UNIVERSIDAD MAYOR DE SAN ANDRÉS

FACULTAD DE HUMANIDADES Y CIENCIAS DE LA EDUCACIÓN

CARRERA DE LINGÜÍSTICA E IDIOMAS

"A PROPOSAL OF TECHNICAL ENGLISH FOR THE FIELD OF TELECOMMUNICATIONS AT THE TELECOMMUNICATIONS AND ELECTRONICS DEPARTMENT OF THE FACULTAD TECNOLÓGICA DE LA UNIVERSIDAD MAYOR DE SAN ANDRÉS IN LA PAZ"

Trabajo Dirigido para obtener el Título de Licenciatura

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INDEX

CHAPTER THREE THEORETICAL FRAMEWORK

CHAPTER IV PROPOSAL DEVELOPMENT

CHAPTER VI CONCLUSIONS AND RECOMMENDATIONS

INDEX OF FIGURES

INDEX OF CHARTS

INDEX OF GRAPHICS

INDEX OF TABLES

ABSTRACT

This Project is related to the design of an ESP course concerning specialized English teaching for the Telecommunications Department at the Facultad Tecnológica at the Universidad Mayor de San Andres in La Paz, Bolivia. It addressed key notions about ESP and in particular EST. This Guided Work started off with a questionnaire applied to the students which determines the necessity of training the students in the use of the following linguistics skills: reading comprehension of technical texts, specialized vocabulary, translation techniques, and grammar related to the Telecommunications field. This led them to reach an intermediate English level of reading comprehension and an effective translation of articles, books and manuals related to the field. The content is divided into six chapters which describe all the process of the course design.

The students' English level was diverse from beginners to intermediate, and their knowledge on the subject matter. A topical/based-content syllabus was designed based on the students' needs analysis which takes into account the skills needed to accomplish the course specific objectives. Genre-based instruction with an Input-based approach was the methodology used, which is an exposition to a special kind of language that belongs to a genre called EST for Telecommunications. The priorities in studying the target language are reading and translating. Only the grammar and vocabulary necessary for reading comprehension was taught. The skills employed by the students were the reading techniques such as skimming and scanning and some of the vocabulary learning strategies such as guessing meaning in context, identifying loans and cognates. A grammar guide with examples and exercises was developed for the students as a guided practice which contained grammar examples. As for the types of translations techniques used in this course were the literal, omission, amplification, and modulation.

The course went on for one academic semester and the meetings were three times a week with each class lasting three hours. The evaluation and results described an improvement on the four skills. The class was assessed at the beginning of the course with students taking a pre-test for measuring their language skills stated in the objectives. Then two mid-term tests followed in order to measure the student's progress. Comparing the pre-test with the three tests in progress, in the pre-test the students scored 56.375% and in the progress-test, they scored 68% which shows a great improvement in their technical English competence attaining in this way the planned objectives. This project describes some weaknesses of the course, and suggests the implementation of two ESP courses in the last semesters.

Keywords: ESP/EST, course design, Telecommunications field, reading and translating methods.

CHAPTER 1

DIAGNOSTIC SECTION

1.1 INTRODUCTION

In a world where technology advancement is continuous and the new tendencies of telecommunications are constantly changing every time, the students and professionals in the field need to be competent and updated in the use of the electronic gadgets and equipment. Therefore, the main task of the Electronics department at the Facultad de Tecnología is to equip the students with abilities and skills that the science and technology demands.

Course design refers to the planning and structuring of a course to achieve the needed goals. It is the outcome of a number of elements that fulfills the requirements of the needs analysis, the syllabus design approach and methodology to the course and the materials. In the same vein, Hutchinson and Waters (1987:65) have defined a course as "An integrated series of teaching-learning experiences, whose ultimate aim is to lead the learners to a particular state of knowledge."

This project is the result of a profound study of four months of work with students at the **"FACULTAD TECNOLÓGICA DE LA UNIVERSIDAD MAYOR DE SAN ANDRÉS.** A need analysis employing three methods has been conducted**,** namely, the target situation analysis (TSA), the learning situation analysis (LSA), and the present situation analysis (PSA). As a result of the study, the data gathering have yielded the following results: the Telecommunications major syllabus only offers one semester of General English, but it lacks the teaching of technical English terminology. Thus, there is a need to design a course of "Technical English (ESP)" for the Telecommunications field as part of its curriculum which runs for a three-year degree program.

The project of this Guided Work is aimed at commanding mainly two skills: reading comprehension and translation of technical texts, from English to Spanish, since this institution of higher education lacks an ESP curriculum per sé. Therefore, there is a need to elaborate and design a Technical English teaching program specifically addressed to the Telecommunications' students and aimed at using specialized terminology for the field so that this course may fulfill the needs of the students and meet the requirements of the Telecommunications major in accordance to its department's goals and objectives.

This project also focuses on specialized English with the specific purpose of teaching lexis and grammar related to the Telecommunications major because its program of study and curriculum contain some subjects in which a lot of terms related to the state of the art in Technology are used. For instance, some of the latest textbooks and manuals of some the equipment that the students use, have been written in English, which are plagued with numerous technical terms. For example, the subject of *Basic Telecommunications Network* requires good knowledge of specialized terminology in this field. Therefore, there is a need to develop an ESP course for the above mentioned field. That is, the telecommunications' students must build up their vocabulary addressed to Electronics and Telecommunications so that they may have the necessary knowledge to read, understand and translate the English books into Spanish in this field.

As a result of this observation, there is a need to bridge the gap that the Telecommunications Department curriculum has. Someone needs to design and write a course of Technical English for this field. This would bring about many benefits to its students in the sense that they could have access to many opportunities in the future when they finish their undergraduate studies at this institution. Firstly, for example, the students will learn to extend and develop their knowledge of both the subject matter and English language skills to understand and translate technical texts, articles, manuals, and deepen their knowledge in Telecommunications. Second, they will gain experience directed toward the development of the ability to apply pertinent knowledge to the identification and solution of practical problems in Telecommunications.

Nowadays, learning a foreign language has become useful and at the same time crucial for university students for many reasons. First, taking into account that the development of technology has increased in the last years, this course needs to be linked with the digital world. Second, to pursue graduate study, for example, a master's or a doctoral degree and finally, to work at a multinational company, etc. Therefore, there is a strong world demand for learning the English language; in this sense, English is the "lingua franca" to do business, to communicate and most importantly to study science and technology. In our case, there are a great number of catalogues and instruction manuals that are written in the English. For this reason, the students should be able to learn this language as a way of preparation to be a very competent professional that can take advantage of the many opportunities the academic life offers. For example, to get a well-paid job in this field, to have numerous chances of growing professionally, to get a scholarship for graduate studies in English speaking countries or travel abroad.

1.2 INSTITUTIONAL BACKGROUND

The present study was carried out at the " Facultad Técnica de la U.M.S.A. " It is located at 2299 Arce Avenue, in La Paz city. On December 2 nd , 1986 The Telecommunications Department modified and approved the new curriculum for the Electronics and Telecommunications major at an "Upper Technical Level" covering all the required subjects for six semesters. It has been noted that the current curriculum contains only one level of General English.

The most important purpose in creating this career was to train students with both a theoretical and practical knowledge of the subject-specific in order to face the challenges of becoming up-to-date with the new technologies in the field of Telecommunications. In addition, the purpose of training the students in this field is to prepare them to understand technical terminology when reading articles, books and manuals.

1.3 ELECTRONICS AND TELECOMMUNICATIONS CAREER ORGANIZATION

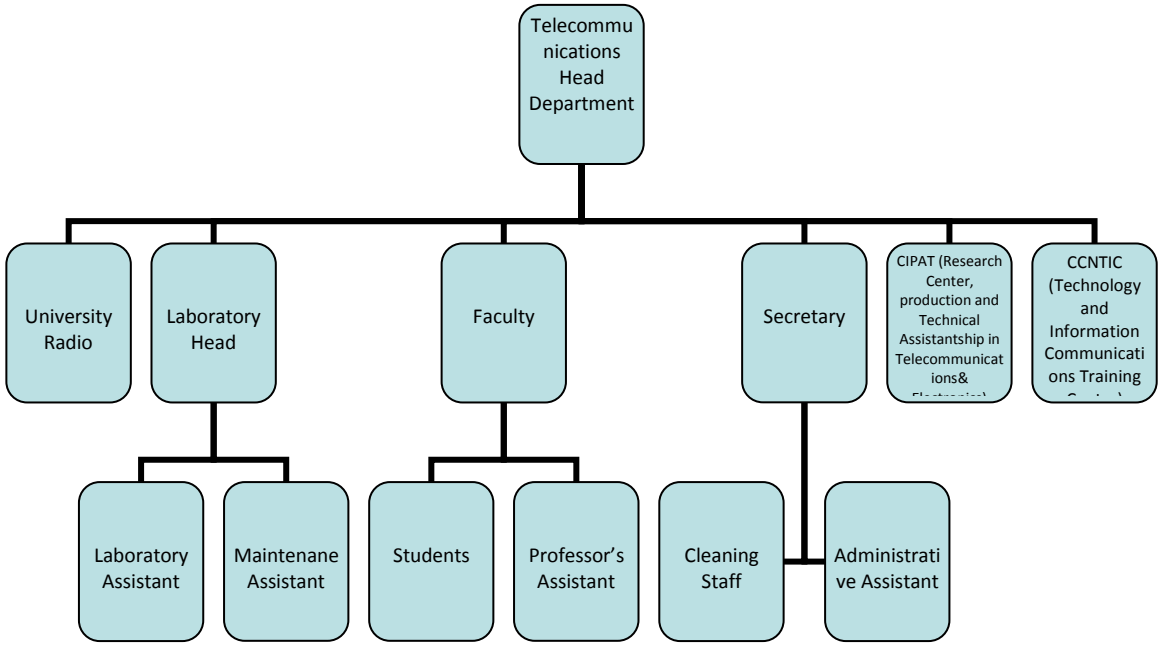


Fig. 1 Staff Chart Flow of the Electronics and Telecommunications Department

The Chart Flow shows the Telecommunications Department subordination line and organization of its staff. It shows a top-down flow that describes the role each person plays in the

organization in which the Head's Department is the main chief of the career. That is, he is the one who makes the most important decisions in relation to the academic and administrative affairs. There is a university radio which informs the Telecommunications students about all the activities to be held in the department. The Laboratory Head is the person in charge of managing the schedules and the provision of materials and equipment for the laboratory. The maintenance assistant is the person in charge of supervising the lacks, needs and maintenance of the laboratory. Then the faculty follows, that is, the professors' staff who are in charge of teaching all the department's subjects. The professors have their aides, who are the professors' assistants. They assist the professor in revising the exams and in reinforcing the subject with numerous practices. Then the students are the direct beneficiaries of the teaching-learning process. Next, the secretary is the woman who is responsible of managing the administration of the correspondence and keeping the place cleaned and tidy. Another department's section is the CIPAT (Research Center, and intellectual production and Technical Assistantship in Telecommunications & Electronics) which is responsible for doing research, producing and releasing new material related to the field and providing with Technical assistantship in matters related to technical problems. Finally, the CCNTIC (Technology and Information Communications Training Center) is in charge of training both the students and faculty in the use of the ITC's Information and Technology Communications.

1.3.1 MISSION

Mission of the " Facultad Tecnológica de la Universidad Mayor de San Andres" is the following:

"Desarrollar la formación profesional universitaria en electrónica y telecomunicaciones Centrada en la investigación aplicada a la formación profesional disciplinaria acorde con el avance científico tecnológico, el mercado profesional y el desarrollo de integración social productiva".

