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Reflections on the importance of English language use of in science and education

Reflexiones sobre la importancia del uso del inglés en la ciencia y en la educación

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Abstract

In the last 2 decades the English language has become more and more relevant in the digital, academic, technological, cultural, educational, and of course in the field of scientific research. Globalization includes a language so universal that a little more than 7 billion inhabitants living today on planet Earth can communicate. Therefore, the development of nations is closely related to the skills, competences, knowledge, and professional studies that their citizens have and an essential tool is to have a high knowledge of the 4 skills of the English language according to the Common European Framework of Reference which is the international standard that defines a linguistic competence that a person possesses with respect to any language. The aim of this article is to enunciate in a qualitative way making a comparative with different researches about the importance of the English use in the different fields of science, analyzing the most effective teaching methods of the English language and its relevance in the now called information society, knowledge society or postmodern society that has already become a requirement in the field of scientific research.

Keywords: globalization, research, English, skills, science.

Resumen

En las últimas 2 décadas el idioma inglés ha cobrado cada día más relevancia en el mundo digital, académico, tecnológico, cultural, educativo y por supuesto en el campo de la investigación científica. La globalización incluye un idioma tan universal que se pueden comunicar un poco más de 7 mil millones de habitantes que estamos viviendo hoy en día en el planeta Tierra. Por consiguiente, el desarrollo de las naciones está estrechamente relacionado con las habilidades, competencias, conocimientos, saberes y estudios profesionales con los que cuentan sus ciudadanos. Una herramienta esencial es tener un elevado conocimiento de las 4 habilidades del idioma inglés de acuerdo al marco común europeo de referencia que es el estándar internacional que define una competencia lingüística que posee una persona con respecto a cualquier idioma. El objetivo del presente artículo es el enunciar de forma cualitativa haciendo una comparativa con distintas investigaciones sobre la importancia del uso del inglés en los distintos campos de la ciencia, analizando los métodos de enseñanza más efectivos de este idioma y su relevancia en la ahora llamada sociedad de la información, sociedad del conocimiento o sociedad postmoderna que ya se ha convertido una exigencia en el campo de la investigación científica.

Palabras clave: globalización, investigación, inglés, habilidades, ciencia.



INTRODUCTION

The main purpose of this article is to show the importance of knowing the English language, which according to the United Nations Organization ([United Naciones, 2021](#)) is considered the official language of the world. In a globalized world where it is extremely necessary to communicate quickly and massively in a society so insatiable to consume information constantly and vertiginously; therefore, the English language is positioned as a fundamental language to acquire and disseminate knowledge of any kind. This language is the dominant language most used as a second language and the lingua franca of scientific communication in periodical publications, in electronic journals of high international impact, books and academic conferences. Therefore, this research analyzes the outstanding relationship that the English language has with the development, history, dissemination and teaching of science, with emphasis on scientific research; as well as the relevance of this language in the work of scientists in these areas and in turn the opportunities and challenges that the English language brings in teaching at all educational levels. As is well known, this XXI century has brought us great advances in areas such as: technology, science and globalization, which has undoubtedly generated changes in the environment that impact both positively and negatively, and students of higher education institutions throughout their professional training must be prepared to be highly competitive and fundamentally be aware of the relevance of the English language. Although Spanish is the native language of more people than English, the latter is more widely learned as a second language than the former. Recent estimates suggest that some 402 million people speak it as their first language, just as it is currently used by more than 1 billion non-native speakers ([Ortiz, 2013](#)).

Globalization is undoubtedly today one of the main factors that trigger economic, social, educational and technological innovation development, which makes this language relevant in all nations of the world.

If the professionals of any academic program of all higher institutions at an international level had intermediate level knowledge of a second language, we would be facing a new competitive society, more developed in all the areas mentioned above and above all, they would have more job opportunities.

The importance of having a command of English lies in the fact that it is spoken internationally. Throughout the length and breadth of the globe, in all nations of the world it has been named "The universal language", although it is not an official language in most countries, currently "It is the language that is being taught more as a second language around the world ([Quezada, 2011](#)).



It is a reality that in the context of the current globalization we live in, the transfer of knowledge is also essentially multilingual ([Edmondson, 2003](#)), in this XXI century it is oriented by its technological, scientific, economic influence, its international treaties and in the world of finance towards English.

