UNIVERSIDAD MAYOR DE SAN ANDRÉS

FACULTAD DE HUMANIDADES Y CIENCIAS DE LA EDUCACIÓN

CARRERA DE LINGÜÍSTICA E IDIOMAS

"Professors' attitudes, competence and frequency of use with regard to information and communication technologies in the teaching of English at the Linguistics and Languages Department of Universidad Mayor de San Andres"

Tesis presentada para obtener el grado académico de Licenciatura en Lingüística e Idiomas

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ABSTRACT

This study was carried out with the purpose of researching the professors' attitudes toward the use of information and communication technologies (ICT), professors' self-perceptions about their current level of ICT competence and frequency of use of information and communication technologies (ICT) in the teaching of English at the Linguistics and languages Department of Universidad Mayor de San Andres.

This descriptive study with a non-experimental research design of trans–sectional type, allowed knowing the favorable or unfavorable attitudes of English professors toward the use of information and communication technologies, the professor' self-perceptions about their current level of ICT competence and the frequency of ICT use in the teaching of English at the Linguistics and Languages Department of Universidad Mayor de San Andres.

The population and sampling are made up of all the English professors that teach at the Linguistics and Languages Department and Centro de Enseñanza y Traducción de Inglés (CETI) of Universidad Mayor de San Andres. In order to collect the data about the English professors' attitudes, competence and frequency of use with regard to information and communication technologies a questionnaire was used as main instrument to obtain the required information.

The results obtained point out that the English professors at Linguistics and Languages Department of Universidad Mayor de San Andres have a favorable attitude towards the use of information and communication technologies in the teaching of English. In relation to current level of ICT competence and the frequency of ICT use, the achieved results showed that professors have a moderate competence in the use of information of communication technologies and that they use sometimes those technologies in the teaching of English at the Linguistics and languages Department of Universidad Mayor de San Andres.

INTRODUCTION

Not long ago information and communication technologies (ICT) promised to reduce the sense of isolation and open new opportunities or ways to access to knowledge or education in ways unthinkable. Due to its capability to offer anytime and anywhere access to remote learning resources, the information and communication technologies (ICT) are considered potentially powerful tools for offering new educational opportunities in an efficient, effective and dynamic way. That is why, currently, it can be said that the use of information and communication technologies (ICT) in education are changing the process of teaching and learning by adding elements of vitality or dynamism to make learning environments be different, interactive, modern, but specially motivating, effective and authentic. UNESCO (2009) considers that information and communication technologies offer new learning opportunities which can help to improve the educational results and quality of education with advanced teaching methods.

In the case of foreign language teaching and learning, the increase in the demand for learning a foreign language such as English has stimulated the interest on using information and communication technologies (ICT) in this area because these technological tools or resources can offer teachers the opportunity to create new, modern and motivating learning environments and build interactive, authentic and meaningful teaching materials by acceding to many resources that ICT offers and in this way to support the teaching practices and engage or encourage students in learning activities. ICT also offers students the possibility of practicing a series of contents in more real or authentic, motivating and interactive situations which can help them to improve or reinforce the different skills such as listening, speaking, etc. Therefore, these kinds of technological tools have to be taken into account by professors to take advantage of them.

Information and communication technologies play an important role in our daily lives, in the way we work, study, communicate, etc., their use in many areas are offering new opportunities and challenges maybe that is the reason why the use of those technological tools has been increased during the last years in many fields including education.

Tchoshanov (2013) points out that the great use of technology is one of the innovative changes that characterize the beginning of the XXI century. However, the penetration of information and communication technologies (ICT) in many areas of our lives could generate different attitudes, points of view, perceptions, opinions, necessities, requirements, etc., among people who use ICT which can affect the future use of those technological tools. Mayor and Tortosa (1990) assure that people's behavior and attitudes are influenced by the use of technology.

Considering this situation, the current research was developed. The main objectives were to identify the professors' attitudes toward the use of information and communication technologies, professors' self-perceptions about their current level of ICT competence and also to identify the frequency of ICT use in the teaching of English at the Linguistics and Languages Department of Universidad Mayor de San Andres.

In order to know and identify the professors' attitudes, professors' self-perceptions about their current level of ICT competence and the frequency of use of information and communication technologies the non – experimental of trans–sectional descriptive type of research design was used. Next, in order to collect the required information a questionnaire with four sections was used as main instrument to obtain the required data. This questionnaire also had an open question in order to survey the views that English professors have in relation to the use of ICT. Then, the data obtained was sorted into tables and charts in order to get some percentages and figures which in its time were the base for the analysis in the corresponding section. This research was carried out at the Linguistics and Languages Department of Universidad Mayor de San Andres. Therefore, the instrument of data collection was applied to English professors who work there and in the Centro de Enseñanza y Traducción de Inglés (CETI).

CHAPTER ONE

PROBLEM AND OBJECTIVES OF THE RESEARCH

1.1 HISTORIC FRAME

The historic time in which this study was carried out is immersed in a situation in which there is a proliferation or increased used of information and communication technologies in different fields, including education. Consequently many governments of developed countries have been investing a lot of money on the integration of technology into the field of education in order to improve it and take advantage of the opportunities or benefits that ICT can offer to this field. Following this tendency and in response to this big challenge which is to use technology in education, governments of developing countries have started using some kinds of technological tools into the process of teaching and learning and they have also started preparing and introducing new programs to develop ICT into the area of education.

In Bolivia, we can see that the use of technology has increased as well, especially in relation to mobile telephony, which is the most popular among people. However, it has to be recognized that still there are technological limitations, especially in the field of education. Just to mention, since some years ago the Bolivian government has started to introduce teachers and students from remote communities into the technological area by implementing telecentres. The government also gave laptops to teachers and students who have to use them for pedagogical purposes. However, these steps may not be enough and some other improvements need to be made in order to take advantage of technology such as to improve professors' competence in the use of ICT, to raise professors' consciousness about the importance of using information and communication technologies in the teaching and learning process.

On the other hand, it is also important to improve the internet connection which is still deficient and expensive, in relation to this, many people hope that this situation and others related to technology use can change with the help of the satellite Tupac Katari. Nevertheless and in spite of the technological limitation we have, the implementation and

use of information and communication technologies have become something important in some educational institutions such as schools and universities.

In the case of Universidad Mayor de San Andres (U.M.S.A), this university and its departments have developed certain prestige along time, mainly because through its different departments, U.M.S.A. provides society with one of the best means of academic formation. In this university there are students and professors from different social classes in which information and communication technologies have been implemented in its different departments. Unfortunately, the technology implementation plans seem to lack consideration of professors' attitudes toward the use of ICT, professors' ICT competence which are important aspects that have to be considered before the full implementation of such technologies in order to get better results and improve some weak aspects.

1.1.1 FRAME OF FACTS

The use of information and communication technologies makes easier the sociability of people; besides that ICT gives us some benefits when we use them. However, as it has some advantages and disadvantages, it can generate different opinions, feelings, behavior, necessities, etc. In relation to this Mayor and Tortosa (1990) point out that people who use technology experiment changes in their behavior and in their attitudes.

La Paz is a booming city with a rather heterogeneous population; different in many aspects such as socially, culturally and economically. Because of these differences, people can perceive things in a different way or can have different points of view, opinions, feelings, behaviors toward something. These aspects of being socially, culturally, but specially economically different could have some effects when we talk about the use of technology, because without good economic resources, maybe we cannot have access to use some technological tools or the frequency of use cannot be enough to give us confidence or competence when we use them. Similarly to La Paz city, the Universidad Mayor de San Andres and its different departments, specifically the Department of Linguistics and Languages, share these situations because U.M.S.A and its different departments have students and professors who are not only from different ages, but they are also socially, culturally and economically different.

In this sense, this study was carried out at the Linguistics and Languages Department of Universidad Mayor de San Andres in La Paz City with the purpose of researching the English professors' attitudes toward the use of information and communication technologies, to check professors' self-perceptions about their current level of ICT competence, and to find out the frequency of use of information and communication technologies in the teaching of English in the aforementioned department.

1.1.2 FRAME OF CONTEXTS

LINGUISTICS AND LANGUAGES DEPARTMENT

The Linguistics and Languages Department of Universidad Mayor de San Andres develops its educational activities in Sopocachi neighborhood of La Paz city. The educational activities are developed in different schedules of the mornings, afternoons and evenings. In this Department, there are four levels of language (level I, level II, level III and level IV), students can enroll for English, French, Aymara and Quechua languages to study them in four semesters. In relation to the specializations, the Department has five languages to be chosen for specialization. These languages are Spanish, English, French, Aymara and Quechua. Students can take those specializations after finishing studying some common subjects that are given in Spanish for all students, normally after the fourth semester. After five years of studying, students can normally get their degrees.

The Linguistics and Languages Department was created and projected as an academic institution of high level that knows and understands the linguistic, cultural and social reality. Its vision is also related to developing researches, disseminating scientific knowledge and offering solutions to issues related to the pluricultural and multilingual reality of our country. [1]

Among the objectives of the Linguistics and Languages Department are the following:

- To form excellent professionals with critic, reflexive and productive reasoning in teaching, translation and research of languages. The educational, scientific,

[1] Information given by the Linguistics and Languages Department.

technological and cultural work has to answer to the necessities of the development and transformation of our country.

- To form linguistic professionals in English, French, Aymara, Quechua and Spanish languages.
- To form professionals in translation of English, French, Aymara, Quechua and Spanish languages.
- To form researchers in the linguistic science.
- To form excellent technical professionals in sociocultural and linguistic researchs of the Aymara language.
- To form technical professionals in the teaching of the Aymara language as a first and second language.[2]

In relation to the teaching methodology of English language at the Linguistics and Languages Department of Universidad Mayor de San Andres and once examined the last teaching plans presented by English professors of this Department, it can be said that most of the English professors use the eclectic method (communicative approach, total physical response, reflective, etc.) for the teaching of English. Professors' teaching in the Linguistics and Languages Department is focused on the four skills: speaking, listening, reading and writing. However, English professors who teach at the different departments of the Universidad Mayor de San Andres, focus their teaching on academic reading, writing and technical English. Something valuable and motivating is that English professors offer to practice the target language in real and specific contexts or situations. In fact, some of them mention in their teaching plans that the students' practice of the language is with native speakers which is really interesting and motivating for the students.

According to the professors' plans, the materials that they use for teaching are the course books, cassettes, CDs, printable materials developed by the same professors, realia, etc. Among the interactive resources they use it could be mentioned the data show, few of them

[2] Information given by the Linguistics and Languages Department.

use internet activities as a resource of teaching. For students who are in advanced levels of English, some professors use visual materials and video activities, etc.

In relation to the use of technology or technological tools in their teaching, professors recognize that technology is very important. However, they do not make use of that resource in a direct way. What it was found is that internet is used as a mean of information and a support material for developing or downloading certain printable materials for the students. Clearly, most of the English professors look for activities, exercises, etc., in the internet which are related to the topics they are teaching. The same happens with professors that teach English in technological careers such as engineering, computer science, aviation, etc. It means that most professors in those careers do not make use of technological tools in a direct way. Some of them make their students read about technology in some English articles, but as it was said before there is not a direct use of that resource.[3]

CENTRO DE ENSEÑANZA Y TRADUCCIÓN DE INGLÉS (CETI).

The Centro de Enseñanza y Traducción de Inglés (CETI) depends on the Linguistics and Languages Department of Universidad Mayor de San Andres. It is located in Sopocachi neighborhood of La Paz city. The classes in this institution are developed in different schedules of the mornings, afternoons and evenings. People who want to study a language can choose among foreign languages (English, French, and sometimes other languages such Italian, Chinese, etc.) and native languages such as Aymara and Quechua. Besides that, this institution offers services of translation in different languages.

The general objective of the Centro de Enseñanza y Traducción de Inglés (CETI) is to develop the students' communicative and intercultural competence which implies the effective, efficient and appropriate use of the language in its four components: speaking, writing, reading and listening. Besides that, another objective is related to fostering the

[3] This information is according to the plans presented in 2012 by the English professors to the Linguistics and Languages Department.

development of attitudes and values that can help in the integral formation of the students and in their autonomous development.[4]

In relation to the mission of the Centro de Enseñanza y Traducción de Inglés (CETI), it can be said that this institution which depends on Linguistics and Languages Department was created to generate and promote the teaching of national and foreign languages through the use of an alternative and innovative methodology. However, services of translation in national and foreign languages can be also found in this academic institution. Its vision is to be recognized as a reputable institution that counts on competent professionals and that it is locally and nationally leading in the teaching, translation, interpretation and certification of languages. It offers a service of quality and an excellent formation in national and foreign languages to the university community and the whole society.[5]

Its academic structure of the English program of the Centro de Enseñanza y Traducción de Inglés (CETI) is made up of basic, intermediate and advanced levels which are distributed in 18 teaching modules. This institution has regular and accelerated courses. In a regular course, a module consists of seven weeks of classes and in an accelerated course each module has three weeks and a half of classes. Therefore, a student who takes the regular program is going to finish the course in 3 years and the person who takes the accelerated program finishes the course in less years.[6]

In relation to the teaching and learning methodology in the Centro de Enseñanza y Traducción de Inglés (CETI), it can be mentioned that the program develops intercultural skills based on a student-centered methodology in which a student has the possibility to communicate in the target language in an effective and natural way. Talking about the classes, students participate in pairs or in groups with the main goal of developing effective communication with emphasis in the intercultural and communicative skills which will help students to interact appropriately with other people who are linguistically and culturally

[4] Information given by the Centro de Enseñanza y Traducción de Ingles (CETI).

[5] Ibid.

[6] Ibid.

different. In relation to the development of competence, it is promoted by a content-based instruction, student-centered and task based learning. Now if we talk about the material for teaching and learning, it is selected according to the level of study, the four skills and to the sub skills. Collaboration in relation to common objectives is also promoted by creating and environment of acceptation and confidence which make classrooms be inclusive where students can feel integrated to the learning environment.[7]

1.1.3 FRAME OF RESEARCHES

Information and communication technologies in the educational field play an important role at an educational level because they help to improve and modernize some aspects of the teaching and learning process with the only reason of getting better or positive results in education which would benefit students. Voogt and Knezed (2008) consider that this technological tool can help to change the outdated educational systems into more effective systems in order to satisfy or improve the learning opportunities of everyone. Considering that ICT has this importance, researchers have been focusing on investigating its use, role, the professors' ICT training, competence, attitudes, perceptions about it, the impact of these tools inside classrooms, and so on.

The United Nations Educational, Scientific and Cultural Organization (UNESCO) have been contributing with some studies, guides, articles, and other materials related to information and communication technologies. For instance, it can be mentioned *Guide to measuring information and communication technologies (ICT) in education* (2009). This guide was developed to strengthen the conceptual framework on ICT use in education; map indicator gaps in order to better monitor progress of countries towards international goals, propose an expanded list of internationally comparable indicators to measure ICT use in education; develop their definitions, purpose, measurement and interpretation; review their comparability and their methodological or operational limitations; and outline criteria for prioritizing the new indicators.

[7] Information given by the Centro de Enseñanza y Traduccion de Ingles (CETI).

In relation to studies related to the attitudes toward information and communication technologies which are linked with the ICT competence; it can be mentioned *Teachers' attitudes toward information and communication technologies: the case of Syrian EFL teachers* (Albirini, 2004). This research was a descriptive study of an exploratory nature carried out with the purpose of determining the high school EFL teachers' attitudes toward ICT and explores the relationship between computer attitudes and five independent variables: computer attributes, cultural perceptions, computer competence, computer access, and personal characteristics. In this research a questionnaire was used as a main technique to collect the information. The findings suggest that teachers have positive attitudes toward ICT in education. The results point to the importance of teachers' vision of technology itself, their experiences with it, and the cultural conditions that surround its introduction into schools in shaping their attitudes toward technology and its subsequent diffusion in their educational practice.

In the case of competence in the use of information and communication technologies, it can be mentioned *ICT Transforming Education a Regional Guide* (2010). This guide grew out of a series of meetings of ICT experts convened by UNESCO Asia and Pacific Regional Bureau for Education to explore pedagogy-technology integration. It was designed to equip teachers and teacher educators with the competencies and resources to use ICT to transform their practices, and the school and education systems. This guide develops issues such as what technologies are included in ICT; what impact ICT is making on schools, on teaching and on learning; and how, outside the classroom, ICT has changed the world of work and almost every aspect of our daily lives. It mentions newer classroom web tools and resources, where to locate them and how innovative teachers are applying these tools to enhance their students' learning.

Another study that can be mentioned in relation to ICT competence is *UNESCO ICT competence framework for teachers* (2011). This document is intended to guide teachers in how to make the best use of the ICT available in their schools to improve students' learning. This framework emphasizes that it is not enough for teachers to have ICT competencies and be able to teach them to their students. Teachers need to be able to help the students become collaborative, problem solving, and creative learners through using

information and communication technologies, having as a result students transformed as effective citizens.

In relation to ICT and the teaching of English it can be mentioned first, *The impact of new information technologies and internet on the teaching of foreign languages and on the role of teachers of a foreign language* (2003). A report elaborated by International European Union, European commission with the purpose of surveying current developments in ICT, measuring its impact on FLT & FLL and predicting possible future developments. The case studies presented in this report, provide samples of good practice and illustrate that the use of information and communication technologies increases motivation among teachers and learners alike and leads to improved performance and motivation on the part of the learners.

Another worth mentioning study is *Information and communication technologies in the teaching and learning of foreign languages; state of the art, needs and perspectives* (Fitzpatrick, 2004). This study highlights the importance and the role of the teacher in ICT-rich foreign language learning environment and shows how such environments can contribute to cross-cultural understanding. Methodological implications of the use of the new media in language learning and language teaching are considered, and suggestions are made for the use of the Internet as a forum for exchange between practitioners and researchers.

On the other hand, there are not many studies that have been carried out here in our country, specifically in La Paz city. However, among the few studies that have been found are *Actitudes de los profesores de primaria y secundaria ante el uso de las nuevas tecnologías de información y comunicación* (Huayta, 2007). This research was carried out at Instituto Americano of La Paz City with the purpose of researching the attitudes toward ICT and the knowledge of ICT focused on the use of computer and internet for educational purposes. It is an exploratory study and has a pre-experimental design. The population is made up of 25 primary teachers and 25 secondary teachers. The data was collected through a questionnaire. The findings suggest that the level of rejection toward ICT is more in humanity teachers than in sciences teachers. It also concluded that teachers have a poor knowledge of ICT.

Another study that can be mentioned is *Las nuevas tecnologías de información y comunicación y el desarrollo de las actitudes hacia el perfeccionamiento continuo en docentes de Ciencias de la Educación* (Martínez, 2008). This research was carried out within Universidad Mayor San Andres, more specifically at Education Science Department. It explores the professors' attitudes toward the continuous academic improvement taking into account the use of ICT and focused on the use of internet. It also investigates the professors' knowledge of the information and communication technologies. This is an educational research of descriptive type and uses a survey to collect the required data. The population was made up of 67 professors. The findings suggest that young professors show favorable attitudes than older professors. 55% of professors reported that they know and use internet, but they do not use it as means of self-education, they use it just to look for information.

1.2 PROBLEM OF THE RESEARCH

1.2.1 Statement of the problem

Nowadays, education has been facing with many different changes and consequently challenges related to getting better results in the learning of students in which this learning must be accessible, appropriate and effective to everyone. To get this goal some aspects of education have been changing. Those changes range from having an education based on acquiring knowledge to having an education focused on students; since students are considered the central part of the teaching and learning process. Another aspect that has been changing in education is the teachers' role because, until not so long ago, teachers' role was limited to select information that the teacher considered appropriate for giving students, but nowadays a teacher is considered a learning facilitator for students; the person who helps to build different learning environments and the one who helps students build their own knowledge. "Teachers as facilitators must therefore provide the nurturing context for learners to construct their meanings in interaction with others.[8]"

[8] Douglas Brown. *Principles of language learning and teaching.* Prentice – Hall Regents, Englewood cliffs, NJ, 1994, p. 91.

These changes in education could be influenced by many factors; one of these factors is the penetration of information and communication technologies into the field of education. These technologies are considered important tools in educational activities that teachers have to take into account and take advantage of them because they could help to modernize or update their educational work, maybe in something easier and most important they would benefit their students' learning. However, their uses demand some requirements or challenges such as to have certain competence, creativity, to be motivated to accept different changes or to have favorable attitudes among others.

In the context of Bolivia, particularly the Universidad Mayor de San Andres, as one of the major centers of study of La Paz city, it is in a process of introducing information and communication technologies in its different departments which can mean to have a great tool to support the students' learning. This aspect is something important for all the departments of the university, included the Linguistics and Languages Department because with the help of ICT language students can participate or be involved in different, interesting and motivating educational activities that can involve not only the use of the language, but also the use technology. Considering that students use or speak a foreign language only in classes, students can learn also a language outside the classroom by using ICT. For instance, they can communicate with native speakers using ICT which can help them to improve skills related to linguistics and technology. "English language learners would need communicative competence not only for the events, interlocutors and media typically covered in language course books but also for the interactions that may take place through oral and written communication with a computer (e.g., requesting a hotel on a web page, paying a bill with a credit card through a phone call to a computer).[9]" Even professors can communicate with other colleges of different countries to exchange current information or educational experiences that can help them to support and improve their teaching practices.

[9] Carol A. Chapelle. *English language learning and technology: lectures on applied linguistics in the age of information and communication technology*. John Benjamin Pub, Amsterdam, 2003, p. 4.

The use of information and communication technologies can enrich the process of teaching and learning of any institution. However, the lack of enough information or current studies about the requirements, necessities or weakness that professors could have in relation to the use of ICT could be a problem. Therefore, it is important and necessary to carry out studies that can allow knowing the current situation of the use of ICT. To have information about this aspect before the full implementation of the use of such technologies in any institution it is important in order to get better results, improve some weak aspects and to better take advantage of them.

Since the use of ICT has been increasing in educational institutions, teachers and students as main features of the teaching and learning process could have or develop different opinions, perceptions, attitudes or necessities in relation to the use of information and communication technologies. Considering also that periodically new technology appears, in a short period of time, changes in people's attitudes, competence may vary. For instance, there could be teachers who can reject the use of these technological tools influenced by many factors. On the other hand, there could be other teachers who can feel comfortable and over-confident when they use such technology in their classes. Seeing these variations, the lack of accurate and updated information about the current situation of the use of ICT, could delay the creation of policies to improve or use effectively the information and communication technologies.

1.2.2 Formulation of the research problem

Taking into account what was said before; the purpose of this study was to research the attitudes of professors toward the use of ICT in the teaching of English, as well as that to research professors' ICT competence and frequency of use of information and communication technologies in the teaching of English at the Linguistics and Languages Department of Universidad Mayor de San Andres.

More specifically, this study attempts to answer the following question:

What are the professors' attitudes, current level of ICT competence and frequency of use of information and communication technologies in the teaching of English at the Linguistics and Languages Department of Universidad Mayor de San Andres?

1.3 OBJECTIVES

1.3.1 General objective

- To identify the professors' attitudes toward the use of information and communication technologies, professors' self-perceptions about their current level of ICT competence and the frequency of ICT use in the teaching of English at the Linguistics and Languages Department of Universidad Mayor de San Andres.

1.3.2 Specific objectives

- To characterize demographically English professors of the Linguistics and Languages Department of Universidad Mayor de San Andres.

- To describe English professors' attitudes toward the use of information and communication technologies in the teaching of English according to the three components of attitude: affective, cognitive and behavioral.

