



AN INVESTIGATION OF ENGLISH LANGUAGE TEACHING AND LEARNING VIRTUAL RESOURCES-BASED WITH A FOCUS ON HIGHER EDUCATION STUDENTS.

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Abstract

The advancement and development of new technologies have impacted the whole world, especially in relation to the progress and advancement of information and communications, one of these advances is the digitization of education, which has been inevitable in the community of learners immersed in the world wide web, with distance learning giving new opportunities for education. Internet resources based on different new information and communication technologies shape some features of the educational process, which allows for the application of a learner-centered cognitive, communicative and socio-cultural approach to English language teaching at the higher education level. The present research work presents the results of the perception of the students of the Higher School Polytechnic of Chimborazo, on the use of virtual tools to support them in learning English. The research was carried out with a quantitative approach through the analysis of data obtained in the statistical software RStudio, the product of the application of a virtual survey of a population of 40 students. The results indicate that students perceive positively the use of technologies to support English language learning and are aware of how these tools can help them acquire skills to master a second language.

Keywords: E-learning; e-learning; English language learning; teaching methods; technological learning tools; ICTs.

1. INTRODUCTION

Nowadays, the English language is considered a fundamental tool for broadening the occupational field, favoring intellectual autonomy and participating fully in a world where interaction between human beings does not necessarily imply physical presence[1-3]. The use of this language constitutes access to formalized knowledge and to various notions of the world, culture, and society, conceived within a globalized scenario. Within this scenario of globalization of communications, a sense of immediacy and international belonging is demanded, which must be guaranteed by the educational system through the effective learning of English[4,5].

The demands of a globalized world have prompted governments and educational institutions to rethink the basic standards for English as a Foreign Language. Thus, the governments of Ministerio de Educacion Gobierno de Colombia (2008); Argentina (2012); Ministerio de Educacion del Peru (2014) in their desire to ensure that citizens have a better level of English that allows them to face the demands of the world and improve their quality of life, have established new standards and



curricula. In Ecuador, through the MEC (2008), the standards for English language learning are established, in which it is stated that students will have a level B1 according to the Common European Framework of Reference for Languages by the end of the third year of Bachillerato[6,7].

In Ecuador, the educational demands of higher education students towards their institutions are increasing in terms of incorporating technology, improving school infrastructure, renewing curricula, and preparing teaching staff, to mention just a few. As a result, institutions must recognize the new profile of the student who enters, as a result of his or her immersion in a society with constant technological changes[8].

Today's students seek to apply new technological/virtual tools and generate dynamic processes inside and outside the classroom[9-11]. In this context, the need has arisen for universities and polytechnics in Ecuador to seek innovative information and communication technologies (ICT), such as virtual platforms for learning management, or systems and devices for information processing, generation, and communication to meet the demands of the university student population. In addition, along with the development of technological competencies, today's students are faced with the need to learn and apply a language in addition to their mother tongue, mainly English, which has become an intercultural communication tool[12,13].

The learning of English is included in the educational curriculum from basic education levels, even with the education reforms already included in preschool; however, it seems that the effort to incorporate this language from the early stages of the student's education has not been sufficient and the learning results have not been the desired ones[14,15]. This is due to the fact that students learn at a different pace and a single method, which is not appropriate for everyone and the results obtained are not adequate. According to [16], the main approaches/methods to be addressed in English language teaching with the help of technological tools, websites, and English language teaching platforms to ensure better results in teaching/learning are as follows: The grammatical translation approach, focused only on learning text translation; it does not consider the communication aspect of the language. The audio-lingual approach is characterized by focusing on language learning and emphasizing the development of oral skills. And finally, the communicative or functional approach considers that the learning process is not simply the mastery of the language, but also its appropriate use for communicative purposes[17-19].

The use of technological tools, through the use of ICTs, in the process of acquiring English language learning to enrich and favor each of the approaches mentioned above, since most students have lived with most virtual tools in a natural way, such as translators found in the web, translators through artificial intelligence, web pages or sites, English language teaching platforms whether free or paid[20-23]. Most students of English courses have grown up with them in many areas of their daily lives and now they have only adopted them in their educational activities, although they must integrate them properly into their learning processes if they want to develop communicative skills or abilities [24,25].

E-learning enables interactivity and promotes motivation, efficiency, and knowledge enhancement in a flexible environment. Therefore, the technologies that are most frequently used in educational levels are the computer, email, translators found on the web, learning platforms of this language and the newest of today, the use of mobile phones with the use of different free or paid applications that can be accessed. Therefore, this research work analyses in a descriptive and qualitative way the different virtual technological tools used for the teaching and learning of the English language, both by teachers and students, through the application of virtual surveys addressed to the student community of the Higher School Polytechnic of Chimborazo and analyzed with the statistical software RStudio.

2. MATERIALS AND METHODS

The research approach was quantitative and based on a non-experimental cross-sectional design, with a descriptive and correlational methodology. For this purpose, an ad hoc structured survey was designed, which was analyzed by means of statistical graphs carried out in RStudio, with which the reliability and content validity of this instrument was assessed.

