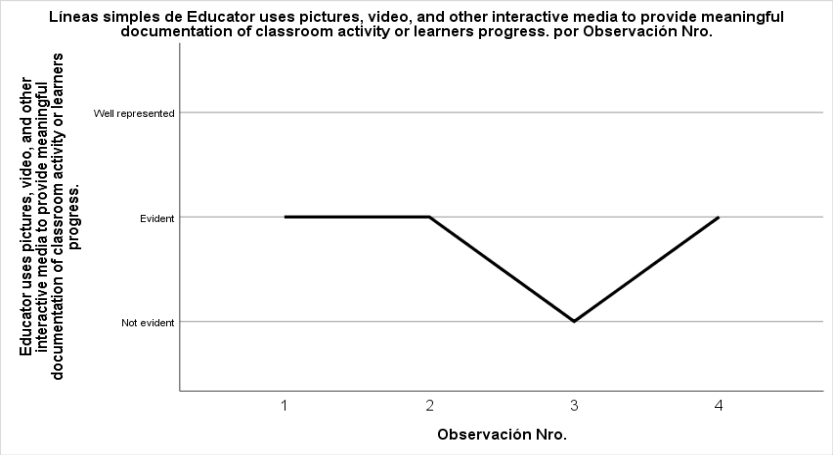


Source: Class observations
Elaborated by: Rugel, S. (2020)

It is not evident that evaluation of technology in classrooms is integrated with ongoing assessments of learning and developmental outcomes.

Item N° 20

Figure 30: *Use of visual media*

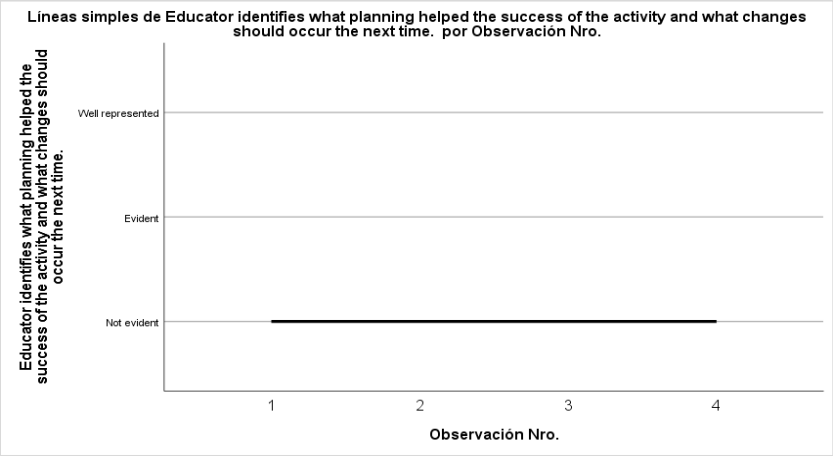


Source: Class observations
Elaborated by: Rugel, S. (2020)

In most of the classes observed, it is evident that educator uses pictures, video, and other interactive media to provide meaningful documentation of classroom activity or learners progress.

Item N° 21

Figure 31: *Lesson planning changes*



Source: Class observations
Elaborated by: Rugel, S. (2020)

It is not quite evident that educator identifies what planning helped the success of the activity and what changes should occur the next time.

3.1.3 Discussion of results

In general terms, the results collected from the survey, the interview and the observations of lessons reveal that there is such a great and significant use of technology as well as technological resources in English language teaching and learning, mainly, to provide opportunities to expand communication interactions through the frequent application of web-based activities to develop speaking skills, since this technology is used in reinforcing pronunciation and building vocabulary as well. Finally, it is clear that “Zoom” and “Speak English” platforms are the ones that are most popular by respondents.

3.2 Hypothesis verification

Investigation hypothesis

The use of Edu-tech provide opportunities to expand the development of the English speaking skills on EFL learners from fifth semester of Pedagogía de los Idiomas Nacionales y Extranjeros from Universidad Técnica de Ambato.

Validation method

The characteristic of allowing multiple answers to questions that involve the relation between the study variables lead to carry out the construction and analysis of contingency tables to establish if the use of Edu-tech enhances the development of the English speaking skills on EFL learners.

Question 1 – Speaking skills development

Table 21: *Speaking sills development – item 1*

			What sub-skill do you think you have developed the most through the use of technology in class?					
			Accuracy	Fluency	Pronunciation	Grammar	Vocabulary	Total
How often do you use technological devices in class? (smartphones, laptops, tablets, projectors, etc)	Sometimes	Recount	0	0	1	1	2	2
		% within of Q1	0,0%	0,0%	50,0%	50,0%	100,0%	
	Often	Recount	1	3	5	3	4	6
		% within de Q1	16,7%	50,0%	83,3%	50,0%	66,7%	
Total		Recount	1	3	6	4	6	8

Source: Data collection instruments
Elaborated by: Rugel, S. (2020)

The results of this table of contingency reflect the use of technological devices such as smartphones, laptops, tablets, projectors, etc., in class mainly affects the development of vocabulary, which has a high impact on students, even when not used so frequently. This is evident because 100% of respondents claim to improve their vocabulary, even if the technology is used "sometimes" only. When these devices are used "often" more sub-skills are developed, mainly boosting the pronunciation, whose weight rises from 50% to 83.3%.

Question 2 – Speaking skills development

Table 22: *Speaking sills development – item 2*

			What sub-skill do you think you have developed the most through the use of technology in class?						
			Accuracy	Fluency	Appropriacy	Pronunciation	Grammar	Vocabulary	Total
How often do you use technology to provide opportunities to expand your communicative interactions beyond the classroom?	Sometimes	Recount	3	2	0	3	2	2	5
		% within Q2	60,0%	40,0%	0,0%	60,0%	40,0%	40,0%	
	Often	Recount	3	3	1	6	5	8	12
		% within Q2	25,0%	25,0%	8,3%	50,0%	41,7%	66,7%	
Total		Recount	6	5	1	9	7	10	17

Source: Data collection instruments
Elaborated by: Rugel, S. (2020)

The contingency table shows that the frequency of using technology to provide opportunities of expanding communicative interactions of learners, beyond the classroom, mostly affects the development of vocabulary, because of its weight in the perception of English skills development that students manifest, increases from 40% to 66.7%.