- To survey the English professors' self-perceptions about their current level of ICT competence according to the type of technology: computer uses, internet, live broadcasting technologies, recorded broadcasting technologies and mobile telephony.

- To survey the frequency of ICT use in the teaching of English according to the type of technology: internet, live broadcasting technologies, recorded broadcasting technologies and mobile telephony.

- To gather professors' suggestions or recommendations in relation to the use of ICT in the teaching of English at Linguistics and Languages Department of Universidad Mayor de San Andres.

1.4 HYPOTHESIS

There is a favorable attitude toward the use of information and communication technologies; the English professors' self-perception about their current level of ICT competence is that it is moderate and the information and communication technologies are sometimes used by those English professors in the teaching of English at the Linguistics and Languages Department of Universidad Mayor de San Andres.

1.5 JUSTIFICATION

The use of ICT in education contributes in many aspects. For instance, one of the most important contributions of the use of ICT in the process of teaching and learning is that both teachers and students could develop their teaching and learning activities in remote areas. Therefore, its use would solve the problem of time, space and distance which have been affecting education for a long time. Other contributions are that ICT make teaching be motivating, effective, modern and dynamic, aspects that are really important in education. Besides that, if an educational institution uses those kinds of tools, it would be connected with the social reality and it would not be an isolated place from society.

Information and communication technologies can provide education with the necessary resources it needs. Noticing the advantages that these technological tools can offer, many institutions have started using information and communication technologies. However, the use of ICT in many fields including education could generate different attitudes, necessities, perceptions, opinions, points of view, requirements etc., in people who use those technological tools which can affect the present and future use of them.

The use of ICT can also require certain skills or competences which can be achieved by taking specialized training courses and using those tools in a frequent way. In this sense, it is important to have studies or information about the changes that are causing among people the use of information and communication technologies. However, reviewing the literature, it proved that there is a lack of current studies related to this topic in our context. This situation was the motivation for developing this current research.

In this sense and considering that most studies are based in different conceptions, which are not connected with the Bolivian context, arises the necessity of studying this kind of topics because it could be positive and helpful to have information about these kinds of researches before, during and after the implementation of ICT in any institution. Summarizing, it can be said that the theoretical value of this research is to fill the gap of absence of current studies about professors' attitudes toward the use of ICT, competence in ICT and frequency of use of information and communication technologies in the teaching of English related to our context.

This study will contribute in generating current information about the professors' attitudes toward the use of ICT, professors' competence in ICT which means to know the necessities or weaknesses that professors of the Linguistics and Languages Department can have in relation to the current use of ICT in the teaching of English, and also to know if ICT is currently being used by those professors at the Linguistics and Languages Department. The information that could generate this research is important because it would allow creating and implementing policies to promote the use of information and communication technologies, motivate professors to use those technological tools at the Linguistics and Languages Department and update the English professors' competence in the use of ICT by providing them periodically updated courses allowing professors having a current tool for teaching English and most important they would use ICT in an efficient and accurate way. In other words, this research would benefit professors of the Linguistics and Languages Department of Universidad Mayor de San Andres because with this study we would know what professors' aspects in relation to the use of information and communication technologies have to be improved or updated to get better results in the use of ICT. On the other hand, this research may also be useful for other educational institutions because they can take this research as an example of how professors' attitudes toward the use of ICT, competence and frequency of use of ICT are being developed and how they are facing the big challenge of using ICT in teaching.

This study has also a practical application because the findings, conclusions, suggestions or recommendation that the research will show could be helpful and it may be taken into account by the Department because it will show the current situation of English professors'

attitudes toward the use of ICT, professors' competence and frequency of use of ICT in the teaching of English. Therefore, the findings, conclusions, etc., could be useful for the Department, any institution or people who want to prepare or give specialized and current courses about the use of information and communication technologies at the Linguistics and Languages Department of Universidad Mayor de San Andres focused on the teaching and learning of English, and on the other different languages such as French, native languages (Aymara and Quechua) and so on.

CHAPTER TWO

THEORETICAL FRAMEWORK

2.1 ATTITUDES

When we express or talk about our likes or dislikes, approval or disapproval, when we behave in a certain way, or express how we feel or think about somebody or something, we are talking about attitudes. Attitudes are important in the sense that they can help us to understand people's behavior and are considered the central part of the people's study in social situations. Some psychologists argue that the study of attitudes is the cornerstone of social psychology. Maybe that is why; social psychologists have paid careful attention to understand how attitudes are formed and how they can influence our everyday life.

Attitudes have been defined in many ways. They have always been related to people's reactions toward an object, situation, person, etc.; those reactions can be evaluated as favorable or maybe unfavorable. The definition for an attitude in Oxford Advanced Learner's Dictionary (2010) is related to the way somebody thinks, feels and behaves toward a person or a thing, showing in this way that person' thoughts and feelings. In Encyclopedia of applied psychology (2004) an attitude is defined as a psychological tendency to evaluate an object (it is the target of an attitude) with some degree of favor or disfavor. In relation to the attitude object, Gilbert et al (1998) point out that attitude objects can be abstract, concrete, individual or collective which can be discriminated or remembered by a person.

On the other hand, there is another definition and explanation about what an attitude is. This definition is done by Gilbert et al (1998) who state that an attitude is a psychological tendency, something internal to the person and that can have a short or long duration of time which is not directly observable, but it would be inferred. Adding to this, these authors say that the positive or negative evaluation of any attitude toward something or somebody is expressed according to favorable or unfavorable responses which show the approval or disapproval, like or dislike of something or somebody in which a favorable attitude is expressed by favorable responses toward a person or an object. Contrary to this, the negative responses show the person's unfavorable attitudes.

Another definition of attitude is done by Eiser (1986) who says that attitudes are related to feelings or thoughts that are reflected in the way we behave or react toward some situations, people or objects. For instance, we can feel attraction or repulsion, trust or distrust, like or dislike approval or disapproval, etc., toward something or somebody.

There are subtle differences among most definitions of attitudes. In this sense, Maio and Haddock (2010) summarize most of these definitions emphasizing the notion that reporting an attitude involves the expression of an evaluative judgment about an object which can mean to make a decision about liking and disliking or favoring versus disfavoring a particular issue, object or person. Based on the above, these authors define attitude as an overall evaluation of an object that is based on cognitive, affective and behavioral information.

2.1.1 INTERNAL STRUCTURE OF ATTITUDE: ITS THREE COMPONENTS

The internal structure of attitudes can be described in terms of **three components** which are: cognitive, affective and behavioral. In relation to this, Pratkanis (1989) establishes that it is important to consider or include the three components of an attitude; it means the cognitive, affective and the behavioral component this in order to measure it appropriately. Thus, attitudes are made up of cognitive, affective and behavioral components. These three components are related to thinking, feeling and acting in certain situations. Although these three components are related, they are empirically different. Let us see in a bit of detail each of one of these components:

2.1.1.1 Cognitive component

This component is related to the person's knowledge about somebody or something. Oerter (1975) says that the cognitive component is related to judgments, reasoning, opinions and beliefs about an object.

Another definition about this component says that "the cognitive component of an attitude refers to the beliefs, thoughts and attributes we associate with an object. In many cases, people's attitudes might be based primarily upon the positive and negative attributes they

associate with an object.[10]" It is important to consider that the information that is known of an object influences the formation of attitudes, and the attitudes that have the cognitive component affect the perception of new information. For example, anyone can say that they believe all snakes are poisonous because of their knowledge of a poisonous one

2.1.1.2 Affective component

This component represents a person's emotional response and it is considered by many authors as the core of the attitudes, maybe this happens because attitudes are generally more linked to feelings and emotions than rational stances toward an object. For example, I can say something I feel in relation to the snakes "I am afraid of snakes," not only because they are poisonous, but also because I do not like the texture of their skin, or the way they move their tongues or so on.

Krech et al (1972) point out that the affective aspect of an attitude is related to emotions and feelings toward some pleasant or unpleasant objects. Maio and Haddock (2010) also say that this component is related to feelings or emotions toward an attitude object. Adding to this, Gilbert et al (1998) explain that this affective component is linked to some experiences that people have had and make them feel, believe or have certain moods or emotions toward a person or a thing. Consequently, based on those experiences, people make a decision about certain responses toward something or somebody which can be positive or negative responses or simply an evaluation of an attitude object.

2.1.1.3 Behavioral component

This component, also called *conative*, involves people's behavior toward a person, object or situation. For example, if somebody sees a snake, they will shriek and run away. Krech et al (1972) say that the behavioral component is a tendency to behave in a certain way toward a person or a thing. Adding to this definition, Nelson and Campbell (2013) point out also that this component is related to the behavioral intentions that a person has toward somebody or something. In relation to the behavioral intentions Neeraya (2011) state that they are related

[10] Greg Maio & Geoffrey Haddock. *The psychology of attitudes and attitude change*. Sage publications, London, 2009, p. 25.

to the intentions of somebody to acting in a certain way, even if sometimes those behavioral intentions never happen.

Summarizing, it can be said that this component is connected to the tendency or predisposition that somebody has to acting or behaving in a particular way toward a person, object, situation, etc.

2.1.2 ATTITUDE MEASUREMENT

Maybe the easiest way to know about someone's attitudes could be to ask him or her about them. However, as attitudes are related to self-image and social acceptance, their answers may be affected by these factors. Therefore, people may not tell about their true attitudes toward somebody or something, on the contrary, they can answer in a way they feel acceptable by the society. Given this problem many methods or techniques to measure attitudes have been developed. Maio and Haddock (2010) make a distinction between explicit (direct) and implicit (indirect) attitude measurements. These authors explain that explicit attitude measurement consists of asking people in a direct way about their attitudes toward somebody or something. On the other hand, in the implicit attitude measurement there is not the necessity to ask people directly about their attitudes.

Among the most popular methods or techniques to measure attitudes are the Guttman scale, semantic differential, the equal appearing interval method and Likert scales. Let us see in a bit of detail each one of these methods or techniques:

2.1.2.1 Guttman Scales or Scalogram Analysis

This technique is very commonly used in political science, anthropology, public opinion, research and psychology. It is also known as Scalogram Analysis or scale analysis that was developed by Louis Guttman in 1944. "Guttman proposed a method in which scores would have unique meanings. This was to be accomplished by ensuring that response patterns were **cumulative**. He suggests that if a scale displays the cumulative pattern described, we can be sure that it is **unidimensional** – that is, it is measuring just one underlying

attitude.[11]" Specifically, Guttman scale has a set of statements so that a respondent who agrees with any specific statement in the list will also agree with all previous statements. In other words, each statement subsumes the lower order statements. It is based on the idea that items can be arranged along a continuum in such a way that a person who agrees with an item or finds an item acceptable will also agree with or find acceptable all other items expressing a less extreme position. In this scale each score represents a unique set of responses and therefore the total score of every individual is obtained.

This scale takes a lot of time and effort in its development. Kothari (2004) emphasizes that this method is not commonly used in a research because the process to develop it is tedious and complex. Its scales do not represent a reliable basis for measuring people's attitudes toward complex objects which make difficult to predict the people's behavior responses. Besides that, this author argues that it is difficult to find in a research the perfect cumulative scales. That is why that its approximation testing has to be used, this can be gotten through coefficient of reproducibility or examining it on the basis of some other criteria.

2.1.2.2 Semantic differential

The semantic differential was developed by Osgood, Suci and Tannenbaum in 1957 as a method to measure the meanings of objects. Researchers have found the semantic differential versatile and useful in business applications. According to Silk (1969), this technique is used in studies of marketing in which researchers want to evaluate the effects of advertising the brand images.

"Semantic differential (SD) is an attempt to measure the psychological meaning of an object to an individual. This scale is based on the presumption that an object can have different dimensions or connotative meanings which can be located in multidimensional space or what can be called the semantic space in the context of semantic differential scale.[12]"

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[11] Stuart Oskamp & P. Wesley Schultz. *Attitudes and opinions*. Lawrence Erlbaum Associates INC, New York, 2005, p. 52.

[12] C. R. Khotari. *Research methodology: methods and techniques*. New Age International Publishers, New Delhi, 2004, p. 90.

Oskamp and Schultz (2005) explain that this technique makes use of opposite adjectives such as “good and bad”, “black and white”, and so on. Specifically, the semantic differential uses a series of 7-point scales with the opposite adjectives which are written at the beginning and at the end of the scale. In this way, people who are asked to evaluate about an attitude object, check the point in each scale according to their impressions, feelings, opinions, etc. about that object. In other words, this technique consists of getting respondents to react to an attitude object by presenting to a person a set of bipolar adjectives to evaluate the object. The person has to choose an adjective that reflect his/her attitude. It is important that the adjectives are related to the attitude object that has to be measured. Among the bipolar adjectives that can be used are young/old, passive/active, clean/dirty, etc.

The scoring of the semantic differential can be illustrated using the bipolar adjectives “passive” and “active.” In this case, respondents are instructed to check the place that indicates the nearest appropriate adjective. From left to right, the scale intervals are interpreted as “extremely passive (EP),” “very passive (VP),” “slightly passive (SP),” “both passive and active (PA),” “slightly active (SA),” “very active (VA),” and “extremely active (EA).”

Passive _**EP**_ _**VP**_ _**SP**_ _**PA**_ _**SA**_ _**VA**_ _**EA**_ Active

2.1.2.3 Equal appearing interval method

In 1927 Louis Thurstone developed the concept that attitudes vary and should be measured accordingly. The construction of a Thurstone scale is a process that can be complex and that requires some stages for its development. According to Maio and Haddock (2010) the first step is to select the attitude object to be evaluated. Next the researcher constructs a set of belief statements that are relevant to the attitude being measured. Those statements are designed to represent both favorable and unfavorable attitudes. Then “expert” subjects (judges) are asked to order or classify the statements along a scale containing many intervals. The position of each statement on the scale is the same as determined by judges. In case of marked disagreement between the judges in assigning a position to an item, that item is discarded. The selected statements by the judges constitute the final scale to be

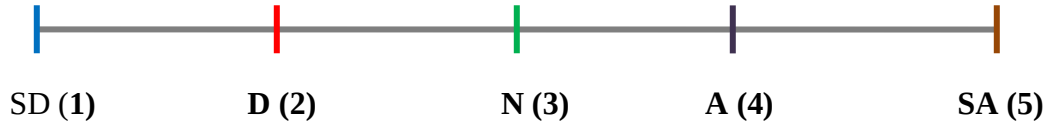
administrated to respondents. After developing the scale, the belief statements are given to the respondents whose attitudes are to be expressed by checking the statements with which they agree.

The Thurstone method can be expensive and quite time consuming. Historically, this kind of method is valuable, but nowadays its popularity is low. Summarizing this method, Kothari (2004) asserts that among the disadvantages founded in this method are the cost, required effort to develop it and the most negative aspect is that the values assigned to various statements by the judges may show or reflect the judges' attitudes making its process as a subjective. So according to this author this method is not considered completely objective.

2.1.2.4 Likert scales or Summated scales

Noticing that Thurstone's methodology was too time-consuming, Rensis Likert (1932) developed a technique of summated ratings. Likert scale instruments are the most widely used for social researches. According to Summers (1978), this method is not only a popular instrument, it is an standard one for studying attitudes because of the reliability of the results that it provides to the research.

Specifically, in the Likert scale, participants show or indicate their attitudes by choosing how strongly they agree or disagree with carefully constructed statements, ranging from attitudes that can be very positive to very negative toward an attitude object. Maio and Haddock (2010) also explain that this instrument is made up of different statements in which respondents are asked to choose among those statements to express favorable or unfavorable attitudes toward a person or a thing. This instrument requires that participants generally choose from approximately five answer options: strongly agree (SA), agree (A), uncertain or neutral (N), disagree (D), and strongly disagree (SD). "These five points constitute the scale. At one extreme of the scale there is strong agreement with the given statement, at the other, strong disagreement, and between them lie intermediate points as it is illustrated below:



Each point of the scale carries a score in which response **1** indicates the least favorable degree and the most favorable is given the highest score which is **5**.[13]" Adding to this, Newcomb and Malfe (1981) indicate that the purpose of this scale is to locate a person in a certain point of a continuum which goes from favorable to unfavorable, where each point of the scale (agree, disagree, and so on) is assigned a number, and then add the score of total responses for each subject. At the end, those with higher scores supposedly have more favorable attitudes and those with low scores have unfavorable attitudes.

After having carefully examined and compared each of the most popular methods discussed above, it was decided that the most suitable for this study, was the Likert's scale method of summated ratings. This decision was based on the comparison that has been made founding that this technique is a standard instrument for researching attitudes that gives reliable results. Moreover, considering its popularity among researchers, it could be very helpful because other researchers can be asked about it; researchers who have previously worked with this instrument and have more experience in developing this kind of scales.

2.1.3 THE IMPORTANCE OF ATTITUDES IN EDUCATION

It is necessary to consider why attitudes are important factors in the process of teaching and learning, and why they have to be considered by educators. Gairin (1990) considers that attitudes have an important role in education as they can influence students' performance in the process of learning, specifically when students have negative attitudes, they can find the process of learning, very difficult. Marzano et al (2005) agree with Gairin in the sense that when attitudes are positive, the learning is good. On the contrary if the attitudes are negative, learning is affected in a negative way.

[13] Kothari, op. cit., p. 85.

The importance of attitudes in education could be specifically related to understand certain attitudes that the participants of the process of teaching and learning can have which can be linked to the performance of them. Its study in the field of education can be useful in order to discover if there are positive attitudes which have to be encouraged or motivated or there could be negative attitudes affecting the performance which have to be modified or corrected. Because of this situation, "the study of attitudes is necessary in order to understand why sometimes the teacher's efforts are well rewarded, and other efforts are useless or futile.[14]"

On the other hand, it is important not to forget the role of teachers because at educational institutions students' attitudes toward some activities or subjects can be modified with the help of teachers, since they possess many resources or techniques that can be used by them in order to help students to adopt good attitudes and values. Krech et al (1972) asserts that it is important or essential that educators know about their students' attitudes.

Gairin (1990) points out that the connection between education and attitudes is not only because of the interest that it has in attitudes, it is also because of the power that education has toward attitudes in which its study not only can contribute to characterize better or with more breadth the educational phenomenon, it can also be an instrument that characterizes the efficacy of the educational process. This author also says that education is an important element in the configuration of permanent attitudes because of the close relationship among education, attitudes and values.

2.2 THE CURRENT ROLE OF ICT IN EDUCATION

Initially when people started learning about computers and internet it was because they wanted to broaden their abilities, but, nowadays those technological tools are used in a different way because today not only they learn about them, people learn with and through them. "Technology is not considered as something completely alien to school, but as basic

[14] José Guadalupe de la Mora. *Psicología del aprendizaje*. Editorial progreso, S.A., México, D.F., 2004, p. 31.

necessity and as a part of knowledge and education of any person of XXI century should have.[15]"

To use some technological tools such as computer, internet and others are abilities that people need to know in order to be part of this society that day by day has been changing and in which information and communication technologies are seen not only as a knowledge that any person should have, but as a resource that helps to improve many spheres of our lives including education. As the Director of UNESCO Asia and Pacific Regional Bureau for Education, quoted in Anderson (2010), says that nowadays we live, learn, work and play in a different way thanks to the new technologies such as internet and the different services that it offers.

Actually, information and communication technologies are a great support for teachers. They are currently seen as tools or resources that can help teachers and students in the teaching and learning process which, according to Chinien (2003), that process can be divided in two broad conditions. The first one is related to learning conditions that are internal to the learners. This is the area where the potential to improve learning outcomes is the highest, it is undoubtedly the area that is most difficult to affect. The second condition of learning is external to the learners. People learn through the five senses and the contributions of each to the amount that we learn varies. The estimated amount of learning from the five senses according to Chinien is as follows:

SENSES	**PERCENTAGES**
1. Touch	1.5%
2. Taste	1%
3. Smell	3.5%
4. Hearing	11%
5. Seeing	83%

Chart 1

[15] Enlaces. *El libro abierto de la informática educativa*. LOM, Santiago de Chile, 2010, p. 158.

Chinien (2003) also says that the amount of information that people retain through the various senses over time is an important aspect of learning and it is as follows:

	After 3 hours (%)	**After 3 days (%)**
Material heard only	70%	10%
Material seen only	72%	20%
Material both heard and seen	85%	65%

Chart 2

"The analysis of the retention rate through the various senses indicates that information and communication technologies can be used to create a variety of external conditions that are conducive to learning and retention.[16]"

In technologies for education (2002), it is mentioned that the use of information and communication technologies in education bring opportunities and new experiences for both teachers and students which is considered as positive. However, it also offers challenges, especially for teacher who nowadays have to learn how to use computers and the enormous body of information that it is found in the internet, this in order to compete with students and in this way enhance the teaching and learning process. Seeing this, it is important to know and understand what kind of students we have in classrooms, the necessities or knowledge they have. UNESCO considers that it is important to understand the students' needs because they are students that do not know the world without the internet, with many hours exposed to digital things which have contributed to develop diverse skills. Besides, those students are different from the ones of the previous generation. For example, they learn a lot when they are outside where the images are more important than texts.

[16] Chris Chinien. *The use of ICTs in technical and vocational education and training.* UNESCO Institute for information technologies in education, Moscow, 2003, p. 26.

In relation to the texts that students use nowadays Anderson (2010) says that today learners interact with texts that are part of today's learners' lifeworlds, those texts are multi-modal and comprise the various codes such as icons, symbols, visuals, graphics, animation, audio and video. Teachers who do not acknowledge these kinds of texts as part of the repertoire of textual materials in the classroom can make the language learning process less authentic as well as disengage learners' real life experiences from everyday classroom learning and teaching.

In conclusion, it can be said that there are some important aspects to be considered about the current role of ICT in education. First, teachers must not think that ICT is going to solve poor education because technology is only a tool that can help them to improve their task as teachers. On the other hand, taking advantage of technologies we can transform education making it relevant, interactive, modern and effective for everyone, anywhere and anytime. Finally, it can be said that the actual role of ICT is to support the teaching and learning process bringing new opportunities, challenges and alternatives since ICT can have the facility to motivate, increase interest, creativity and imagination in students, ICT can also promote the problem solving, collaborative learning, and the self-learning.

Therefore, by using information and communication technologies we can improve the quality of education making it more efficient, effective, productive, modern and most important more accessible. Besides that, "technology-enhanced learning will play a crucial role in the development of a lifelong learning culture and has the capacity to empower learners by providing them with multiple pathways that offer choices and channels to meet their education and training needs.[17]"

2.2.1 THE USE OF ICT AND THE ACTUAL ROLE OF FOREIGN LANGUAGE TEACHERS

The new learning environment differs from the one we had some years ago because of the use of information and communication technologies since they have brought new opportunities, challenges and requirements into the process of teaching and learning.

[17] Chinien, op. cit., p. 24.

Nowadays educators in general have to cope with different aspects and changes into the educational field. They have to be conscious of those important changes in order to improve education. For instance, educators have to be able to accept new programs, objectives and challenges related to the educational process, they have also to accept the new roles for both the teachers and students and have new competencies or skills in relation to the use of information and communication technologies.

Enlaces (2010) highlights the importance of changing the role of a teacher into a more dynamic and active one. It also emphasis that as teachers nowadays can count on ICT, they can promote the cognitive procedural and attitudinal development in students, change or improve the relationship that they have with their students and create new pedagogical strategies to ensure the students' learning. However, the most important aspect is that both teachers and students have to be involved in creating new knowledge.