2.1. SAMPLE SIZE ANALYSIS

Probability sampling is a process for sample selection where elements are determined randomly. The formula for calculating the sample size when the population size is known is as follows:

$$n = \frac{N * Z_{\alpha}^2 * p * q}{e^2 * (N + 1) + Z_{\alpha}^2 * p * q} \quad (1)$$

where:

N = population size

Z = confidence level,

p = probability of success, or expected proportion

q = probability of failure

e = precision (maximum permissible error in terms of proportion)

2.2. MEASURING INSTRUMENT

An instrument was designed in accordance with the research objectives and the context in which it was applied. The designed questionnaire consists of 9 items in Likert-type format, with five rank points, two in each polarity and one in between; they are scored from 1 (strongly disagree) to 5 (strongly agree). These were written in the sense of agreement with the answers concerning the respondents' perception of the use of virtual tools and information and communication technologies.

2.3. ENGLISH LANGUAGE TEACHING-LEARNING AND VIRTUAL TECHNOLOGY TOOLS

Within the new methods for learning a new language, the ability to use it in the real context of communication is implied. To fulfill this objective, the development of the ability to interact in diverse situations where the language can be developed in an adequate and intelligent way is implied. With the learning of a second language, the interaction to which the student is linked must be taken into account, that is to say, all his environment and activities that he develops will be put as a base for the learning of English. The student must make use of the language for communication, which is the end to be achieved in the learning process [26-28]. The components of English learning are based on instructions and sequences of steps as seen in Figure 1.



Figure 1. Components of English language learning



The virtual resources used today can be expressed in 3 components (see Figure 2): cyberspace, web pages, and automatic translation tools such as Google translator and other translators.

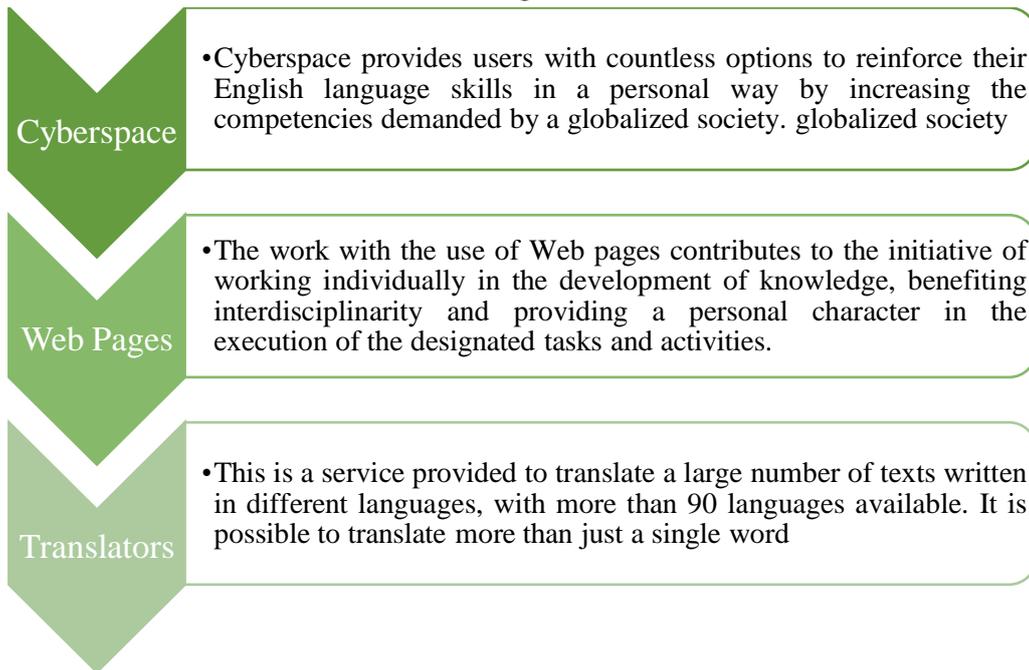


Figure 2. Virtual tools used for English language learning

3. RESULTS AND DISCUSSIONS

3.1. CALCULATION OF THE SAMPLE SIZE OF THE POPULATION UNDER ANALYSIS

Using the mathematical expression (1) expressed above, for the sample size reliability of 95% with a margin of error of 5% will be used, it is observed in Figure 3 that the Z value is 1.96.