Question 3 – Speaking skills development

Table 23: *Speaking sills development – item 3*

			What sub-skill do you think you have developed the most through the use of technology in class?						
			Accuracy	Fluency	Appropriacy	Pronunciation	Grammar	Vocabulary	Total
How often do you develop web-based activities in class? (Online forums, online educational games, online quizzes, virtual assignments, etc.)	Sometimes	Recount	0	1	1	1	0	1	2
		% within Q3	0,0%	50,0%	50,0%	50,0%	0,0%	50,0%	
	Often	Recount	5	3	0	5	6	6	9
		% within Q3	55,6%	33,3%	0,0%	55,6%	66,7%	66,7%	
Total		Recount	5	4	1	6	6	7	11

Source: Data collection instruments
Elaborated by: Rugel, S. (2020)

Based on the contingency table, the frequency of developing web-based activities, such as online forums, online educational games, online quizzes, virtual assignments, etc., mainly influences the development of accuracy, grammar, and vocabulary, because its significance in the perception of the development of English skills that learners show, increases when magnifying the frequency from "sometimes" to "often". These results demonstrate that the use of these types of activities has a greater impact in learning English language.

Question 5 – Speaking skills development

Table 24: *Speaking sills development – item 5*

			What sub-skill do you think you have developed the most through the use of technology in class?						
			Accuracy	Fluency	Appropriacy	Pronunciation	Grammar	Vocabulary	Total
Autonomously out of classes, how often do you use technological applications that allow you to develop speaking skills?	Rarely	Recount	0	0	0	2	2	2	3
		% within Q5	0,0%	0,0%	0,0%	66,7%	66,7%	66,7%	
	Sometimes	Recount	5	4	1	6	3	7	11
		% within Q5	45,5%	36,4%	9,1%	54,5%	27,3%	63,6%	
	Often	Recount	1	2	1	5	5	4	7
		% within Q5	14,3%	28,6%	14,3%	71,4%	71,4%	57,1%	
Total		Recount	6	6	2	13	10	13	21

Source: Data collection instruments
Elaborated by: Rugel, S. (2020)

According to this contingency table, the frequency of the use of technological applications out of classes to develop speaking skills has a considerable effect in the development of pronunciation and grammar, since its influence in the perception of students' development of English skills increases when magnifying the frequency from "rarely" to "often".

Decision

First, in every single contingency table it is demonstrated that the use of different resources using educational technology to teach English language helps to enhance pronunciation and vocabulary; therefore, there is statistic evidence that enable to affirm that “the use of Edu-tech enhances speaking skills in EFL learners.

CHAPTER IV

CONCLUSIONS AND RECOMMENDATIONS

4.1 Conclusions

- Edu-tech is a pedagogical strategy globally used lately, especially in these days, where education was forced to be online instead of being face-to-face. Educational technology positively impacts students' oral productive skills by providing and facilitating not only opportunities to put into practice their language communication through virtual interaction, but also an immeasurable exposition to a new educational field where technology is the main and only resource used to get education by using a great variety of meaningful tools to achieve learning outcomes.

- Through this investigation, the different methods and resources used by teachers were identified. It was known that in the current circumstances of virtual education, the methodologies used were "Blended learning" and "Flipped classrooms". Furthermore, the two main resources that this class used to develop lessons are: "Zoom", to establish video communications to host virtual sessions; and the UTA platform, to manage learning progress of students. In addition to this, the tools and resources that this teacher used to complement her classes were: "Kahoot!", "Socrative", "Poll Everywhere", "QR Codes" and "Plickers". She mentioned that these resources were the favorites among her learners since these prompted students to talk and discuss with each other and thus to enhance their speaking skills.

- According to the development of the research, the use of technological devices and online resources in class positively impacts the learning process due to the fact that using these features not only influence the development of vocabulary, grammar and accuracy, but also provides opportunities of expanding communicative interactions of learners.

- Edu-tech has been identified as a useful and complementary tool to develop productivity, cooperation, and communicative interaction. On the one hand, educational technology was used as a tool: to present and display content. On the other hand, it also was used as a resource: for investigation, creation of content, development of assignments, communication, and autonomous construction of knowledge.

4.2 Recommendations

- It is greatly recommended that teachers must implement the utilize of educational technology and its innovative features in classroom settings not only to project and present content or to make learners develop web-based assignments and classroom exercises but also to share knowledge about useful applications and webpages aimed to build learning as students as well as future teachers. In doing this, learners would be more engaged in in activities and be aware about the need of technology for educational purposes.

- Since technology and features are every day evolving, it is advised that teachers develop some research and upgrade knowledge about the newest and latest websites and apps workable not only for students management but also for themselves as teachers: to plan lessons, to asses, to manage learner's progress, to present, create and display content and so on. Technology offers a huge variety of tools and resources available for teachers meant to make work life easier.

- It is suggested that teachers must lead and supervise technology usage in class in order to make sure that it is been used to achieve learning objectives and educational goals, since during lessons, technology could be misused and aimed to different purposes alien to education at all.

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Annexes

Annex 1: Student's Survey

UNIVERSIDAD TÉCNICA DE AMBATO

FACULTAD DE CIENCIAS HUMANAS Y DE LA EDUCACIÓN

CARRERA DE PEDAGOGÍA DE LOS IDIOMAS NACIONALES Y EXTRANGEROS

STUDENT'S SURVEY

Survey Objective

To collect information about: "Edu-Tech as a teaching strategy and the speaking skills in the fifth semester from Pedagogía de los Idiomas Nacionales y Extranjeros from Universidad Técnica de Ambato"

Instructions:

- Read carefully the following questions.
- Chose an alternative and make a cross on it.

QUESTIONS		ANSWERS				
		Always	Often	Sometimes	Rarely	Never
1.	How often do you use technological devices in class? (Smartphones, laptops, tablets, projectors, etc.)					
2.	How often do you use technology to provide opportunities to expand your communicative interactions beyond the classroom?					
3.	How often do you develop web-based activities in class? (Online forums, online educational games, online quizzes, virtual assignments, etc.)					

4.	How often do you think that lessons focus on exclusively developing speaking skills?					
5.	Autonomously out of classes, how often do you use technological apps that allow you to develop speaking skills?					