Interpretation: To get a professional academic growth in the Telecommunications field focused on the applied science and technology in order to meet the requirements of the the latest scientific advancement as well as the current labor market and the productive integration with the society.

1.3.2 VISION

The Visión of the " Facultad Tecnológica de la Universidad Mayor de San Andrés" is the following:

"La Carrera demuestra aptitudes para resolver problemas emergentes de la dinámica social, establece canales de comunicación entre la Universidad y sociedad , orientando sus actividades académicas y administrativas con eficacia y eficiencia, supera sus estándares de calidad y rendimiento, tomando en cuenta evaluaciones periódicas y cuenta con personal docente adecuado para satisfacer los requerimientos del currículo, contando para ello con una buena infraestructura civil, equipamiento y material bibliográfico, cumpliendo sus metas en la formación profesional, interacción social e investigación".

Interpretation: The Telecommunications department is prepared and ready to solve emerging problems of the society and bridges gaps for a real communication between the university and the society, addressing its academic and administrative tasks with efficacy and efficiency. The Telecommunications department fulfills with excellence its quality standards and high productivity which is periodically evaluated. In addition, it has the adequate qualified faculty in order to fulfill the curriculum requirement and has the appropriate facilities such as the necessary technical equipment and bibliographic material for reference. In this way, the institution attains its goals in the professional academic training, social interaction, and scientific research.

1.4 NEEDS ANALYSIS

According to head of the "Telecommunications department", the course design for the Telecommunications department has to be designed according to content, time, number of students and major. In our case, we must take into consideration the questionnaire's needs analysis applied to students of the Telecommunications field. Needs analysis, is carried out to establish the "what" and the "how" of a course, it is the first stage in the ESP course development which is followed by the syllabus design, materials selection, methodology, assessment, and evaluation. However, these stages should not be seen as separate, proceeding in a linear fashion. Rather, as noted by Dudley - Evans and St John (1998: 301), they are interdependent overlapping activities in a cyclical process. This conceptual distinction is neatly encapsulated by the diagrams in

Figure 2, showing how needs analysis is often ongoing, feeding back into various stages which start with the questionnaire needs analysis and ends with the syllabus design . The type of information sought during the needs analysis is closely related to the approach to teaching and learning and to syllabus design followed by the analysis.

Richterich, and Chancerel (1997: 87) put a particular emphasis on *present situation analysis* (PSA). A present situation analysis draws attention to the gap between what students know at the beginning of the course and what they need to learn within the course. According to Iwai et al. (1999:1), the term "needs analysis" generally refers to the activities that are involved in collecting information that will serve as the basis for developing a course design which will meet the needs of a particular group of students. Needs analysis is a procedure to collect information about learners' needs (Richards, 2001:26). Needs analysis is considered a crucial component of systematic curriculum development. Clearly, the role of needs analysis in any ESP course is indisputable. For Johns (1991:3), needs analysis is the first step in course design and it provides validity and relevancy for all subsequent course design activities. In Brown's (1995: 36) systematic curriculum development model, it is the first phase of the quality control process. Brown (1995. 36) defines needs analysis as the systematic collection and analysis of all relevant information necessary to satisfy the language learning requirements of the students within the context of the particular institutions involved in the learning situation. In the initial needs analysis phase, the intern collects and analyzes information about students' needs in order to design sound, defensible objectives – which is the second phase of Brown's five-phase model. That is, based on this model, the purpose of conducting needs analysis is to systematically gather information in order to design objectives. While goals are general statements about what must be accomplished in order to attain and satisfy students' needs, objectives refer to precise statements about what content or skills the students must master in order to attain a particular goal' (Brown, 1995: 21). Thus, objectives have to be derived from corresponding goals. Therefore, it is essential for a language program to have well-defined goals so that the subsequent evaluation instruments can accurately measure the extent to which students have mastered the goals.

As for methods, a deductive procedure was used which involves questionnaires and structured interviews. A questionnaire is the most frequently used and efficient method to elicit responses. In our case a questionnaire was conducted which evaluated the students' needs. The questionnaire contained multiple-choice questions to help to determine the present and future domains of

language use (see Appendix 3). Inmediately after comes the selection of materials which are going to be used during the course.Thus, since the course is addressed to the students of Electronics and Telecommunications, materials are going to be designed in which the science applied to technology is the main genre of the texts that the students will be reading and translating. This means that the linguistics features, rethoric and discourse structures of the texts belong to the English for the Science and Technology (EST) discourse community readership.

1.4. 1. Components of ESP Needs Analysis

Different components of language needs analysis are employed to investigate different focuses and issues in language planning, development, teaching and learning. Many ESP scholars suggest that TSA (Target Situation Analysis), LSA (Learning Situation Analysis), PSA (Present Situation Analysis) are the fundamental components for assessing language needs of learners.

1.4.1.1. Target Situation Analysis (TSA)

Target Situation Analysis (TSA) refers to form of needs analysis, which centers on identifying the learners' language requirements in the occupational or academic setting.

Dudley-Evans & St. John [p124] define TSA as, "TSA refers to task and activities learners are/will be using English for target situation". They state that TSA generally uses questionnaire as the instrument. Dudley-Evans and St. John [p124] also explain as:

"TSA includes objective, perceived and product-oriented needs. The objective and perceived needs are derived by outsiders from facts, from what is known and can be verified."

In our case the Target Situation Analysis (TSA) were delineated when we had previous meeting with the Head of the Telecommunications department who played the role of an "outsider" and suggested what kind of English the students from that department needed to learn.

In this respect, Hutchinson and Waters propose further subdivisions of target needs which are: Necessities, Lacks, and Wants.

Necessities

Are the academic or occupational requirements of the target situation, that is, what the learner has to know in order to function effectively in the target situation. Accordingly, needs "are perhaps more appropriately described as objectives" to be achieved as (Robinson, 1991: 7) claims.

Lacks

Are what the learners are deficient in, i.e what they ignore or cannot perform in English. Subsequently, lacks are the gaps between the initial or actual situation of the learners in terms of language proficiency or aptitudes, and the one which is required after the accomplishment of the language training.

Wants

Are the learners' personal expectations and hopes towards acquiring English, i.e. What they would like to gain from the language course.

In order to design the syllabus content, the ESP practitioners have to take into consideration the learners aims; however, in almost all cases, these contrast with the lacks identified by the teacher or the necessities of the target situation.

1.4.1.2 Learning Situation Analysis (LSA)

Learning Situation Analysis (LSA) refers to subjective, felt and process-oriented needs. LSA also directs what learners want to learn. Dudley-Evans and St. John (p. 5), state that LSA means effective ways of learning the skills and language. According to them, LSA also refers to why do learners want to learn. They elucidate that subjective and felt needs are derived from insiders and correspond to cognitive and affective factors.

1.4.1.3 Present Situation Analysis (PSA)

Robinson delineates that PSA (Present Situation Analysis) seeks to ascertain what the students are akin to at the start of their language course, looking into their strengths and weaknesses. Dudley-Evans & St. John (p. 124) state that PSA estimates strengths and weaknesses in language, skills and learning experiences. The most extensive range of devices for establishing the PSA are three basic sources of information: the students themselves, the language-teaching

establishment (methodology), and the 'user-institution', for example the students' place of study or work. For each of these, an ESP student seeks information regarding their respective levels of ability; their resources; and their views on language teaching and learning.

Munby argues that PSA represents constraints on the TSA. According to McDonough (1984: 27), PSA involves 'fundamental variables', which must clearly be considered before the TSA. In practice, one is likely to seek and find information relating to both TSA and PSA simultaneously. Thus, needs analysis may be seen as a combination of TSA and PSA.

Here are the following statements developed in our case under the headings TSA (Target Situation Analysis), LSA (Learning Situation Analysis), PSA (Present Situation Analysis):

1. I need to see and understand specialized vocabulary (TSA)
2. I find it difficult the order when I write the adjective + noun. (PSA)
3. I pick up vocabulary by reading technical texts (LSA)
4. Students need to translate manuals (TSA)
5. I have to read and understand Telecommunications books. (TSA)
6. My problem is that I tend to translate word by word instead of using other translation techniques. (PSA)

In brief, the following comparison between TSA and PSA can be drawn:

- PSA could be positioned as a complement to Target Situation Analysis.
- If TSA tries to establish what the learners are expected to be like at the end of the language course, Present Situation Analysis attempts to identify what they are like at the beginning of it.
- The PSA can be carried out by means of established placement tests; however, the background information, level of education etc. can provide enough information about their present abilities which can thus be predicted to some extent. (Robinson, 1991:87; Jordan, 1997: 85)

1.4.2 Needs Analysis Process

The models of ESP needs analysis that were suggested by most writers are similar to a certain extent to the ones that they used when they tried to identify the English language needs of the learners. However, the writers have their own views on the focus of needs analysis, the data analysis and the development of the training program in the context of ESP. In this section, a suggested model for this course has been developed. This model states that the method

for investigating the students' necessities, lacks and wants is the use of a questionnaire applied to the students and an interview with the Head of the Telecommunications Department. The aim of this process was to identify how needs analysis incorporates linguistic form (register analysis) and functional form (discourse analysis). Both forms are the basis in both target situation and present situations that supply the foundatioins for syllabus design.