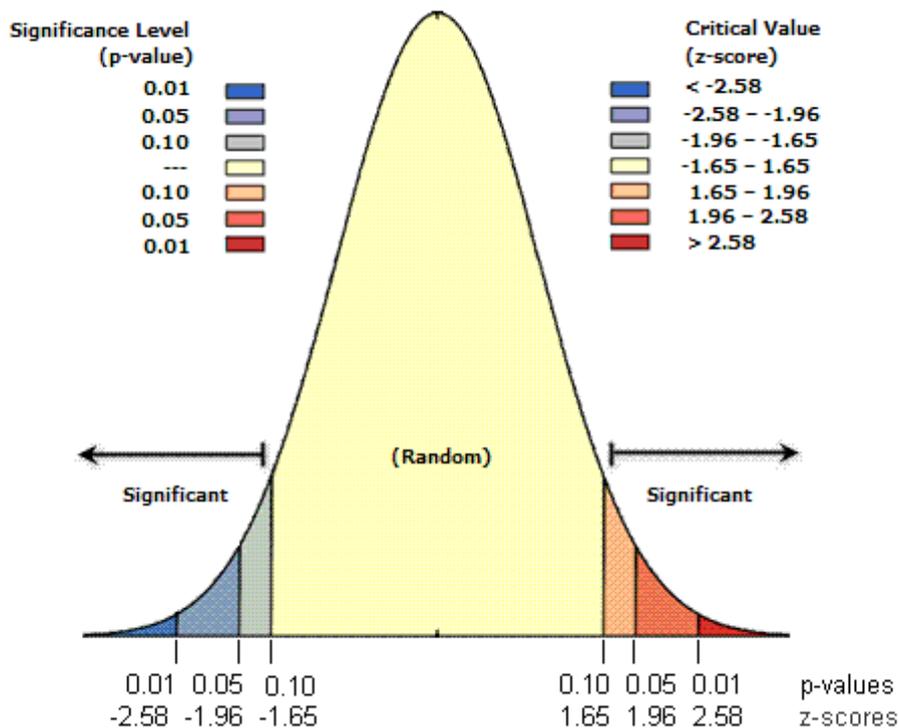


Figure 3. Gaussian distribution to determine the Z value for a reliability of 95 %.



$$n = \frac{40 * (1,96)^2 * 0,5 * 0,5}{0,05^2 * (40 + 1) + (1,96)^2 * 0,5 * 0,5}$$

$$n \approx 36$$

For a population of 40 students, no less than 36 people should be surveyed, both men and women, in order to be 95% sure.

3.2. DESIGN AND ANALYSIS OF THE MEASUREMENT INSTRUMENT (QUESTIONNAIRE)

A 9-item questionnaire was designed, as shown in Table 1. The results obtained by the surveyed students range in weighting from 1-5 as explained in the previous section following a Likert-type format (see Table 2).

Table 1. Items selected for the survey

A structured questionnaire based on virtual technology tools	
Q1	Do you consider the English language important for your profession?
Q2	Do you consider that the use of virtual tools helps you to learn English?
Q3	Do you think that the use of technological applications helps you to learn English?
Q4	Do you think that the use of translators such as Google or DeepL helps you to learn English?
Q5	Do you think that the use of cell phones in the classroom helps in your training?
Q6	Do you think that the use of English teaching platforms is adequate for your education?
Q7	Do you consider that the use of the Internet in the classroom is of great help for your learning?
Q8	Do you consider the use of web pages for your language learning?
Q9	Do you consider good learning through new technologies?

The questions were carefully elaborated according to the use of virtual resources and technological tools that are commonly used by the university community to improve or acquire knowledge of the English language, and above all for better learning.

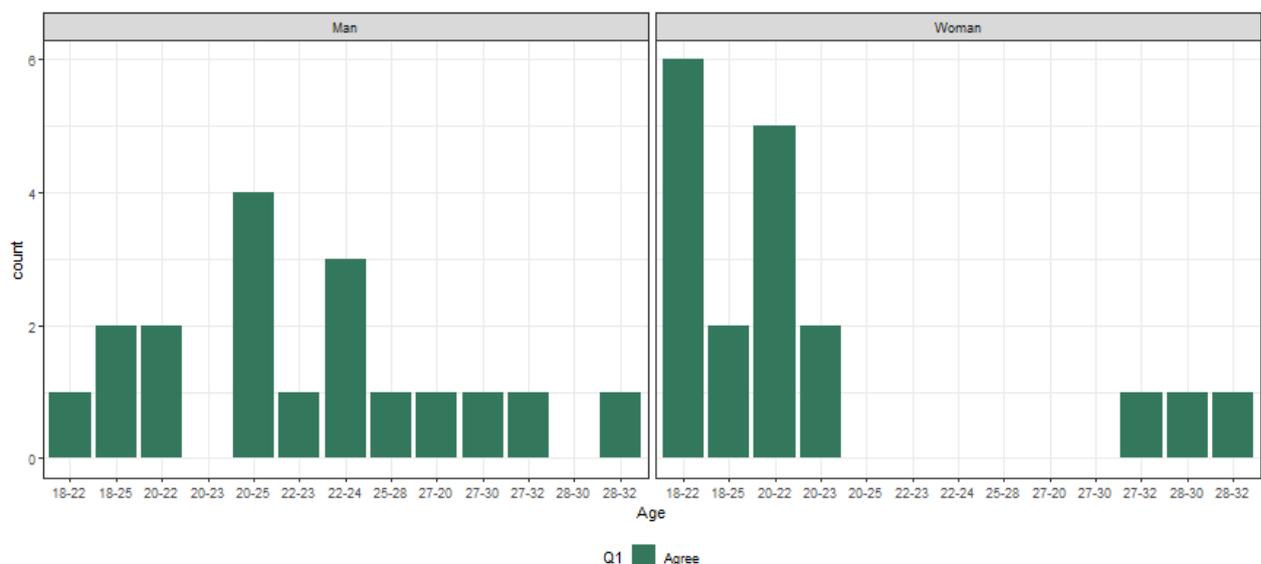


Figure 4. Analysis Q 1. Do you consider the English language important for your profession?