As the actual use of ICT among students is related to entertainment and communication (send emails, chat, play games, etc.), it is important that teachers guide, and help students to create other uses for those technologies. Therefore, teachers without considering the subject that they are teaching, should realize that their roles have been changing with the integration of ICT in education. In relation to this, Anderson (2010) points out that thanks to information and communication technologies, teachers have been adopting different roles in their classrooms as it can be seen in the following chart:

CHANGES IN TEACHERS' ROLES

A SHIFT FROM		TO
Knowledge transmitter; primary source of information.		Learning facilitator, collaborator, coach, knowledge navigator and co-learning.

Teacher controlling and directing all aspects of learning.	➢	Teacher giving students more options and responsibilities for their own learning.

Chart 3

"The changing role of teachers is aptly summed up in the quip that teachers have moved from being 'sages on the stage' to becoming 'guides on the side'. The teacher is no longer the all-knowing authority. The new role can perhaps be likened to that of a team coach or the conductor of an orchestra who tries to bring out the best performance in all players.[18]"

Definitively, that nowadays, the role of language teachers is different and complex to understand because it involves different aspects that have changed and that have to be considered and accepted for them. In the book titled *The Impact of information and communication technologies on the Teaching of Foreign Languages and on the Role of Teachers of Foreign Languages* (2003), mentions that language teachers have to make their students participate in situations, activities that they have designed for them. The collaborative aspect is also mentioned in this book which considers something important for helping learners and teachers complement one another's skills. Therefore according to this book, and seen from a rather new perspective, the new roles that have to be performed by language teachers involved not only to be the designer of (complex) learning scenarios, the collaborator or the facilitator and guide, they have also to be the learner, the integrator (of media). Besides that it has not to be forgetting that the teacher as a researcher is also considered inside the new teachers' roles.

Summarizing, it can be said that "the teacher is no longer the sole source of knowledge and information about the language, nor is s/he the sole provider of texts and exposure to target language materials. S/he will need to apply (new found) skills to guiding learners through the labyrinths and excesses of the information society to a principled approach to learning

[18] Jonathan Anderson. *ICT transforming education a regional guide*. UNESCO, Bangkok, 2010, p. 6.

which can be appropriated by learners to help them on the path to self-determined acquisition of language skills and knowledge.[19]" On the other hand, in relation to the teachers' goals and challenges, Fitzpatrick (2004) points out that the chief goal of the language teaching profession is to facilitate access to other cultures and languages, and using ICT resources effectively in their teaching represents one of the chief challenges facing language teachers today.

2.2.2 THE USE OF ICT AND THE ACTUAL ROLE OF STUDENTS

In order to understand why the students' role has been changing and why they have different skills it is important to consider that "any child born since the beginning of this century is growing up in a digital world. Those born at the start of the century, already in the middle years of primary school have been dubbed the 'Net generation' or more called 'digital natives'. Theirs is a world of television, text messaging, camera phones, iPods, MP3, and interactive video games. They can watch television, listen to their IPods, send text messages, and work online – all at the same time. Parents of these modern children, born in the last century, are labeled by Prensky (2001), in contrast to their children, 'digital immigrants'. Because they were not brought up in the digital age, parents are often bewildered by the new language and cannot comprehend how their sons and daughters seemingly multi-task while doing their homework.[20]"

Since we live in a digital world, it is important that teachers realize and understand that because of information and communication technologies we have new resources for using in teaching. Educators have also to understand that students are not the same as they were many years ago; now they have new ways of learning, new necessities, new skills and so on. In relation to this, in Anderson (2010) we can see how students' roles have been changing as a result of implementing ICT in their classrooms:

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[19] International certificate conference, European Union, European Commission, Directorate-General for education and culture. *The impact of information and communication technologies on the teaching of foreign languages and on the role of teachers of foreign languages.* EC, Brussels, 2003, p. 22.

[20] Anderson, op. cit., p. 20.

CHANGES IN STUDENTS' ROLES		
A SHIFT FROM		TO
Passive recipient of information.	➢	Active participant in the learning process.
Reproducing knowledge.		Producing knowledge.
Learning as a solitary activity.		Learning collaboratively with others.

Chart 4

Anderson (2010) also explains that the use of ICT in classrooms make students be active researchers and make them use the web for doing their individual or group projects, reaching conclusions according to what they have researched. By the use of ICT, students also develop good communication with their classmates, teachers and other students from other schools.

Although we have the same schools, institutes or universities with the same infrastructures which might mean that education has not changed a lot and that most students have the same education as we had many years ago, education itself has changed. It is crucial that governments, if we talk about public education and owners or administrators of private schools, universities, etc., and consequently educators have to understand that the students' requirements, necessities and communication are different in this digital era so the sooner the people involved in this activity can accept this situation the better for students. "Today's digital natives as students often feel disconnected from traditional teaching practices in schools that have changed little from days gone by.[21]" OREAL/UNESCO

[21] Anderson, op. cit., p. 20.

(2010) establishes that the schools we know were thought for other time, other students and other resources; therefore, the ICT implications modify this reality.

Since the teacher is in the necessity to assume a rather new role, let us see what happens to the student. In the book titled *The Impact of information and communication technologies on the Teaching of Foreign Languages and on the Role of Teachers of Foreign Languages*, (2003), it is mentioned that students' role have been changing in these last years. Specifically, as they now are considered active participants in the learning process, they have as a new role to be creators of language rather than passive recipients of it. Besides that, they must take on new responsibilities because classes will become much more learner-centered. This change in students' role is possible because nowadays students have access to an amount of authentic target-language information; communicate with other learners or native speakers. To sum up, the learned is considered as an agent of change, a person who reacts, interacts with the mass of materials, activities, etc. that s/he encounters. S/he does not have that passive role in which the teacher pours wisdom and knowledge.

2.3 FACTORS THAT INFLUENCE THE USE OF ICT IN EDUCATION

Considering that information and communication technologies are sources of knowledge or means to transmit content, information in an interactive way, and so on, their use can be a determining factor to change or improve the process of teaching and learning. However, the use of information and communication technologies inside classrooms faces with different challenges, especially for educators which can affect the use of ICT in education. A set of factors associated with teachers are developed as follows:

2.3.1 TEACHERS' ATTITUDES TOWARD THE USE OF INFORMATION AND COMMUNICATION TECHNOLOGIES

As it has previously been said attitudes affect significantly a person's thought, and they can be one of the main causes to accept or reject an attitude object. In the case of the use of ICT, teachers can accept or reject the use of information and communication technologies in the process of teaching and learning. Maybe because of this, any institution has to take into account people's attitudes when they are trying to implement any kind of change;

especially if it is related to technology. In relation to this, Mayor and Tortosa (1990) argue that the use of technology affects significantly the attitudes and behavior of the members of an organization. However, these authors explain that the new technology' features introduced in an institution do not exactly affect attitudes, it is the way how they are implemented in the institution, the strategic decisions are going to be taken into account and the changes that involve the use of that new technology in the workplace. They considered that it is important to take into consideration the necessities not only related to the institution, but the people who are going to use the new technology, their personal characteristic and so on.

It is undeniable that teachers are an important factor among the ones who contribute to the educational process. As they play such an important role, teachers' attitudes also have a relevant task in education. Taking into account this aspect and considering that many changes can be done in an educational institution such as the implementation of technology in teaching. However, those changes or all the efforts done in order to get good results would be futile if a teacher does not have a good attitude toward something or in this case toward the use of information and communication technologies. Therefore, the teachers' success could depend mainly on the teachers' attitudes. In relation to this, Albirini (2006) establishes that attitudes are considered as a major predictor of the use of new technologies in the educational settings. This author also points out that the successful implementation of technology depends largely on teachers' attitudes because they eventually determine how technological tools are used in a classroom.

The importance of considering teachers' attitudes before the full implementation of technology in the process of teaching and learning can help to assure in some way the success of it, because its use inside and outside classrooms mostly depends on teachers. Aguiar et al. (2002) point out that teachers are the clue for the implementation and use of information and communication technologies in an educational institution. "The ways in which ICT has been used have been very dependent upon teachers themselves, what they believe to be important, how they select the technology tools for their curriculum, how they

organize the lesson and so on.[22]" Therefore, teachers and consequently their attitudes, among other factors, are the key factors in using technology in the process of teaching and learning. "The attitude of teachers and learners significantly affect their willingness and abilities to use ICT tools and thereby the level of benefit which could be achieved.[23]" In addition to this, in *Las TIC en la educación obligatoria: de la teoría a la política y la práctica* (2010) states that it is essential to consider for the pedagogical implementation of information and communication technologies some aspects such as teachers' attitudes, confidence and competence.

2.3.2 TEACHERS' ICT COMPETENCE

Oxford Advanced Learner's Dictionary (2010) defines competence as the ability to do something well. On the other hand, Voogt and Knezed (2008) say that to have suitable or sufficient skills, knowledge, experience, etc. to perform an activity is to have competence. Another definition says that competence is "the cognitive, affective, socio-emotional and physical abilities that move a person in an integrate way to act efficiently according to the requirements or demands of a determined professional context.[24]" Considering this definition and as competence involves certain cognitive and affective abilities, it can be said that competence is a collection of attitudes, values, experience, knowledge and theoretical and practical abilities to perform any activity, task, etc.

Now specifically talking about teachers' competence in information and communication technologies, it can be said that it encompasses the knowledge, skills, attitudes, experience and values required to use the information and communication technologies in an educational context and in a responsible, appropriate, and effective way. In other words be able to select, understand and use appropriately many or a great variety of technological tools inside and outside classrooms. Be prepared also to guide students in the correct use of

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[22] Marilyn Leask & Norbert Pachler. *Learning to teach using ICT in the secondary school: a companion to school experience.* Routledge, London, 1999, p. 34.

[23] Leask & Pachler. op. cit., p. 32.

[24] Ana Garcia-Varcarcel. *Herramientas tecnológicas para mejorar la docencia universitaria. Una reflexión desde la experiencia y la investigación.* RIED v. 10, España, 2007, p. 131.

ICT. Having this big responsibility and challenge, ICT competence is an important aspect that has to be considered by teachers and the institution where the changes in relation to the use of technology are carried out, this in order to guarantee a successful introduction of these kinds of tools and consequently support teachers who have to face with new challenges related to technology and because teachers basically have the task of teaching students how to be competent or be basic users of information and communication technologies which can help students to be successful in their academic and work careers. This is a big challenge and a great change for teachers that considering that technology changes fast, unluckily for some of them it is a difficult task, but it is not impossible.

In this sense and seeing the importance of the use of ICT in education, UNESCO has developed in 2008 a useful guide called *ICT Competence Framework for Teachers*, which has been updating and improving since that year. This guide helps us to identify the competencies that a teacher has to develop to use technology effectively in classrooms. It was elaborated according to three approaches and it is as follows:

- *Technology literacy:* it involves the acquisition of basic competence related to hardware and software, changes in teachers' role because of the use of various ICT tools and digital content and most important to know where and when (as well as when not) to use technology. Specifically, teachers' competences related to the technology literacy approach include basic digital literacy skills and digital citizenship, along with the ability to select and use appropriate off-the-shelf educational tutorials, games, drill-and-practice software, and web content in computer laboratories or with limited classroom facilities to complement standard curriculum objectives, assessment approaches, unit plans, and didactic teaching methods. Teachers must also be able to use ICT to manage classroom data and support their own professional learning.

- *Knowledge deepening*: this involves the collaborative learning in projects, student-centered teaching and necessary competences that allow teachers to help students to generate, implement and monitor students' projects. Specifically, teachers should be able to use ICT to create and monitor individual and group student project plans, as

well as to access information and collaborate with other teachers to support their own professional learning.

- *Knowledge creation*: the most significant aim in this approach is for students to be able to create their own learning goals and plans—to establish what they already know, assess their strengths and weaknesses, design a learning plan, track their own progress, and so on. Teachers in this approach are seen as model learners and knowledge producers who are constantly engaged in educational experimentation and innovation in collaboration with their colleagues and outside experts to produce new knowledge about learning and teaching practice. Teachers who are competent in the knowledge creation approach will be able to design ICT-based learning resources and environments; use ICT to support the development of knowledge creation and the critical thinking skills of students; support students' continuous, reflective learning; and create knowledge communities for students and colleagues. They will also be able to play a leading role with colleagues in creating and implementing a vision of their school as a community based on innovation and continuous learning, enriched by ICT.

Considering that information and communication technologies play an important role not only in education, but also in our daily life. Therefore, almost everybody needs an understanding of ICT in order to use it in an appropriate and efficient way in order to take advantage of it. However, maybe for some older teachers or adults in general, it is not an easy task to be competent in the use of ICT, but considering its importance, we have to make an effort to improve this situation little by little. Voogt and Knezek (2008) make a comparison between children and adults in relation to the use of technology and say that children can understand and master new technologies easily while adults do not have the time to master one technology before another new technology arrives. These authors also assure that teachers' negative attitudes toward technology are related to the lack of knowledge and experience in the use of it. Adding to this, Buabeng-Andoh (2012) states that teachers who have positive attitudes toward computers is because of their teachers' experience on computers. This means that the more experience they have, the more positive attitudes they show.

To sum up, it can be said that to be competent in the use of information and communication technologies is increasingly necessary not only for teachers, it is also important for most people because in the 21st century to study, work, exchange information or simply communicate using ICT is becoming something essential and a necessity for our daily life, education and for being successful in a work place.

2.3.3 FREQUENCY OF USING INFORMATION AND COMMUNICATION TECHNOLOGIES AMONG TEACHERS

As it was pointed out before, to know about the use of information and communication technologies is important not only for teachers or students, but for most people. This factor is in any way linked to the frequency of using ICT because the more frequent somebody uses something, the better. Voogt and Knezed (2008) point out that teachers who use technology more frequently are more competent, have better attitudes and also judge that using technology in the classroom will make them better teachers.

Now, in order to develop a better competence, the professors' ICT use inside and outside classrooms can be a great help to master these technological tools because if they increase the frequency of use of information and communication technologies this can help them to have more confidence, less apprehension, and consequently there could be an improvement in their competence. Doing this, professors' attitudes, competences, etc., could be in some way improved and finally technology could be used in an appropriate and efficient way. Voogt and Knezek (2008) point out that the good use of technology can help to change many aspects of education, such as curriculum, learning roles within the classrooms, etc. Technology can be also helpful for knowing the needs of an institution.

2.4 THE USE OF INFORMATION AND COMMUNICATION TECHNOLOGIES AND THE TEACHING OF LANGUAGES

Since this study is concerned with the use of information and communication technologies in a foreign language teaching, it would be important to know about language teaching. Lately, "language teaching is not easily categorized into methods and trends. Instead, each teacher is called on to develop a sound overall approach to various language classrooms.

This approach is a principled basis upon which the teacher can choose particular designs and techniques for teaching a foreign language in a particular context maybe because every learner is unique, every teacher is unique, every learner-teacher relationship is unique and every context is unique. The task for teachers is to understand the properties of those relationships.[25]"

The above means that teachers can choose particular strategies, resources according to the content, context, kind of students' learning and other aspects that have to be considered before, after and in the moment of teaching. Therefore, nowadays teachers not only have to be committed to their initial training but also they have to be conscious that it is important to continue with the professional development which means to be up-to-date with the new teaching practices, thus, in this way they can improve the process of teaching and learning.

Therefore, to teach a foreign language could be considered a complex process that actively involves multiple senses. On the other hand, the process of learning a language may be structured in different ways; whether in a classroom or at home, with or without a teacher, emphasizing or minimizing grammar, or the other skills such as listening, speaking, etc. However, no matter where or how the learning process occurs, since the objective is to get a high proficiency of the target language, the needs are the same, and nowadays information and communication technologies are powerful tools that can help to improve the teaching and learning process of a language.

The teaching of foreign languages such as English has proved to have some differences compared to the teaching of other subjects because of its peculiar characteristics that have to be considered by teachers in the process of teaching and learning. As Fitzpatrick (2004) says: one important point that has evolved in the study of the use of ICT in foreign language learning and teaching is that, as a subject area, it has some differences with the other subject areas in the curriculum because it is both skill-based and knowledge based. In this respect it has more in common with a subject like music than, for example, history or

[25] Brown, op. cit., p. 14.

geography. This has some implications both for the types of technologies that are used in foreign language teaching (FLT) / foreign language learning (FLL), but also for FLT pedagogy and methodology.

The teaching of English, as a complex and peculiar activity as it has been described, can greatly be improved with the use of information and communication technologies in language teaching and learning. ICT can help to create genuine or more real learning situations that are helpful in order to develop and improve the different skills: writing, reading, listening and speaking. Thanks to ICT teachers can combine different skills in a single activity making each class more interactive, useful, dynamic and effective. At the same time, students can develop new skills about the best way of learning, they can investigate in a better way which can help them to be generators of knowledge and be more independent in their learning. The use of ICT could also help to acquire competence and other skills that would help students in their professional development. In other words ICT would be a great help for promoting students' creativity, collaborative work, innovation, critical thinking, and so on. "Through introduction of technology, language students can master the kinds of information and communications media that will allow them to use their new language in potentially powerful ways, such as for national and international communication, investigation and research knowledge production and dissemination, and publication of texts and multimedia documents.[26]"

The use of information and communication technologies in language teaching and learning has as a main contribution to help educators to adopt new alternatives for language teaching and learning and in this way to improve education. Since ICT offers a collection of tools and technological resources such as computers, internet (web pages, blogs, e-mails, etc.), which are useful, different, interesting and motivating that gradually integrated in classrooms, they can help to transform the educational process which can mean a very big challenge for today' teachers.

[26] Anthony Fitzpatrick. *Information and communication technologies in the teaching and learning of foreign languages: state-of-the-art, needs and perspectives.* UNESCO Institute for information technologies in education, Moscow, 2004, p. 46.

However, in order to be successful and make a real change in the teaching and learning process of any subject, it is really important not to forget what the main goal of teaching is. In the case of the process of teaching a foreign language, Fitzpatrick (2004) points out that although memorization of grammar rules, vocabulary or the development of individual communication skills are important aspects in the language teaching, the most important aspect that has to be considered in a foreign language teaching is the improvement the human and social development of students and their broader community.

2.4.1 TECHNOLOGICAL TOOLS USED IN LANGUAGE TEACHING

Nowadays teachers wrestle with new techniques or strategies that they have to know and use in order to improve their work, they have also to know about new resources that appear almost every day in order to use them for improving the process of teaching and learning. Lately, many changes have been witnessed in different areas, one of these changes is related to the use of new technological tools which means that teachers have to get used to using new materials inside and outside classrooms. However, prior to say anything about new tools in teaching we have to review some materials that were very useful and maybe, in some places, they are still being used.

In the area of teaching languages such as English, especially in our country, for many years the only material used was the radio cassette player. Surely many teachers remember that they used to carry it from one class to another which was something complicated because some of them were big, besides that sometimes teacher used to waste time looking for the correct audio for each activity they had prepared. Fortunately, those problems were solved with the appearance of the CD system which made some teaching activities easier. Another device that has been widely used is the VHS. For many teachers surely it was interesting to start working with audio and image, although it had some limitations. Nevertheless, this activity was improved because then appeared the digital videodisc or the digital versatile disk well known as DVD, a tool that is still broadly used for professional and domestic purposes. But, those tools such as VHS and DVD still need another important one in order to have a complete function, which is the television set; an appliance that was and is still important and necessary for teachers.

Anderson (2010) describes that first computers where introduced in schools in the late 1970s. After that, other technologies were appearing which make people start using the term IT (information technologies). This term was used to describe computers and various peripheral devices. Then, a new term was introduced and used by people to describe internet, computers networks, and the World Wide Web, email and search engines. This term was called ICT (information and communication technologies) and embraces the many technologies that enable us to communicate, receive or exchange information. UNESCO (2009) defines ICT as a diverse set of technological tools and resources such as computers, internet (websites, blogs and emails), live broadcasting technologies (radio, television and webcasting), recorded broadcasting technologies (podcasting, audio and video players, and storage devices) and telephony which can be fixed, mobile, satellite, video-conferencing. These technological tools according to UNESCO help us to create, store, transmit, share or exchange information.

To start using those new technological tools such as computers, internet at the beginning was something frustrating because of the lack of knowledge for using them, but nowadays it is something that we really have to know and it is not an option since they will continue being used as educational and work tools. Besides, by using ICT students can have an active participation and feel motivated to perform different kinds of activities inside and outside classrooms. Mayor and Tortosa (1990) point out that according to the theory of action, machines and objects influences the behavior of students. This means that students can act influenced by certain devices.

To sum up it can be said that a great step forward was the incorporation of ICT in education, especially in the teaching of English because "technology allows learners to immerse themselves in the target language and community easily, which in the past was only possible by more or less extended stays in the country where the target language was spoken in which only a relatively small number of more affluent students could afford.[27]"

[27] Gary Motteram (ed). *Innovations in learning technologies for English language teaching.* British Council, London, 2013, p. 98

2.4.1.1 MOST USED COMPUTER TECHNOLOGIES

In the case of computer technologies, there is a brief description in the following section of the most popular tools that a computer offers to its users to develop different tasks or activities.

Create and organize computer files and folders

A file is an item that contains information. For example, it can contain text, images or music. On the other hand, a folder is a location where you can store your files.

The most common way to create new files is by using a program. For example, you can create a text document in a word-processing program, downloading photos to your computer or creating a movie file in a video-editing program. On the other hand, you can create any number of folders and even store folders inside other folders (subfolders). To create a folder, go to the location where you want to create a new folder. Right-click a blank area on the desktop or in the folder window, point to **New**, and then clicks **Folder**. Type a name for the new folder, and then press Enter. The new folder will appear in the specified location.

To create folders for different files, documents, subjects, etc., allows keeping things organized on computers. Therefore, to organize files is related to putting documents in a folder so that they could be easily located when they are needed. In a computer, files are represented with icons; this makes it easy to recognize a type of file by looking at its icon.

Word processing program

Word processing program refers to using computer to create a document, edit and store it electronically and print the document on a printer. To perform this program, a person needs a computer, a special program called a word processor and a printer. According to The Oxford Advanced Learners' Dictionary (2010) it is related to the use of computer to create, store and print a piece of text, usually typed from a keyboard.

Presentation program

Jamrich and Oja (2013) explain that a presentation program gives the users of this program the tools that they need for combining text, graphics, graphs, animation, video and sound into a series of electronic slide.

Spreadsheet program

The Oxford Advanced Learners' Dictionary (2010) defines it as a computer program that is used, for example, when doing financial or projects planning. It works when a person enters data in rows and columns and the program calculates costs, etc. from it.

Elaboration of educational material with different software

It is related to the development of certain material done and used by teachers with the main purpose of facilitating the students' learning. It is also used to motivate students and getting a meaningful learning among them. Among the aspects that have to be taken into account in the elaboration of educational material are the teaching and learning methods, contents, social group, ages, etc. According to these aspects, different software is available to develop different materials. For instance, software related to mind mapping tools, interactive activities, information organizer, learning platforms, etc.

Select and evaluate educational software

Educational software is a technological product used by educators and learners to achieve certain goals; it is designed to support educational process. Due to the proliferation of much educational software, there is a necessity to select the right software for using it in classes. This selection can be made taking into consideration the objectives of the content, the methodology that will be used and the context in which the software is going to be used. Therefore, in the evaluation of any kind of educational software it is important to consider the quality and the appropriateness of the content and the methodological aspects of these kinds of resources. An educator has also to take into account in which area, subject or topic the software is going to be used, type of resources or devices that they need to work with, type of required skills that the teacher or the student need for using it, ages of the people

who are going to use the software, etc. It is also important to consider the feedback of the users.