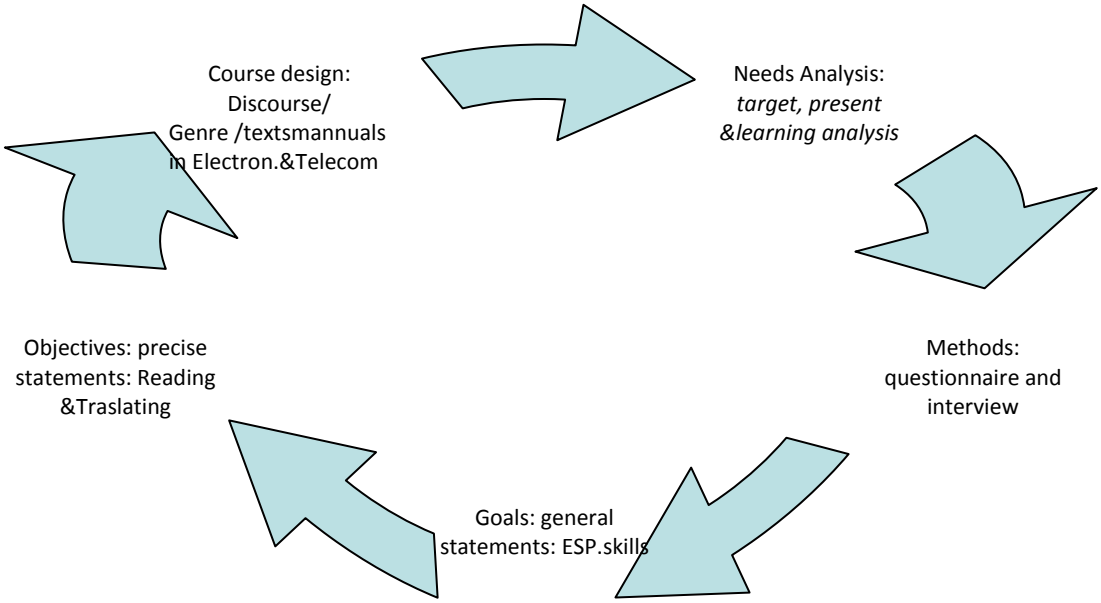


Fig. 2 The ESP needs analysis cyclical process

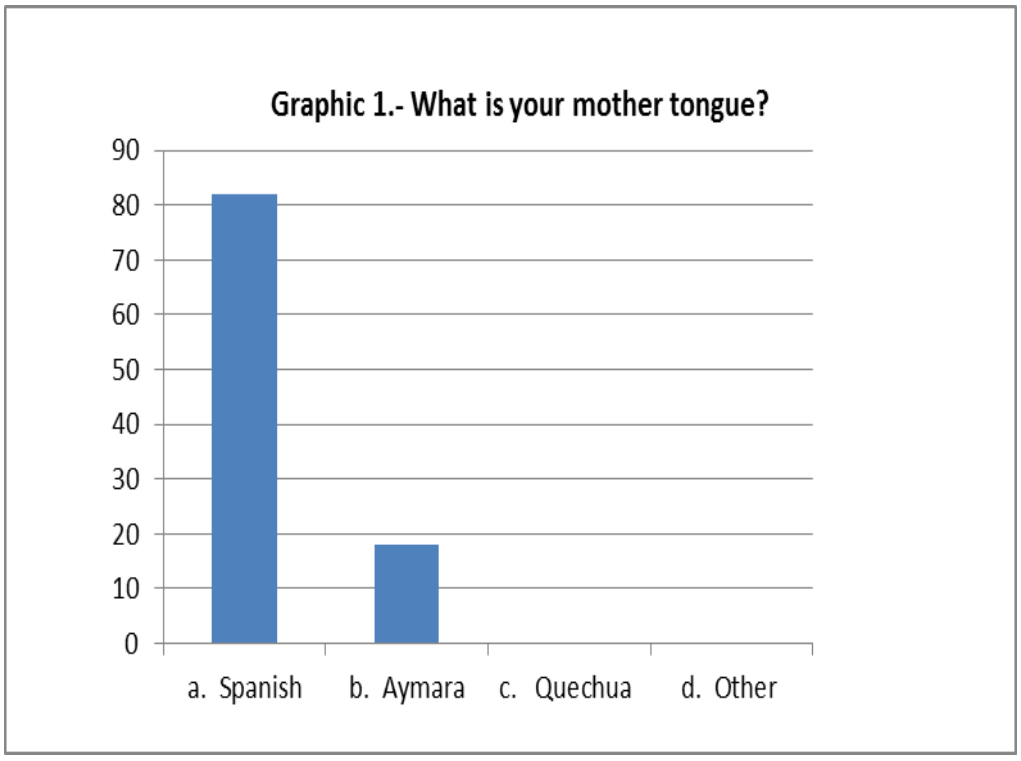
Fig 2 depicts the ESP needs analysis life cycle of this project. As seen in the above figure, the cycle starts with the needs analysis which is the start of the ESP course design. Afterwards, the questionnaire was conducted which was the most suitable method used for gathering data. Then we proceeded to analyze the data and consequently some goals were set up in order to narrow down the focus of the learning which is related to developing ESP skills. Then, some real achievable objectives were set to focus specifically on the issues related to reading and translating. The course design is the the next step to this process as technical English in both register and discourse in which the students exploit the technical texts and articles related to the Electronics and Telecommunications field that are to be read and translated. Discourse is their ability to gather and give information effectively textually and linguistically—in their particular contexts, especially the genre's rhetorical structure, in our case articles and vocabulary from books and equipment manuals. Then the cycle starts again, at this point it can be can concluded that a great

experience has been gained from the previous cycle, that is, the previous work done before can serve as a guideline for designing future projects. Then here we have the chance to improve the course for the following semester and the conditions are ready to undertake a new project by conducting a new needs analysis.

1.4.3 Needs Analysis Graphics

The total number of Electronics students was 100.

GRAPHIC 1



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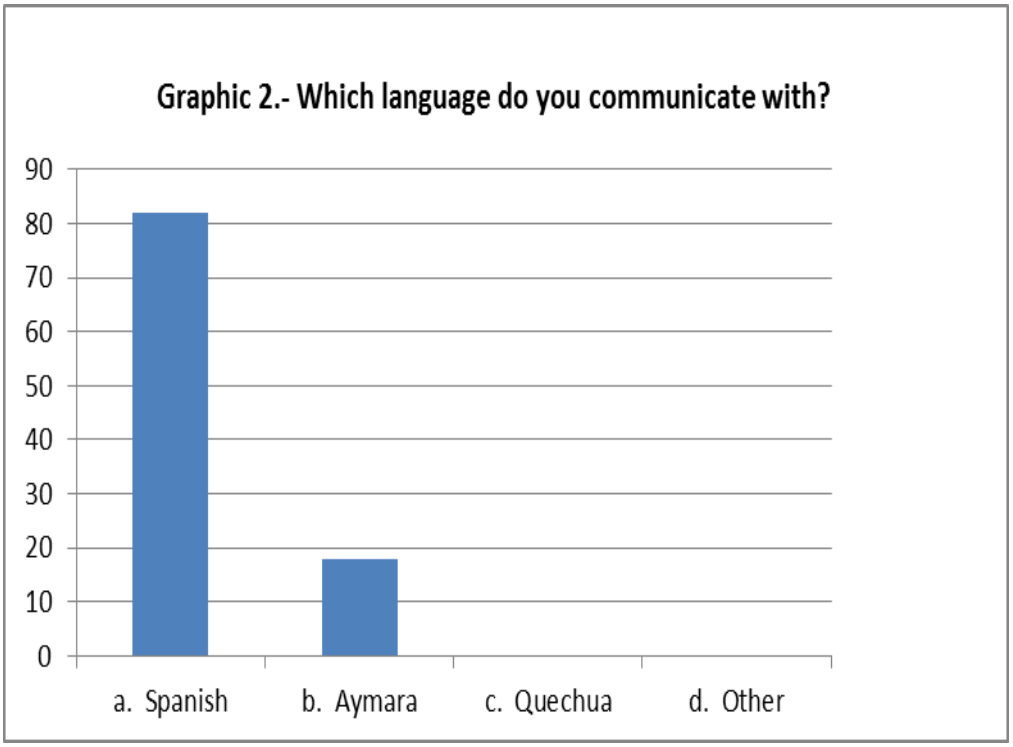
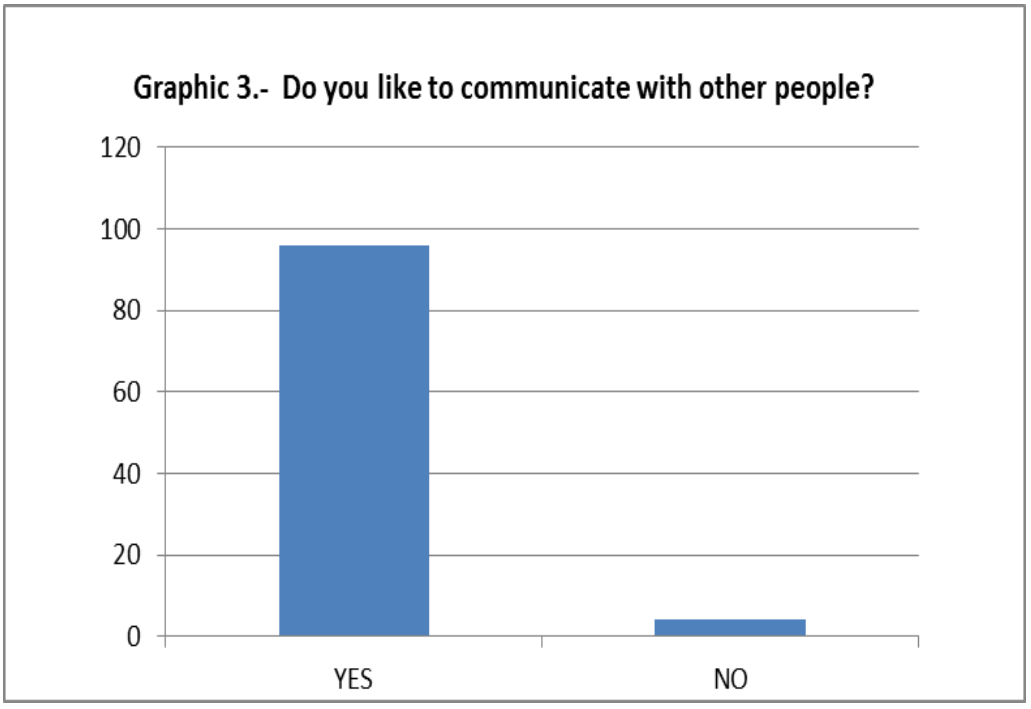