The results of the survey carried out on a sample of 36 students out of a population of 40 at the Higher School Polytechnic of Chimborazo show that 100 % (see Figure 4) agree that the English language is extremely important for their professional future.

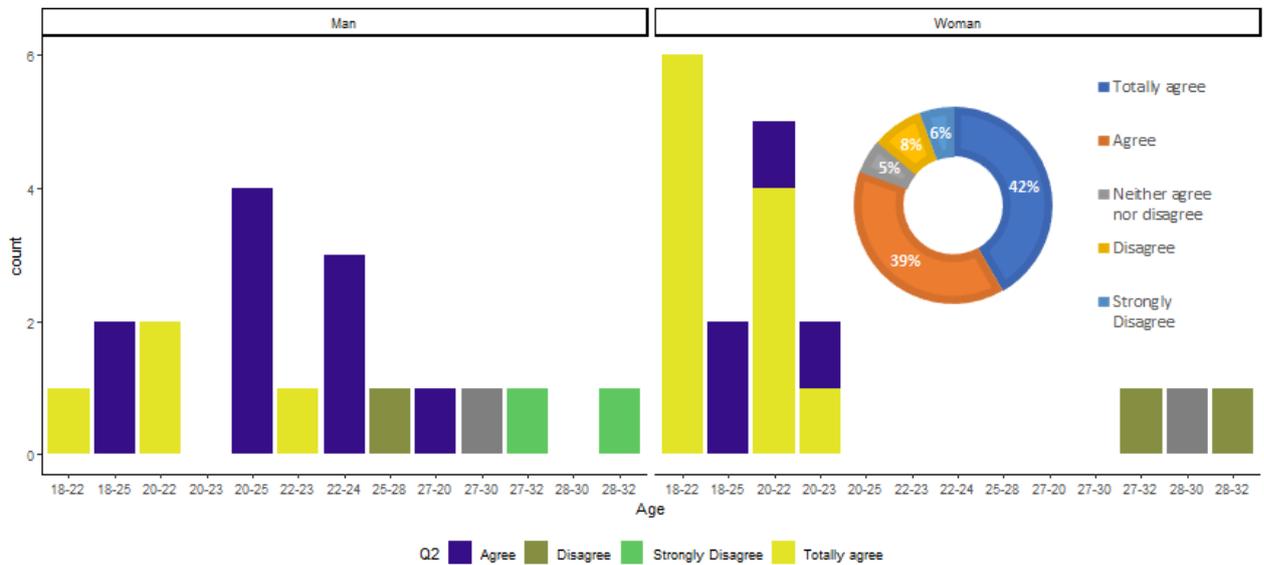


Figure 5. Analysis Q 2. Do you consider that the use of virtual tools helps you to learn English?

The analysis of the data from the questionnaire applied to the students, for question 2, highlights that 39% of the respondents agree and 42% say they agree that using virtual tools in the English class can help in their learning, which means that 81% of the students agree with the use of virtual tools for their learning process, which is a large percentage of students who opt for technology (see Figure 5); However, 5% do not have a clear position, neither agreeing nor disagreeing, only 8% disagree and 6% strongly disagree.

When correlating the data with respect to age and perception of the use of virtual tools, there is a significant among younger students who think that using technology and practicing outside the classroom is necessary to learn English more easily.

With regard to question 3, on whether they consider that the use of technological applications can help in the learning of English, the majority of respondents were inclined to agree (see Figure 6).