Install and uninstall any software

In order to use new software you will first need to install it. How you do this will depend on the format of the software whether it is on a CD, DVD, flash drive or something you downloaded from the Internet to your computer. On the whole, installing software is the act of making any software ready for execution. In other words, it can be said that it is related to put software on a computer so that the computer can run it. The easiest way to go about installing software is having the CD autorun which most computers and software support this feature. When the CD is placed in the drive, there is a file on that CD that automatically launches the setup program for that software. Another way to install software is to go to your Add/Remove Programs utility located in the Control Panel.

On the other hand, to uninstall software is related to remove a software completely or parts of it from a computer. To uninstall any kind of software usually involves more than just erasing it. The best way to uninstall software is to go back to your Control Panel and to the Add/Remove Programs or Programs and Features utility. Right there, the software to be removed can be found.

2.4.1.2 THE USE OF INTERNET IN LANGUAGE TEACHING

Nowadays internet is part of people's daily life, and life cannot be imagined without it. This important technology has become a rapid means of communication, source of information, knowledge, learning, and a tool that facilitates professional development and promotes the collaborative work. However, it is important to remember that internet is the result of years of evolution. As its name indicates, it is about INTER connected NETworks which allows the transference of data among computers that are connected. "It refers to worldwide interconnected networks that enable users to share information in an interactive format –

referred to as hypertext – through multiple wired or wireless receivers (personal computers, laptops, PDAs, smartphones, etc.).[28]"

As in other areas, the internet is also widely used in the teaching and learning of a language because of the many resources that it offers to teachers and students. In relation to this, Motteram (2013) mentions that internet not only offers the access to authentic materials or tools that help people communicate, share, design, create and publish. It is considered a very useful tool characterized for offering environments where English students, professionals and people in general meet, communicate, collaborate and work.

Its use in the teaching and learning of a language brings variety to a class since students can learn or practice a foreign language in a new, interactive, innovative and pleasant way, not just by interacting with the teacher and reading from books. As internet can support and complement the traditional teaching, this technological tool can be used in an alternate way, which means that traditional classes or activities can be alternated by using internet. This can be a great step to motivate and engage students. Kumar and Tammelin (2008) point out that the students can feel motivated by the use of internet because it offers an easy and fast access to different, real and updated materials in the target language.

Currently, to talk about internet is something complex because of the many resources or tools that can be found on it. "Examples of tools that have become established are publishing tools like blogging platforms: Word Press, Blogger, etc., or podcasting services like Podomatic; platforms that serve as repositories and sharing environments for videos, slides and images such as Flickr, You Tube, Vimeo and Slideshare; collaborative knowledge collection, writing and publishing tools such as wikis; learning management systems such as Moodle; social networking tools such as Twitter and Facebook, or the alternative for educational use, Edmodo, etc.[29]"

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[28] UNESCO Institute for Statistics. *Guide to measuring information and communication technologies (ICT) in education.* Author, Montreal, 2009, p. 121.

[29] Motteram, op. cit., p. 106.

Several years ago, people were just mere spectators in the web. However, nowadays people can interact, participate, share information, communicate, study, work and do many other things in a real time using internet. This can happen thanks to internet technologies such as Facebook, Twitter, Wikis, etc. In the following section there is a brief description of the most popular services or tools that internet offers to its users to develop different tasks or activities.

Electronic mail (email or e-mail)

Electronic mail is a method to create, send or receive digital messages. The Oxford Advanced Learners' Dictionary (2010) defines this term as a way of sending messages and data to other people by means of computers connected together in a network.

Chat

Chat consists of a simultaneous conversation between two or more people that are connected in the Net. The term chat is defined by The Oxford Advanced Learners' Dictionary (2010) as to exchange messages with other people on the internet, especially in a chat room.

Blogs

"A blog (contraction of *web log*) is a website where people make comments about their personal experiences and interests, a kind of electronic diary or journal. *Blog posts* are entries that individuals place on their blog websites.[30]" Adding to this, The Oxford Advanced Learners' Dictionary (2010) define blogs as websites where a person writes regularly about recent events or topics that interest them, usually with photos and links to other websites that they find interesting.

Wikis

A wiki is a collaborative website that can be modified by its readers. In relation to this term, Anderson (2010) explains that wikis can be private or public. The private wikis are

[30] Anderson, op. cit., p. 11.

related to those which are restricted to particular groups. The public wikis are those which are open spaces to everyone. This author also says that wikis are websites where people can develop content about different topics of interest, add or edit the existing wikis. Besides that, wikis make people collaborate among them.

Social networks

Among the most popular social networks are Facebook and Twitter. On these websites, users can freely create personal, business, institutional profiles, etc., to share information, photos, videos, etc. To start using Facebook or Twitter, users must first create an account, which requires having an email address and, additionally in the case of Facebook, noting one's age.

Google Drive

It is a free online storage provided by Google to all its users; this mean that Google Drive provides free online storage to all Google account users, the information storage is accessible from all around the globe. According to Procopio (2013) Google Drive is a place where people can store their files online and access them from anywhere. He explains that when people use Google drive, their files are stored remotely on the web instead of the computer's hard drive.

Educational platforms

Educational platforms are related to e-learning education system based on the Web that models conventional in-person education by providing equivalent virtual access to classes, class content, tests, homework, grades, assessments, and other external resources such as academic or museum website links. It is also a social space where students and teachers can interact through threaded discussions or chat.

Mind mapping tools

This kind of tools help to organize, present ideas, tasks and others which are organized around a key word, concept or idea into a mind map diagram. Anderson (2010) explains that these tools also called concept maps are used by educators and students to develop

study skills – writing essays, note-taking, summarizing, reading and studying. In internet, there can be found different software related to mind mapping tools to make the task more adaptable, easier to share and retain permanent copies. Something interesting is that online mind mapping tools also allow a number of users to work collaboratively which means that users can collaborate among them and develop a mind map.

Quiz and puzzle construction tools

According to Anderson (2010), these quiz and puzzle construction tools are web sites where teachers can construct puzzles relating content that they are currently teaching. With these tools teachers can also construct traditional quizzes of different kinds as multiple choice, short-answer, or multi-select questions, cloze-type and matching exercises, and so on.

Build and administer a web page

Build and administer a web page cannot be defined before knowing what a web page is. The Oxford Advanced Learners' Dictionary (2010) defines a web page as a document that is connected to the World Wide Web and that anyone with internet connection can see. In relation to the creation of a web page, Weverka et al (2004) point out that a person who wants to create a web page can take many different approaches to creating it. According to these authors, people can use a simple web page editor to create their web pages. Both Microsoft Internet Explorer and Netscape Navigator come with basic web page editors that enable people to create simple web pages without knowing any programming. The web pages besides containing unique and useful information, they have to contain some elements such as the title, navigation links, author and copyright information.

On the other hand, to administer a web page is related to keep your webpage upgraded, which in other words means to put interesting, and current materials or contents for people who visit the web page. Those materials could be related to publications, videos, pictures, etc. To administer a web page is also related to administer the emails, to back up the web page that could be diary, weekly or monthly, to create innovative sections, contents or tools to obtain comments or opinions, etc.

Video conferencing

Video conferencing is a technology that helps two or more people situated in different geographical locations to connect via video and audio to converse with each other in a real time. The Oxford Advanced Learners' Dictionary (2010) defines video conferencing as a system that enables people in different parts of the world to have meeting by watching and listening to each other using video screens.

Once briefly described some popular tools or services that internet offers users, it is important to point out that nowadays these resources are considered useful and necessary. This is based on the fact that internet makes people connect with their peers helping them build knowledge in interaction with others. However, in order to have a good use of internet in education, educators play an important role in guiding students for a better, positive and effective use of it. Adding to this, UNESCO (2003) recommends teachers to prepare students to work with information which means to make students develop their critically thinking which must be the goal of the educational system. Therefore, UNESCO considers that it is not enough to have access to internet; it is necessary and really important to guide students in the use of it. The sooner teachers do that, the better for students.

2.4.1.3 THE USE OF LIVE BROADCASTING TECHNOLOGIES (RADIO, TELEVISION AND WEBCASTING) IN LANGUAGE TEACHING

Live broadcasting technologies such as radio and television have an important place in mass communication. In some places radio and television have a significant role in distance education. People who are immerse in the education field use those means as educational tools for those who do not have much access to education, they take advantage of those tools because they are part of our everyday life and are familiar for the students.

The term webcasting is applied for using the internet to broadcasts audio or video transmission, for using this kind of resource a computer is needed. Webcasting is related to watching events or programs on television or listening to radio broadcasts in which a single content file can be reached to multiple simultaneous listeners or viewers.

Using live broadcasting technologies such as television, radio and webcasting satisfies both visual and auditory senses of the students. Those technologies are useful tools for teaching and learning languages in the sense that some programs of television and radio help students to increase vocabulary, pronunciation and listening skills because those programs allow students to listen to many and different native speakers that use English at different conversation speeds with a variety of accents and as students learn about other cultures and listen to/read news, students can discover new phrases and expressions which can help them to increase vocabulary, improve their listening skills and pronunciation. Therefore, as they are means that introduce new words, it can be said that they directly influence a language. In the case specifically of radio, it also helps to increase and improve students' imagination and listening skills.

"Radio and television have been used widely as educational tools since the 1920s and the 1950s, respectively. There are three general approaches to the use of radio and TV broadcasting in education:

a. **Direct class teaching**, where broadcast programming substitutes teachers on a temporary basis;

b. **School broadcasting**, where broadcast programing provides complementary teaching and learning resources not otherwise available; and

c. **General educational programming over community**, national and international stations which provide general and informal educational opportunities.[31]"

Moreover, Oppenheimer (2010) who has visited many countries in order to research or look for ideas of how to improve the quality of education in South American countries, found something interesting in Finland where English is spoken in any public place of that country without any problem, although it is not its official language. In that country movies

[31] Victoria Tinio. *ICT in education.* UNDP-APDIP, Kuala Lumpur, 2003, p. 11.

or cartoons which are watched by children and others are not dubbed into Finnish. Therefore, people have to see them in English since they are children. Most cartoons, series and Hollywood movies are broadcasted by the Finnish television in their original language and it happens because of the cost that it implies to dub into Finish: with a small population and without any other country that speaks Finnish, the television channels concluded that to dub the American programs were no commercially feasible. And what had started as a measure of saving money has turned into a great and competitive advantage of the country in order to be in a global economy.

2.4.1.4 THE USE OF RECORDED BROADCASTING TECHNOLOGIES IN LANGUAGE TEACHING: PODCASTING

Nowadays the web is used for many reasons. One of these reasons is because people want to watch and share different kinds of videos. Another activity is to listen to music, download and listen to it anywhere and anytime. These activities are related to podcasting which is a way to share audio files on the internet, just like blogging is a way to share online writing. The content of most popular podcasts is most similar to the issues of radio. However, the main difference between a podcast and a live broadcast is that by downloading the former, a person can listen to the latest release at his convenience in comfortable surroundings. Thus, podcasting takes the best from the well-known methods of communication: Internet and radio. Users can subscribe to their interesting episodes (podcasts) and listen to them on demand at any time and any place. "Podcasts allow anywhere, anytime learning. They permit students to access educational materials at home, while travelling to university or work, or doing any activity that people choose. They can play the recordings at any time which is convenient to them rather than be confined to set class times. They have an obvious place in distance education, fulfilling the same role that audiocassettes performed in a previous era.[32]"

The use of podcasting in the teaching and learning process is a very useful tool for language learners because through it we can find useful resources as authentic materials, language

[32] Indrawati Nataatmadja & Laurel Dyson. *The role of podcasting in students' learning.* iJIM vol. 2, 2008, p 17.

courses, or add-on materials to support teaching which can be used for an established course or independent learners. As podcasts include audio, video, images, music and other supplementary materials for teaching and learning, podcasting can be used for improving aspects such as vocabulary, spelling, reading, listening, etc. and also for learning different aspects such as history, culture, politics, etc., of the countries where English is spoken.

Rosell-Aguilar (2007) says that podcasting is divided into two main potential uses: creating podcasts and using the podcast resources available. In relation to the creation of podcasts, there are podcasts created by teachers, and those created by learners. In the case of available language learning podcast resources, it can be classified into two main groups: the first is authentic content provided by native speakers of the target language such as news feeds or radio programming that can be found in the webpages of major television and radio broadcasters or by searching for themes of interest. The second group is language courses for teaching content specifically designed for language learning, this content can be classified into whole stand-alone courses that strive to operate as virtual classrooms or add-on activities to classroom teaching or distance education. Therefore, there are two types of resources: those that aim to provide whole standalone courses and those that provide supporting material. The latter are classified into two subgroups: materials designed for an established audience such as the materials provided by teachers or institutions for their own students and supporting materials designed for independent learners who are not enrolled on a particular course, delivered as a public broadcast.

Podcasting is very effective for the development of some skills in English language learners. It can improve speaking because it can allow teachers to contextualize pronunciation and create meaningful tasks, allowing students to hear the proper pronunciation of the words rather than simply have students repeat and practice lists of words or sound. It is also useful for the development of listening skills as podcasts offer many audio materials teachers can download and use them in classrooms several times making students have the opportunity to listen to native speakers which is really important for those who live where English is not spoken. Another advantage of podcasting is that the audio files are provided with texts, so students not only can listen, they can also read so in

this way they can improve reading skills and acquire more vocabulary. Podcasting can also help students in developing other aspects such as creativity, collaborative work, and others.

"Podcasting provide flexibility, portability and autonomy and promote active, mobile learning, which is important in adult education and lifelong learning. Several studies report that students' speaking, listening, vocabulary and grammar skills have improved through podcasting. Furthermore, it can also allow students to organize learning into manageable chunks and it is a good revision tool, as it can be listened outside class and repeatedly so, which is important to develop automaticity. Other advantages of podcasts are that they allow for flexibility, they are portable and they allow students to learn autonomously. Finally, podcasting is sustainable as it is a low cost, low barrier technology.[33]"

2.4.1.5 THE USE OF MOBILE TELEPHONY IN LANGUAGE TEACHING

These days the use of technology in our lives is becoming more common and obviously making our life easier. That is the case of cell phones which are used more and more by a lot a lot people of different ages. It is clear that nowadays nearly everyone has a cell phone; its use has become very popular among people. As Reig and Vílchez (2013) say, mobile telephony has an important place in our lives; this is a communication tool that does not distinguish social classes, cultural levels, gender or ages. The use of mobile phones has increased during the last decades. It is not only a device to make and receive calls. Now smartphones allow us to do different activities at the same time as surfing the net, interact in social networks, chat, take pictures, etc. According to these authors, there are some studies which show that mobile devices in general and particularly the mobile phones motivate students who are more disruptive in class. In classrooms, smartphones could provide privileged access to internet which could be simpler than netbooks or other classroom computers and versatile than a tablet. The fact that mobile devices give us a direct access to internet can be an advantage which has to be taken into account by teachers.

[33] Brian tomlinson & Claire Whittaker. *Blended learning in English language teaching: course design and implementation.* British council, London, 2013, p. 135-136.

On the other hand, for some students, mobile phones are the only access to internet outside the educational institutions because they do not have computers at home. The use of smartphones in classrooms offers many advantages of interaction with the content and an easy way to access to it. Now if the activities are well designed, mobile phones may contribute with a great motivation and the possibility of connection with reality. The use of mobiles with internet connection in class would approach the school to what occurs in the real world, or in the other existing world outside classrooms. Of course, it has to be related to a didactic use of mobile phones, in which activities have to be well defined and designed for an effective learning.

Although there are many people who still think that mobile phones are devices with an only benefit which is to make and receive telephone calls. On the contrary, sadly taking advantage of the benefits they have, there are others who use it in the wrong way or for wrong purposes. In the case of education, mobile phones are often regarded as distractions for learning; some teachers think that they distract students from their lessons. However, other teachers use them to engage with their students and encourage new learning strategies. Although the first and foremost purpose of cell phones is communication, they have other benefits that have to be taken into account, especially if they are connected to internet because they can facilitate students learning inside and outside classrooms.

“The use of smart devices in the teaching and learning process presents a series of advantages. As these mobile devices have access to internet, they help students to share the development of certain activities with their classmates, creating groups, sharing information, and facilitating the exploratory learning in which the students learn to explore, experiment and apply what has been learned in each lesson. These mobile devises also allow taking notes directly in the device since they are portable and functional. Moreover, mobile phones can be used to encourage experiences of autonomous or group learning, they also allow teachers send reminders to the students about the period of activities, homework or send messages of supporting and encouragement. Finally, mobile telephony is used as a

tool to teach basic literacy reducing in this way the resistance toward the use of information and communication technology.[34]"

To conclude this chapter, it has to be mentioned that we started this theoretical framework talking about the issue of attitude, specifically its definitions, its internal structure, methods and techniques to measure it and the importance that it has in the field of education. All of this literature focused on attitude helped to understand that an attitude is related to evaluating a person, thing, situation, etc., according to its three components which are the cognitive, affective and the behavioral component. The lack of one of them could affect the correct measure of attitude. Therefore, because of its importance, these three components have to be taken into account when attitudes are measured.

On the other hand, we also dealt with the issue of ICT in education. Specifically, we saw the matter of the current role of ICT, its use in education and the current role of teachers and students, its use in the teaching of languages and the factors that influence its educational use. All of this information related to the use of information and communication technologies into the field of education helped to clear up that they are technological tools that help not only teachers or students; they are useful, valuable and important resources that help people in general, not only in education, but in many spheres of their lives. As they have such importance, especially into the field of education, their use changed the role of teachers and students from a teachers' passive way of teaching to a more dynamic, participative and collaborative way of learning. It was understood that in order to have these changes educators must consider that nowadays they have some resources such as internet, live broadcasting technologies, recorded broadcasting technologies, mobile telephony and so on for using them in their classes and in this way improve the teaching and learning process and make their work easier. On the other hand, we realize that it is important not to forget that there are some factors that in somehow can determine or affect the use of ICT into the field of education. These factors can be related to teachers' attitudes toward ICT, teachers' ICT competence, the frequency of ICT use, etc.

[34] Innovación de estudios empresariales avanzados. *Mobile learning, análisis prospectivo de las potencialidades asociadas al Mobile Learning,* Author, España, 2009, p. 22-23.

To end up this chapter and after having reviewed most of the important literature related to the study it can be said that this thesis is supported by the different authors and their theories, points of views, explanations, conclusions, etc., presented in this theoretical framework and that helped us to carry out this study of professors' attitudes, competence and frequency of use with regard to information and communication technologies in the teaching of English at the Linguistics and Languages Department of Universidad Mayor de San Andres.

CHAPTER THREE

METHODOLOGY

3.1 RESEARCH DESIGN

In order to get good results, for most types of activities, planning is a key factor. That is, it is necessary to sort the available material, to plan the kind of outcomes we want to obtain, to design the procedures and steps to be followed to obtain some expected results, and so forth. In science and in any kind of investigation planning is fundamental because it provides a frame for the work to be done. Besides, a correct planning can save time, effort and guarantee to obtain the desired results. Therefore, the right planning should be chosen according to the type of activity to be carried out.

For carrying out an investigation or research, Hernandez et al (2010) propose two types of research designs which are the experimental and the non – experimental. For the development of this research the latter has been followed. The non – experimental design, according to Hernandez et al (2010) is an investigation in which the independent variables are not intentionally manipulated. Owing to the fact that this research was carried out without manipulating the variables deliberately, which means that we saw the phenomena in the way they were presented in their natural context to analyze them, and that is precisely what has been done in this study; this research has a non – experimental design.

The purpose of this research was to describe certain professors' attitudes, competence and frequency of ICT use at the Linguistics and Languages Department of Universidad Mayor de San Andres, information that was obtained in certain period of time and subsequently it was subject to the corresponding analysis which means that the data in this research was collected in a given moment during the months of June, July and part of August of 2013. Therefore, taking into account the above, the design of this research is non – experimental of trans-sectional descriptive type. "This kind of research collects data in a given moment with the purpose of describing and analyzing the variables in a given moment.[35]"

[35] Roberto Hernández, Carlos F. Collado & María del Pilar Baptista. *Metodología de la investigación.* McGraw-Hill, México, D.F., 2010, p. 151.

3.2 VARIABLES

A variable in a research is the central part of an investigation. It is usually defined as something observable that varies or changes, in which this variation or change can be measured. Adding to this, Hernandez et al (2010) defined a variable as a property that can vary and it is capable of being measured or observed.

This research is oriented to find out the professors' attitudes toward the use of information and communication technologies in the teaching of English at the Linguistics and Languages Department of Universidad Mayor de San Andres. On the other hand, this study has another purpose which is to survey the professors' self-perceptions about their current level of ICT competence and the frequency of use of ICT in the teaching of English.

As the design of this research is related to the descriptive type, the variables in this research are classified according to the amount of them. According to Tintaya (2008) in this kind of designs there are not independent variables or dependent variables, that is why they are expressed as variable one (V1), variable two (V2), and so forth. Taking into account this, the variables that are studied in this research are:

VARIABLE 1	Professors' attitudes toward the use of information and communication technologies
VARIABLE 2	Professors' self-perceptions about their current level of ICT competence
VARIABLE 3	Frequency of use of information and communication technologies in the teaching of English

Chart 5

3.2.1 Conceptual definition of the variables

Professors' attitudes toward the use of information and communication technologies

Professors' attitudes toward the use of information and communication technologies are related to professors' feelings (affective component), professors' beliefs (cognitive component) and professors' behavior (behavioral component) toward or with a predisposition to use internet, live and recorded broadcasting technologies, and mobile telephony. (Definition proposed by the author of this thesis).

Professors' self-perceptions about their current level of ICT competence

This is related to the professors' self - perceptions about their current level of computing skills, programming and knowledge of the use of internet, live and recorded broadcasting technologies, and mobile telephony for educational purposes and in general. (Definition proposed for the author of this thesis).

Frequency of use of ICT in the teaching of English

This is related to how often English professors use information and communication technologies in the teaching of English. Specifically, if those English professors always, almost always, sometimes, almost never or never use internet, live and recorded broadcasting technologies, and mobile telephony in the teaching of English at the Linguistics and Languages Department of Universidad Mayor de San Andres. (Definition proposed for the author of this thesis).

3.2.2 Operationalization of variables

Operationalization of the variable: PROFESSORS' ATTITUDES TOWARD THE USE OF INFORMATION AND COMMUNICATION TECHNOLOGIES

DIMENSIONS	INDICATORS	SCALES	ITEMS
Affective	Professors' emotional responses in relation to the use of information and communication technologies	Strongly disagree Disagree Neutral Agree Strongly agree	1. The use of internet, live broadcasting technologies (radio, television and webcasting), recorded broadcasting technologies (podcasting) and mobile telephony in English teaching does not scare me at all. 2. The use of internet, live broadcasting technologies (radio, television and webcasting), recorded broadcasting technologies: (podcasting) and mobile telephony in English teaching makes me feel uncomfortable. 3. I am glad that I can use internet, live broadcasting technologies (radio, television and webcasting), recorded broadcasting technologies (podcasting) and mobile telephony in English teaching these days.
Cognitive	Professors' beliefs and perceptions about the use of	Strongly disagree Disagree	4. The use of internet, live broadcasting technologies (radio, television and webcasting), recorded broadcasting technologies (podcasting) and mobile

	information and communication technologies	Neutral Agree Strongly agree	telephony in teaching saves time and effort. 5. The use of internet, live broadcasting technologies (radio, television and webcasting), recorded broadcasting technologies (podcasting) and mobile telephony in English teaching would increase students' motivation. 6. I do not think I would ever need to use internet, live broadcasting technologies (radio, television and webcasting), recorded broadcasting technologies (podcasting) and mobile telephony in English teaching.
Behavioral	Professors' predisposition or tendency to use information and communication technologies	Strongly disagree Disagree Neutral Agree Strongly agree	7. I would like to learn more about internet, live broadcasting technologies (radio, television and webcasting), recorded broadcasting technologies (podcasting) and mobile telephony for using them in English teaching. 8. I have no intention to use internet, live broadcasting technologies (radio, television and webcasting), recorded broadcasting technologies (podcasting) and mobile telephony in the near future.