GRAPHIC 3



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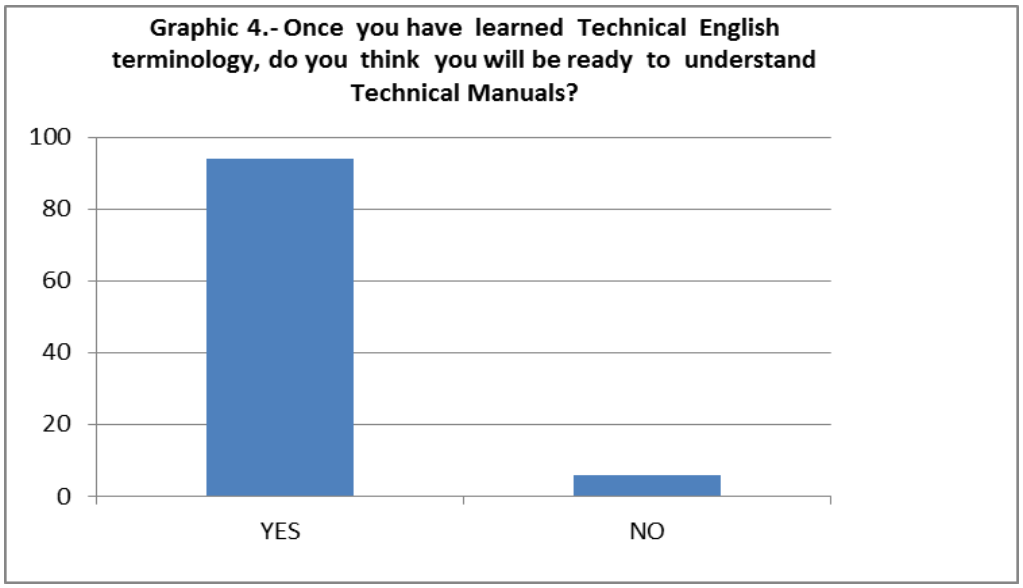
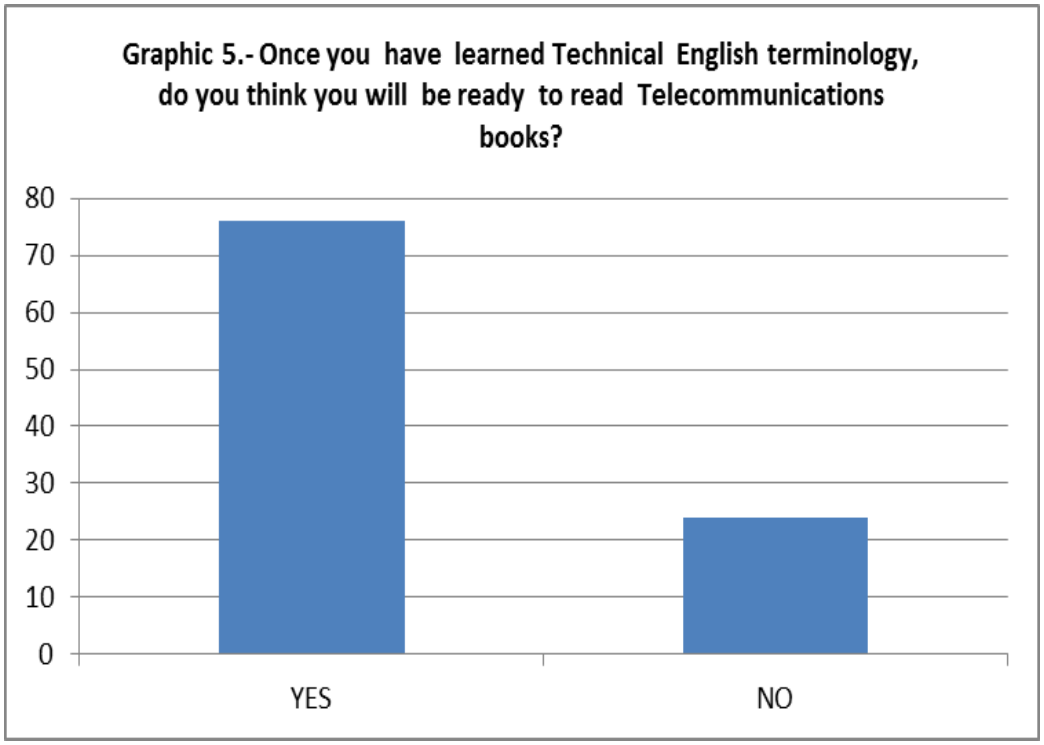
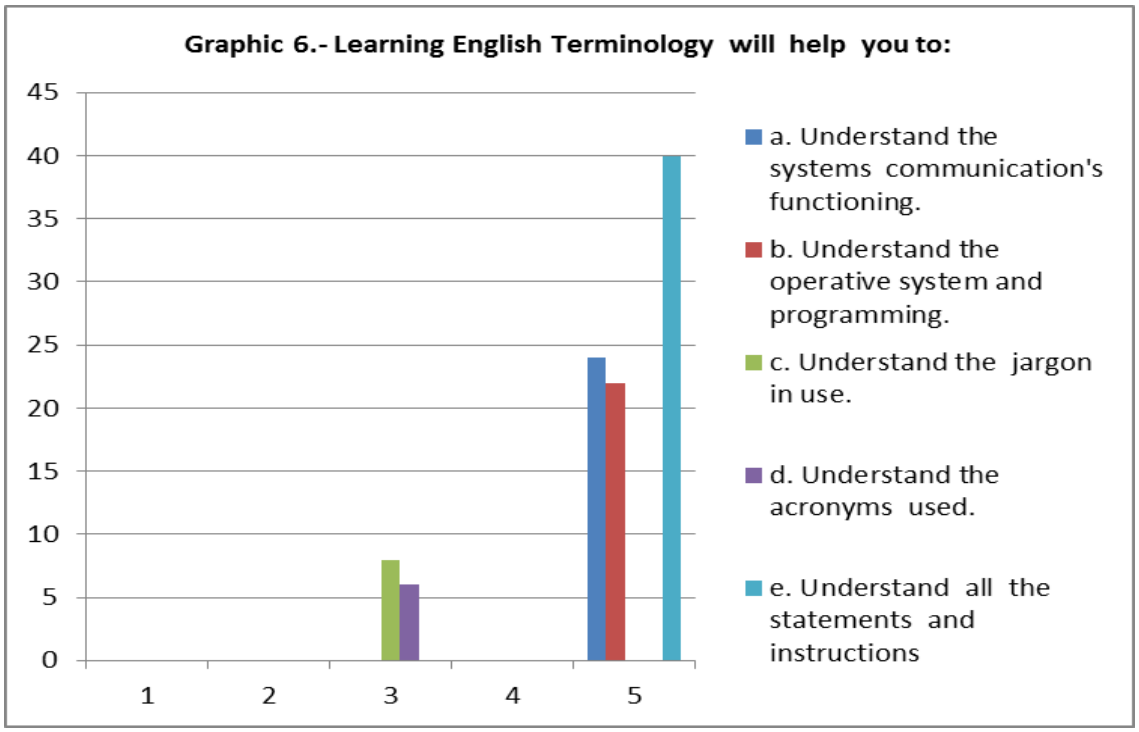


GRAPHIC 5



GRAPHIC 6



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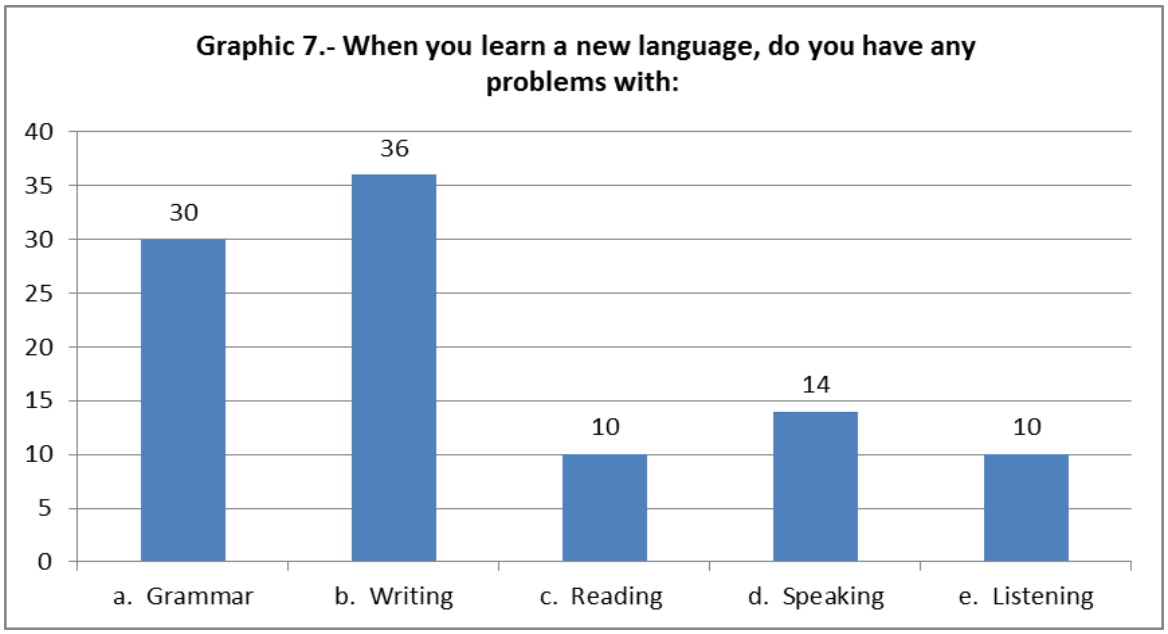
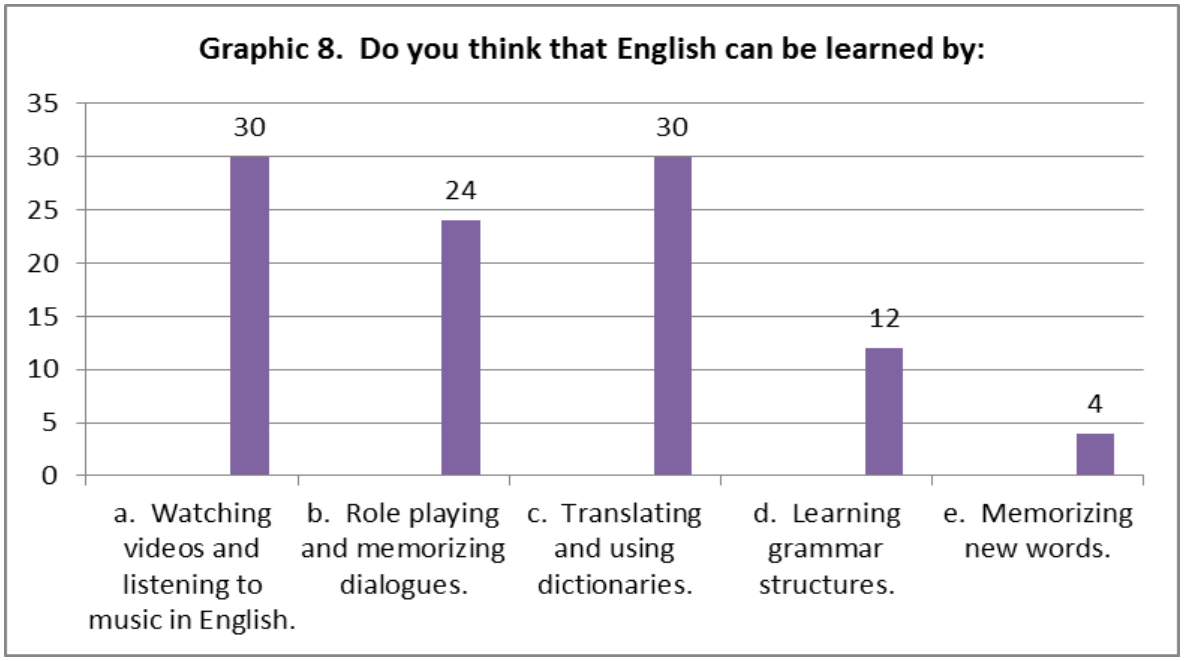
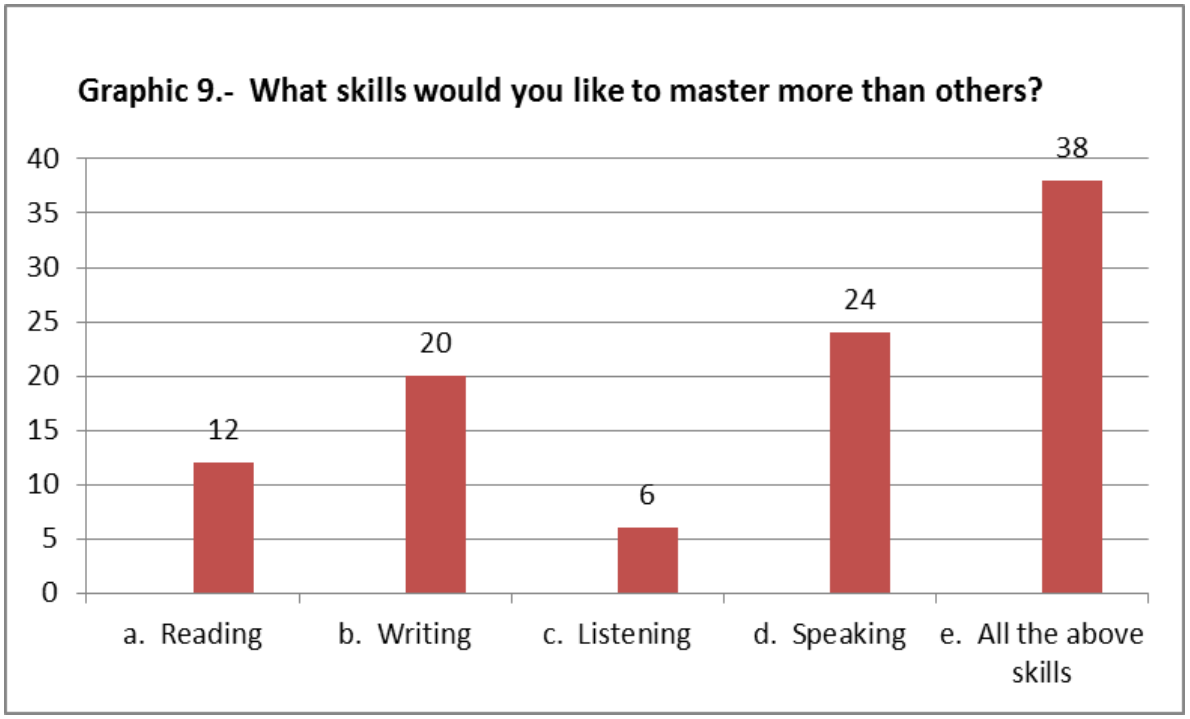