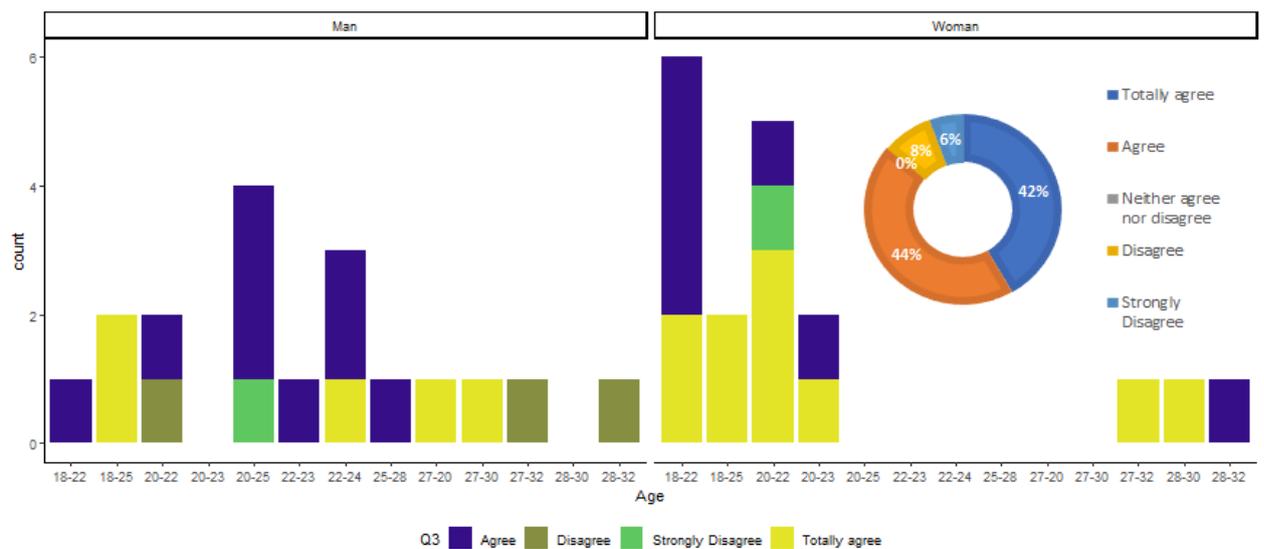


Figure 6. Analysis Q 3. Do you think that the use of technological applications helps you to learn English?

Table 2. Responses from student respondents

Likert Scale	Responses to items							
	Q2	Q3	Q4	Q5	Q6	Q7	Q8	Q9
Totally agree	15	15	9	12	16	6	14	12
Agree	14	16	24	20	10	27	16	18
Neither agree nor disagree	2	0	0	0	2	0	1	1
Disagree	3	3	2	2	5	2	3	2
Strongly Disagree	2	2	1	2	3	1	2	3
Total	36	36	36	36	36	36	36	36

Similarly, for the data analysis of question 4, the results show that 25% of respondents strongly agree and 67% agree that using virtual technological resources, such as translators, found on the Internet helps to reinforce English language learning; only 5% disagree and 3% strongly disagree (see Figure 7).

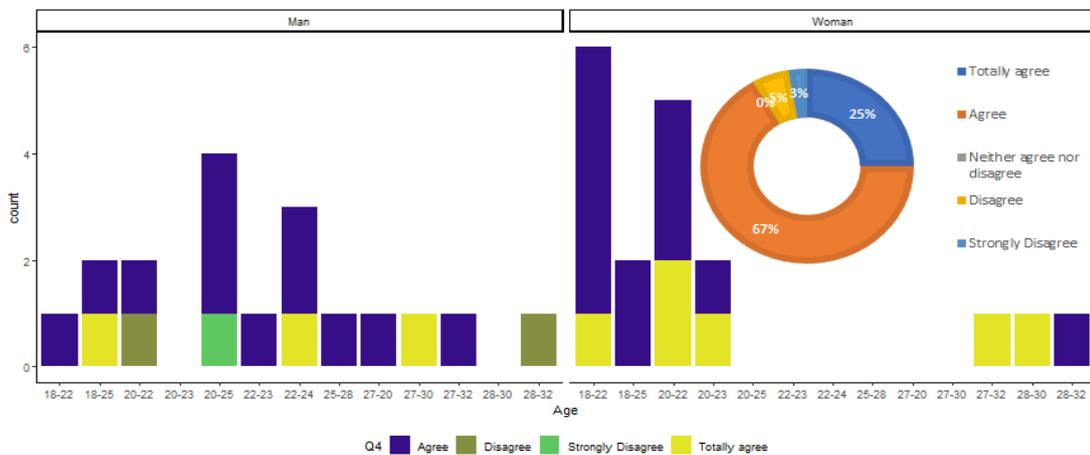


Figure 7. Analysis Q 4. Do you think that the use of translators such as Google or DeepL helps you to learn English?

When asked whether the use of downloaded mobile applications could support their learning in English, according to Figure 8, the responses were in favor with the following results: 56% agree that using these tools can help them improve their learning, while 5% disagree, and only 6% strongly disagree. The rest clearly strongly agree with the use of these tools.

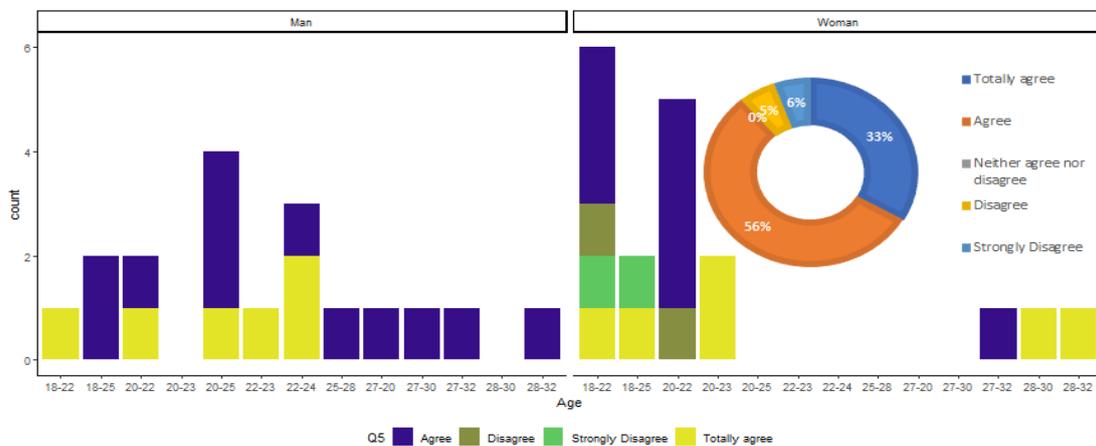


Figure 8. Analysis Q 5. Do you think that the use of cell phones in the classroom helps in your training?