Table 25: Students' survey
Resource: Survey directed to students
Elaborated by: Rugel, S. (2020)

6. What apps or websites are used to **develop** the lesson?

    a. Zoom
    b. Microsoft Teams
    c. Google Classrooms
    d. Other (_____)

7. What types of activities do you do by using technology during class?

    a. Gaming
    b. Creating / presenting content
    c. Taking quizzes
    d. Other (_____)

8. How do you use technology during the lessons?

    a. As a tool of investigation
    b. As a mean of communication
    c. As a tool of support and construction of knowledge
    d. Technology used as learning tools of expression.

9. What sub-skill do you think you have developed the most through the use of technology in class?

    a. Accuracy
    b. Fluency
    c. Appropriacy
    d. Pronunciation

e. Grammar
f. Vocabulary

10. What apps or websites do you use in class to develop/improve your speaking skills?

a. Speak English!
b. Elsa
c. FluentU
d. Other (_____)

THANK YOU FOR YOUR VALUABLE COLLABORATION

Annex 2: Teacher's Interview

UNIVERSIDAD TÉCNICA DE AMBATO

FACULTAD DE CIENCIAS HUMANAS Y DE LA EDUCACIÓN

CARRERA DE PEDAGOGÍA DE LOS IDIOMAS NACIONALES Y EXTRANGEROS

INTERVIEW FORM

Survey Objective

To collect information from a teacher's perspective about: "Edu-Tech as a teaching strategy and the speaking skills in the fifth semester from Pedagogía de los Idiomas Nacionales y Extranjeros from Universidad Técnica de Ambato"

Interviewer: Sara Michelle Rugel Torres **Date:** 6th July, 2020

Interviewed: Lcda. Mg Dorys Cumbe

Licenciada en ciencias de la educación – mención inglés

Magister en ciencias de la educación.

a) What apps or web sites do you use to develop your lessons?

b) How do you select the webpages and apps that you use in your lessons?

c) Do you make your students develop web-based activities in your lessons? If yes, how?

d) What teaching methodologies do you apply in your lessons?

e) Do you think that your student's English speaking skills could be improved through the use of educative applications and web pages? If yes, how?

f) Do you focus some of your lessons on exclusively developing speaking skills? If yes, how?

g) Would you name some of the apps or web sites that you use to help your learners' developing their speaking skills?

INTERVIEW – TRANSCRIPTION

Interviewer: So, I'm going to start with the first question: What apps or websites do you use to develop or perform your lessons?

Interviewed: Well, you know that nowadays technology has become an essential tool and some of the most common apps and web pages that I use is "Kahoot!", "Socrative", "Poll Everywhere", sometimes we use "QR Codes" and students have to use "QR Readers" for scab in your hands and something that I usually use in campus classes is "Plickers" and students love it because it's kind of quizzes where they have to use codes to find the answers of some questions that I may ask.

Interviewer: And in order to perform your lesson, It is well known that nowadays the whole university is using zoom, right?

Interviewed: Yes, thats right.

Interviewer: So, do you use Zoom or some others programs or applications to carry on your classes?

Interviewed: Yeah, for classes I'm using Zoom nowadays but also we use the University Platform where they have to upload the assignments.

Interviewer: Ok… So let's go to the next question… How do you select the web pages and apps that you use in your lessons? How do you select them?

Interviewed: It depends on what I want to do, for example, for making polls to activate pair knowledge I use Poll Everywhere which allows to make live polls, so I present a general question and they have to select the best option for them to have a discussion of that… Ah, if I want to have an evaluation or test them, then I use Socrative. And for having fun for check students' progress I use "Kahoot!" which I consider is the best tool for them to entertain, they like it a lot, and at the end it presents… let's say, a score work of three places so they enjoy it a lot.

Interviewer: And do you have a kind of training, from the university could be, in order to select web pages or applications for your classes? or do you do it by yourself?

Interviewed: I do it by myself. I research apps that I can use for education, so I have selected the best ones. Internet provides you different tools, but I have selected these ones, so it has been my own research about what can I use in classes.

Interviewer: Ok, great! And, the next question is: Do you make your students develop web-based activities in your lessons?

Interviewed: Yes, I do. Students usually work in different web pages to complete assignments, and one of the most important one that we use at the university is "Moodle", where they can do everything, they have to… like upload homework, create glossaries, quizzes, participating forms and chats. Also, they develop… assignments in different web pages; I also use sometimes "WhatsApp" because they need to have some activities at that moment, so "WhatsApp" is one of the tools that we usually use in class.

Interviewer: Great! The next question: What teaching methodologies do you apply in your lessons?

Interviewed: Nowadays with the situation that we are living I'm using: blended learning and flipped classroom, which is mixed, or what is known nowadays like hybrid lessons where students have to check material first and then in class there is a deep explanation and discussion of what they already checked or reviewed. Of course this material is given through different tools; it could be videos, YouTube videos, websites, PDF's, shared folders in One Drive. So the material they check first is given in a technological tool and then in classes it is discussed.

Interviewer: Ok, and have you ever tried a methodology that now you know it's not working? What would be the methodology the methodology that you think it's not working because of the situation that we are living know.

Interviewed: Well, I would say that traditional classes are not working today, because it's even more difficult to have real connection with students. You know that as teachers we need to make eye contact, to have body gesture, body language, to engage students in our lessons. In this way of having classes through the computer we can't do that, so we must present different options to students; lots of pictures, lots of videos, clear instructions because to students it's difficult for them to pay attention through a computer as they are at home as well, they have a lot of distractors there, so teacher must find the way to avoid doing what they usually did. So teachers must find the better ways to catch student's attention through the technology.

Interviewer: That's right! Ok, the next question is: do you think that your student's English speaking skills could be improved through the use of educative applications and websites?

Interviewed: Definitively. There are several apps where students can practice the four skills, they are free and easy to use; in the same way, there is a YouTube channel where students just subscribe and participate in active lessons. There are also test simulators where students can check their progress, there are webpages and apps where students can practice pronunciation, can practice vocabulary, can practice daily expressions or idioms, something that students really need, so students can improve their speaking skills through the use of different technological tools.