In this regard, English is predominant in the scientific area: currently, two thirds of the world's scientists read in that language and use it as a means to make their research known ([Niño-Puello, 2013](#)). Given this scenario, it is evident that English is fundamental for acquiring knowledge. Likewise, in the educational area, this language is essential if the aim is to train the new generations to insert themselves and compete adequately in a globalized world.

English as a language that generates scientific knowledge; in spite of the fact that at the international level the proportion of English-speaking population may be lower than that of other languages (for example, Chinese or Spanish), in the current globalized context English has an indisputable dominance and diffusion. This language has official or special status in more than 75 countries ([Agudelo, 2011](#)).

Thus, with the context raised in this order of ideas, it is clear that the English language is fundamental for acquiring knowledge. This is because it is the fundamental language of books, high-impact international electronic journals, periodicals and academic conferences in the fields of science and technology. Approximately 65% of scientists in the world read in English, and at least three quarters of the electronic information collected and stored in databases is in this language ([Edmondson, 2003](#)).

In other words, most countries choose this language to teach as a foreign language because of the scope it has within communication and research.

Therefore, the professional and personal demands imposed by this globalized world force the university to pay special attention to the training of bilingual professionals, since nowadays the command of a second language, such as English, has gone from being an added value to become a linguistic competence that the individual needs to develop ([España, 2010](#)).

Hence the obligation of universities to promote the learning of the English language and make it part of the educational curriculum, making students develop new skills so that they are competent to meet the demands of today's labor market.



It is undeniable that there is a very close link between the use and importance of English in research and scientific publications. The use of this international language in science is well documented. English has transcended cultures and has influenced everything from fashion to traditions and lifestyles (Crystal, 2004).

The English language clearly shows us that in scientific research it is essential to understand texts, scientific articles, and obviously also to write them. It is certain that more than 90% of the results that are currently published are in English, regardless of the country where the research was carried out. With certainty it can be stated that articles published in the English language have wide dissemination, citation and acceptance in the scientific community (Ammon, 2001). Therefore, in the production of scientific research, one should have sufficient oral and written skills and abilities to reach a suitable level in a greater mastery of the 4 skills of this language, although mostly reading comprehension of scientific texts as well as written production and the proper use of English grammar in a specialized context with a special terminology, with the main objective of increasing the knowledge and skills of this professional activity such as communication with other specialists in their field of knowledge, the submission of a paper to a national or international event and the reading or submission of an article or written work to a scientific journal.

DEVELOPMENT

The highest degree of linguistic evolution is the oral language, and of all the species that exist on planet Earth, the human being is the only one that has developed it. It is regularly used as an instrument of communication, representation and social relationship and is of transcendental importance for the cognitive, social and affective development of the individual, hence the important role played by oral language, which reaches its peak in the definition of linguistic communication competence. Thus, human communication reaches its full originality when it is exercised through language, even if there are other means of communication, especially today in the world we live in. Language is the only type of social behavior whose primary function is communication (Verón, 1971). Consequently, language evolves and becomes one of the greatest riches for the interaction of people with their environment, since it is the main means of communication between people. Language is the first specific manifestation of man as such, that is, as an entity capable of knowing the world, as well as the first and only absolutely general form that man has at his disposal to fix and objectify, beyond immediate impressions and reactions, the knowledge of the world and of himself, that is, the entire content of consciousness (Coseriu, 1967). Consequently, the evolutionary record of man as a social entity through the analysis of the history of language can be said that language is a process of communication that allows the emission and reception of information. Kristeva



(1988), confirms that language is a communication process based on the emission of a message between at least two speaking subjects, one being the sender and the other the receiver. Language is, therefore, the ability of the human species to communicate by means of a system of vocal signs, which brings into play a complex bodily technique and implies the existence of a symbolic function (Lewandowski, 2000). Language "is precisely the elaboration and transmission of information through language that allows social interaction, communication" (Garrido, 1994). Therefore, everything that is produced in relation to language happens in order to be communicated in social exchange. From the above it can be deduced that the linguistic code is the instrument that allows us to know the world around us and to interpret it, in order to be able to develop in it. According to Malmberg (1966), our way of using sounds and words, forms and syntactic constructions, is also part of the complex of social models of behavior that characterize human groups. Any analysis and reflection on culture and social life, under any of its forms, is also an analysis of human language, of conventions, of the linguistic system. Social and cultural models are reflected in the structure of language, that is, in the linguistic code that gives rise to language (Coseriu, 1967).