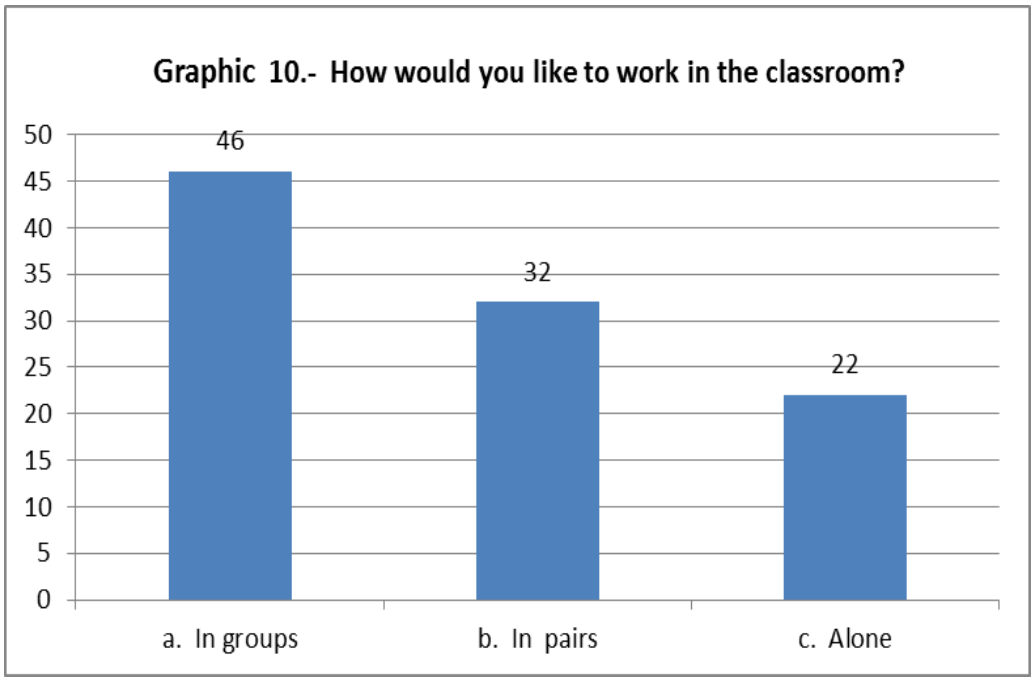
GRAPHIC 8



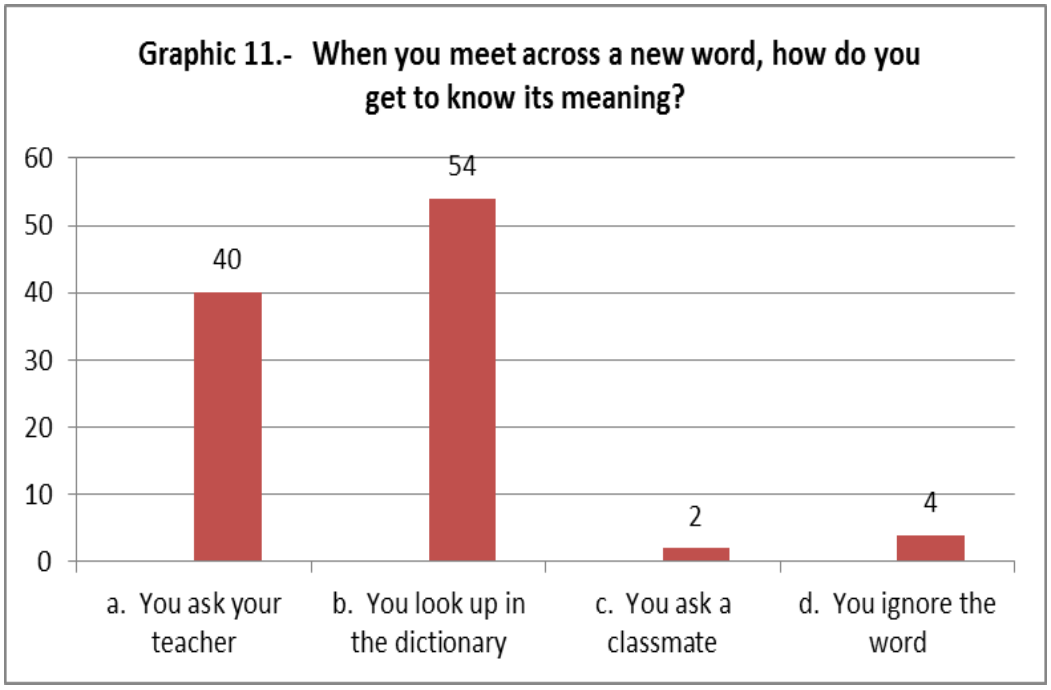
GRAPHIC 9



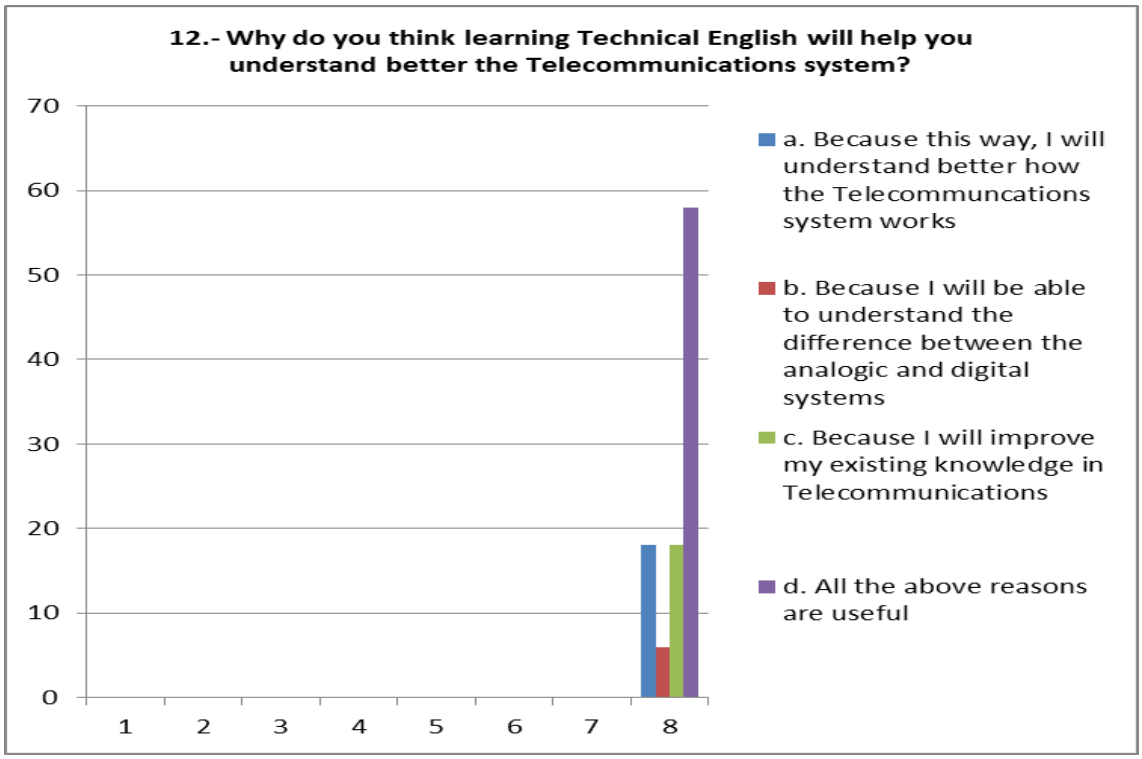
GRAPHIC 10



GRAPHIC 11



GRAPHIC 12



1.4.4 Needs Analysis Graphics Description

- We could establish that almost all Telecommunications' students' mother tongue is Spanish. (See graphics 1 and 2)
- Most of them want to reach a high competence in reading and understanding Technical English, found in books and technical manuals related to the Telecommunications field.(see graphic 4)
- Most of the students want to learn Technical English terminology in order to read Telecommunications books. (See graphic 5)
- A great number of students consider English useful in order to understand Technical English; acronyms that are used in the field of Telecommunications. (See graphic 6)
- The majority of the students think that the learning of technical English vocabulary would help them to install update software, deal with hardware and improve their knowledge about operative systems. Besides, some of them regard Technical English as an important tool which would let them understand technical terminology. (See graphic 6)

- Telecommunications students have also problems with pronunciation and listening skills. (See graphic 7)
- Most student think that English can be learned by audiovisual means and also translation. (See graphic 8)
- Students think that all language skills are necessary to be mastered. (See graphic 9)
- Most students think that working in groups is the best way to work in the classroom dynamics. (See graphic 10)
- The majority of students think that using the dictionary is the best way to get the meaning of new words. (See graphic 11) the meaning of new words. (See graphic 11)
- Students believe that all of the above reasons are useful to Telecommunications systems (See graphic 12) Telecommunications systems. (See graphic 12)

1.4.5 Questionnaire Conclusions

After a throurough needs analysis of the questionnaire, it is concluded that the students of Telecommunications want to reach a high competence in reading and understanding technical texts and build up technical vocabulary in the field. In addition, they also want to update their knowledge in the Telecommunications and Electronics field. Finally they want to develop their reading, grammar, vocabulary and translation language skills.

The planning of a course design involves careful consideration of some teaching methods, supporting materials, learning situations, how the student learn languages, what their current level of language proficiency is, what language will be useful for them in their target situation, and where and how they will be using Technical English in the future.

The results that the questionnaire yielded are going to help the study to establish the objectives, at the same time, methods or approaches and the teaching materials which must be carefully devised before beginning the process of the course design. Having in mind the students' needs and background, which reflect the priorities of learners, and taking into account the results and the substantial information about students' needs that were analyzed through a questionnaire, an ESP language-centered course design has been proposed for the course and the implementation of the genre-based instruction approach, since it was considered that this kind of course design was the most suitable for some reasons: it uses

tasks and activities to encourage learners to use the language in a topical way in order to achieve a functional purpose, assuming that successful language learning in ESP is achieved by practicing reading, vocabulary strategies and using appropriate translation techniques. Regarding the syllabus implemented in this course a content-based syllabus (English for Telecommunications) along with a topical syllabus will be implemented.

CHAPTER II

PROPOSAL SECTION

In the present chapter the justification, objectives, and the development of our course design are described.

2.1 JUSTIFICATION

The arguments that are going to be presented in this part constitute important reasons through which we can highlight the importance of carrying out this project, because these aspects show the needs, strengths or weaknesses that students have when learning English as a foreign language.

All the students from this institution should not miss the opportunity to learn a foreign language, especially ESP English. The learning of this language is very important, useful, and profitable for the Telecommunications students because, at the end, of the course they will be able to understand not only the instruction manuals, handbooks, valuable information from the Internet, but also to read texts and books about Telecommunications.

Students need English in their course of study and for their future professional occupation. There are many foreign companies operating in Bolivia where all staff is required to have at least an intermediate level level of Technical English proficiency and also the requirement for being able to readily apply technology in order to seek innovative solutions to the full range of Telecommunications needs. From this follows, that once the students from the Technological faculty have completed their study at university, they need to be able to deal with a variety of subjects using English as a primary tool and to perform well in different areas such as the science and technology, so that the student can usually get by with just being able to read textbooks and follow lectures in English. These are complex skills, and so are all the additional skills that the working professional has to master. Many technical professionals have to read not only books but technical reports, manuals, memos, journal articles, proposals, contracts, letters, and a variety of other written documents in English. To do this, they need a repertoire of reading skills, from scanning to intensive reading, explaining technological developments and new products, making presentations, reading academic/ professional journals, attending professional conferences, etc. An ESP course needs to equip them with skills and knowledge to do these activities.