Interviewer: Yes, I agree with that. So, the next question is: do you focus some of your lessons on exclusively developing speaking skills?

Interviewed: Zoom platform allows to create the" break out rooms", and students are assigned in small groups. The idea of this is that they can develop the assignment using the second language, in this case English, where they can practice in smaller groups and use the language in the activities they are assigned. After that, I usually make a whole class session where they share ideas and in the same way, though the lesson question-answer display helps to activate student's participation; so through the lesson I ask questions about one explaining, or also I use the chat that Zoom has to check student's attention, so I questions about what I just said and they have to write down the answer in the chat.

Interviewer: Ok, so we can say that the whole lesson is based on the speaking skill, right?

Interviewed: Yes, when they write their answers in the chat I as them "Ok, what is the reason you said this?" so they have to speak. It's very important to make them participate, otherwise if it was only TTT, we will lose out students, they won't be there.

Interviewer: Yes. Now, let's go to the last question: Would you name some of the apps or websites that you use to help your learners developing their speaking skills?

Interviewed: Well, I'm not using something very specific for speaking skills because the subjects I teach are more about content: I teach Literature, I teach Research Methodology, Inclusive Education; so what we do is to practice the language in our class, in Zoom sessions. If I'd have to mention an app or website I would say that they use the "Break out rooms" in Zoom. They also use the "WhatsApp" app to send voice clips to their partners or to the teacher, in this case to me. So, I'm not using very specific for speaking skills.

Interviewer: Ok. So, those were the questions teacher and first of all, I want you to let you know that I'm very grateful because of your time and advices. I'm always pretty amazed by your knowledge about technology and educational tools that are really worthy for students so I want to thank your time and also for letting me this opportunity to know about your knowledge.

Interviewed: You are more than welcome, Sarita and I hope you have the results you expect… So, go ahead!

Interviewer: Thank you teacher, that would be all for today.

Annex 3: Class observation checklists

UNIVERSIDAD TÉCNICA DE AMBATO
FACULTAD DE CIENCIAS HUMANAS Y DE LA EDUCACIÓN
CARRERA DE PEDAGOGÍA DE LOS IDIOMAS NACIONALES Y EXTRANGEROS
OBSERVATION FORM

EDU-TECH AS A TEACHING STRATEGY TO DEVELOP SPEAING SKILLS – CHECKLIST OBSERVATION

SELECTION (Intentionality, Developmental Appropriateness, Planning)	**Well represented**	**Evident**	**Not evident**	**COMMENTS**
1. The use of interactive media and technology tools is intentional.				
Supports the learning objective and goals, or curricular areas of focus.	✔			The teacher presents the learning outcome at the beginning of the class.
A need is identified first, and then an appropriate resource is selected.	✔			Teacher states the main need of the lesson when she presents the topic of the day.
2. Selected applications and webpages/web resources are developmentally appropriate.				
Selected tools are age-appropriate, provide clear instructions and prompts.	✔			Teacher makes use of websites that students reflect a good knowledge

				of management. In addition, instructions seem to be clear since no one has any doubt or demonstrate misunderstanding.
Technology features are deliberately chosen to meet instructional goals for the developmental needs of the learner, including distinct cognitive abilities, social-emotional needs, and interests of the student.		✔		Websites used in class are partially linked to each learning outcome of the lesson.
Interactions with technology are playful and open-ended, encourage creativity, pretend communication, active speech, and speaking activities.	✔			Teachers' intention of making students participate communicatively is evident. Learners are actively participating during the whole lesson
Gives learners control of the medium; may offer scaffolding and reinforcement to learners of different abilities.			✔	Since it is an online lesson, learners cannot scaffold or control the medium at all.
3. Web page and application use is well planned.				
Teacher shows full knowledge of the resources used during the lesson.	✔			The teacher seems to have a great knowledge of every single resource used in the lesson. She demonstrates full knowledge of these

				tools when using all the features of each resource.

USE (Physical Environment, Collaboration, Connection to Non-Digital World, Digital Equity)	Well represented	Evident	Not evident	COMMENTS
4. The physical environment is configured to accommodate the specific technology tool.				
Hardware availability and placement accommodate individual, small group, and whole group instruction so the physical environment is configured appropriately for usage by students (i.e. tablets, computers, or cellphones are better suited for individuals and small groups, while light tables and interactive whiteboards are better for whole groups).			✔	There is no way to know about placement accommodation of the physical environment since it is an online lesson.
Technology is infused into multiple learning areas of the classroom alongside traditional materials.			✔	There is no way to have multiple learning physical areas since it was an online lesson.
5. Technology and interactive media offer opportunities for joint engagement, collaboration, information sharing, and conversation between students and also with the teacher.				
May enable communication between learners and with the educator as well.	✔			The teacher offers plenty of opportunities to students to participate in engaging communication with their partners and with the teacher as well.

6. Interactive media and technology tools are connected to the non-digital world.				
Educator uses technology tools to connect to the lives of students and world beyond the classroom.		✔		Teacher mentions the use of a WhatsApp Group where the whole have access to talk to the teacher about any concern.
Technology is used to explore real-world issues.			✔	There is no evidence of exploring real-world issues by using technology
Technology supports learning and expands access to new content by complementing and supplementing current activities such as creative play, physical activity, outdoor experiences, conversation, or social interactions.	✔			"Kahoot" was played to present a warm up at the beginning of the lesson.
7. Technology tools and interactive media are used to prompt spontaneous conversations about the lesson.				
Educator models appropriate interactive media and technology tool usage and creates opportunities to talk and develop speaking skills to share learning knowledge.	✔			Teacher uses a tool from Zoom called "Breakout Rooms" in order to make students collaborate communicatively in groups.

INTEGRATION (Professional Development, Support)	Well represented	Evident	Not evident	COMMENTS
8. The educator has access to online or offline communities of learning around digital media literacy that may include formal courses, mentors, webinars, online courses, or in-service.				
Professional development offers opportunities to explore, create, and play with interactive media and technology tools.		✔		Teacher's management and use of technological tools and web resources reflects her professional development with those features.
9. Senior leadership support use of technology in classroom and programs, and allocate staff, equipment, financial resources, and time appropriately.				
Technical and training assistance is available for maintaining and using digital resources			✔	There is no visual evidence of it.
Educators feel empowered by leadership to effect change in technology integration.			✔	There is no visual evidence of it.