From the above mentioned, we can see the importance that human beings have always given to communication, which has been a determining factor in their evolution, has been inherent to human beings and of course has allowed man to have access to culture and to the world around him. Following Flores & Orozco (2005), it can be defined that communication is a word that comes from the Latin word "comunicare" which means to put or put in common.

Communication is considered the tool by means of which man can modify his environment. It has also been for the human being the vehicle of transmission of ideas, thoughts, feelings and reflections on the past and opinions about the future.

The human being is by nature a social being and communication is something extremely vital for him, he could not live without the interaction with others, because of his constant need to express feelings, thoughts, words, emotions sometimes through the use of symbols. The origin of language in the human being is millenary as well as his desire to communicate, it is also inherent the need to investigate, to explore, to want to know and to learn other activities, new, playful, that are interesting, that seem challenging, that are seasoned with the dynamism of the generational time in which we live, a clear example of the above is learning a new language, as a challenge, goal or objective; it will always be for the human being a test of courage, will and daring. That is why in the last two centuries a variety of methods for language learning have emerged.



With respect to foreign language learning, [Richards & Rodgers \(2001\)](#) understand the concept of a teaching approach as a set of beliefs and principles that can be used as a basis for teaching a language. They are characterized by a diversity of interpretations as to how they can be applied and can be revised and updated over time as new practices emerge. It is a specific teaching design or system based on a particular theory of language and language learning.

The Common European Framework of Reference for Languages establishes a scale of six common levels of reference for the organization of language learning and for the accreditation of the different diplomas issued by certified entities. The division is grouped into three blocks that correspond to a more classical division of basic, intermediate and advanced levels, although they do not correspond exactly to the classical levels because they are located above or below them, see Table 1 ([Instituto Cervantes, 2001](#)).

For a better understanding and socialization using the English language, we should favor in our educational programs a high teaching-learning process where university students can at least reach the third level of reference for their better performance as professionals later on.

According to Dr. in Sciences [Hernández Chérrez \(2014\)](#), English is undoubtedly the most taught language in the world, it is taught as a foreign language in more than 100 countries such as: China, Russia, Germany, Spain, Egypt, Brazil and Ecuador. In the European Union, English is a compulsory language in 14 countries or regions starting at the primary school stage. In 2009, 73% of students enrolled in primary school in the European Union were learning English. In compulsory secondary education the percentage exceeded 90% and in pre-vocational and vocational secondary education it reached 74.9%.

In higher education, recent graduates are expected to be able to understand complex texts within their area of knowledge and to be able to express themselves with a certain degree of fluency when communicating with other people in English. For this reason, Higher Education Institutions must guarantee the fulfillment of a basic number of hours and the quality of the courses that are taught ([Ministerio de Educación Nacional de Colombia, 2005](#)).



Table 1. Scale of six common reference levels for the organization of foreign language learning.

Level	Sublevel	Description
A (Basic User)	A1 (Access)	Can understand and use familiar everyday expressions and very basic phrases aimed at the satisfaction of needs of a concrete type. Can introduce him/herself and others and can ask and answer questions about personal details such as where he/she lives, what he/she owns and who he/she knows. Can interact in a basic way provided the other person talks slowly and clearly and is prepared to cooperate.
	A2 (Platform)	Can understand sentences and frequently used expressions related to areas of most immediate relevance (e.g. basic information about him/herself and his/her family, shopping, places of interest, occupations, etc.). Can communicate in simple and routine tasks requiring simple and direct exchanges of information on familiar and routine matters. Can describe in simple terms aspects of his/her background and environment, as well as matters related to his/her immediate needs.
B (Independent User)	B1 (Intermediate)	Can understand the main points of clear standard input on familiar matters regularly encountered in work, school, leisure, etc. Can understand the main points of clear standard input on familiar matters regularly encountered in work, school, leisure, etc. Can understand the main points of clear standard input. Can deal with most situations likely to arise whilst travelling in an area where the language is spoken. Can produce simple connected text on topics which are familiar or of personal interest. Can describe experiences, events, wishes and aspirations and briefly give reasons and explanations for opinions and plans.
	B2 (Upper Intermediate)	Can understand the main ideas of complex text on both concrete and abstract topics, including technical discussions in his/her field of specialization. Can interact with native speakers with a sufficient degree of fluency and spontaneity to ensure that communication is effortless for both parties. Can produce clear, detailed text on a wide range of subjects and explain a viewpoint on a topical issue giving the advantages and disadvantages of various options.
C (Proficient User)	C1 (Effective Operational Proficiency)	Can understand a wide range of demanding, longer texts, and recognise implicit meaning. Can express him/herself fluently and spontaneously without much obvious searching for expressions. Can use language flexibly and effectively for social, academic and professional purposes. Can produce clear, well-structured, detailed text on complex subjects, showing controlled use of organisational patterns, connectors and cohesive devices.
	C2 (Mastery)	Can understand with ease virtually everything heard or read. Can reconstruct information and arguments from different spoken and written sources, reconstructing arguments and accounts in a coherent, summarised presentation. Can express him/herself spontaneously, very fluently and precisely, differentiating finer shades of meaning even in more complex situations.