In relation to the student’s perception of whether they consider that using the different English language teaching platforms makes it easier for them to understand the language, as shown (see Figure 9) the results after applying the survey, 44% of the respondents indicate that they totally agree and 88% agree; 6% did not express a clear position, as they indicated neither agreeing nor disagreeing, 14% disagreed, and 8% totally disagreed, which indicates that 24% disagreed with the rest of the respondents, and if we correlate the age data, this percentage corresponds to the older age range.

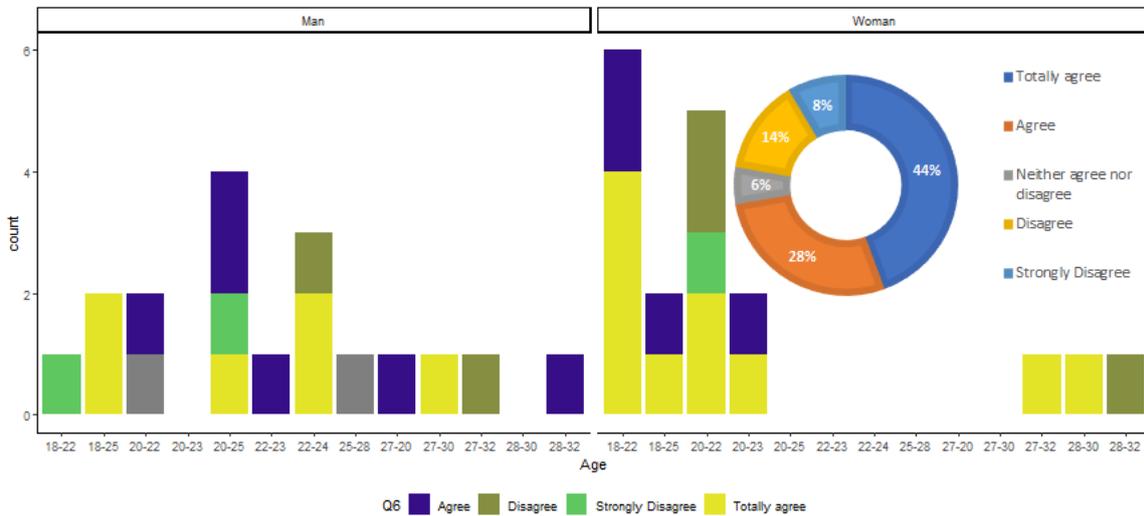


Figure 9. Analysis Q 6. Do you think that the use of English teaching platforms is adequate for your education?

Similarly, respondents were asked whether they consider that the use of the Internet in the classroom in an appropriate way helps to improve English language learning, and the results of this survey clearly show that 72% of students agree and 17% strongly agree, which means that a total of 32 students support the use of the Internet in the classroom, and only 4 students do not agree or do not express a definite position (see Figure 10).

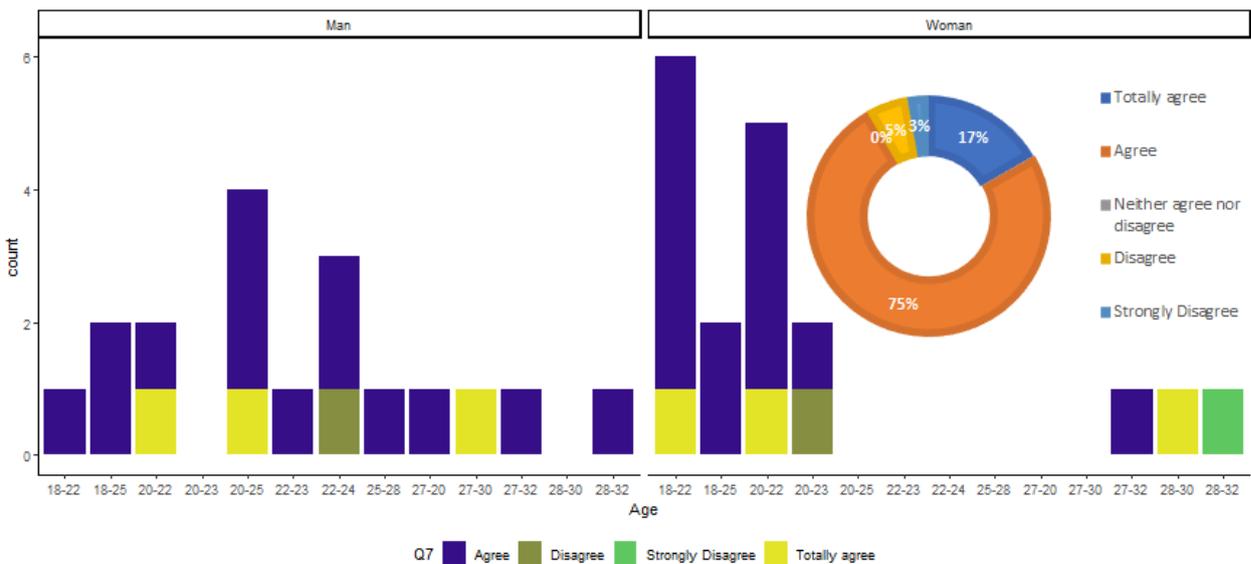


Figure 10. Analysis Q 7. Do you consider that the use of the Internet in the classroom is of great help for your learning?