EVALUATION (Assessment, Reflection)	Well represented	Evident	Not evident	COMMENTS
10. Educator assesses whether learners are meeting expected objectives.				
Educator develops system to track the use of technological features to develop speaking skills.			✔	There is no visual evidence of it.
Evaluation of technology in classrooms is integrated with ongoing assessments of learning and developmental outcomes.			✔	There is no visual evidence of it.
Educator uses pictures, video, and other interactive media to provide meaningful documentation of classroom activity or learners progress.		✔		The teacher shares a screen where students could see their scores of class participation, assistance and scores they got today.
11. Educator reflects on activity, identifies areas of success and ideas for improvement.				
Educator identifies what planning helped the success of the activity and what changes should occur the next time.			✔	There is no visual evidence of it.

Table 26: Checklist observation form
Source: "Checklist for identifying exemplary uses of technology and interactive media for early learning", by Robb, M., Catalano, R., Smith, T., Polojac, S., Figlar, M., Minzenberg, B., & Schomburg, R. (2013).

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OBSERVATION FORM

EDU-TECH AS A TEACHING STRATEGY TO DEVELOP SPEAING SKILLS – CHECKLIST OBSERVATION

SELECTION (Intentionality, Developmental Appropriateness, Planning)	Well represented	Evident	Not evident	COMMENTS
1. The use of interactive media and technology tools is intentional.				
Supports the learning objective and goals, or curricular areas of focus.			✔	This time, the teacher presents does not present the learning outcome at the beginning of the class.
A need is identified first, and then an appropriate resource is selected.		✔		Teacher does not explicitly mention the need of the lesson, but as the lesson continues the need starts to be evident.
2. Selected applications and webpages/web resources are developmentally appropriate.				
Selected tools are age-appropriate, provide clear instructions and prompts.	✔			Teacher makes use of websites that students seem to be familiarized with. In addition, learners demonstrated clear

				understanding when repeating by themselves the instructions given by the teacher.
Technology features are deliberately chosen to meet instructional goals for the developmental needs of the learner, including distinct cognitive abilities, social-emotional needs, and interests of the student.	✔			Before using each website, the teacher provides a short explanation about the tool and what is it for.
Interactions with technology are playful and open-ended, encourage creativity, pretend communication, active speech, and speaking activities.	✔			Teachers' intention of making students participate communicatively is evident. Learners are actively participating during the whole lesson
Gives learners control of the medium; may offer scaffolding and reinforcement to learners of different abilities.			✔	Since it is an online lesson, learners cannot scaffold or control the medium at all.
3. Web page and application use is well planned.				
Teacher shows full knowledge of the resources used during the lesson.	✔			The teacher shows a great knowledge of every single resource used in the lesson. She demonstrates full knowledge of these tools when using all the features of each resource.

USE (Physical Environment, Collaboration, Connection to Non-Digital World, Digital Equity)	Well represented	Evident	Not evident	COMMENTS
4. The physical environment is configured to accommodate the specific technology tool.				
Hardware availability and placement accommodate individual, small group, and whole group instruction so the physical environment is configured appropriately for usage by students (i.e. tablets, computers, or cellphones are better suited for individuals and small groups, while light tables and interactive whiteboards are better for whole groups).			✔	There is no way to know about placement accommodation of the physical environment since it is an online lesson.
Technology is infused into multiple learning areas of the classroom alongside traditional materials.			✔	Since it was an online lesson, there is no way to have multiple learning physical areas.
5. Technology and interactive media offer opportunities for joint engagement, collaboration, information sharing, and conversation between students and also with the teacher.				
May enable communication between learners and with the educator as well.	✔			The teacher offers students plenty of opportunities to participate in engaging communication not only with their partners but also with the teacher.
6. Interactive media and technology tools are connected to the non-digital world.				
Educator uses technology tools to connect to the lives of students and world beyond the classroom.		✔		Teacher mentions the use of a WhatsApp Group where the whole have access to talk to the

				teacher about any concern.
Technology is used to explore real-world issues.			✔	There is no evidence of exploring real-world issues by using technology
Technology supports learning and expands access to new content by complementing and supplementing current activities such as creative play, physical activity, outdoor experiences, conversation, or social interactions.	✔			"Poll Everywhere" was played to perform a warm up at the beginning of the lesson.
7. Technology tools and interactive media are used to prompt spontaneous conversations about the lesson.				
Educator models appropriate interactive media and technology tool usage and creates opportunities to talk and develop speaking skills to share learning knowledge.	✔			Teacher used "Breakout Rooms" from "Zoom" to make students work and discuss in groups.

INTEGRATION (Professional Development, Support)	Well represented	Evident	Not evident	COMMENTS
8. The educator has access to online or offline communities of learning around digital media literacy that may include formal courses, mentors, webinars, online courses, or in-service.				
Professional development offers opportunities to explore, create, and play with interactive media and technology tools.		✔		Teacher's management of the web resources and digital tools reflects her professional development with those features.
9. Senior leadership support use of technology in classroom and programs, and allocate staff, equipment, financial resources, and time appropriately.				
Technical and training assistance is available for maintaining and using digital resources			✔	There is no visual evidence of it.
Educators feel empowered by leadership to effect change in technology integration.			✔	There is no visual evidence of it.

EVALUATION (Assessment, Reflection)	Well represented	Evident	Not evident	COMMENTS
10. Educator assesses whether learners are meeting expected objectives.				
Educator develops system to track the use of technological features to develop speaking skills.			✔	There is no visual evidence of it.
Evaluation of technology in classrooms is integrated with ongoing assessments of learning and developmental outcomes.			✔	There is no visual evidence of it.
Educator uses pictures, video, and other interactive media to provide meaningful documentation of classroom activity or learners progress.		✔		When the teacher shared screen, students were able to give a look of their attendance.
11. Educator reflects on activity, identifies areas of success and ideas for improvement.				
Educator identifies what planning helped the success of the activity and what changes should occur the next time.			✔	There is no visual evidence of it.

Source: "Checklist for identifying exemplary uses of technology and interactive media for early learning", by Robb, M., Catalano, R., Smith, T., Polojac, S., Figlar, M., Minzenberg, B., & Schomburg, R. (2013).