Most of the bibliography used by students, mainly university students, are presented in English, mainly those that are more updated, so that if they do not know this language, they lack the necessary tools for research and the preparation of the student would not be complete or comprehensive.

Although the basic principles of scientific writing are applied in all languages, it is very common that its writing is done in English with a view to contribute to its greater visibility and possible scope, since this has become the international language of science, a situation that therefore requires greater care in its preparation, especially in the case of non-English speakers to ensure the proper quality of the corresponding manuscript and therefore, the greatest possibility of acceptance for publication by journals of recognized international prestige. It is advisable to write simply, avoiding complex constructions and overloaded texts to ensure effective communication (Núñez, 2009).

When bibliographic searches are carried out to design new research projects (especially when dealing with new and little researched topics), the amount of information found in this language significantly exceeds the information available in other languages, including Spanish. Similarly, many international journals indexed with the best rankings require that scientific articles corresponding to the results of research projects be published in English (Uribe, 2012).

The concept of foreign language teaching methods has so far had several interpretations and definitions. Richards & Rodgers (2001) suggest the following definition: Method is a general plan for the orderly presentation of linguistic material, none of which contradicts, and which is based on the approach selected. An approach is axiomatic, a method is procedural. Within an approach, there may be many methods.

Authors Richards & Rodgers (2001), Harmer J (2011), , Diane Larsen-Freeman (2000), Mehisto P, Marsh & Frigols (2008), Echevarria J, Vogt ME & Short DJ. (2008) have made a compilation over many years, define and mention the English language teaching methods that have been for decades the most effective internationally when learned by people whose native language is obviously other than English:

- The Grammar and Translation Method. This method of teaching functioned as the norm until the 1960s. It was used for the purpose of helping students read and appreciate foreign language literature. It was also hoped that, through the study of the grammar of the target language, students would become more familiar with the grammar of their native language and that this familiarity would help them to speak and write their native language better.



- Direct or natural method. The Direct Method became very popular when the grammatical translation method was not considered effective for learning to use a foreign language for communicative purposes. This method has a very basic rule: it does not allow translation. In fact, the Direct Method gets its name from the fact that meaning must be conveyed directly in the target language through the use of visual and demonstration aids, without resorting to the learners' native language.

- Audio Lingual Method. One of the reasons for the development of the Audio-lingual Method was the entry of the United States into World War II. In addition, as the United States emerged as an international power, there was a growing demand for teaching English to immigrants and foreign students. In the audio-lingual method, greater emphasis was placed on the mastery of the formal aspects of the language, i.e., good grammar usage. Under this methodology grammar or grammatical structures are the starting point of teaching, mainly through intensive oral production with attention to pronunciation. The audio-lingual methodology is based on Skinner's behaviorist theories of learning (Stimulus-Response-Reinforcement Model).

- Communicative Approach. The communicative approach (CLT) emerged in the 1980s. Its origins are the result of the dissatisfaction of educators and linguists with the Grammar and Translation Method and the Audio-lingual Method. The communicative approach makes communicative competence the goal of language teaching and recognizes the interdependence of language and communication. It emphasizes the importance of language functions rather than focusing solely on grammar and vocabulary. A guiding principle of this approach is to teach students the correct use of language forms so that they can be applied in a variety of contexts and for a variety of purposes. CLT is considered an approach and not a method as it is compatible with many teaching methods. There is no specific teaching methodology available for CLT. The availability of a specific teaching methodology would be characteristic of a method. The underlying language theory of CLT considers language as communication, and the goal of teaching is the development of communicative competence.