Strategic planning is not only important in the organization of a course design, but also in its application, because the planning defines the objectives that will be achieved. In this way, the project's purpose is mainly aimed at designing an appropriate ESP course based on the students' needs and the Telecommunications and Electronics department's needs.

Taking into account the social aspect, this project constitutes a useful support, in the sense that this institution lacks a specific course based on ESP in the Telecommunications' curriculum; they only offer general English. Hence this course is going to gap that bridge and enable the students of Telecommunications to manage the habitual problems on the field with efficiency and efficacy.

2.1.1 Proposal

The proposal of the course can be stated as follows: As seen in the first chapter, the Telecommunications department students needed to learn technical English based on the following language skills: reading comprehension skill, translations techniques, specialized vocabulary and language structures related to the ESP/EST field.

The student's profile and language background showed that most of the students were beginners who had a previous English knowledge before starting this ESP/EST course design. Thus, this proposal offers a solution based on various aspects of contexts such as: students, time, physical settings, and teaching resources in order to help them achieve an intermediate reading comprehension level of technical manuals and books related to the Telecommunications field. In addition, they should be able to understand specialized vocabulary and translate technical manuals for operating equipment in the laboratory. This course lasts one academic semester.

The methods applied in this project were the Genre-based instruction, Input based strategy and the Reading Comprehension Method. On the other hand, the Translation Method is followed by the Grammar-translation method. They are the most suitable and adaptable methods to the teaching and learning process of this course. The former consisted of translating a technical article from the TL (Target language) to the SL (source language) through some translations techniques. The latter consisted of learning grammar and vocabulary related to the telecommunications field through technical readings. Therefore, all the above mentioned methods will help the students develop their knowledge and understanding of the Technical English.

2.1.2 The ESP Course Cycle

The following section explicates all the cycle of our ESP course, starting with the Needs, Analysis, Syllabus preparation, Course design: materials & methods, Teaching –Learning process, Students' Assessment, and Course Evaluation. All of these are an outline of the process of the ESP course we were be dealing with

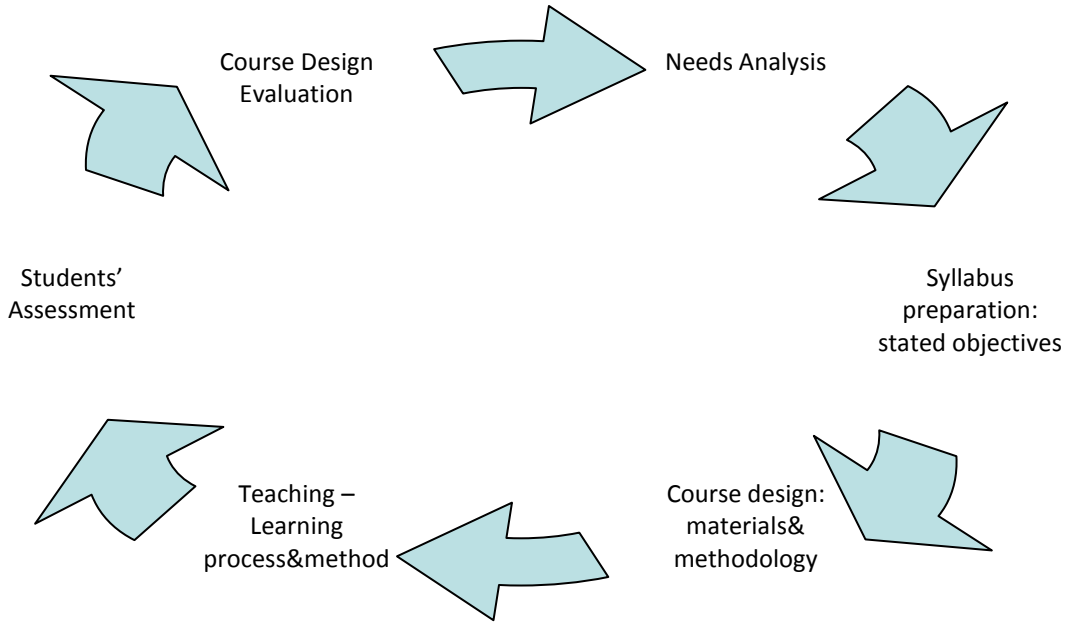


Fig. 3 The cycle of the ESP Course Design

This is a cycle that starts with the learner's needs analysis which is a crucial component that serves to outline and sketch the whole course in terms of drawing up the syllabus – a semantically based model drawing on " content-based " syllabus design was proposed – stating the objectives, delineating the methodology, and preparing materials design. After obtaining the syllabus, the next step is to design the course around the syllabus. According to Hutchinson and Waters (1998: 65) "course design is the process by which the raw data about learning need is interpreted in order to produce an integrated series of teaching – learning experience, whose ultimate aim is to lead the learners to a particular state of knowledge" (p, 65). In short, course design is to adapt or write materials in accordance with the syllabus, to develop a methodology for teaching those materials and to establish evaluation procedure by which progress towards the specified goals will be

measured. The next step is the implementation of the Teaching – Learning process which is followed by the students' assessment. This implies the learner's performance through a series of summative and formative assessment consisting of some quizzes and three tests. Finally the evaluation of the course which deals with the analysis of the course's weaknesses and strengths which includes the conclusions and recommendations that will serve to carry out a new course design with improvements and corrections.

The process of the course design can be summarized step by step as follows:

Step 1: diagnosis of needs (needs analysis)

Step 2: formulation of objectives

Step 3: selection of content (syllabus design)

Step 4: organization of content (syllabus design)

Step 5: selection of learning experiences (Course design: methodology)

Step 6: organization of learning experiences (methods)

Step 7: determination of what to evaluate and of the ways of doing it (students' assessment and Course design Evaluation).

2.1.3 Rationale

The principles that underlie the course design are clearly established as mentioned before. The knowledge of the English language is a must within the academic setting for many reasons, namely the continual expansion of science and technology and also the globalization of communication, that is, the superhighway information phenomena. Thus in Bolivia there has been a very strong demand to learn English, especially at the technological majors, here at the Universidad Mayor de San Andrés, in La Paz, Bolivia. The students have the chance to learn general English, here at the Linguistics department, or at the Centro de Enseñanza y Traducción de Idiomas (CETI), however, this center does not offer ESP courses.

The course is designed for Electronics and Telecommunications undergraduates who are aged about 20 years old or more who are wishing to get his/her Bachelor of Science university degree at the level of (Técnico Superior-licenciatura) at the Facultad Tecnológica, from the telecommunications and electronics department. Some of the students have learned English during high school, others at the Centro Boliviano Americano, as well as in the university. However, their English is not good enough for their understanding texts, concerning the

Electronics studies. They wish to improve and increase their English proficiency in order to have better understanding and comprehension of English Telecommunications and Electronics books as well as to be able to translate technical manuals from English to Spanish related to their field. As we know, there are many Telecommunications learning sources which have been written in English. So the students must have a good enough English proficiency to comprehend the materials in the books. They would also deal with reading technical reports and the language used is usually international language, English. So they have to be able to analyze and be familiar with specialized terminology and acronyms to be updated with the current advances in the field.

The goal of this course is to ease the learners to comprehend English books and laboratory manuals and understand technical English related to the field. The course is mainly focused on reading comprehension skills, technical vocabulary and translations methods. It provides skills such as reading comprehension, vocabulary strategies for understanding specialized and non – specialized vocabulary, as well as the most useful acronyms related to Electronics study. It also will give them confidence to use English more effectively to translate technical texts. The material will be taught based on topical and content-based syllabus – it deals with general meaning and use–, and functional syllabus –the course content is based on function not grammatical structures. This course will be held in 6 months with two meetings of three hours each. Only a few departments at the UMSA offer ESP course.

It is known that that Telecommunications department has only one English course as part of its curriculum, but this does not adequate to the requirements of a technical English. This course is given in the first semester of the telecommunications' major which is not advisable because this course should be given after the students have basic knowledge of Electronics and Telecommunications, that is, the ESP course should be taught in upper courses.

2.2 OBJECTIVES

2.2.1 General Objective

- To design an ESP course for the Telecommunications field at an upper-intermediate level, regarding reading, grammar and specialized lexis, to read and translate texts and manuals.

2.2.2 Specific Objectives

- To analyze students' real needs through a diagnostic questionnaire and an interview with the Telecommunications Head Department in order to fulfill the necessities and lacks that the field demands.
- To suggest a shift from General English to ESP in the current English program given at the Telecommunications' department.
- To select authentic materials to familiarize with the up- to date technologies in the Telecommunications field.
- To apply the course syllabus using the following methodologies: The Input-based Strategies, Reading Approach Method, Grammar–Translation Method, and translation methods so the students are able to translate technical texts from English to Spanish and comprehend specialized texts.
- To develop an adequate amount of technical terminology such as clippings and acronyms in the Electronics and Telecommunications field.

2.3 SCOPE.

The present project is to design an ESP if not EST course addressed to the students of telecommunications at the "Facultad Tecnológica" At the Universidad Mayor de San Andrés. This course will bridge the student´s needs which are to achieve a high – intermediate reading skills as well as translating abilities related to the field. The driving force behind today's increasingly global economy is the explosion of technology. But technology itself depends on information, and this information is most often conveyed in English. The course started in June 2015 and finished in November 2015.

It has been distinguished two types of ESP teaching objectives: proficiency and knowledge. Proficiency objectives concern mastery of skills such as reading, and translating. Knowledge objectives concern the acquisition of linguistic and technological information. Linguistic knowledge objectives include language analysis and awareness of the systematic aspects of language. Technological knowledge objectives include development of academic and specialized vocabulary. They include attitudes toward attaining second language competence, and language learning.

The ESP teacher has to design a “narrow angled” course (designed for a very specific group of learners– the Electronics and Telecommunications) because it refers to a course that is more specific, as it has been designed for learners we might assume it has largely homogeneous needs and who have a particular type of academic or work environment in mind which is English for the telecommunications field.

2.4 ACHIEVEMENT INDICATORS

In order to develop an ESP course, it was essential to set up the indicators of this project. These indicators are the measurable and observable aspects of a work which verify if the objectives have been reached through the results obtained after the implementation of the methodology and assessment of the course (Tintaya, 2008: 35). For this reason, two charts were created to illustrate these aspects. The first chart shows the sequence of steps that were followed in the course design purposes (See Chart 1). The second chart shows the course design process throughout the entire ESP course design and the application of the proposal.

CHART 1

	OBJECTIVES	INDICATORS	RESULTS
COURSE DESIGN PURPOSES	**General Objective** •To develop an upper-intermediate level of Technical English course design focused on the following linguistics skills: reading comprehension of texts, specialized terminology, translation techniques, and grammar related to the communications field.	The needs, lacks and wants of students and an interview with the Head from the Telecommunications’ department were obtained through a diagnostic questionnaire in order to design a four-month technical English course.	The EST course was designed to focus on the following skills: reading comprehension strategies, language features, technical vocabulary, and translation techniques.