Operationalization of the variable: PROFESSORS' SELF-PERCEPTIONS ABOUT THEIR CURRENT LEVEL OF ICT COMPETENCE

INDICATORS	SCALES	ITEMS
Professors' self-perceptions about their current knowledge or skills in using information and communication technologies	No competence Little competence Moderate competence Much competence	- Create and organize computer files and folders - Operate a word processing program (e.g., MS WORD). - Operate a presentation program (e.g., MS Power Point). - Operate a spreadsheet program (e.g., MS Excel). - Elaborate educational material with different software. - Install and uninstall any software. - Select and evaluate educational software. - Send emails. - Chat. - Blogs. - Wikis. - Social networks. - Google drive. - Educational platforms (e.g., Moodle). - Mind mapping tools. - Quiz and puzzle construction tools. - Build and administrate a web page. - Podcasting (use of audio or video recordings for portable media players, computers, etc.). - Use of live broadcasting technologies in English teaching. - Use of mobile phones in English teaching. - Video conference in English teaching.

Operationalization of the variable: FREQUENCY OF USE OF INFORMATION AND COMMUNICATION TECHNOLOGIES IN THE TEACHING OF ENGLISH

SCALES	ITEMS
Always Almost always Sometimes Almost never Never	- Send emails - Chat - Blogs - Wikis - Twitter - Facebook - Google drive - Educational platform - Mind mapping tools - Quiz and puzzle construction tools - Administrate a web page - Podcasting - Use of live broadcasting technologies in English Teaching - Use of mobile phones in English teaching - Video conferencing in English teaching

3.3 POPULATION AND SAMPLING

Hernandez et al (2010) say that a population refers to a group of elements such as people, phenomena, objects, or situations that agree with a series of specifications. On the other hand, the sample refers to a subgroup of elements that are taken from a large population. Taking into account these definitions about population and sampling, and since at the Linguistics and Languages Department the population is limited, which means that there is not a great number of English professors working in this institution, and as this study has the purpose of achieving valid conclusions about the population, it was decided to work with all the population of the Linguistics and Languages Department and take into account also the English instructors of Centro de Enseñanza y Traducción de Inglés (CETI). In this

sense, there is not a kind of sampling because as it was said before all the population was taken into account for developing the current research.

Considering these points, the population and sampling are the same in this research and are made up of 20 English professors of the Linguistics and Languages Department and 15 English instructors of Centro de Enseñanza y traducción de Inglés (CETI). This number of participants corresponds to the 100% of the total of professors that teach English at the Linguistics and Languages Department, the Centro de Enseñanza y Traducción de Inglés (CETI) and in other Departments of Universidad Mayor de San Andres.

Since this research deals with professors of English that teach at the Linguistics and Languages Department, Centro de Enseñanza y Traducción de Inglés (CETI) and other Departments of Universidad Mayor de San Andrés, the total number of professors was provided by the respective authorities of the institution; the number of professors belongs to the first semester of 2013.

3.4 INSTRUMENT OF DATA COLLECTION

The instrument that was used in this research was the questionnaire which was based on the questionnaire that Abdulkafi Albirini (2006) used in his research *Teachers' attitudes toward information and communication technologies*. This choice was made because after reviewing a great number of questionnaires many of them fail to identify clearly the components of the attitudes; Albirini's questionnaire emphasizes variables related to the attitudes and identifies clearly the affective, cognitive and the behavioral component of the attitudes. Besides that, as the questionnaire measured also competence and other aspects related to the use of information and communication technologies, that is why it was very useful to develop the other sections that involved measuring the ICT competence and frequency of use of ICT. However, in spite of the usefulness of Albirini's questionnaire, it was modified and adapted for being used in this context. Besides, since technology changes almost daily, it was necessary to change and add some new technological terms; components that are available nowadays. For purposes of this study the technologies that were considered were the internet, live broadcasting technologies (radio, television and webcasting), recorded broadcasting technologies (podcasting) and mobile telephony. These

technologies were considered based on *Guide to measuring information and communication technologies (ICT) in education* (UNESCO, 2009). This guide presents an expanded set of indicators for monitoring ICT in education, and that was checked by coordinators of different countries including Bolivia.

The questionnaire was divided into four sections which were:

SECTION (1):	Professors' personal data
SECTION (2):	Professors' attitudes toward the use of ICT
SECTION (3):	Professors' self-perceptions about their current level of ICT competence
SECTION (4):	Frequency of ICT use in the teaching of English
OPEN QUESTION	

The first section of the questionnaire is related to professors' personal characteristics or demographic data. In this section the data that were taken into account for their respective analysis were gender, age, years of experience in teaching English.

The development of the second section was focused on researching professors' attitudes toward the use of information and communication technologies in the teaching of English and it contained eight items based on a 5-point likert scale from strongly disagree, disagree, neutral, agree and strongly agree. The eight items were subdivided according to the three attitude components which were as follows:

- Statements from 1 to 3 belong to the affective component.
- Statements from 4 to 6 belong to the cognitive component.
- Statements from 7 to 8 belong to the behavioral component.

It is important to remember that in this second section each statement was developed taking into account the different technologies such as internet, live broadcasting technologies (radio, television and webcasting), recorded broadcasting technologies (podcasting) and mobile telephony.

The third section was aimed at knowing professors' self-perception about the knowledge or skills they have about information and communication technologies. It consisted of twenty one items which took into account the different technologies in a detailed way. This section, besides testing professors' knowledge of the internet, live broadcasting technologies (radio, television and webcasting), recorded broadcasting technologies (podcasting) and mobile telephony, it also tested the knowledge of computer uses. Among the different answer options were no competence, little competence, moderate competence and much competence.

Finally, the fourth section was meant to measure the frequency of ICT use in the teaching of English. This section consisted of fifteen items with the following answer options: always, almost always, sometimes, almost never and never. As in the other sections, the following tools were taken into account: internet, live broadcasting technologies (radio, television and webcasting), recorded broadcasting technologies (podcasting) and mobile telephony

The questionnaire also had an open question in order to survey the views and suggestions that English professors could give in relation to the use of information and communication technologies at the Linguistics and Languages Department of Universidad Mayor de San Andres.

3.5 PROCEDURE OF THE ADMINISTRATION OF THE QUESTIONNAIRE

3.5.1 First stage: validity of the instrument

Validity is related to "the degree in which an instrument measures the variable that a researcher wants to measure.[36]" Taking into account this definition, and once established

[36] Hernández, op. cit., p. 201.

the variables to be measured which were: attitudes, ICT competence and frequency of ICT use, we followed the next steps to start building a valid instrument to measure appropriately those variables and in this way to verify if the statements that made up the questionnaire were able to show and include all the studied variables.

The first step to start developing the instrument was to review researches related to the study of attitudes, ICT competence and use of information and communication technologies. The studies that were examined were researches developed from 2000 to 2012. What is more, books related to the issue were also considered for the developing of the instrument. This step allowed us to see that most instruments that measure attitudes only measure two of the three components that made up the attitudes. Besides that, all of the items/statements of those questionnaires do not identify clearly the three components of the attitudes.

On the other hand, and in relation to the use of information and communication technologies, most questionnaires only measure one technology which was the use of internet. In this sense and after examining different studies, we found an instrument in a research carried out by Abdulkafi Albirini (2006) which is *Teachers' attitudes toward information and communication technologies*. The instrument of this research was chosen because it fulfilled most of the requirements that we were looking for. Therefore, we have a valid questionnaire, especially for the study of attitudes as it measures attitude according to its three components (affective, cognitive and behavioral). What is more, it identifies clearly the items or statements of each component. Besides that, this instrument guided us to develop the items for other sections of the study: the ICT competence and the frequency of ICT use. However, as it was developed in 2006, it measured the technology of those years. That is why it had to be contextualized and some more terms were added. For this purpose, we had to recourse to UNESCO, specifically to the *Guide to measuring information and communication technologies (ICT) in education*. As this guide defines and explains clearly what information and communication technologies are, it helped us to choose the types of technological tools that are commonly used these days.

As a second step, the first version of the questionnaire was developed. Once it was finished, it was submitted to different experts in order to obtain their respective points of view and observations. This process is called face validity that, according to Hernandez et al (2010), occurs when an instrument is examined by qualified people to see if it measures the studied variable. In this sense, those experts' different opinions helped us to see some omissions and weakness of the questionnaire. Once examined and corrected those observations, the instrument was again presented to those experts and the tutor for a detailed check. After that, there were some few observations specifically in the technological field which needed to be improved and cleared up. Then, the tutor's and the experts' observations were considered, and the instrument was submitted again to those experts including the tutor. Finally, and after a long process of preparing the research instrument, it was accepted by experts and the tutor. It is important to clarify that the group of experts mentioned before was made up of systems engineers, psychologists, and computer scientists, most of them linked to the educational field.

3.5.2 Second stage: implementation of the pilot study

Now in order to see the last details of the instrument, a pilot study was carried out to confirm that the statements, instructions and other details were expressed clearly in the questionnaire and also to verify if those statements were able to show and include all the studied variables.

In this way, the questionnaire was administered to a group of English professors. However, because of the lack of time of English professors, the pilot test was administered to only 5 English professors of Linguistics and Languages Department. Seeing this difficulty, a group of 12 English professors that worked in different universities with similar characteristics (ages, years of experience in the teaching of English and academic degrees) were asked to answer the questionnaire.

After the questionnaire was administered to the above mentioned subjects, the feedback from the participants showed some observations. What they perceived in the questionnaire was the following:

- The second part of the questionnaire had three options for answering each statement which were *disagree, neutral* and *agree*. This section had to be increased to five options: *strongly disagree, disagree, neutral, agree,* and *strongly agree*. This change was done in order to help the participants by providing them more answer options; that was precisely their suggestion. The conclusion was that dealing with participants who are professionals, they can easily discriminate among more options. "If the participants have a low capacity of discrimination, a questionnaire can have between 2 or 3 options for answering, on the contrary if the participants have a high level of education and a great capacity of discrimination, more than 3 options for answering can be included.[37]"

- The format of the questionnaire in the second part had to be changed. They reported that they felt as if they were answering the same questions, and they got scare of seeing many statements to answer. For a better understanding, let us see how was the first format of the questionnaire taking as an example the first statements in the second part of the questionnaire.

	Disagree	Neutral	Agree
1. The use of internet in English teaching does not scare me at all.			
2. The use of live broadcasting technologies (radio, television and webcasting) does not scare me at all			
3. the use recorded broadcasting technologies: podcasting (audio or video for …) does not scare me at all			
4. The use of mobile telephony does not scare me at all			

[37] Hernández, op. cit., p. 11.

So instead of having four questions, we arranged it into only one question then, the format was changed as follows:

			Strongly disagree	Disagree	Neutral	Agree	Strongly agree
1. The use of …	Internet	in English teaching does not scare me at all.					
	Live broadcasting technologies(radio, television and webcasting)						
	Recorded broadcasting technologies: podcasting (audio or video for …)						
	Mobile telephony						

Once corrected these observations, another pilot study was carried out in order to corroborate if there was not any other observation. Luckily, the respondents did not have any. It is important to mention that in this second pilot study the questionnaire was only administered to the group of English professors that worked in different universities with similar characteristics of ages, years of experience in the teaching of English and academic degrees.

3.5.3 Third stage: reliability of the instrument

Once carried out the second pilot study, we evaluated the reliability of the instrument. In reference to this, Hernandez et al (2010) point out that an instrument is reliable when it is applied repeatedly to the same people generating the same results. Taking into account this definition, the research instrument was applied to a group of English professors with the purpose of getting the same results and corroborating the reliability of the instrument. In this sense, the questionnaire was administered 3 times in different periods of time. Besides that, the results of the administration of the questionnaire plus the results of the second pilot study were also taken into account. Therefore, in total the instrument was administered 4 times in order to see its reliability allowing knowing and corroborating its reliability. It is

important to mention that owing to the lack of time of English professors of the Linguistics and Languages Department, this step was done only with a group of English professors made up of 12 subjects with similar characteristics in ages, years of experience in the teaching of English and academic degrees.

3.5.4 Fourth stage: implementation of the final instrument

After the final version of the questionnaire was designed and corrected considering the different observations made in the various steps that it was subjected to, it was administered to the population which was made up of English professors of the Linguistics and Languages Department and English instructors of Centro de Enseñanza y Traducción de Inglés (CETI) at Universidad Mayor de San Andres. The questionnaire was given to each professor personally and with the permission of the Head of the Linguistics and Languages Department and the Principal of Centro de Enseñanza y Traducción de Inglés (CETI). See appendix 1 to see the final questionnaire.

CHAPTER FOUR

ANALYSIS AND INTERPRETATION OF DATA COLLECTION

In this chapter the collected data will be shown, interpreted and analyzed. For this purpose a descriptive statistical analysis was used to identify the frequencies, percentages, etc. The program that was used for the data processing was the Statistical Package for Social Sciences (SPSS) version 15.0 for Windows and MS Excel 2010.

The descriptive analysis was done taken into account the objectives of the research. In this case it is as follows:

- To characterize demographically English professors of the Linguistics and Languages Department of Universidad Mayor de San Andres.
- To identify the professors' attitudes toward the use of information and communication technologies, professors' self-perceptions about their current level of ICT competence and the frequency of ICT use in the teaching of English at the Linguistics and Languages Department of Universidad Mayor de San Andres.
- To describe English professors' attitudes toward the use of information and communication technologies in the teaching of English according to the three components of attitude: affective, cognitive and behavioral.
- To survey the English professors' self-perceptions about their current level of ICT competence according to the type of technology: computer uses, internet, live broadcasting technologies, recorded broadcasting technologies and mobile telephony.
- To survey the frequency of ICT use in the teaching of English according to the type of technology: internet, live broadcasting technologies, recorded broadcasting technologies and mobile telephony.

- To gather professors' suggestions or recommendations in relation to the use of ICT in the teaching of English at Linguistics and Languages Department of Universidad Mayor de San Andres.

As the instrument was elaborated according to the research objectives mentioned before, the analysis of the collected information was done according to the four sections of the questionnaire, including the open question:

SECTION (1):	Professors' personal data
SECTION (2):	Professors' attitudes toward the use of ICT
SECTION (3):	Professors' self-perceptions about their current level of ICT competence
SECTION (4):	Frequency of ICT use in the teaching of English
OPEN QUESTION	

In this sense, the analysis starts first with the presentation of the data related to professors' personal characteristics or demographic data. As a second step, the descriptive analysis of the professors' attitudes toward the use of information and communication technologies was carried out, elaborating for each statement and in a global way, charts of frequencies, percentages, averages, and graphs. It was also analyzed the attitudes in relation to the three components. Then, it was examined the self-perceptions of professors' ICT competence. Later, the frequency of ICT use in teaching English was analyzed. It was also done the analysis according to the type of technology for both cases: the professors' ICT competence and the frequency of use of ICT.

4.1 PROFESSORS' PERSONAL CHARACTERISTICS

The personal characteristics or demographic data of English professors at the Linguistics and Languages Department of Universidad Mayor de San Andres that were taken into account for their respective analysis were: gender, age, and years of experience in teaching English.

4.1.1 PROFESSORS' GENDER

According to the obtained data of the gender of English professors at the Linguistics and Languages Department of Universidad Mayor de San Andres, it is possible to point out that most of the population and sampling belongs to the female gender with 54% (19 professors) while the male gender is represented by 46% which means 16 English professors. See chart 6. (To check in detail the table of frequency related to professors' gender, see appendix 2).

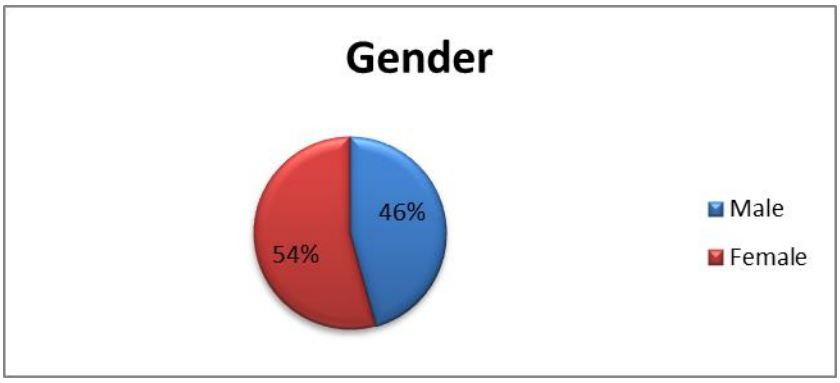


Chart 6

4.1.2 PROFESSORS' AGES

In relation to the ages of professors at the Linguistics and Languages Department of Universidad Mayor de San Andres, it can be said that there are more English professors between the ages 40 and 49 with 46% (16 professors). On the other hand, there is only a

person who is over 60 (3%). The youngest professors are only 3, that is 9%. The other professors are between the ages 30 and 39 with 23% (8 people), and finally 7 English professors (20%) are between the ages 50 and 59 years old. See chart 7. (To check in detail the table of frequency related to professors' ages, see appendix 2).

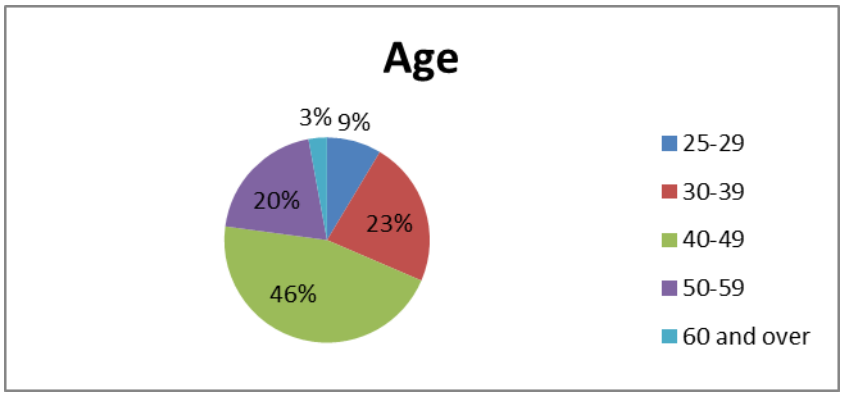


Chart 7

4.1.3 YEARS OF TEACHING EXPERIENCE

In relation to the years of experience in the teaching of English professors at the Linguistics and Languages Department of Universidad Mayor de San Andres, the highest percentage of the population which means 37% (13 professors) said that the teaching experience they have is between 11 and 15 years. The rest of the population is divided in an almost equivalent way among the other ranks of years of teaching experience. This is: from 6 to 10 years 17% (6 teachers), from 16 to 20 years 20% (7 professors), and there are 9 English professors (26%) who have over 20 years of teaching experience (see chart 8). To check in detail the table of frequency related to professors' years of experience in teaching, see appendix 2.

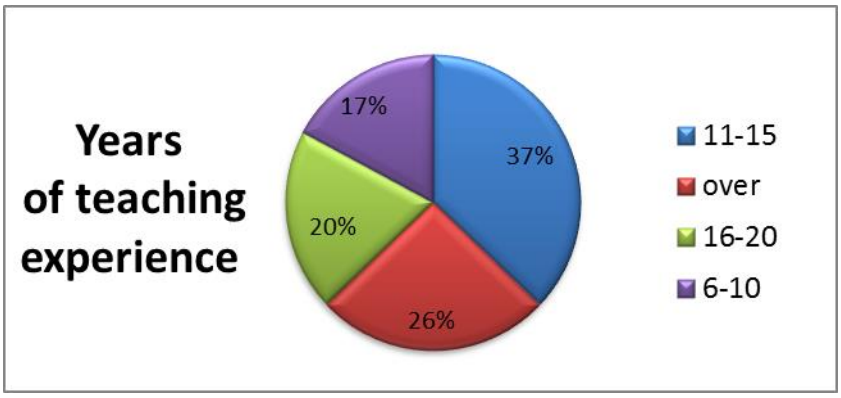


Chart 8

4.2 ANALYSIS OF PROFESSORS' ATTITUDES TOWARD THE USE OF INFORMATION AND COMMUNICATION TECHNOLOGIES IN THE TEACHING OF ENGLISH AT THE LINGUISTICS AND LANGUAGES DEPARTMENT OF UNIVERSIDAD MAYOR DE SAN ANDRES

Before analyzing each statement of the attitude scale, it is important to clarify that this section (2) had 8 statements in which each statement had 5 options or categories of answering (strongly agree, agree, etc.) so the respondents had to choose only one as an answer. Now, in order to analyze them, these answers were coded which meant to assign a number from 1 to 5 to these different 5 options. However, it is also important to explain that among these eight statements there were items that had a positive or negative tendency which affected the coding of the data in these statements. "Statements can have the following tendencies: positive or favorable and negative or unfavorable. This tendency is very important to know how the answer options are coded.[38]"

In the case of the instrument used to collect the information, there were four statements with positive tendency, which were the items: 1, 3, 4 and 5. Therefore, the values assigned for the answer options were as follows:

[38] Hernández, op. cit., p. 246.

ANSWER OPTIONS	VALUES
Strongly Agree (SA)	5
Agree (A)	4
Neutral (N)	3
Disagree (D)	2
Strongly disagree (SD)	1

On the other hand, there were also three statements with negative tendency which were the items: 2, 6 and 8. According to Hernandez (2010) when the statements have a negative tendency, they are coded contrary to the positive ones. In this sense, the values assigned for the answer options in the statements mentioned before were according to the next chart:

ANSWER OPTIONS	VALUES
Strongly agree (SA)	1
Agree (A)	2
Neutral (N)	3
Disagree (D)	4
Strongly disagree (SD)	5

STATEMENT N. 1

"The use of internet, live broadcasting technologies (radio, television and webcasting), recorded broadcasting technologies (podcasting) and mobile telephony in English teaching does not scare me at all."