In the case of the use of platforms, specifically English language teaching websites, 6% of respondents strongly disagreed and 8% disagreed that these platforms can help their learning, which means that almost 20% considered that they are not useful; 3% neither agreed nor disagreed; and the majority of respondents with 44% perceived that technology supports their English language learning, agreeing and 39% strongly agreed (see Figure 11).

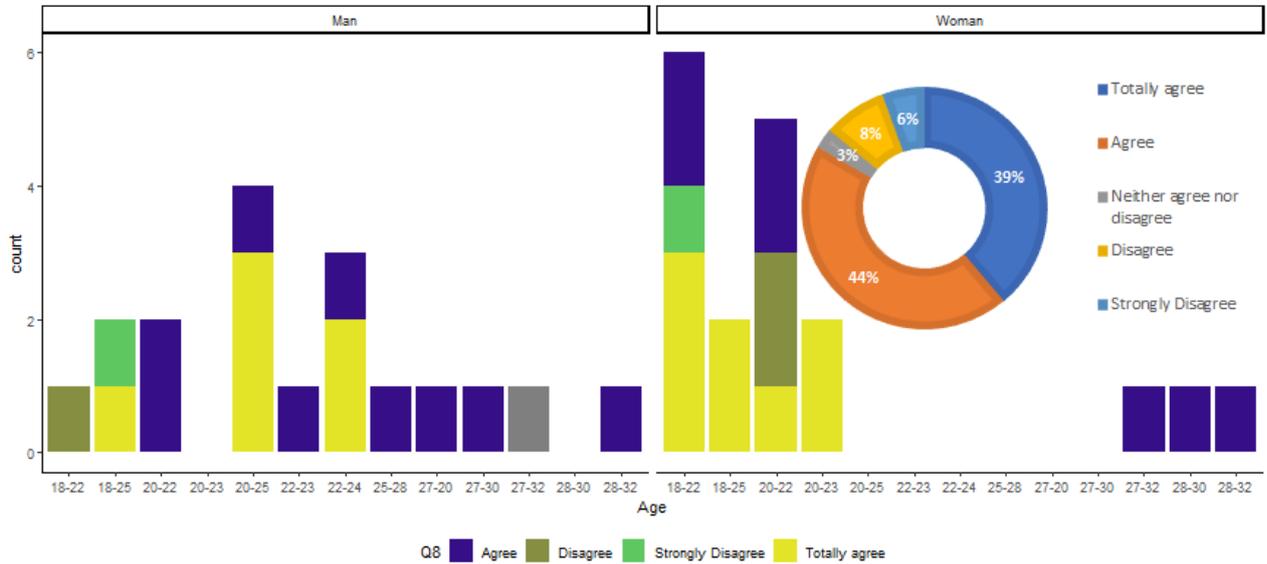


Figure 11. Analysis Q 8. Do you consider the use of web pages for your language learning?

In relation to the last question about the use of new technologies for the development of English language learning, the majority of the respondents, which corresponds to 83%, between agreeing and totally agreeing, indicated that yes, new technologies have emerged to work together with the academy and above all to acquire a greater benefit in the field of self-learning; and only 17% expressed negatively (see Figure 12).