- Community Language Learning (Community Language Learning). In the early 1970s Charles, A. Curran proposed community language learning as a method whose basic principle is to establish interpersonal relationships between teacher and students to facilitate learning. The basis of this methodology is the idea that learning is learning to live, is a social matter and can only occur in social interaction. This methodology is based on counseling techniques for learning. The role of the teachers is focused on reducing fears and insecurities, as well as attending to the personal and linguistic problems that the person encounters in learning foreign languages.



- The Total Physical Response Method. The Total Physical Response is based on the idea of James J. Asher, who states that the more active the learning process is, the more effective it becomes. Based on his research studies, (Asher,1969) According to this author, the fastest way to manifest understanding and the least stressful way to achieve understanding of any language as a foreign language is to follow instructions given by the teacher (without translation from the native language). Likewise, the proponent of TPR worked from the premise that adult learning of a foreign language may have developmental patterns similar to those of child language acquisition. If children learn their language from discourse directed at them in the form of commands and instructions to perform actions, then adults will also learn better that way. Consequently, TPR proposes that learners respond physically to the language they hear. Language processing is combined with physical action.

- Content Based Instruction (CBI). Content Based Instruction (CBI) was developed in the 1980s and is based on the principles of the communicative approach: it is a teaching approach in which teaching is organized according to content or topics to be taught rather than to a set type of linguistic, grammatical program. As its main axis, teaching is content-based, and its primary objective is to convey meaningful content to students. Language is used to teach the subject matter, and the language itself is acquired as a by-product of learning about real-world content.

- Task Based Language Teaching (Task Based Learning). The task-based approach to language teaching was introduced in the 1980s and is a development of the communicative approach. It was developed by Dave and Jane Willis and is based on the use of tasks as the central unit of language planning and teaching. The primary objective is to provide learners with a natural context for language use. As they work to complete a task, they have opportunities to interact. Such interaction is intended to facilitate language acquisition. As they complete the task they check to see if they have understood correctly and sometimes have to ask for clarification. As they interact and socialize with others, they get to hear language that may be beyond their ability at the time, but which can be assimilated into their knowledge of the target language for use at a later time. Instead of a linguistic structure, learners are presented with a task to perform or a problem to solve.

- The PPP (Presentation-Practice-Production) model. The PPP model (acronym for presentation, practice and production) emerged from structural-situational teaching. In this procedure, the teacher introduces a situation that contextualizes the language to be taught. The PPP model is implemented through the progression of three sequences: 1) Presentation: the teacher presents new words or structures, gives examples, writes them on the blackboard, etc. 2) Practice: students practice the use of words or structures in a controlled manner, for example, by making sentences from messages, asking and answering questions, giving sentences based on an image. Practice can be oral or



written. 3) Production: students use the language they have learned to express themselves more freely, speaking or writing about their own lives and interests, expressing opinions, or imagining themselves in different situations. Like practice, production can be oral or written.

- The SIOP model (Sheltered Instruction Observation Protocol Model). [Echevarria J, Vogt ME & Short DJ, \(2008\)](#) created the SIOP (Sheltered Instruction Observation Protocol or Sheltered English Observation Protocol, is used in contexts where there are students who have to learn content in a language that is not their native language by combining content-based instruction and SIOP, teachers seek to develop students' English language proficiency by incorporating information from the subject areas they are likely to study. Sheltered instruction, which is part of the abbreviation SIOP, can be explained as a set of instructional strategies designed for teachers who teach academic content to learners with different levels of language skills. In addition to comprehensible information, SIOP offers different learning strategies and scaffolding techniques. The learning strategies and techniques help teachers choose different teaching methods to suit the purpose of a class and promote students' critical and strategic thinking.

- Content and Language Integrated Learning (CLIL). Content and Language Integrated Learning (CLIL) is a language teaching methodology whose main emphasis is not on form, but on content. The acronym CLIL was introduced by [Marsh \(2002\)](#), who works in the area of multilingualism and bilingual education at the Finnish University of Jyväskylä, and defines this methodology as a language pedagogy focused on meaning in contrast to those focused on form. Thus, this same author suggested CLIL as a generic term to refer to methodologies that lead to learning- and content-focused education.