Table of frequency N. 1

Options	Frequency	Percentage	Mean
SA	14	40	2.00
A	12	34	1.37
N	6	17	0.51
D	3	9	0.17
SD	0	0	0.00
TOTAL	**35**	**100**	**4.06**

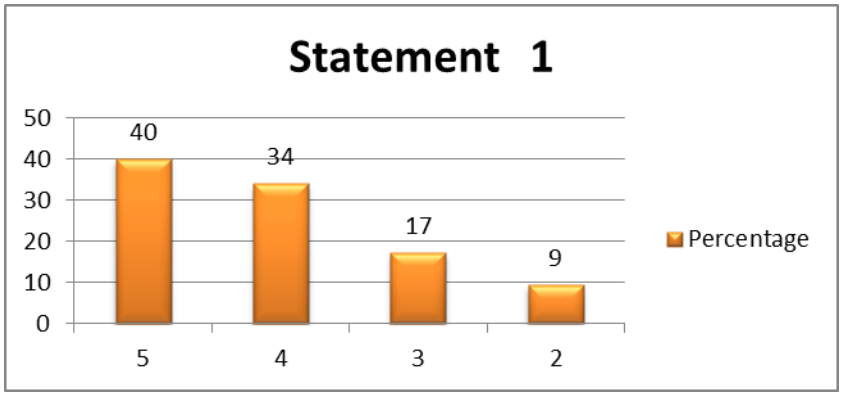


Chart 9

In relation to feeling afraid of using information and communication technologies in English teaching, most of the English professors agree that they do not feel frightened of using ICT in English teaching because 40% of them reported that they strongly agree and agree (34%) with this statement. This means that they have a favorable attitude toward this item. The unfavorable option: strongly disagree (1) was not considered by any of the respondents while the option disagree (2) was selected only by a 9% of the respondents. 17% of the English professors did not show a tendency for any of the other options.

STATEMENT N. 2

"The use of internet, live broadcasting technologies (radio, television and webcasting), recorded broadcasting technologies (podcasting) and mobile telephony in English teaching makes me feel uncomfortable."

Table of frequency N. 2

Options	Frequency	Percentage	Mean
SA	1	4	0.03
A	3	8	0.17
N	5	15	0.43
D	11	30	1. 26
SD	15	44	2.14
TOTAL	**35**	**100**	**4.03**

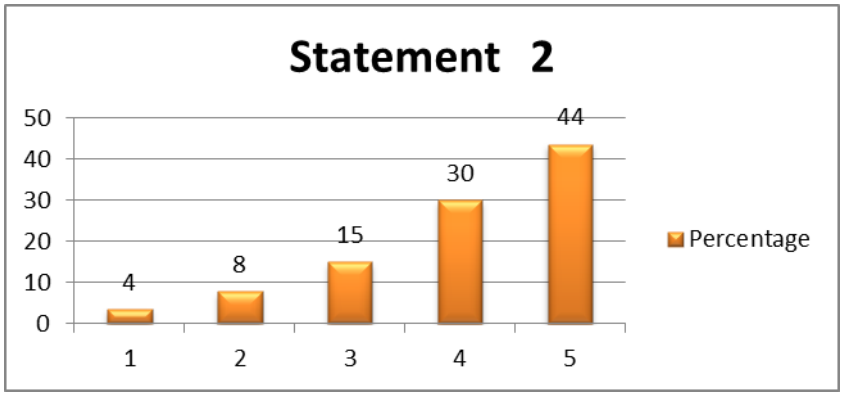


Chart 10

According to the results 74% (30% disagree and 44% strongly disagree) of English professors do not agree with the statement: *"The use of internet, live broadcasting technologies (radio, television and webcasting), recorded broadcasting technologies (podcasting) and mobile telephony in English teaching makes me feel uncomfortable."* This can be interpreted as something favorable because it means that almost 80% of the respondents feel comfortable in using information and communication technologies in English teaching. There is a 15% that do not feel attracted for any of the answer options, while there is 12% (4% and 8%) that feel uncomfortable in using internet, radio, and television, webcasting, podcasting and mobile telephony.

STATEMENT N. 3

"I am glad that internet, live broadcasting technologies (radio, television and webcasting), recorded broadcasting technologies (podcasting) and mobile telephony can be used in English teaching these days."

Table of frequency N. 3

Options	Frequency	Percentage	Mean
SD	1	3	0.03
D	1	3	0.06
N	2	6	0.17
A	13	37	1.48
SA	18	51	2.57
TOTAL	**35**	**100**	**4.31**

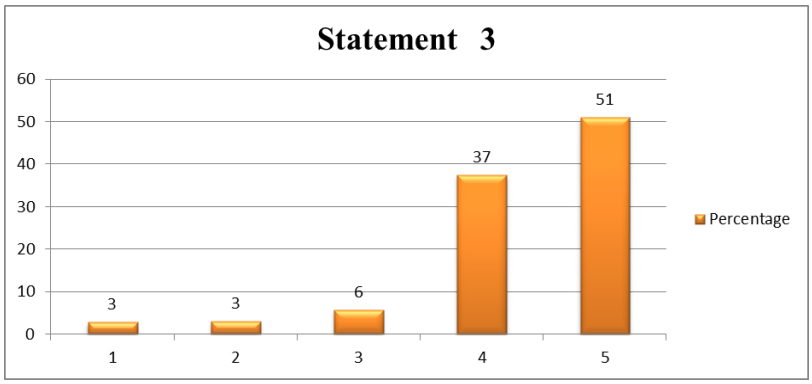


Chart 11

In this statement, related to the current use of information and communication technologies, it is observed that there is a tendency toward a favorable attitude because 88% of the English professors chose between the following answer options: agree (37%) and strongly agree (51%) which means that they agree with this statement, showing with this result that they are glad that ICT can be used these days. 6% of the respondents showed certain indecision toward this idea while only 6% (2 English professors) showed an unfavorable attitude toward the idea of using information and communication technologies these days.

STATEMENT N. 4

"The use of internet, live broadcasting technologies (radio, television and webcasting), recorded broadcasting technologies (podcasting) and mobile telephony in teaching saves time and effort."

Table of frequency N. 4

Options	Frequency	Percentage	Mean
SD	0	0	0.00
D	6	17	0.34
N	9	26	0.77
A	11	31	1.26
SA	9	26	1.28
TOTAL	**35**	**100**	**3.66**

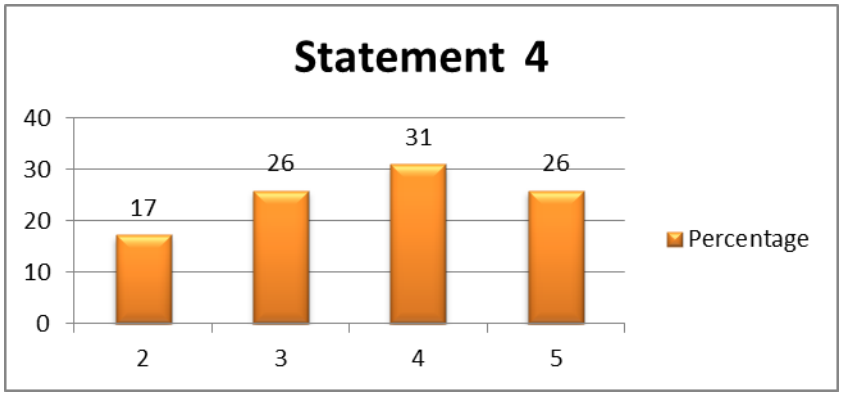


Chart 12

In relation to the idea that the use of information and communication technologies in teaching saves time and effort, 57% of the respondents showed a favorable attitude. It is reflected in the corresponding percentages because of the answer options that these people chose, which are between: strongly agree (26%) and agree (31%). Although this is a low percentage, there is a difference with the English professors that show unfavorable attitudes in relation to this statement with a percentage of 17%. Adding to this, there was not any professor who chose strongly disagree, but there were respondents (26%) who did not show favorable or unfavorable attitude in relation to this statement.

STATEMENT N. 5

"The use of internet, live broadcasting technologies (radio, television and webcasting), recorded broadcasting technologies (podcasting) and mobile telephony in English teaching would increase students' motivation."

Table of frequency N. 5

Options	Frequency	Percentage	Mean
SD	0	0	0.00
D	0	0	0.00
N	6	17	0.51
A	13	37	1.49
SA	16	46	2.29
TOTAL	**35**	**100**	**4.29**

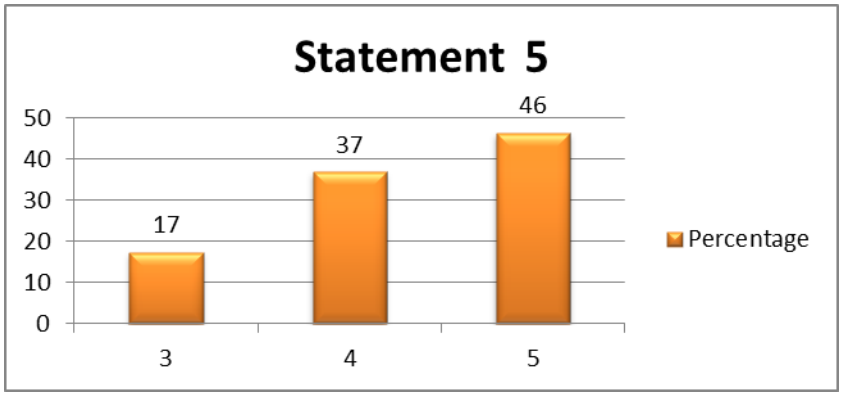


Chart 13

In relation to this statement, among the three options that were chosen by the English professors are strongly agree (46%), agree (37%) and neutral (17%). According to this, it can be said that most of the English professors (83%) reported that the use of internet, live broadcasting technologies (radio, television and webcasting), recorded broadcasting technologies (podcasting) and mobile telephony in English teaching would increase students' motivation. On the other hand, there were only six English professors (17%) that did not have any clear tendency toward a positive or negative attitude.

STATEMENT N. 6

"I do not think I would ever need to use internet, live broadcasting technologies (radio, television and webcasting), recorded broadcasting technologies (podcasting) and mobile telephony in English teaching."

Table of frequency N. 6

Options	Frequency	Percentage	Mean
SA	1	3	0.03
A	2	6	0.11
N	4	10	0.34
D	9	26	1.03
SD	19	55	2.71
TOTAL	**35**	**100**	**4.23**

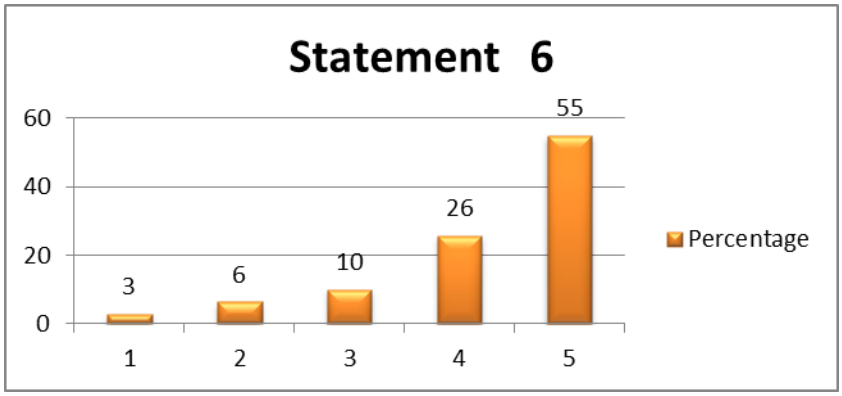


Chart 14

According to the results, 81% (55% strongly disagree and 26% disagree) of the respondents reported that they think they somehow would need to use internet, live broadcasting technologies (radio, television and webcasting), recorded broadcasting technologies (podcasting) and mobile telephony in English teaching. On the other hand, there is only a 3% of the English professors who showed a high unfavorable attitude and 6% that showed simply an unfavorable attitude toward this statement. The other respondents with a percentage of 10% did not show a specific attitude (favorable or unfavorable).

STATEMENT N. 7

"I would like to learn more about internet, live broadcasting technologies (radio, television and webcasting), recorded broadcasting technologies (podcasting) and mobile telephony for using them in English teaching."

Table of frequency N. 7

Options	Frequency	Percentage	Mean
SD	0	0	0.00
D	0	0	0.00
N	4	12	0.34
A	17	49	1.94
SA	14	39	2
TOTAL	**35**	**100**	**4.29**

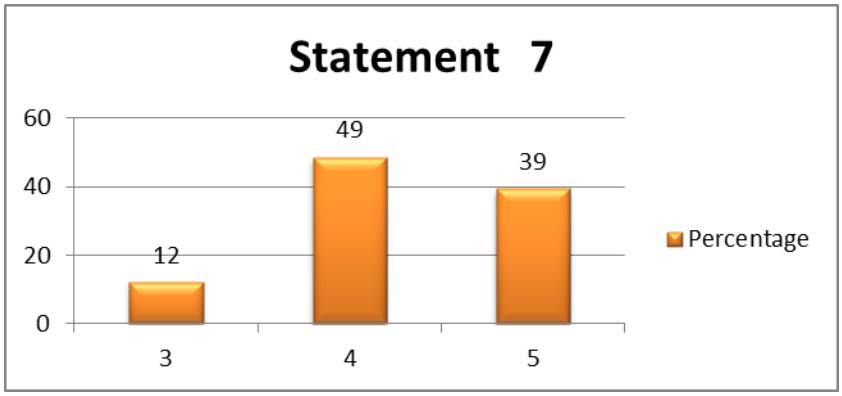


Chart 15

In relation to this statement, 39 % of the English professors strongly agreed with this statement and 49% of them simply agreed. This result indicates that a great percentage of the respondents (88%) reported that they would like to learn more about internet, live broadcasting technologies (radio, television and webcasting), recorded broadcasting technologies (podcasting) and mobile telephony for using them in English teaching. On the other hand, there are only four English professors (12%) that did not show any clear tendency toward learning about information and communication technologies for using them in English teaching.

STATEMENT N. 8

"I have no intention to use internet, live broadcasting technologies (radio, television and webcasting), recorded broadcasting technologies (podcasting) and mobile telephony in English teaching in the near future."

Table of frequency N. 8

Options	Frequency	Percentage	Mean
SA	0	0	0.00
A	0	0	0.00
N	2	6	0.17
D	10	28	1.14
SD	23	66	3.29
TOTAL	**35**	**100**	**4.60**

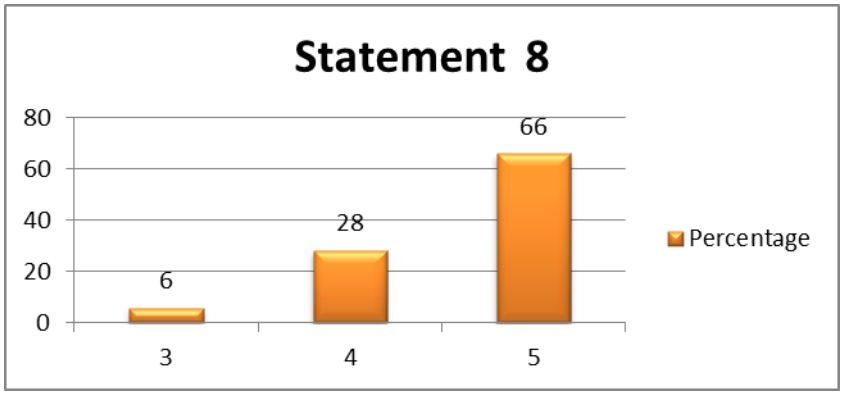


Chart 16

The results indicate that most of the English professors showed a favorable attitude toward the intention of using internet, live broadcasting technologies (radio, television and webcasting), recorded broadcasting technologies (podcasting) and mobile telephony in English teaching in the near future with a total percentage of 94% (66% strongly disagree and 28% disagree). It shows that there is a favorable tendency and a great motivation for using information and communication technologies in the near future. On the other hand, it can be observed that there are only 2 English professors (6%) that did not show a clear inclination (favorable or unfavorable) toward this statement or toward the use of information and communication technologies in English teaching in the near future.

Once analyzed each statement of the attitude scale, the next table is presented as an illustration of the distribution of mean scores on the scale of attitudes toward the use of information and communication technologies. The professors' attitudes toward the use of ICT were represented by a mean score on a 5-point scale, where 5 (Strongly Agree) represents the maximum score of the scale and 1 (Strongly Disagree) represents the minimum score.

Table N. 1 Distribution of the mean scores for each statement on the scale of professors' attitudes toward the use of information and communication technologies

STATEMENT	N	MIN	MAX	MEAN
1	35	2	5	**4.06**
2	35	1	5	**4.03**
3	35	1	5	**4.31**
4	35	2	5	**3.66**
5	35	3	5	**4.29**
6	35	1	5	**4.23**
7	35	3	5	**4.29**
8	35	2	5	**4.60**

Table elaborated according to the obtained data

According to the results showed in this table, it can be said that most of the means of the statements of the attitude scale show favorable averages. The above results imply that on a 5-point scale most of the means are about four which demonstrates that most of the English professors show a favorable attitude toward the use of information and communication technologies in the teaching of English at the Linguistics and Languages Department of Universidad Mayor de San Andres.

The lowest mean is in the statement N. 4 ***"****The use of internet, live broadcasting technologies (radio, television and webcasting), recorded broadcasting technologies (podcasting) and mobile telephony in teaching saves time and effort.****"*** The obtained mean is **3.66** although this is the lowest one; it can be observed that there is an almost favorable attitude toward the idea of this statement. This implies that English professors almost agree with the idea that the use of information and communication technologies in teaching saves time and effort.

The highest mean (**4.60**) is in the last statement (N. 8) *"I have no intention to use internet, live broadcasting technologies (radio, television and webcasting), recorded broadcasting technologies (podcasting) and mobile telephony in English teaching in the near future."* This mean represents a quite favorable attitude. With this result, it can be implied that English professors show a great disposition to use information and communication technologies in the teaching of English but in the near future.

As a next point, it is presented a second table in which the global mean of the eight statements is shown.

Table N. 2 Distribution of the global mean on the scale of professors' attitudes toward the use of information and communication technologies

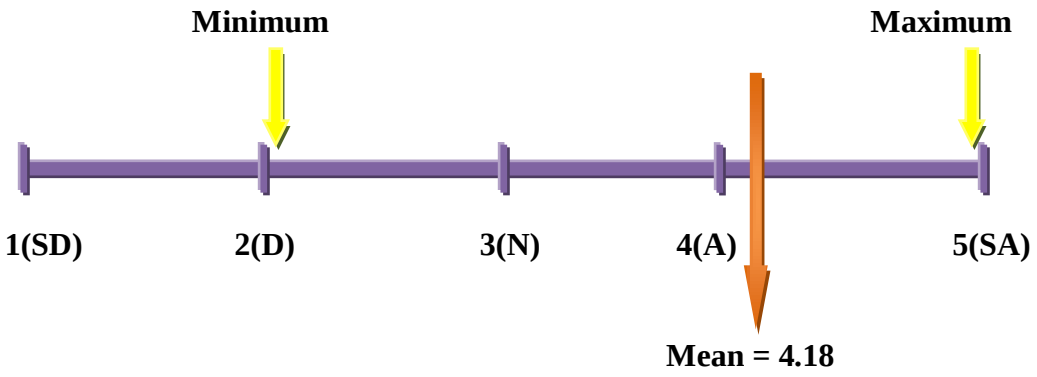
Statements	N	Min	Max	Media[39]	Standard error[40]	Confidence intervals (95%)[41]	
						Inferior	Superior
From 1 to 8	35	2	5	**4.18**	**0.06**	**4.07**	**4.29**

[39] In order to check in detail the way how the mean was calculated, see appendix 5.

[40] In order to check in detail the way how the standard error was calculated, see appendix 5.

[41] In order to check in detail the way how the confidence intervals were calculated, see appendix 5.

Considering this global result of the eight statements related to the measurement of professors' attitudes toward the use of information and communication technologies in the teaching of English at the Linguistics and Languages Department of Universidad Mayor de San Andres, the following graph is presented in order to identify where the found mean of **4.18** is specifically located on a 5-point scale. In this way, it can graphically be shown if those English professors have a favorable or unfavorable attitude toward the use of information and communication technologies.



Graph 1

According to this global finding related to the attitude study, it can be concluded that the English professors' attitudes toward the use of information and communication technologies in the teaching of English at the Linguistics and Languages Department of Universidad Mayor de San Andres is favorable, with a mean of **4.18** on a 5-point scale, where 5 (Strongly Agree) represents the maximum score in the scale and 1 (Strongly Disagree) represents the minimum score. As this mean (**4.18**), is a little more than the favorable attitude (4) that is why we say that English professors have a favorable attitude toward the use of information and communication technologies in English teaching.

4.2.1 ANALYSIS OF PROFESSORS' ATTITUDES IN RELATION TO THE THREE COMPONENTS OF ATTITUDES

It is important to remember that English professors were asked to respond 8 Likert-type statements dealing with their attitudes toward the use of information and communication technologies in English teaching. The items were designed to measure the professors' attitudes in its affective domain or component (items 1–3), cognitive domain (items 4–6), and behavioral domain (items 7–8). The following table illustrates this part and shows the results:

Table N. 3 Distribution of mean scores according to the three components of the attitudes

Statements	Components	Mean[42]	Standard error[43]	Confidence intervals (95%)[44]	
				Inferior	Superior
1 2 3	AFFECTIVE	4.13	0.17	3.80	4.47
4 5 6	COGNITIVE	4.06	0.16	3.74	4.38
7 8	BEHAVIORAL	4.44	0.11	4.23	4.65

Table elaborated according to the obtained data

According to the results of these three components or domains, it can be pointed out that in the first component (affective) English professors showed a favorable attitude with a mean of **4.13.** With this result, it can be implied that the respondents do not have any apprehension in relation to the use of information and communication technologies, feel comfortable using them, and that they were glad about the current use of information and communication technologies in English teaching.

[42] To see how to calculate the mean, see an example of how to do it in appendix 5.

[43] To see how to calculate the standard error, see an example of how to do it in appendix 5.

[44] To see how to calculate the confidence intervals, see an example of how to do it in appendix 5.

In relation to the cognitive component or domain with a found mean of **4.06**, most of the English professors think that information and communication technologies save time and effort in teaching. Those respondents agree that information and communication technologies would increase students' motivation, and that those technologies are needed in English classes.

Finally, in the behavioral domain (mean=**4.44**) most of the respondents expressed positive behavioral intentions in terms of learning more about information and communication technologies and using them in the near future in English teaching.

4.3 ANALYSIS OF PROFESSORS' SELF-PERCEPTIONS ABOUT THEIR CURRENT LEVEL OF ICT COMPETENCE AT THE LINGUISTICS AND LANGUAGES DEPARTMENT OF UNIVERSIDAD MAYOR DE SAN ANDRES

The study of the competence in information and communication technologies of English professors (section 3), was made up of 21 items developed to test this aspect in those professors. Each item had four options or categories of answering ranging from 1 (no competence) to 4 (much competence) as it can be observed in the next chart:

ANSWER OPTIONS	VALUES
Much competence	4
Moderate competence	3
Little competence	2
No competence	1

Now, relating to the analysis of this section (3), the next table illustrates the distribution of the mean scores of the 21 items of the study of English professors' competence in information and communication technologies (to check in detail all the tables of frequency of this section, see appendix 3).