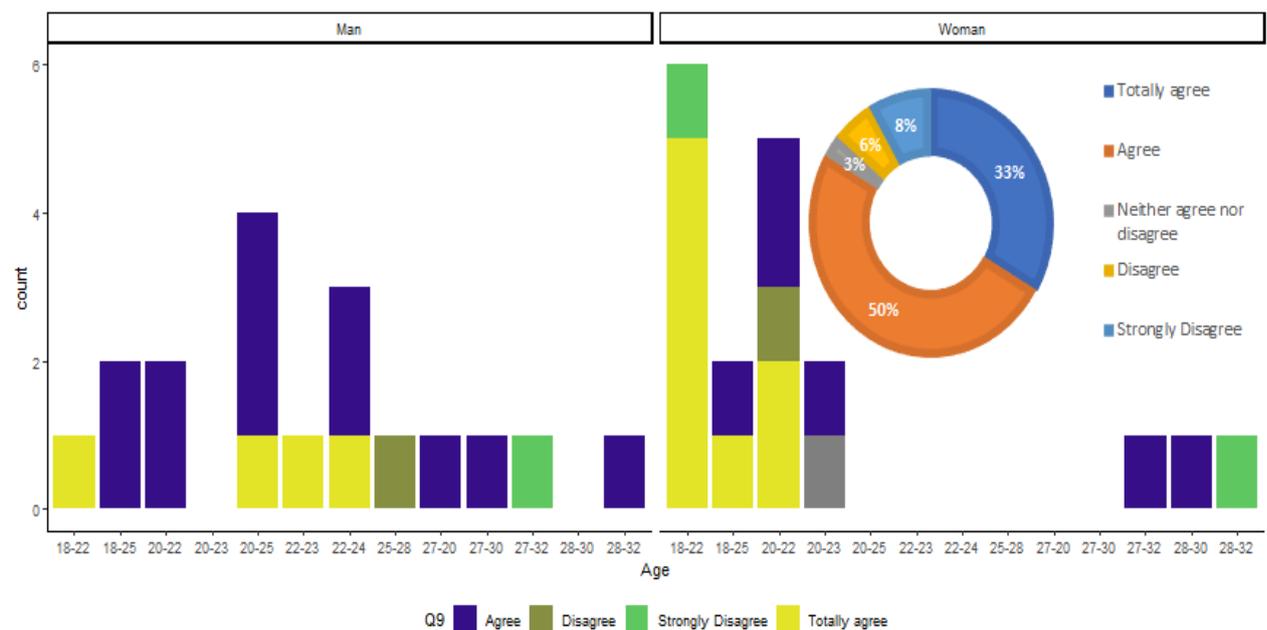


Figure 12. Analysis Q 9. Do you consider good learning through new technologies?

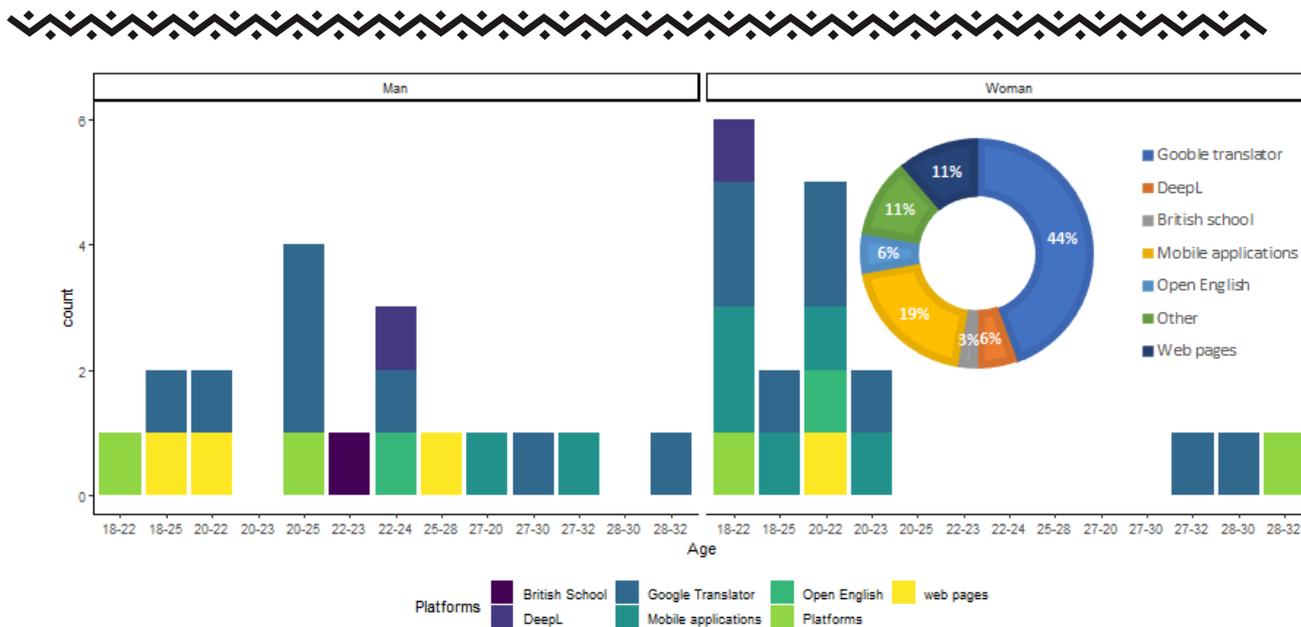


Figure 13. Most used technology platforms

Finally, an additional question was asked about the applications, web pages, platforms, etc. that are used most frequently, and evidently most of the respondents mentioned that they use Google Translator (44%), as shown in Figure 13.

4. CONCLUSIONS

Based on the results obtained and analyzed from the different surveys made to a sample of 36 higher education students who have taken different English courses.

According to the data shown in this study, students are immersed in technologies and for them they represent an important support in their daily learning; they are also aware of how these tools can help them acquire skills to master a second language, as is the case of English; likewise, they consider that social networks, the Internet, web pages and translators promote their learning; this may be because these are the technologies with which they have a greater relationship and better mastery.

Also, it is concluded that taking advantage of technological means to learn is not enough; they must be interactive and allow student participation to motivate them to continue learning. It is also worth noting that applying ICTs to English language teaching is not a simple task and that constant innovation is required, focused on the intellectual development of the student. It is a fact that technologies will have an increasing presence, but only a didactic sense of their use will be able to strengthen their use in the learning and formation of students.

The virtual tools are considered by the young students of higher education as instruments that facilitate the learning of knowledge by possessing a singularity of access to information of importance for the understanding of English, for which they express that it is necessary that these are imposed in all the institutions of higher education to facilitate the student of platforms that possess instruments of bilingual education.

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