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OBSERVATION FORM

EDU-TECH AS A TEACHING STRATEGY TO DEVELOP SPEAING SKILLS – CHECKLIST OBSERVATION

SELECTION (Intentionality, Developmental Appropriateness, Planning)	Well represented	Evident	Not evident	COMMENTS
1. The use of interactive media and technology tools is intentional.				
Supports the learning objective and goals, or curricular areas of focus.	✔			The teacher presented the learning outcome at the beginning of the class.
A need is identified first, and then an appropriate resource is selected.	✔			Teacher stated the main need of the lesson before to start with the subject matter.
2. Selected applications and webpages/web resources are developmentally appropriate.				
Selected tools are age-appropriate, provide clear instructions and prompts.	✔			Students show good management of the web resources used by the teacher. In addition, instructions seem to be clear since no one

				demonstrate misunderstanding.
Technology features are deliberately chosen to meet instructional goals for the developmental needs of the learner, including distinct cognitive abilities, social-emotional needs, and interests of the student.	✔			After presenting the learning outcomes, the teacher mentioned the resources that were going to be used with each learning outcome.
Interactions with technology are playful and open-ended, encourage creativity, pretend communication, active speech, and speaking activities.	✔			Teachers' intention of making students participate communicatively is evident. She is constantly asking lots of questions to students in order to make them participate during the whole lesson.
Gives learners control of the medium; may offer scaffolding and reinforcement to learners of different abilities.			✔	Since it is an online lesson, it is not evident.
3. Web page and application use is well planned.				
Teacher shows full knowledge of the resources used during the lesson.	✔			The teacher shows great knowledge of every single resource used during the lesson.

USE (Physical Environment, Collaboration, Connection to Non-Digital World, Digital Equity)	Well represented	Evident	Not evident	COMMENTS
4. The physical environment is configured to accommodate the specific technology tool.				
Hardware availability and placement accommodate individual, small group, and whole group instruction so the physical environment is configured appropriately for usage by students (i.e. tablets, computers, or cellphones are better suited for individuals and small groups, while light tables and interactive whiteboards are better for whole groups).			✔	There is no way to know about placement accommodation of the physical environment since it is an online lesson.
Technology is infused into multiple learning areas of the classroom alongside traditional materials.			✔	There is no way to have multiple learning physical areas since it was an online lesson.
5. Technology and interactive media offer opportunities for joint engagement, collaboration, information sharing, and conversation between students and also with the teacher.				
May enable communication between learners and with the educator as well.	✔			The teacher offers plenty of opportunities for students to participate and engage communication with their partners and with the teacher as well, not only about the subject but also about themselves.
6. Interactive media and technology tools are connected to the non-digital world.				
Educator uses technology tools to connect to the lives of students and world beyond the classroom.		✔		Teacher mentions the use of a WhatsApp Group

				where the whole have access to talk to the teacher about any concern.
Technology is used to explore real-world issues.			✔	There is no evidence of exploring real-world issues by using technology
Technology supports learning and expands access to new content by complementing and supplementing current activities such as creative play, physical activity, outdoor experiences, conversation, or social interactions.	✔			The teacher presented the game “Socrative” as a warm up at the beginning of the lesson.
7. Technology tools and interactive media are used to prompt spontaneous conversations about the lesson.				
Educator models appropriate interactive media and technology tool usage and creates opportunities to talk and develop speaking skills to share learning knowledge.	✔			Teacher used “Breakout Rooms”, from “Zoom”, in order to make students work in groups to develop a collaborative task.

INTEGRATION (Professional Development, Support)	Well represented	Evident	Not evident	COMMENTS
8. The educator has access to online or offline communities of learning around digital media literacy that may include formal courses, mentors, webinars, online courses, or in-service.				
Professional development offers opportunities to explore, create, and play with interactive media and technology tools.		✔		Teacher's good management of the resources reflects her professional development and familiarization with those features.
9. Senior leadership support use of technology in classroom and programs, and allocate staff, equipment, financial resources, and time appropriately.				
Technical and training assistance is available for maintaining and using digital resources			✔	There is no visual evidence of it.
Educators feel empowered by leadership to effect change in technology integration.			✔	There is no visual evidence of it.

EVALUATION (Assessment, Reflection)	Well represented	Evident	Not evident	COMMENTS
10. Educator assesses whether learners are meeting expected objectives.				
Educator develops system to track the use of technological features to develop speaking skills.			✔	There is no visual evidence of it.
Evaluation of technology in classrooms is integrated with ongoing assessments of learning and developmental outcomes.			✔	There is no visual evidence of it.
Educator uses pictures, video, and other interactive media to provide meaningful documentation of classroom activity or learners progress.			✔	In this occasion, teacher did not share screen when taking attendance.
11. Educator reflects on activity, identifies areas of success and ideas for improvement.				
Educator identifies what planning helped the success of the activity and what changes should occur the next time.			✔	There is no visual evidence of it.

Source: "Checklist for identifying exemplary uses of technology and interactive media for early learning", by Robb, M., Catalano, R., Smith, T., Polojac, S., Figlar, M., Minzenberg, B., & Schomburg, R. (2013).

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OBSERVATION FORM

EDU-TECH AS A TEACHING STRATEGY TO DEVELOP SPEAING SKILLS – CHECKLIST OBSERVATION

SELECTION (Intentionality, Developmental Appropriateness, Planning)	Well represented	Evident	Not evident	COMMENTS
1. The use of interactive media and technology tools is intentional.				
Supports the learning objective and goals, or curricular areas of focus.			✔	Learning objectives of that lesson were not presented.
A need is identified first, and then an appropriate resource is selected.	✔			The need of the lesson is presented at the beginning of the lesson.
2. Selected applications and webpages/web resources are developmentally appropriate.				
Selected tools are age-appropriate, provide clear instructions and prompts.	✔			Students show a good management of the resources used during the lesson.
Technology features are deliberately chosen to meet instructional goals for the developmental needs of the learner, including distinct cognitive abilities, social-		✔		Websites used in class are evidently linked to the main need of the lesson.

emotional needs, and interests of the student.				
Interactions with technology are playful and open-ended, encourage creativity, pretend communication, active speech, and speaking activities.	✔			Teachers' intention of making students participate communicatively is evident. Teacher offer learners opportunities to participate in discussions during the whole lesson
Gives learners control of the medium; may offer scaffolding and reinforcement to learners of different abilities.		✔		Since it is an online lesson, scaffolding is not evident at all.
3. Web page and application use is well planned.				
Teacher shows full knowledge of the resources used in the lesson.	✔			The teacher shows good knowledge of every single resource and all of its features.