Table N. 4 Distribution of the mean scores for each item related to professors' ICT competence

N	ITEM	N	MIN	MAX	MEAN
1	Create and organize computer files and folders	35	2	4	**3.46**
2	Operate a word processing program	35	1	4	**3.58**
3	Operate a presentation program	35	2	4	**3.40**
4	Operate a spreadsheet program	35	1	4	**2.83**
5	Elaborate educational material with different software	35	2	4	**3.02**
6	Install and uninstall any software	35	1	4	**2.76**
7	Select and evaluate educational software	35	1	4	**2.94**
8	Send emails	35	2	4	**3.71**
9	Chat	35	1	4	**3.34**
10	Blogs	35	1	4	**3.03**
11	Wikis	35	1	4	**2.71**
12	Social networks	35	1	4	**2.81**
13	Google drive	35	1	4	**3.00**
14	Educational platforms(e.g., Moodle)	35	1	4	**2.77**
15	Mind mapping tools	35	1	4	**2.78**
16	Quiz and puzzle construction tools	35	1	4	**2.51**
17	Build and administrate a web page	35	1	4	**2.17**
18	Podcasting	35	1	4	**2.97**
19	Use of live broadcasting technologies in English teaching	35	1	4	**2.49**
20	Use of mobile phones in English teaching	35	1	4	**2.34**
21	Video conference in English teaching	35	1	4	**2.32**

Table elaborated according to the obtained data

In this table the 21 items with their respective means are shown; the minimum and maximum answer options that were chosen in each item by the English professors. Now observing the highest and the lowest means, as it can be seen that the highest mean is in the item related to *sending emails* (mean= **3.71**). With this mean, it is deduced that English Professors have quite competence in sending emails. In the second place is the item: *operate a word processing program (e.g., MS Word)* with a mean of **3.58**. Now in relation to the lowest mean (**2.17**), it is in the item 17 (*Build and administrate a web page*). Then, follows the item related to *Video conference in English teaching* with a mean of **2.30**.

In the next table the global mean of the 21 items is presented.

Table N. 5 Distribution of global mean related to the professors' ICT competence

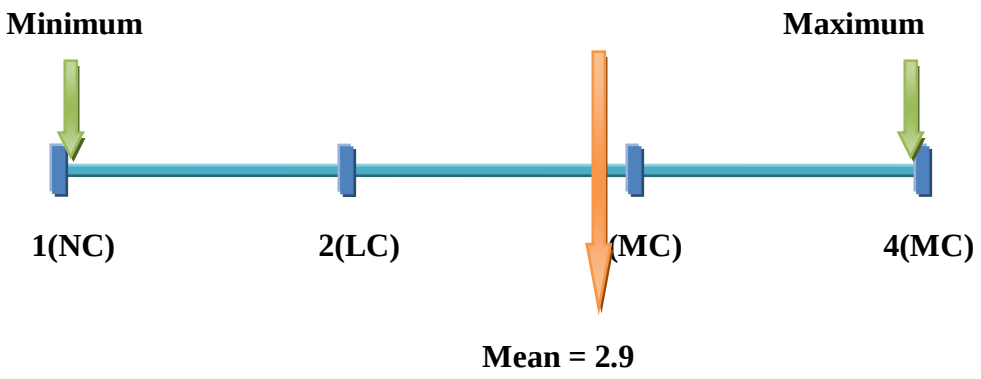
Items	N	Min	Max	Mean[45]	Standard error[46]	Confidence intervals (95%)[47]	
						Inferior	Superior
From 1 to 21	35	1	4	**2.9**	**0.07**	**2.76**	**3.04**

The global finding (**2.9)** of the 21 items related to measure the English professors' self-perceptions about their current level of competence in information and communication technologies at the Linguistics and Languages Department of Universidad Mayor de San Andres is illustrated in the following graph. The purpose of doing this is to locate on a 4-point scale the found mean of **2.9** which we will help us to see where is specifically located the English professors' competence in relation to information and communication technologies.

[45] To see how to calculate the mean, see an example of how to do it in appendix 5.

[46] To see how to calculate the standard error, see an example of how to do it in appendix 5.

[47] To see how to calculate the confidence intervals, see an example of how to do it in appendix 5.



Graph 2

According to this result, it can be pointed out that there is an almost moderate competence in information and communication technologies among the English professors' at the Linguistics and Languages Department of Universidad Mayor de San Andres.

The finding of **2.9** as a mean on a 4-point scale, where 4 (Much competence) represents the maximum score of the scale and 1 (No competence) represents the minimum score and as this mean (**2.9**) is near the point 3 (Moderate competence), that is why we say that the self-perceptions of English professors about their current level of competence in information and communication technologies is almost moderate.

4.3.1 ANALYSIS OF PROFESSORS' ICT COMPETENCE IN RELATION TO THE TYPE OF TECHNOLOGY

In order to know in what kind of technology English professors are more competent, the English professors' ICT competence at the Linguistics and Languages Department of Universidad Mayor de San Andres was analyzed according to the types of technology which were: computer uses, internet, live broadcasting technologies, recorded broadcasting technologies and mobile telephony.

For a better understanding of the results of this part, the found means according to the type of technology are shown in the next table:

Table N. 6 Distribution of mean scores of professors' ICT competence according to the type of technology

Items	Type of technology	Mean [48]	Standard error[49]	Confidence intervals (95%)[50]	
				Inferior	Superior
1 2 3 4 5 6 7	**COMPUTER USES**	**3.14**	**0.06**	**3.03**	**3.25**
8 9 10 11 12 13 14 15 16 17 21	**INTERNET**	**2.83**	**0.07**	**2.69**	**2.97**
18	**RECORDED BROADCASTING TECHNOLOGIES**	**2.97**	**0.29**	**2.4**	**3.54**
19	**LIVE BROADCASTING TECHNOLOGIES**	**2.49**	**0.29**	**1.92**	**3.06**
20	**MOBILE TELEPHONY**	**2.34**	**0.29**	**1.77**	**2.91**

Table elaborated according to the obtained data

According to these findings, it can be pointed out that English professors at the Linguistics and Languages Department of Universidad Mayor de San Andres reported to have more competence in technology related to computer uses. It is deduced based on the found mean

[48] To see how to calculate the mean, see an example of how to do it in appendix 5.

[49] To see how to calculate the standard error, see an example of how to do it in appendix 5.

[50] To see how to calculate the confidence intervals, see an example of how to do it in appendix 5.

of **3.14**, which is the highest average compared to the other 4 technologies. On average, the respondents reported that their competence in computer uses includes create and organize computers files and folders, operate Microsoft Office (MS Word, Excel, etc.), elaborate educational materials, select and evaluate educational software and the installation of any software.

In relation to internet (mean= **2.83)** English professors have an almost moderate competence, especially in sending emails, chatting, and using blogs. In relation to recorded broadcasting technologies (mean=**2.97**), English professors reported that their competence is moderate. Since podcasting is related to audio or recordings for portable media players, computers, etc., this favorable result can be linked to the fact that most of the time English teachers work with audio or recordings.

On the other hand, the competence in using live broadcasting technologies such as radio, television and webcasting is between little and moderate competence with a mean of **2.49.** Now according to the type of technologies, the lowest competence reported by English professors is in the mobile technology with an average of **2.34**, with this result those professors show that they have little competence in using mobile telephony in the English teaching at the Linguistics and Languages Department of Universidad Mayor de San Andres.

4.4 ANALYSIS OF THE FREQUENCY OF ICT USE IN THE TEACHING OF ENGLISH AT THE LINGUISTICS AND LANGUAGES DEPARTMENT OF UNIVERSIDAD MAYOR DE SAN ANDRES

This section (4) was made up of 15 items with the purpose of testing the frequency of using information and communication technologies in the teaching of English at the Linguistics and Languages Department of Universidad Mayor de San Andres.

In these 15 items, each one of them had 5 options or categories of answering ranging from 1 (never) to 5 (always) as it can be observed in the next chart:

ANSWER OPTIONS	VALUES
Always (A)	5
Almost always (AA)	4
Sometimes (S)	3
Almost never (AN)	2
Never (N)	1

In relation to the analysis of this section (4), the next table illustrates the distribution of the mean scores of the 15 items of the study of the frequency of using information and communication technologies in the teaching of English at the Linguistics and Languages Department of Universidad Mayor de San Andres. (To check in detail all the tables of frequency of this section, see appendix 4).

Table N. 7 Distribution of mean scores for each item related to the frequency of ICT use

N	ITEM	N	MIN	MAX	MEAN
1	Send emails	35	1	4	**3.89**
2	Chat	35	1	5	**3.12**
3	Blogs	35	1	5	**2.93**
4	Wikis	35	1	5	**2.40**
5	Twitter	35	1	4	**1.83**
6	Facebook	35	1	5	**2.74**
7	Google drive	35	1	5	**2.54**
8	Educational platforms	35	1	5	**2.49**
9	Mind mapping tools	35	1	5	**2.66**
10	Quiz and puzzle construction tools	35	1	5	**2.69**
11	Administrate a web page	35	1	4	**1.92**
12	Use of podcasting in English teaching	35	1	5	**3.02**
13	Use of live broadcasting in English teaching	35	1	5	**2.57**
14	Use of mobile phones in English teaching	35	1	5	**2.18**
15	Use of video conference in English teaching	35	1	4	**1.78**

Table elaborated according to the obtained data

In this table the 15 items with their respective means are shown; the minimum and maximum answer options that were chosen in each item by the English professors. Comparing the average of the items, it can be seen that the item *send emails*, has the highest mean (**3.89**), this result shows that English professors at the Linguistics and Languages Department have certain preference for using emails in the teaching of English. The item *chat* (mean= **3.12**) is in the second place of professors' preferences for using it in the teaching of English. On the other hand, related to the lowest item, it can be found the item *use of video conference in English teaching* (mean =**1.78**), this item and the use of *Twitter* (mean=**1.83**) definitely are almost never used in the teaching of English or they are not in the professors' preferences for using them in the teaching of English at the Linguistics and Languages Department of Universidad Mayor de San Andres.

The other items are analyzed in a global way in the next table in which the global mean of the 15 items is shown.

Table N. 8 Distribution of the global mean related to the frequency of use of information and communication technologies

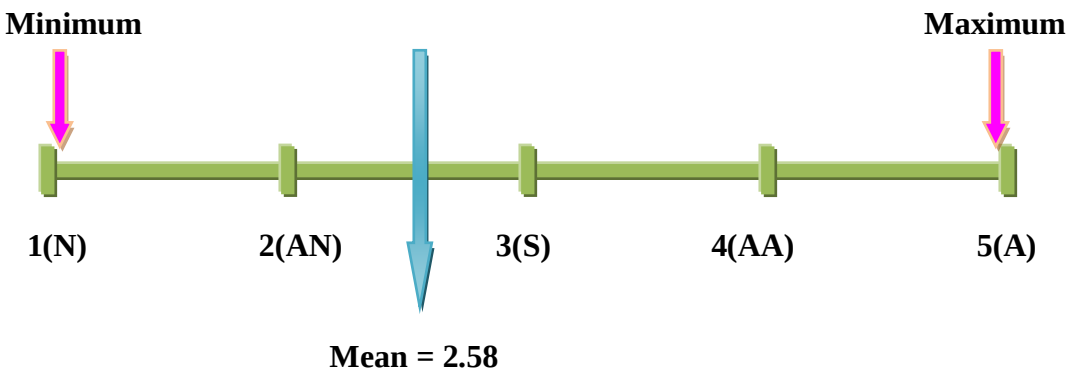
Items	N	Min	Max	Media[51]	Standard error[52]	Confidence intervals (95%)[53]	
						Inferior	Superior
From 1 to 15	35	1	4	**2.58**	**0.09**	**2.4**	**2.77**

The global finding (**2.58)** of the 15 items related to testing the frequency of using information and communication technologies in the teaching of English is illustrated in the following graph with the purpose of identifying this mean (**2.58**) on a 5-point scale and see where is specifically located the professors' ICT use.

[51] To see how to calculate the mean, see an example of how to do it in appendix 5.

[52] To see how to calculate the standard error, see an example of how to do it in appendix 5.

[53] To see how to calculate the confidence intervals, see an example of how to do it in appendix 5.



Graph 3

Analyzing this mean of **2.58** as a global finding on a 5-point scale, where 5 (Always) represents the maximum score of the scale and 1 (Never) represents the minimum score, and considering that this mean (**2.58**) is almost between the point 3 (sometimes) and the point 2 (Almost never), it can be concluded that English professors use sometimes the information and communication technologies at the Linguistics and Languages Department of Universidad Mayor de San Andres.

4.4.1 ANALYSIS OF THE FREQUENCY OF ICT USE ACCORDING TO THE TYPE OF TECHNOLOGY

In order to see professors' preferences about the type of technology that they use more frequently in the teaching of English at the Linguistics and Languages Department of Universidad Mayor de San Andres, the next table was prepared to compare those preferences according to the type of technology:

Table N. 9 Distribution of mean scores of the frequency of ICT use according to the type of technology

Items	Type of technology	Mean[54]	Standard error[55]	Confidence intervals (95%)[56]	
				Inferior	Superior
1 2 3 4 5 6 7 8 9 10 11 15	**INTERNET**	**2.58**	**0.09**	**2.4**	**2.77**
12	**RECORDED BROADCASTING TECHNOLOGIES**	**3.02**	**0.34**	**2.36**	**3.68**
13	**LIVE BROADCASTING TECHNOLOGIES**	**2.57**	**0.34**	**1.91**	**3.23**
14	**MOBILE TELEPHONY**	**2.18**	**0.34**	**1.52**	**2.84**

Table elaborated according to the obtained data

Comparing these means according to the type of the most used technology among English professors; it can be observed that the technology that English professors reported to use sometimes in the teaching of English is the *podcasting* (**3.02**). Although this mean is not too high, maybe this result could be linked to the fact that podcasting is related to audio or

[54] To see how to calculate the mean, see an example of how to do it in appendix 5.

[55] To see how to calculate the standard error, see an example of how to do it in appendix 5.

[56] To see how to calculate the confidence intervals, see an example of how to do it in appendix 5.

recordings for portable media players, computers, etc., a well-known and most used technology in the teaching of English.

In the second place is *internet* (**2.58**) and *live broadcasting technologies* (use of radio, television and webcasting) with a mean of **2.57**. According to these results, English professors reported that they do not frequently use neither *live broadcasting technologies* nor *internet* in the teaching of English. In the case of internet, English professors reported to sending emails almost always in their English classes, and that sometimes they use blogs, chat, Facebook in the teaching of English.

Finally, the technology that is the least used or it is not in the English professors' preferences is *mobile telephony* with a mean of **2.17**. With this result, it can be inferred that English professors almost never use *mobile telephony* in the teaching of English at the Linguistics and Languages Department of Universidad Mayor de San Andres.

4.5. PROFESSORS' SUGGESTIONS OR RECOMMENDATIONS IN RELATION TO THE USE OF ICT IN THE TEACHING OF ENGLISH AT THE LINGUISTICS AND LANGUAGES DEPARTMENT OF UNIVERSIDAD MAYOR DE SAN ANDRES

In order to gather English professors' suggestions or recommendations in relation to the use of information and communication technologies in the teaching of English at the Linguistics and Languages Department of Universidad Mayor de San Andres, an open question was included in the questionnaire to this aspect.

The answers to this question are illustrated in the next graph.

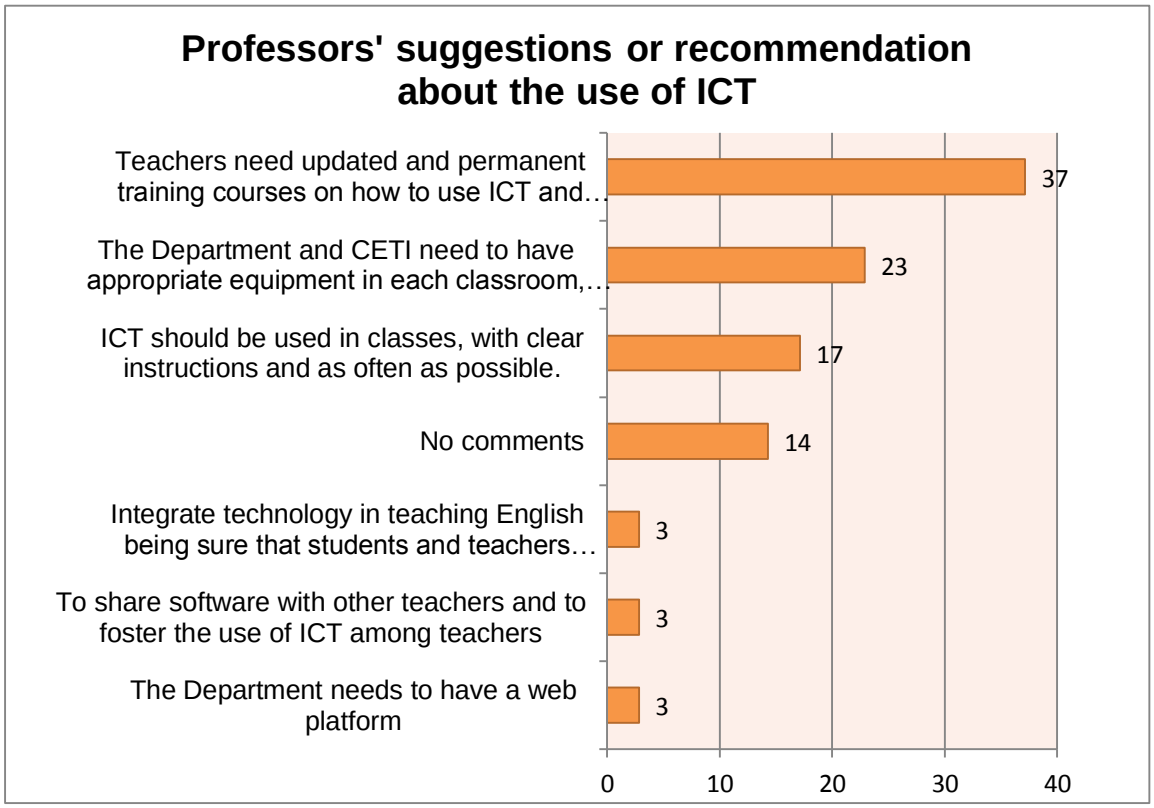


Chart 17

According to these results, 37% of the English professors at the Linguistics and Languages Department of Universidad Mayor de San Andres suggested that they need to be updated in the use of information and communication technologies; they specifically recommended having permanent training courses on how to use information and communication technologies and how to make additional material for students.

The second professors' suggestion is related to having appropriate equipment in each classroom (23%), an updated lab, and a computer lab for teachers and students. This necessity of having appropriate equipment guides to the next professors' recommendation, those who say that information and communication technologies should be used in classes with clear instructions and as often as possible (17%). 9% of professors are divided in 3 groups, those who think that the Linguistics and Languages Department needs to have a web platform (3%), share software with other teachers and foster the use of information and

communication technologies among them (3%) and finally integrate technology in the teaching of English being sure that students and teachers understand and use effectively ICT (3%). On the other hand, 14% of English professors did not suggest or recommend anything.

CHAPTER FIVE

CONCLUSIONS AND RECOMMENDATIONS

Based on the analysis and interpretation of the results, in this chapter, firstly, the respective conclusions are presented. Secondly, the recommendations are outlined based on the findings which were described in the previous chapter.

5.1 CONCLUSIONS

The conclusions of the current research were developed according to general and specific objectives of the research. Finally, there are also conclusions in relation to the proposed hypothesis in the first chapter.

Conclusion according to the general objective

- *To identify the professors' attitudes toward the use of information and communication technologies, professors' self-perceptions about their current level of ICT competence and the frequency of ICT use in the teaching of English at the Linguistics and Languages Department of Universidad Mayor de San Andres.*

According to the obtained result, it is concluded that there is a favorable attitude toward the use of information and communication technologies in the teaching of English among English professors who teach at the Linguistics and Languages Department and Centro de Enseñanza y Traducción de Inglés (CETI) of Universidad Mayor de San Andres. This final result implies that English professors think, feel, and have disposition to learn and use ICT in their English classes. They also accept and give the right importance to the information and communication technologies in the teaching of English which can benefit them and their students.

On the other hand, in relation to the professors' self-perceptions about their current level of ICT competence, it is concluded that English professors at the Linguistics and Languages Department and Centro de Enseñanza y Traducción de Inglés (CETI) of Universidad Mayor de San Andres perceive their current level of competence in information and communication technologies as moderate. This final result helps to understand that

although English professors have an acceptable competence in ICT, that professors' knowledge in those technological tools has to be improved with more and regular training, specifically for using information and communication technologies in their English classes. This, because technology changes in a short period of time and professors need to be updated regularly and most important because professors need to better take advantage and empower their classes with those technological tools.

Finally, in relation to the frequency of use of information and communication technologies in the teaching of English, it is concluded that English professors at the Linguistics and Languages Department and Centro de Enseñanza y Traducción de Inglés (CETI) of Universidad Mayor de San Andres sometimes use the information and communication technologies which means that as those English professors do not use those technological tools in a regular way in their English classes, they are not completely taking advantage of the benefits and facilities that information and communication technologies offer to educators and students.

Conclusions according to the specific objectives

- *To characterize demographically English professors of the Linguistics and Languages Department of Universidad Mayor de San Andres.*

In relation to the demographic data, it is concluded that although most of the population belongs to female gender, the difference with the male gender is not great; therefore, it is stated that in the current study, the points of view of both genders were considered in an equal way. On the other hand, it is very important to mention that the experience in English teaching that most professors have is valuable for the Department and Centro de Enseñanza y Traducción de Inglés (CETI). In relation to the professors' ages, the final result helped us to conclude that most of the population of the Linguistics and Languages Department of Universidad Mayor de San Andres are "digital immigrants" which means that those professors had to adapt to using technology in their adult age, or had to pass through a process of technological adaptation for using this kind of tools.

- *To describe English professors' attitudes toward the use of information and communication technologies in the teaching of English according to the three components of attitudes: affective, cognitive and behavioral.*

Well, in relation to the analysis of the three components, the results allowed determining that English professors have a little bit more favorable attitude toward the use of information and communication technologies in the behavioral component than in the affective and cognitive component; Although there is not a great difference among the results, all of them show that English professors at the Linguistics and Languages Department and Centro de Enseñanza y Traducción de Inglés (CETI) of Universidad Mayor de San Andres do not have any apprehension of the use of ICT, they are also glad about the current use of ICT in the teaching of English. Moreover, they have a favorable disposition towards learning more about these technological tools and using them in the future because they consider information and communication technologies as helpful and necessary tools that save time and effort, and increase students' motivation in the teaching of English.

- *To survey the English professors' self-perceptions about their current level of ICT competence according to the type of technology: computer uses, internet, live broadcasting technologies, recorded broadcasting technologies and mobile telephony.*

According to the final results, it is concluded that English professors at the Linguistics and Languages Department and Centro de Enseñanza y Traducción de Inglés (CETI) of Universidad Mayor de San Andres have more competence in handling most of the computer functions. Although the obtained result for computer uses is the highest obtained result among the other four technologies, it simply signifies that English professors have a moderate competence in the computer use. In the case of recorded broadcasting technologies and internet, the results show that English professors have an almost moderate competence in using those technologies. Finally, the technologies in which English professors have less competence are shared by the last two technologies such as live broadcasting technologies and mobile telephony. To sum up, English professors at the Linguistics and Languages Department and Centro de Enseñanza y Traducción de Inglés

(CETI) of Universidad Mayor de San Andres have a little competence in live broadcasting technologies and mobile telephony and more competence in the computer functions than recorded broadcasting technologies and internet.

- *To survey the frequency of ICT use in the teaching of English according to the type of technology: internet, live broadcasting technologies, recorded broadcasting technologies and mobile telephony.*

As we wanted to know which technologies are the most common or the most used by professors in the teaching of English at the Linguistics and Languages Department and Centro de Enseñanza y Traducción de Inglés (CETI) of Universidad Mayor de San Andres, it is establish that English professors prefer to use the recorded broadcasting technologies, specifically podcasting. Although this technology obtained the highest result, it simply indicates that those professors use sometimes podcasting in the teaching of English. The second most used technologies are live broadcasting technologies and internet. Although these technologies are in the second place of the professors' preferences, it is important to mention that they are used with less frequency in the teaching of English by those professors. Finally, the least used technology is the mobile telephony; its obtained result indicates that this kind of technology is almost never used by English professors. To sum up, it is concluded that at the Linguistics and Languages Department and Centro de Enseñanza y Traducción de Inglés (CETI) of Universidad Mayor de San Andres, English professors prefer to use podcasting than live broadcasting technologies and internet. On the other hand, mobile telephony is not in the professors' preference for using it in the teaching of English because it is the least used technology in the teaching of English.