	Specific Objective To equip the students with different reading strategies and grammar structures in order to understand technical texts	Authentic material related to Electronics and Telecommunications were used which contained reading strategies like skimming, scanning, choosing the title that best matches the text, identification of unknown/known words	The strategies employed when reading technical texts have served to enhance our reading comprehension of manuals of laboratory equipment and technical books related to the field.
	Specific Objective To teach the Telecommunications´ students the different translating techniques.	The types of translation techniques to be used are: Literal translation, omission, amplification and modulation.	The four different translation techniques have equipped students to do translation from English to Spanish of different technical texts showing specialized terminology which the students are already familiar with.
	Specific Objective: Grasp and use an adequate amount of terminology in the Electronics and Telecommunications field.	The specialized terminology is learned through some vocabulary strategies like EAP (words and phrases related to academic English) and strictly technical words and acronyms related to the Telecommunications technical field and the clipping (process which consists in the reduction of a word) as part of the specialized terminology.	The teaching of specialized terminology will enable the learners to read and understand technical materials with the help of a specialized dictionary.

CHART 2

	OBJECTIVES	INDICATORS	RESULTS
COURSE DESIGN PROCESS	General Objective: Provide the students with adequate learning methods to understand and translate technical texts.	Electronics students have used two methods: The genre-based instruction which consist of the Input-based Strategies which provides reading strategies and the translation method which enables the learners with different translation techniques, Students were given reading strategies and classroom translation practices for the purpose of reading technical articles and translation.	The whole course was developed in a period of six months. Students have achieved and intermediate Reading comprehension level through these materials and resources.
	Specific Objective: Apply the contents of the course with grammar structures that are commonly used in electronics.	The contents were based on the most important grammatical structures such as: simple present, present continuous, simple past, past continuous. Present perfect, past perfect, future "will", future " going to ", modal verbs, adjectives and passive voice.	The students have learned grammatical structures and new specialized electronics vocabulary in the whole course.
	Specific Objective: Utilize reading articles in English according to the difficulty of grammatical structures and new	They have reinforced the learning process through activities using the different Reading techniques. The grammar guide provided	Thanks to these resources, learners showed interest, motivation and progress throughout the course and have practiced reading and

	vocabulary.	grammar structures with different tenses for Electronics. The reading of articles was divided in two stages. In the first stage using reading techniques such as: Skimming, Scanning, cognates, known words and unknown words with basic information about electronics. In the second stage, students translate the articles of electronics and telecommunications. The students have practiced different language skills by doing classroom exercises using reading, vocabulary and translation samples As the last resource they look up the new words in the dictionary.	translation.
	Specific Objective: Train students in the use of different translation techniques	The students use different types of translation techniques such as: literal. Omission, amplification, and modulation.	The student is able to choose the most appropriate translation techniques according to the type of text.
	Specific Objective: To assign the students with homework related to reading comprehension and translation to improve their competence.	Students practice different Reading strategies and translation techniques outside the classroom.	The students have increased their reading comprehension competence level and increase their vocabulary that enable them to translate manuals and specialized books.

2.5 WORK PLAN

The work plan regards the sequence of activities, techniques, and materials that were developed and the time the entire course design and proposal took. The following action plan is divided in two charts, namely chart 3 and chart 4. The methodology is described in chart 3 with the application of different learning strategies and techniques (see Chart 3). It shows the teaching process of the ESP course through materials, activities, reading techniques that were used to attain a reading comprehension level enough to understand technical books and translate manuals related to the telecommunication's field. Chart four describes the syllabus course design, that is the stages it is made up and process it followed (See Chart 4).

CHART 3

	OBJECTIVES	ACTIVITIES	LEARNING TECHNIQUES	TIME	RESOURCES	PARTICIPANTS
LEARNING STRATEGIES & TECHNIQUES	Learn grammar structures that are commonly used in Telecommunications texts, vocabulary and the different practices at the beginning of the course.	–Students learn specific grammatical structures. –Students develop technical English vocabulary. –Students utilize newly learnt grammatical structures and vocabulary through short telecommunications texts. –Students translate specific articles during each lesson. – The students complete the exercises.	Sentence constructions Comprehension of questions. Fill in the blanks. Types of translations Recognize cognates, known words and unknown words.	From August to September 2015	A grammar guide Bilingual dictionaries Markers Eraser Blackboard Photocopies	Students

	Utilize technical articles for Electronics in English according to the difficulty of grammatical structures , new vocabulary and types of translations techniques.	Students read familiar telecommunication article in English with information they learned in the first language. Students translate articles about the telecommunication field. Students develop technical telecommunication vocabulary.	Scanning Skimming Known words Unknown words Translations	From October to November 2015	Photocopies of Telecommunications Articles Eraser Blackboard Markers Bilingual dictionaries	Students

LEARNING STRATEGIES & TECHNIQUES	Apply different translation techniques for translating.	Students learn how use the different types of translations techniques Students read the article individually and underline the global idea. Student read the new the article and write the main idea Students make their translations of the article.	Individual work Group work Global idea Main idea Known words Unknown words	From October to November 2015	Photocopies of telecommunications Articles Eraser Blackboard Color markers Bilingual dictionaries	Students

CHART 4

	OBJECTIVES	ACTIVITIES	COURSE DESIGN STRATEGIES	DATES	RESOURCES	PARTICIPANTS
COURSE DESIGN PLAN	Identify the needs of the students through a diagnostic questionnaire at the Telecommunication Department.	Conversation with the director of Telecommunications Department.	Preliminary and collaborative meeting.	June 2015	Notebook Pens Computer	Head of Telecommunications Department.
		Diagnostic questionnarie design.	Questionnaries with close questions (multiple choice).	June 2015	Photocopies Pens Notebook Computer	Students majoring Telecommunications.
		Administration of the diagnostic questionnaire to students.	Questionnaries	June 2015	Photocopies Notebook	Students and teacher
		Identification of the needs, lacks and wants of the Telecommunications students.	Data gathering Needs analysis	June 2015	Completed questionnaries Computer.	Teacher

COURSE DESIGN PLAN	Sylllabus design according to the students' needs	Selection of syllabus for Telecommunications in accordance with the learners' interests. Selection of specific grammatical structures and vocabulary that correlates the syllabus and students' interests.	Implementattion of topical and content-based syllabus (English for Telecommunications) English level: (elementary-intermediate)	July 2015	Short texts and articles on Electronics Grammar and Vocabulary course books. Dictionaries Notebook	students

SYLLABUS DESIGN PLAN	Select and adapt engaging material throughout the course	- Selection of short texts and articles according to Telecommunications topics - Review of different English books Selection of Telecommunications Reading according to learners' familiarity and interest in each topic. - Design and selection of different classroom translation practices. - Adaption of all these selected materials in a text guide.	Compilation of reading materials Materials review	July 2015	Computer Notebook Grammar Books Telecommunications books Vocabulary books English books Markers Internet Dictionaries Telecommunications articles	Students

CHAPTER THREE

THEORETICAL FRAMEWORK

This chapter will define some concepts related to the present project giving a brief explanation of each one and the books and articles on which the theoretical reference is based.

3.1 Literature Review

This section will give a description of the previous research done regarding ESP course for Telecommunications and will provide a good insight for all the literature that is appealing and engaging for designing a novel ESP course based on some authors that have excellent ideas fo developing a technical course for the field. In addition, there will be the proper definition to understand the theory and the approaches and methodology used for this project,

3.1.1 ESP and EST definitions

Generally, ESP is a branch of EFL or ESL, which are the main branches of English Language Teaching (ELT) in general. According to Hutchinson and Waters (1987: 17) ESP is an approach to language learning based on learners' needs and centered around the question: "Why does this learner need to learn a foreign language?" According to Strevens (1988: 311) ESP is designed to meet learners‟ specific needs by choosing content from particular disciplines and using activities, syntax, lexis and discourse suitable to these activities, and he added that ESP may not use any pre-planned instructional methodology. Dudley- Evans and St. John (1998: 85) revised Strevens definition and accepted most of his claims. However, they elaborated and broadened the concept by adding more variables such as:

– ESP may be related to the specific subjects;
– It may use teaching methods and situations different from General English (GE);
– It may be designed for adult intermediate or advanced learners. (pp. 4-5)

These definitions, thus, makes it clear that learners‟ specific need is the foundation on which the entire edifice of ESP is established.

The term "specific" in ESP refers to the specific purpose for learning English. Students approach the study of English through a field that is already known and relevant to them. This means that

they are able to use what they learn in the ESP classroom right away in their work and studies. The ESP approach enhances the relevance of what the students are learning and enables them to use the English they know to learn even more English, since their interest in their field will motivate them to interact with speakers and texts. ESP assesses needs and integrates motivation, subject matter and content for the teaching of relevant skills.

"ESP is a major activity around the world today. It is an enterprise involving education, training and practice, and drawing upon three major realms of knowledge: language, pedagogy, and the students' specialist areas of interest." (Robinson, 1991:1) The full name of "ESP" is generally given as "English for Specific Purposes", and this would imply that what is specific and appropriate in one part of the globe may well not be elsewhere. Thus, it is impossible to produce a universally applicable definition for ESP.

English for specific purposes (ESP) refers to the teaching and learning of English as a second or foreign language where the goal of the learners is to use English in a particular domain. The teaching of English for specific purposes, in its early days, was largely motivated by the need to communicate across languages in areas such as commerce and technology (see Benesch 2001:35 , Johns, this volume, Starfield 2012 for reviews of these developments).

A key feature of an ESP course is the content and the aims of the course are oriented to the specific needs of the learners. ESP courses, then, focus on the language, skills, and genres appropriate to the specific activities the learners need to carry out in English. Typically (although not always) ESP students are adult learners. They are also often a homogeneous group in terms of learning goals, although not always in terms of language proficiency. Key issues in the teaching of English for specific purposes are how to identify learner needs, the nature of the text genres that learners need to be able to understand as well as translate, and how can be known that our learners have been able to do this successfully, and, if not, what can be done to help them to accomplish this.

Several issues and challenges that have surrounded English for specific purposes since the late 1960s and early 1970s still exist today as teachers and researchers continue the discussion of needs assessment, discourse analysis, curriculum design, materials development, and delivery of instruction (Johns and Dudley 1991: 1-15). The challenges are due to its dual role of teaching field-specific content while simultaneously facilitating learner’s development of the English language skills required to succeeding in the ESP field.

ESP is an approach to language teaching which aims to meet the needs of particular learners. This means in practice that much of the work done by ESP teachers is concerned with designing appropriate courses for various groups of learners (Hutchinson and Waters, 1996: 6, 19). Therefore, students learn English for specific purposes and the purpose of ESP is to prepare a specialist to be able to use a foreign language as the main source, in our case, for understanding technical readings and manuals related to the Telecommunications field, for translating such technical texts from English to Spanish and for identifying equipment and accessories in the professional field and real-life situations. So, teaching/learning ESP is said to be specialty-oriented as it is submitted to specific (professional) needs of the students.

The students' abilities in their subject-matter fields, in turn, enhance their ability to acquire English subject-matter knowledge gives them the context they need to understand the English of the classroom. The ESP class takes subject-matter content and shows students how the same information is expressed in English. The teacher can exploit the students' knowledge of the subject matter in helping them learn English faster. Our situation has been defined as that where all education is offered in the native language of the country – in our case Spanish– and English is considered to be an auxiliary language.

3.1.1.2 Characteristics of ESP

Dudley-Evans & St John (1998:85) provide their definition of ESP. They also use absolute and variable characteristics of ESP as Strevens centers on defining ESP. In addition, there are other characteristics that will be described above.

3.1.1.2.1 Absolute characteristics:

1. ESP is designed to meet specific needs of the learner;
2. ESP makes use of the underlying methodology and activities of the disciplines it serves;
3. ESP is centered on the language (grammar. Lexis, register), skills, discourse and genres Appropriate to those activities.