USE (Physical Environment, Collaboration, Connection to Non-Digital World, Digital Equity)	Well represented	Evident	Not evident	COMMENTS
4. The physical environment is configured to accommodate the specific technology tool.				
Hardware availability and placement accommodate individual, small group, and whole group instruction so the physical environment is configured appropriately for usage by students (i.e. tablets, computers, or cellphones are better suited for individuals and small groups, while light tables and interactive whiteboards are better for whole groups).			✔	There is no way to know about placement accommodation of the physical environment since it is an online lesson.
Technology is infused into multiple learning areas of the classroom alongside traditional materials.			✔	There is no way to have multiple learning physical areas since it was an online lesson.
5. Technology and interactive media offer opportunities for joint engagement, collaboration, information sharing, and conversation between students and also with the teacher.				
May enable communication between learners and with the educator as well.	✔			The teacher offers plenty of opportunities to make students participate and communicate themselves with each other and with the teacher as well.

6. Interactive media and technology tools are connected to the non-digital world.				
Educator uses technology tools to connect to the lives of students and world beyond the classroom.		✔		Teacher mentions the WhatsApp Group of the class where they can text to if any doubt or concern.
Technology is used to explore real-world issues.			✔	There is no evidence of exploring real-world issues by using technology
Technology supports learning and expands access to new content by complementing and supplementing current activities such as creative play, physical activity, outdoor experiences, conversation, or social interactions.	✔			"Pull Everyone" is used to perform a wrap up at the end of the lesson.
7. Technology tools and interactive media are used to prompt spontaneous conversations about the lesson.				
Educator models appropriate interactive media and technology tool usage and creates opportunities to talk and develop speaking skills to share learning knowledge.	✔			Teacher makes use of the "Breakout Rooms" in order to make students plan and create a role-play to be presented with the whole class.

INTEGRATION (Professional Development, Support)	Well represented	Evident	Not evident	COMMENTS
8. The educator has access to online or offline communities of learning around digital media literacy that may include formal courses, mentors, webinars, online courses, or in-service.				
Professional development offers opportunities to explore, create, and play with interactive media and technology tools.		✔		Teacher's management of the online resources and technological tools reflects her professional development with those features.
9. Senior leadership support use of technology in classroom and programs, and allocate staff, equipment, financial resources, and time appropriately.				
Technical and training assistance is available for maintaining and using digital resources			✔	There is no visual evidence of it.
Educators feel empowered by leadership to effect change in technology integration.			✔	There is no visual evidence of it.

EVALUATION (Assessment, Reflection)	Well represented	Evident	Not evident	COMMENTS
10. Educator assesses whether learners are meeting expected objectives.				
Educator develops system to track the use of technological features to develop speaking skills.			✔	There is no visual evidence of it.
Evaluation of technology in classrooms is integrated with ongoing assessments of learning and developmental outcomes.			✔	There is no visual evidence of it.
Educator uses pictures, video, and other interactive media to provide meaningful documentation of classroom activity or learners progress.		✔		The teacher shares screen where students were able to check their scores of class participation and attendance.
11. Educator reflects on activity, identifies areas of success and ideas for improvement.				
Educator identifies what planning helped the success of the activity and what changes should occur the next time.			✔	There is no visual evidence of it.

Source: "Checklist for identifying exemplary uses of technology and interactive media for early learning", by Robb, M., Catalano, R., Smith, T., Polojac, S., Figlar, M., Minzenberg, B., & Schomburg, R. (2013).

Annex 4: Validations of instruments of data collection

UNIVERSIDAD TÉCNICA DE AMBATO
FACULTAD DE CIENCIAS HUMANAS Y DE LA EDUCACIÓN
CARRERA DE IDIOMAS

EXPERT'S GENERAL INFORMATION:

Full Name: Xavier Sulca Guale
Profession: English Professor
Workplace: Universidad Técnica de Ambato
Degrees Undergraduate: LICENCIADO EN CIENCIAS DE LA EDUCACIÓN MENCIÓN INGLÉS Postgraduate: MAGISTER EN DOCENCIA UNIVERSITARIA Y ADMINISTRACIÓN EDUCATIVA.

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CARRERA DE IDIOMAS

INSTRUMENT VALIDATION CHART - SURVEY

Topic: "EDU-TECH AS A TEACHING STRATEGY AND THE SPEAKING SKILLS"

Objective: To collect information about: "Edu-Tech as a teaching strategy and the speaking skills in the fifth semester from Pedagogía de los Idiomas Nacionales y Extranjeros from Universidad Técnica de Ambato"

Instructions: Select the option you consider relevant to each item.

R: Relevant
NR: Not Relevant

EXPERT'S NAME: Lic. Mg. Xavier Sulca Guale

ITEM	Objective		Variable		Dimension		Indicator		Drafting		OBSERVATION
	R	NR	R	NR	R	NR	R	NR	R	NR	
1	✓		✓		✓		✓		✓		
2	✓		✓		✓		✓		✓		It should be a "frequency question".
3	✓		✓		✓		✓		✓		
4	✓		✓		✓		✓		✓		
5	✓		✓		✓		✓		✓		It should be a "frequency question".
6	✓		✓		✓		✓		✓		
7	✓		✓		✓		✓		✓		
8	✓		✓		✓		✓		✓		
9	✓		✓		✓		✓		✓		
10	✓		✓		✓		✓		✓		

Source: Rugel, S. (2020).

Final Resolution:

Approved	✓	**Disapproved**	

Source: Rugel, S. (2020).