- *To gather professors' suggestions or recommendations in relation to the use of ICT in the teaching of English at Linguistics and Languages Department of Universidad Mayor de San Andres.*

Based on the final results it is concluded that most professors of the Linguistics and Languages Department and Centro de Enseñanza y Traducción de Inglés (CETI) recommended to be updated on the use of information and communication technologies and suggested having permanent training courses on how to use ICT and make additional

material for students which have to be shared among professors, generating in this way a collaborative work. Besides that, they see that there is a necessity of having appropriate equipment in each classroom, an updated laboratory, and a computer laboratory for teachers and students. This necessity of having appropriate equipment guides to the next professors' recommendation who say that ICT should be used in classes with clear instructions and as often as possible and that its use has to be fostered among them.

Conclusions according to the hypothesis

The question that guided the current research was:

What are the professors' attitudes, current level of ICT competence and frequency of use of information and communication technologies in the teaching of English at the Linguistics and Languages Department of Universidad Mayor de San Andres?

The hypothesis we suggested for the question was:

There is a favorable attitude toward the use of information and communication technologies; the English professors' self-perception about their current level of ICT competence is that it is moderate and the information and communication technologies are sometimes used by those English professors in the teaching of English at the Linguistics and Languages Department of Universidad Mayor de San Andres.

Based on the result, it can be concluded that English professors have a favorable attitude toward the use of information and communication technologies in the teaching of English at the Linguistic and Languages Department of Universidad Mayor de San Andres and Centro de Enseñanza y Traducción de Inglés (CETI).

On the other hand, in relation to professors' self-perception about their current level of ICT competence, it can be concluded that English professors perceive their competence in information and communication technologies as moderate.

Finally, in relation to the frequency of using information and communication technologies in the teaching of English it can be said that the information and communication technologies are sometimes used by English professors in the teaching of English at the

Linguistics and Languages Department of Universidad Mayor de San Andres and Centro de Enseñanza y Traducción de Inglés (CETI).

To sum up, it can be pointed out that the proposed hypothesis of this research: *there is a favorable attitude toward the use of information and communication technologies; the English professors' self-perception about their current level of ICT competence is that it is moderate and the information and communication technologies are sometimes used by those English professors in the teaching of English at the Linguistics and Languages Department of Universidad Mayor de San Andres* is confirmed by the obtained results.

5.2 RECOMMENDATIONS

The analysis of the research results about the professors' attitudes toward the use of information and communication technologies in the teaching of English at the Linguistics and Languages Department and Centro de Enseñanza y Traducción de Inglés (CETI) of Universidad Mayor de San Andres allows us to realize that although there is a favorable attitude toward the use of ICT in the teaching of English among English professors, its use has to be continuously fostered by the institution which means that English professors need to be motivated to participate in projects related to the use of information and communication technologies in the teaching of English. Moreover, it could be a good idea to know in detail the professors' necessities, opinions and other aspects related to the use of information and communication technologies in the teaching of English.

On the other hand, the results of the study showed that there is a moderate ICT competence among English professors at the Linguistics and Languages Department and Centro de Enseñanza y Traducción de Inglés (CETI) of Universidad Mayor de San Andres. This finding suggests that there has to be a planning and organization of updated courses about information and communication technologies. Moreover, taking into account the aspect that more professors are *digital immigrants* and considering that new technologies appears almost every day, these training courses have to be developed periodically. It is also recommended that this training has to be focused specifically on the use of ICT in the teaching of English and taking into account its use in higher education. For training courses related to improve or update the professors' competence in the use of ICT, it can be taken

into account UNESCO ICT Competence Framework for Teachers which was mentioned in pages 38 and 39 of this research.

In relation to the low use of information and communication technologies in the teaching of English at the Linguistics and Languages Department and Centro de Enseñanza y Traducción de Inglés (CETI) of Universidad Mayor de San Andres, it can be taken into account professors' suggestions: to provide with appropriate equipment to each classroom, an updated laboratory, and a computer laboratory for teachers and students. It could also be interesting to develop policies to support and foster the use of information and communication technologies in the teaching of English among professors.

Another aspect that has to be considered is that there is a necessity of having a subject for students related specifically to the use of information and communication technologies for teaching and learning English because having only workshops related to this topic, it is not enough. It could be interesting to have this kind of subjects more than one semester because students need to learn not only to use ICT, but to create their own technological tools. With this possibility of having a specific subject related to information and communication technologies in the Department, arises the necessity of having a well-equipped computer laboratory for students where they can learn how to use and create appropriately and effectively technological tools for the teaching and learning of English which can help students to have updated knowledge consequently they would be ready to face with changes that involves the use of technology in education. Moreover, it can help to broaden their work fields.

On the other hand, it is recommendable to implement a web platform as a way to support professors' work and help students in their process of learning. Moreover, by doing this professors and students may develop or improve their technology literacy. This can be also considered as a step to introduce little by little the use of information and communication technologies in the teaching of English at the Linguistics and Languages Department and Centro de Enseñanza y Traducción de Inglés (CETI) of Universidad Mayor de San Andres.

Finally, for further research it could be interesting to replicate this research in other areas of the Linguistics and Languages Department such as French, native languages (Aymara o

Quechua) or in other educational institutions, this in order to expand the results, conclusions and design strategies for appropriate and effective use of information and communication technologies in education. Another suggestion is to carry out researches about the use of information and communication technologies focused on specific skills such as speaking, reading, etc., or on the other hand, to research about the use of specific technological tools in the teaching of English.

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APPENDICES

Appendix 1

PROFESSORS' QUESTIONNAIRE

SECTION (1) Instructions: Please answer the following questions by drawing an "X" in the appropriate box.

GENDER: MALE ☐ FEMALE ☐

AGE: 25-29 ☐ 30-39 ☐ 40-49 ☐ 50-59 ☐ 60 and over ☐

YEARS OF EXPERIENCE IN ENGLISH TEACHING: 1-5 ☐ 6-10 ☐ 1-15 ☐ 6-20 ☐ over ☐

SECTION (2) Instructions: Please indicate your level of agreement or disagreement with the following statements by drawing an "X" in the appropriate box. MAKE SURE TO RESPOND TO EVERY STATEMENT.

			Strongly Disagree	Disagree	Neutral	Agree	Strongly agree
1. The use of …	Internet	in English teaching does not scare me at all.					
	Live broadcasting technologies(radio, television and webcasting)						
	Recorded broadcasting technologies: podcasting (audio or video recordings for portable media players, computers, etc.)						
	Mobile telephony						
2. The use of …	Internet	in English teaching makes me feel uncomfor table.					
	Live broadcasting technologies(radio, television and webcasting)						
	Recorded broadcasting technologies: podcasting (audio or video recordings for portable media players, computers, etc.)						
	Mobile telephony						
3. I am glad that …	Internet	can be used in English teaching these days.					
	Live broadcasting technologies(radio, television and webcasting)						
	Recorded broadcasting technologies: podcasting (audio or video recordings for portable media players, computers, etc.)						
	Mobile telephony						
4. The use of …	Internet	in teaching saves time and effort.					
	Live broadcasting technologies(radio, television and webcasting)						
	Recorded broadcasting technologies: podcasting (audio or video recordings for portable media players, computers, etc.)						
	Mobile telephony						
5. The use of …	Internet	in English teaching would increase students' motivation.					
	Live broadcasting technologies(radio, television and webcasting)						
	Recorded broadcasting technologies: podcasting (audio or video recordings for portable media players, computers, etc.)						
	Mobile telephony						

			Strongly Disagree	Disagree	Neutral	Agree	Strongly agree
6. I do not think I would ever need to use …	Internet	in English teaching.					
	Live broadcasting technologies(radio, television and webcasting)						
	Recorded broadcasting technologies: podcasting (audio or video recordings for portable media players, computers, etc.)						
	Mobile telephony						
7. I would like to learn more about ...	Internet	for using it/them in English teaching.					
	Live broadcasting technologies(radio, television and webcasting)						
	Recorded broadcasting technologies: podcasting (audio or video recordings for portable media players, computers, etc.)						
	Mobile telephony						
8. I have no intention to use…	Internet	in English teaching in the near future.					
	Live broadcasting technologies(radio, television and webcasting)						
	Recorded broadcasting technologies: podcasting (audio or video recordings for portable media players, computers, etc.)						
	Mobile telephony						

SECTION (3) Instructions: Please indicate your current competence level in the following aspects:

	No competence	Little competence	Moderate competence	Much competence
Create and organize computer files and folders				
Operate a word processing program (e.g., MS Word)				
Operate a presentation program (e.g., MS Power Point)				
Operate a spreadsheet program (e.g., MS Excel)				
Elaborate educational material with different software				
Install and uninstall any software				
Select and evaluate educational software				
Send emails				
Chat				
Blogs				
Wikis				
Social networks				
Google drive				
Educational platforms(e.g., Moodle)				
Mind mapping tools				

	No competence	Little competence	Moderate competence	Much competence
Quiz and puzzle construction tools (e.g. Hot potatoes)				
Build and administrate a web page				
Podcasting (use of audio or video recordings for portable media players, computers, etc.) in English teaching				
Use of live broadcasting technologies in English teaching				
Use of mobile phones in English teaching				
Video conference in English teaching				

SECTION (4) Instructions: Please indicate how often you use the following tools in teaching English.

	Always	Almost always	Sometimes	Almost never	Never
Send emails					
Chat					
Blogs					
Wikis					
Twitter					
Facebook					
Google drive					
Educational platforms(e.g., Moodle)					
Mind mapping tools					
Quiz and puzzle construction tools (e.g. Hot potatoes)					
Administrate a web page					
Podcasting (use of audio or video recordings for portable media players, computers, etc.) in English teaching					
Use of live broadcasting in English teaching					
Use of mobile phones in English teaching					
Video conference in English teaching					

Write any further suggestion or recommendations about the use of information and communication technologies in English teaching at Linguistics and Languages Department at UMSA.

_____

_____

_____

_____

Thank you a lot for your collaboration

Instrument adapted from the questionnaire that Abdulkafi Albirini (2006) used in his research *Teachers' attitudes toward information and communication technologies.*

Appendix 2: TABLES OF FREQUENCY RELATED TO THE DEMOGRAPHIC DATA

Table of frequency N. 1: professors' gender

Gender	Frequency	Percentage
Male	16	46%
Female	19	54%
Total	**35**	**100**

Table of frequency N. 2: professors' ages

Ages	Frequency	Percentage
25-29	3	9%
30-39	8	23%
40-49	16	46%
50-59	7	20%
60 and over	1	3%
Total	**35**	**100**

Table of frequency N. 3: years of English teaching experience

Years of experience	Frequency	Percentage
6-10	6	17%
11-15	13	37%
16-20	7	20%
over	9	26%
Total	**35**	**100**

Appendix 3: TABLES OF FREQUENCY RELATED TO THE DATA OF PROFESSOR' COMPETENCE IN ICT

Table of frequency N. 1: CREATE AND ORGANIZE COMPUTER FILES AND FOLDERS

Options	Frequency	Percentage	Mean
Little Competence	2	6	0.11
Moderate Competence	15	43	1.29
Much Competence	18	51	2.06
Total	**35**	**100**	**3.46**

Table of frequency N. 2: OPERATE A WORD PROCESSING PROGRAM

Options	Frequency	Percentage	Mean
No competence	1	3	0.03
Little Competence	1	3	0.06
Moderate Competence	10	29	0.86
Much Competence	23	66	2.63
Total	**35**	**100**	**3.58**

Table of frequency N. 3: OPERATE A PRESENTATION PROGRAM

Options	Frequency	Percentage	Mean
Little Competence	2	6	0.11
Moderate Competence	17	49	1.46
Much Competence	16	46	1.83
Total	**35**	**100**	**3.40**

Table of frequency N. 4: OPERATE A SPREADSHEET PROGRAM

Options	Frequency	Percentage	Mean
No competence	1	3	0.03
Little Competence	12	34	0.69
Moderate Competence	14	40	1.2
Much Competence	8	23	0.91
Total	**35**	**100**	**2.83**

Table of frequency N. 5: ELABORATE EDUCATIONAL MATERIALS

Options	Frequency	Percentage	Mean
Little Competence	7	20	0.4
Moderate Competence	20	57	1.71
Much Competence	8	23	0.91
Total	**35**	**100**	**3.02**

Table of frequency N. 6: INSTALL/UNINSTALL ANY SOFTWARE

Options	Frequency	Percentage	Mean
No competence	5	14	0.14
Little Competence	6	17	0.34
Moderate Competence	16	46	1.37
Much Competence	8	23	0.91
Total	**35**	**100**	**2.76**

Table of frequency N. 7: SELECT/EVALUATE EDUCATIONAL SOFTWARE

Options	Frequency	Percentage	Mean
No competence	1	3	0.03
Little Competence	9	26	0.51
Moderate Competence	16	46	1.37
Much Competence	9	26	1.03
Total	**35**	**100**	**2.94**

Table of frequency N. 8: SEND EMAILS

Options	Frequency	Percentage	Mean
Little Competence	1	3	0.06
Moderate Competence	8	23	0.68
Much Competence	26	74	2.97
Total	**35**	**100**	**3.71**

Table of frequency N. 9: CHAT

Options	Frequency	Percentage	Mean
No competence	2	6	0.06
Little Competence	6	17	0.34
Moderate Competence	5	14	0.43
Much Competence	22	63	2.51
Total	**35**	**100**	**3.34**

Table of frequency N. 10: BLOGS

Options	Frequency	Percentage	Mean
No competence	3	9	0.09
Little Competence	6	17	0.34
Moderate Competence	13	37	1.11
Much Competence	13	37	1.49
Total	**35**	**100**	**3.03**

Table of frequency N. 11: WIKIS

Options	Frequency	Percentage	Mean
No competence	5	14	0.14
Little Competence	10	29	0.57
Moderate Competence	10	29	0.86
Much Competence	10	29	1.14
Total	**35**	**100**	**2.71**

Table of frequency N. 12: SOCIAL NETWORKS

Options	Frequency	Percentage	Mean
No competence	3	9	0.09
Little Competence	12	34	0.69
Moderate Competence	9	26	0.77
Much Competence	11	31	1.26
Total	**35**	**100**	**2.81**

Table of frequency N. 13: GOOGLE DRIVE

Options	Frequency	Percentage	Mean
No competence	3	9	0.09
Little Competence	6	17	0.34
Moderate Competence	14	40	1.2
Much Competence	12	34	1.37
Total	**35**	**100**	**3.00**

Table of frequency N. 14: EDUCATIONAL PLATFORMS

Options	Frequency	Percentage	Mean
No competence	3	9	0.09
Little Competence	10	29	0.57
Moderate Competence	14	40	1.2
Much Competence	8	23	0.91
Total	**35**	**100**	**2.77**

Table of frequency N. 15: MIND MAPPING TOOLS

Options	Frequency	Percentage	Mean
No competence	2	6	0.06
Little Competence	11	31	0.63
Moderate Competence	15	43	1.29
Much Competence	7	20	0.8
Total	**35**	**100**	**2.78**

Table of frequency N. 16: QUIZ/PUZZLE CONSTRUCTION TOOLS

Options	Frequency	Percentage	Mean
No competence	7	20	0.2
Little Competence	9	26	0.51
Moderate Competence	13	37	1.11
Much Competence	6	17	0.69
Total	**35**	**100**	**2.51**

Table of frequency N. 17: BUILD/ADMINISTRATE A WEB PAGE

Options	Frequency	Percentage	Mean
No competence	11	31	0.31
Little Competence	11	31	0.63
Moderate Competence	9	26	0.77
Much Competence	4	11	0.46
Total	**35**	**100**	**2.17**

Table of frequency N. 18: PODCASTING

Options	Frequency	Percentage	Mean
No competence	4	11	0.11
Little Competence	6	17	0.34
Moderate Competence	12	34	1.03
Much Competence	13	37	1.49
Total	**35**	**100**	**2.97**

Table of frequency N. 19: LIVE BROADCASTING TECHNOLOGIES

Options	Frequency	Percentage	Mean
No competence	5	14	0.14
Little Competence	14	40	0.8
Moderate Competence	10	29	0.86
Much Competence	6	17	0.69
Total	**35**	**100**	**2.49**

Table of frequency N. 20: MOBILE PHONES

Options	Frequency	Percentage	Mean
No competence	9	26	0.26
Little Competence	10	29	0.57
Moderate Competence	11	31	0.94
Much Competence	5	14	0.57
Total	**35**	**100**	**2.34**

Table of frequency N. 21: VIDEO CONFERENCE

Options	Frequency	Percentage	Mean
No competence	13	37	0.37
Little Competence	5	14	0.29
Moderate Competence	10	29	0.86
Much Competence	7	20	0.8
Total	**35**	**100**	**2.32**

Appendix 4: TABLES OF FREQUENCY RELATED TO THE DATA OF FREQUENCY OF ICT USE

Table of frequency N. 1: SEND EMAILS

Options	Frequency	Percentage	Mean
Never	3	9	0.09
Sometimes	9	26	0.77
Almost always	9	26	1.03
Always	14	40	2
Total	**35**	**100**	**3.89**

Table of frequency N. 2: CHAT

Options	Frequency	Percentage	Mean
Never	5	14	0.14
Almost never	4	11	0.23
Sometimes	14	40	1.2
Almost always	6	17	0.69
Always	6	17	0.86
Total	**35**	**100**	**3.12**

Table of frequency N. 3: BLOGS

Options	Frequency	Percentage	Mean
Never	5	14	0.14
Almost never	7	20	0.4
Sometimes	13	37	1.11
Almost always	5	14	0.57
Always	5	14	0.71
Total	**35**	**100**	**2.93**

Table of frequency N. 4: WIKIS

Options	Frequency	Percentage	Mean
Never	9	26	0.26
Almost never	10	29	0.57
Sometimes	11	31	0.94
Almost always	3	9	0.34
Always	2	6	0.29
Total	**35**	**100**	**2.40**

Table of frequency N. 5: TWITTER

Options	Frequency	Percentage	Mean
Never	17	49	0.49
Almost never	8	23	0.46
Sometimes	9	26	0.77
Almost always	1	3	0.11
Total	**35**	**100**	**1.83**

Table of frequency N. 6: FACEBOOK

Options	Frequency	Percentage	Mean
Never	9	26	0.26
Almost never	8	23	0.46
Sometimes	9	26	0.77
Almost always	1	3	0.11
Always	8	23	1.14
Total	**35**	**100**	**2.74**

Table of frequency N. 7: GOOGLE DRIVE

Options	Frequency	Percentage	Mean
Never	12	34	0.34
Almost never	5	14	0.29
Sometimes	10	29	0.86
Almost always	3	9	0.34
Always	5	14	0.71
Total	**35**	**100**	**2.54**

Table of frequency N. 8: EDUCATIONAL PLATFORMS

Options	Frequency	Percentage	Mean
Never	9	26	0.26
Almost never	6	17	0.34
Sometimes	16	46	1.37
Almost always	2	6	0.23
Always	2	6	0.29
Total	**35**	**100**	**2.49**

Table of frequency N. 9: MIND MAPPING TOOLS

Options	Frequency	Percentage	Mean
Never	7	20	0.2
Almost never	7	20	0.4
Sometimes	15	43	1.29
Almost always	3	9	0.34
Always	3	9	0.43
Total	**35**	**100**	**2.66**

Table of frequency N. 10: QUIZ AND PUZZLE CONSTRUCTION TOOLS

Options	Frequency	Percentage	Mean
Never	8	23	0.23
Almost never	7	20	0.4
Sometimes	10	29	0.86
Almost always	8	23	0.91
Always	2	6	0.29
Total	**35**	**100**	**2.69**

Table of frequency N. 11: ADMINISTRATE A WEB PAGE

Options	Frequency	Percentage	Mean
Never	19	54	0.54
Almost never	4	11	0.23
Sometimes	8	23	0.69
Almost always	4	11	0.46
Total	**35**	**100**	**1.92**

Table of frequency N. 12: THE USE OF PODCASTING

Options	Frequency	Percentage	Mean
Never	4	11	0.11
Almost never	8	23	0.46
Sometimes	11	31	0.94
Almost always	7	20	0.8
Always	5	14	0.71
Total	**35**	**100**	**3.02**

Table of frequency N. 13: USE OF LIVE BROADCASTING TECHNOLOGIES

Options	Frequency	Percentage	Mean
Never	9	26	0.26
Almost never	7	20	0.4
Sometimes	10	29	0.86
Almost always	8	23	0.91
Always	1	3	0.14
Total	**35**	**100**	**2.57**

Table of frequency N. 14: USE OF MOBILE PHONES

Options	Frequency	Percentage	Mean
Never	15	43	0.43
Almost never	5	14	0.29
Sometimes	11	31	0.94
Almost always	2	6	0.23
Always	2	6	0.29
Total	**35**	**100**	**2.18**

Table of frequency N. 15: USE OF VIDEO CONFERENCE

Options	Frequency	Percentage	Mean
Never	20	57	0.57
Almost never	5	14	0.29
Sometimes	8	23	0.69
Almost always	2	6	0.23
Total	**35**	**100**	**1.78**

<u>Appendix 5</u>: CALCULATION OF THE MEAN, STANDARD ERROR AND CONFIDENCE INTERVALS RELATED TO THE DATA OF PROFESSORS'ATTITUDES TOWARD ICT

In relation to the mean, it was obtained according to the following way:

$$\bar{X} = \frac{\sum_{i=1}^{n} x_i}{n} = \frac{33.47}{35} = 4.18$$

Once having the respective mean of 4.18, in the next example we will show how to calculate the standard error and the confidence intervals. However, before doing that, it is necessary to calculate the variance or S^2 and the standard deviation (S) because the data of those measures will be needed in order to calculate the standard error and the confidence intervals. In this sense, we have the following:

$$S^2 = \frac{\sum_{i=}^{n} x_i^2 - n\bar{x}^2}{n-1} = \frac{140{,}56 - 8 * 4{,}18^2}{8-1} = 0{,}11$$

$$S = \sqrt{S^2} = \sqrt{0.11} = 0{,}33$$

Then, it has to be mentioned that as the population is subject to inference, it is necessary to measure the precision of the data. In this respect, the estimation will be done through the confidence intervals with a level of confidence of 95% as it is shown in the following formula to calculate this aspect:

$$\bar{X} - Z_{1-\frac{\alpha}{2}} \frac{S}{\sqrt{n}} < \mu < \bar{X} + Z_{1-\frac{\alpha}{2}} \frac{S}{\sqrt{n}}$$

Replacing the values and considering that $Z_{0,975} = 1.96$, we have the following calculation:

$$4.18 - 1.96\frac{0,33}{\sqrt{35}} < \mu < 4.18 + 1.96\frac{0.33}{\sqrt{35}}$$

$$4.07 < \mu < 4.29$$

Finally, in the case of the standard error it is as follows:

$$\varepsilon_a = \frac{S}{\sqrt{n}} = \frac{0,33}{\sqrt{35}} = 0.06$$

As this standard error of 0.06 is something minimum, it is concluded that the mean of 4.18 is accurate and summarizes in a right way all the collected data.