- The audiovisual method is a didactic model designed for teaching LE to beginners. It gives priority to oral language, without neglecting written language; the first sessions (approximately 20 hours) of the method are dedicated to oral language and then the learning of written language begins. It is considered that LE learning is channeled through hearing (listening to dialogues) and sight (observing the situation); this explains the combined use of dialogue recordings on magnetic media (in the early days, on tape recorder; later, on cassette) and images on film (similar to slides). Special attention is paid to the material resources, and care is taken to make the presentation as attractive as possible. [Howatt \(1987\)](#) defines the method as "the first serious attempt to construct a pedagogical description of a foreign language based on transcriptions of spoken conversations. During the course of this article, the importance of globalization, of which we are all a part as citizens of any nation, but also as part of a society that has ample possibilities and it is practically impossible not to notice what is going on around us, since there is a great variety of forms of mass communication available at the reach of a click on electronic devices, is evident. The same happens with the English language, to which



a human being has direct or indirect contact from an early age. It has been analyzed that at all educational levels it is part of the curriculum of both public and private schools, either intensively or with a few hours per month of English classes, but invariably there will always be a slight but permanent contact. It has also been mentioned that human beings always use language to communicate in a variety of creative ways in today's digital age. Later, when he finishes his university career, is a professional and is passionate about scientific research, he will again need to have knowledge of English as a second language. In this article we have analyzed different points of view of expert authors on this subject and also at the end of the development of this article we have mentioned all the most used, most popular and most effective teaching methods for the acquisition and mastery of the English language. Science is an excellent bridge that will continue to contribute to the economic development of society to recover as soon as possible from this experience that we have all lived as has been the Covid-19 pandemic, it also provides an opportunity to bring us closer to knowledge, to knowledge, to encourage habits of discipline in scientific study; through scientific work contribute in some way in the formation of more reflective, analytical, empathetic citizens and that each of them through ethical values, responsibility, honesty, creativity and ingenuity go ahead with the premise that education, science and technology are the right path that allows us to be prepared as a society for future contingencies of any kind always seeking the welfare of each and every one of the citizens.

METHODOLOGY

The present review on the importance of the use of English in science has been developed mainly with a qualitative approach, both narrative and descriptive, generating a new perspective from a subjective point of view, analyzing through logical reasoning a series of comparisons that lead to a discernment of the most relevant and important concepts and definitions of the topic in question. In turn, the research is also of an exploratory type, since during its development, a systematic review of the literature of various scientific articles in English and Spanish on this topic has been carried out using the following scientific databases: Direct Science, Emerald, Scopus, Scielo, Redalyc, Google Académic. Likewise, for the present article, search criteria were applied based on search engines or descriptors, achieving the best results with high impact articles. The matrix of the present research is developed with the purpose of correlating each of the elements through the execution of a logical sequence ([Rivero, 2013](#)).



CONCLUSIONS

This article confirms that most of those who publish scientific papers or articles at the international level benefit in some way from citation in high impact journals. It should be noted that the intellectual work of scientific research carried out in institutions of higher education through the publication of scientific papers in English represents in itself a great effort, especially by those whose mother tongue is different from English or who are in non-English-speaking countries, is a clear example of the globalization that is happening in today's world in the formation of new knowledge. The great advantage of this 21st century is that it is plagued with great technology that is at the forefront, but it has not yet been able to replace in any way the work of the teacher who teaches English as a figure that guides or facilitates learning through effective teaching strategies, interactive, visual and didactic resources that contribute to meaningful learning with ingenuity and creativity, Of course, the digital and technological resources that continue to be used help those who wish to learn through the self-taught method, facilitated by the technology we have today, along with gadgets and multiple electronic devices connected to the Internet that facilitate learning with free applications or videos on YouTube.

Scientific researchers will continue to face a great challenge, times of change are always favorable, to continue learning and this undoubtedly renews the work of those who investigate in a very exciting area such as science, it is said out there renew or die and now we must all seek and explore the best techniques or methods of learning the most popular language, We must all now seek and explore the best techniques or methods for learning the most popular, important and useful language in the last century to continue contributing with scientific work in the economic, educational, technological, cultural, academic development and always contributing with innovation in a world where everything is constantly moving and the key is to be in constant learning, adaptation and training, especially in communication technologies.

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