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FACULTAD DE CIENCIAS HUMANAS Y DE LA EDUCACIÓN

CARRERA DE IDIOMAS

INSTRUMENT VALIDATION CHART - INTERVIEW

Topic: "EDU-TECH AS A TEACHING STRATEGY AND THE SPEAKING SKILLS"

Objective: To collect information from a teacher's perspective about: "Edu-Tech as a teaching strategy and the speaking skills in the fifth semester from Pedagogía de los Idiomas Nacionales y Extranjeros from Universidad Técnica de Ambato"

Instructions: Select the option you consider relevant to each item.

R: Relevant

NR: Not Relevant

EXPERT'S NAME: Lic. Mg. Xavier Sulca Guale

ITEM	Objective		Variable		Dimension		Indicator		Drafting		OBSERVATION
	R	NR	R	NR	R	NR	R	NR	R	NR	
1	✓		✓		✓		✓		✓		
2	✓		✓		✓		✓		✓		
3	✓		✓		✓		✓		✓		
4	✓		✓		✓		✓		✓		
5	✓		✓		✓		✓		✓		
6	✓		✓		✓		✓		✓		
7	✓		✓		✓		✓		✓		

Source: Rugel, S. (2020).

Final Resolution:

Approved	✓	**Disapproved**	

Source: Rugel, S. (2020).

UNIVERSIDAD TÉCNICA DE AMBATO

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CARRERA DE IDIOMAS

EXPERT JUDGMENT EVIDENCE

I, XAVIER SULCA, MAGISTER IN UNIVERSITY TEACHING AND EDUCATIONAL ADMINISTRATION, with I.D. No. 1802447548, certify that I conducted the expert judgment on this instrument designed by Sara Michelle Rugel Torres, with I.D. No. 1805487418 for the Final Degree Project entitled "EDU-TECH AS A TEACHING STRATEGY AND THE SPEAKING SKILLS" since it is a fundamental requirement to qualify for the Bachelor's Degree in Educational Sciences; Mention: English, at Universidad Técnica de Ambato.

Ambato, June 23rd, 2020.

Sincerely,

XAVIER SULCA GUALE

I.D. 1802447548

UNIVERSIDAD TÉCNICA DE AMBATO

FACULTAD DE CIENCIAS HUMANAS Y DE LA EDUCACIÓN

CARRERA DE IDIOMAS

EXPERT'S GENERAL INFORMATION:

Full Name: Edgar Encalada Trujillo
Profession: English Professor
Workplace: Universidad Técnica de Ambato
Degrees Undergraduate: LICENCIADO EN CIENCIAS DE LA EDUCACION MENCIÓN INGLES Institution: UNIVERSIDAD TECNICA DE COTOPAXI Year: 2003 Postgraduate: MAGISTER IN APPLIED LINGUISTICS Institution: UNIVERSIDAD CATOLICA DEL ECUADOR.

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FACULTAD DE CIENCIAS HUMANAS Y DE LA EDUCACIÓN
CARRERA DE IDIOMAS

INSTRUMENT VALIDATION CHART - SURVEY

Topic: "EDU-TECH AS A TEACHING STRATEGY AND THE SPEAKING SKILLS"

Objective: To collect information about: "Edu-Tech as a teaching strategy and the speaking skills in the fifth semester from Pedagogía de los Idiomas Nacionales y Extranjeros from Universidad Técnica de Ambato"

Instructions: Select the option you consider relevant to each item.

R: Relevant
NR: Not Relevant

EXPERT'S NAME: Lic. Mg. Edgar Encalada

ITEM	Objective		Variable		Dimension		Indicator		Drafting		OBSERVATION
	R	NR	R	NR	R	NR	R	NR	R	NR	
1	✓		✓		✓		✓		✓		
2	✓		✓		✓		✓		✓		
3	✓		✓		✓		✓		✓		
4	✓		✓		✓		✓		✓		
5	✓		✓		✓		✓		✓		
6	✓		✓		✓		✓		✓		
7	✓		✓		✓		✓		✓		
8	✓		✓		✓		✓		✓		
9	✓		✓		✓		✓		✓		
10	✓		✓		✓		✓		✓		

Source: Rugel, S. (2020).

Final Resolution:

Approved	✓	**Disapproved**	

Source: Rugel, S. (2020).

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FACULTAD DE CIENCIAS HUMANAS Y DE LA EDUCACIÓN

CARRERA DE IDIOMAS

INSTRUMENT VALIDATION CHART - INTERVIEW

Topic: "EDU-TECH AS A TEACHING STRATEGY AND THE SPEAKING SKILLS"

Objective: To collect information from a teacher's perspective about: "Edu-Tech as a teaching strategy and the speaking skills in the fifth semester from Pedagogía de los Idiomas Nacionales y Extranjeros from Universidad Técnica de Ambato"

Instructions: Select the option you consider relevant to each item.

R: Relevant

NR: Not Relevant

EXPERT'S NAME: Lic. Mg. Edgar Encalada

ITEM	Objective		Variable		Dimension		Indicator		Drafting		OBSERVATION
	R	NR	R	NR	R	NR	R	NR	R	NR	
1	✓		✓		✓		✓		✓		
2	✓		✓		✓		✓		✓		
3	✓		✓		✓		✓		✓		
4	✓		✓		✓		✓		✓		
5	✓		✓		✓		✓		✓		
6	✓		✓		✓		✓		✓		
7	✓		✓		✓		✓		✓		

Source: Rugel, S. (2020).

Final Resolution:

Approved	✓	**Disapproved**	

Source: Rugel, S. (2020).

UNIVERSIDAD TÉCNICA DE AMBATO

FACULTAD DE CIENCIAS HUMANAS Y DE LA EDUCACIÓN

CARRERA DE IDIOMAS

EXPERT JUDGMENT EVIDENCE

I, EDGAR ENCALADA TRUJILLO, MAGISTER IN APPLIED LINGUISTICS with I.D. No. 0501824171, certify that I conducted the expert judgment on this instrument designed by Sara Michelle Rugel Torres, with I.D. No. 1805487418 for the Final Degree Project entitled "EDU-TECH AS A TEACHING STRATEGY AND THE SPEAKING SKILLS" since it is a fundamental requirement to qualify for the Bachelor's Degree in Educational Sciences; Mention: English, at Universidad Técnica de Ambato.

Ambato, June 23rd, 2020.

Sincerely,

EDGAR ENCALADA TRUJILLO

I.D. 0501824171