3.1.1.2.2 Variable characteristics:

1. ESP may be related to or designed for specific disciplines;
2. ESP may use, in specific teaching situations, a different methodology from that of 'General English';
3. ESP is likely to be designed for adult learners; either at a tertiary level institution or in a Professional work situation;
4. ESP is generally designed for intermediate or advanced students. Most ESP courses assume basic knowledge of the language system, but it can be used with beginners.

The definition that Dudley-Evans & St John offer is clearly influenced by that of Strevens and they have included more variable characteristics. Their division of ESP into absolute and variable characteristics, in particular, is very helpful in resolving arguments about what is and is not ESP.

3.1.1.2.3 Field homogeneity

The students share a particular field of study. This characteristic of the educational system In relation to ESP in most of Latin America provides the possibility of having field-homogeneous groups, considered to be ideal for the development of specific instruction (Hyland, 2002: 393). All the students taking this course are from the Electronics and telecommunications department at the Facultad Tecnológica.

3.1.1.2.4 Latinate L1 background

The main major language spoken in Latin America is Spanish, being of Latin origin. It is well known that the English language was greatly influenced by Latinate languages, both in the areas of science and technology. Thus, most scientific terms in English can be expected to be cognates of Spanish. This similarity allows students to make the best of the learners' intuitive knowledge of their first language. Thus, in the Latin American context, the linguistic similarity between the local languages and English for science clearly contributes to reducing the burden of vocabulary learning.

3.1.1.2.5 Highly specific needs

The students that participate in EAP/ESP courses all over the world usually have very specific and urgent needs. Thus it is possible, and practical, to concentrate on one particular teaching goal at a time, such as focusing on a single skill. In general, EAP courses at the Universidad Mayor de San Andres are not usually concerned with the spoken skills, In fact, they mainly focalize on the reading skills, and in general they develop translating in undergraduate courses as the students' most immediate needs are related to building technical vocabulary in English to meet the requirements of their specific major. The specificity of needs at the Telecommunications department calls for specific instruction. Hence, the students may be expected to have deep knowledge of only the restricted set of genres required, specific instruction also favors the learners, as they concentrate only on the genres that their programs require. In our case, our students' needs stresses on reading and technical vocabulary related to the Telecommunications field.

First, ESP can be defined in terms of two basic goals for the learner: 1) the acquisition of content knowledge of a specific field and 2) the development of English language skills requires performing in the discipline. This combination requires expertise in English language teaching and content knowledge of a particular field such as science and technology, in our case. In order to meet the specific needs of the learners; however, few individual teachers possess adequate knowledge of both specific discipline and English language pedagogy.

Second, the ESP curriculum must meet the specific needs of the learner and utilize the methodology, activities, and authentic materials of the disciplines or occupations it supports and in the process provide appropriate language practice in terms of syntax, lexis, register, discourse and genre required by the discipline (Stevens as cited in Dudley-Evans (1991: 69) and Chen,2006:26). Different types of ESP courses strive to accomplish these goals with variables centered on the teacher, the course design, and the department location of the ESP courses. Chen (2006:26) found that acquisition of general English skills was frequently the dominant factor in curriculum design while field specific language and functions provided content that met specific needs of the learners. He noted that in ESP teaching, the content related specific language cannot stand alone without general English syntax, lexis, and functions.

3.2 ESP vs EFL

ESP should be seen simple as an 'approach' to teaching, or what Dudley-Evans describes as an 'attitude of mind'. Such a view echoes that of Hutchinson et al. (1987:19) who state, "ESP is an approach to language teaching in which all decisions as to content and method are based on the learner's reason for learning".

The key question to answer is: question: "How is ESP different from EFL?" The major difference between ESP and EFL lies in the learners and their purposes for learning English. ESP students are adults who already have some familiarity with English and are learning the language in order to communicate a set of professional skills and to perform particular job-related functions. An ESP program is therefore built on an assessment of purposes and needs and the functions for which English is required.

EFL and ESP differ not only in the nature of the learner, but also in the scope of the goals of instruction, whereas in EFL all four language skills; listening, reading, speaking, and writing, are stressed equally, in ESP a needs assessment determines which language skills are most needed by the students, and the program is focused accordingly. An ESP program in our project stresses the development of reading skills in students who are preparing to read Telecommunications books with emphasis on technical vocabulary and translation of technical manuals of use in that field. ESP integrates subject matter and English language instruction. Such a combination is highly motivating because students are able to apply what they learn in their English classes to their major field of study, in our cases Telecommunications and Electronics. Being able to use the vocabulary and structures that they learn in a meaningful context reinforces what is taught and increases students' motivation.

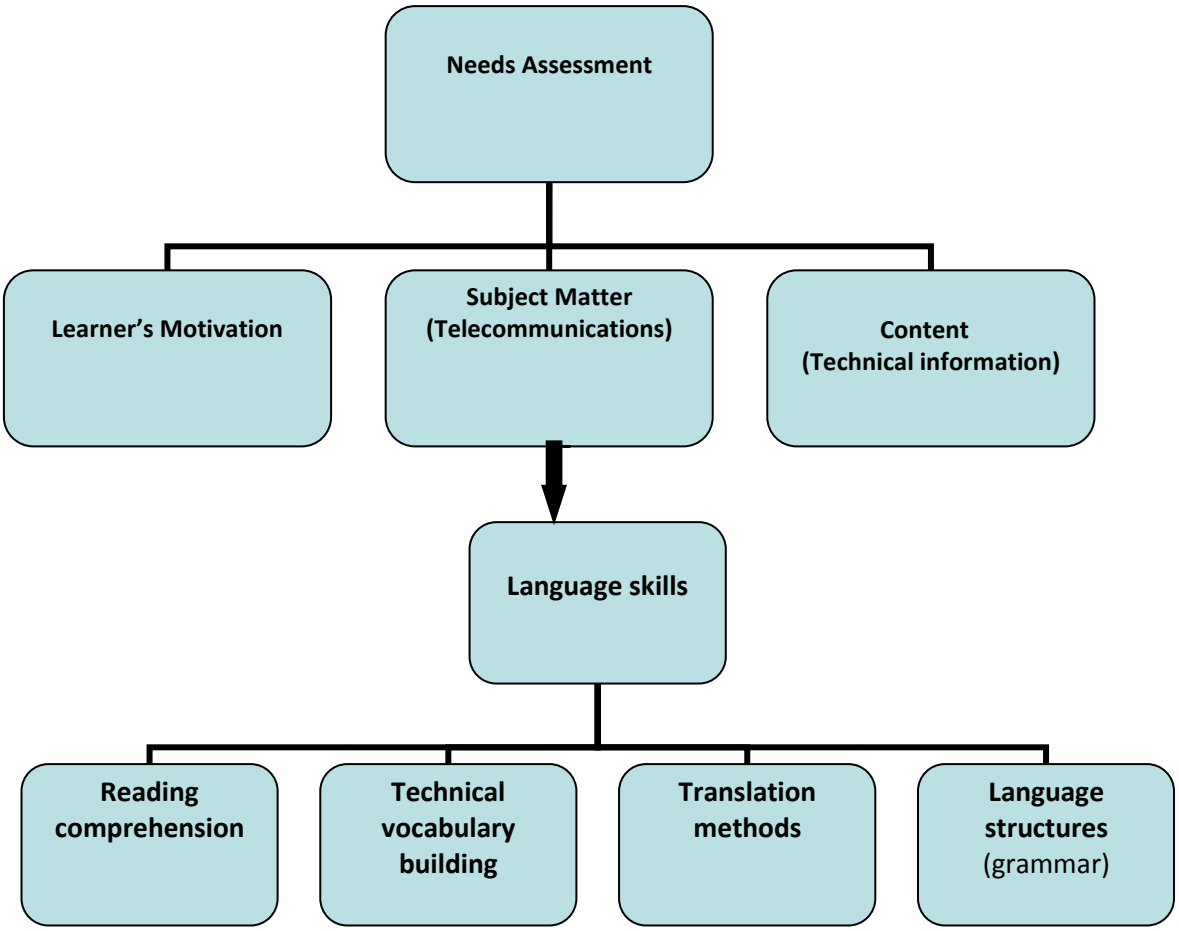


Fig. 4 Needs assessment and integrated skills link.

The above figure outlines the learning skills and the language skills needed as part of the designing of the ESP course and the process that takes place in the ESP classroom for the Telecommunications field. That is, the teacher as a course designer has to have the ability to link the content of the subject matter (Electronics and Telecommunications) with language skills of English that are needed to develop a sound understanding of the field. All of the process starts off with the needs assessment and ends up with students' language usage of the four language skills and sub-skills: Reading comprehension**,** Technical vocabulary building, Translation methods, and the Language structures (grammar) needed to perform well on the ESP course.

ESP is part of a larger movement within language teaching away from a concentration on teaching grammar and language structures to an emphasis on language in context. ESP covers subjects ranging from accounting or computer science to tourism, Electronics and Telecommunications.

The ESP focus means that English is not taught as a subject divorced from the students' real world; instead, it is integrated into a subject matter area important to the learners. ESP involves the use of English and it is the preferred language of international communication. “English for Special Purposes” has become “English for Specific Purposes for the following reasons: “specific” focuses attention on the purposes of a task in English”, in our case technical English. It implies a selection of skills (reading, vocabulary, grammar and translation) and a selection of text types (specialized books and manuals for the telecommunications field).

3.2.1 Language in use

Field: ESP. the vocabulary used: telecommunications texts use the language **of** telecommunications just as linguists ones use the language of linguistics and biological ones use that of biology.

Purpose:

• Explanatory (a.k.a. expository): Text books and manuals as well as university lectures and term papers are largely expository.

• Directive: They may also include a certain amount of descriptive material. Manuals will have large sections which give instructions.

Medium:

• written and written to be translated**.**

Personal tenor or style: Technical style and the tenor is formal language.

3.2.2 The origins of ESP

Since the World War II there has been an expansion in scientific and technical activity throughout the planet. This expansion and their relentless progress created a demand for an international language. For various reasons most notably the economic power of the United States in the post-war fell into English. Previously the reason for learning English or any other language had not been previously defined. But English became the lingua franca of technology it created a new generation of learners who knew specifically why the wanted to learn a new language– mechanics who had to read instruction manuals, doctors who wanted to keep with the developments in their field and a whole range of students whose course study included textbooks

and journals only available in English. All these and many others needed English and they knew why they needed it. Whereas English had previously decided its own destiny, it now became subject to the wishes, needs and demands of people other than language teachers. Teachers of ESP began to recognize the importance of sub-technical vocabulary, that is, the words and phrases that surround the technical words (see Kennedy and Bolitho 1984:48). According to (Swales 1990:38) the field has gone through since the 1960s—beginning with an urge to teach general English with technical vocabulary, moving to an awareness of the importance of sub-technical vocabulary and needs analysis, and emerging eventually to recognition of the need to use discourse analysis.

3.3 TYPES OF ESP

Dudley-Evans and St. John, (1998: 85) have divided EAP into two divisions: English for General Academic Purposes (EGAP) and ESAP. EGAP is related to the teaching of language skills that are common in different disciplines but ESAP refers to the teaching of language features that are specific for various disciplines. Research has offered insights into the mutual relationship of EGAP and ESAP. Skills and language functions learnt in EGAP programs may be transferred to specific disciplines in ESAP programs (ibid.). Many researchers have discussed about the types of ESP and most of them have grouped ESP into two main categories: English for Occupational Purposes (EOP) and EAP (Hutchinson and Waters, 1987: 6, 19; Robinson, 1991: 87)

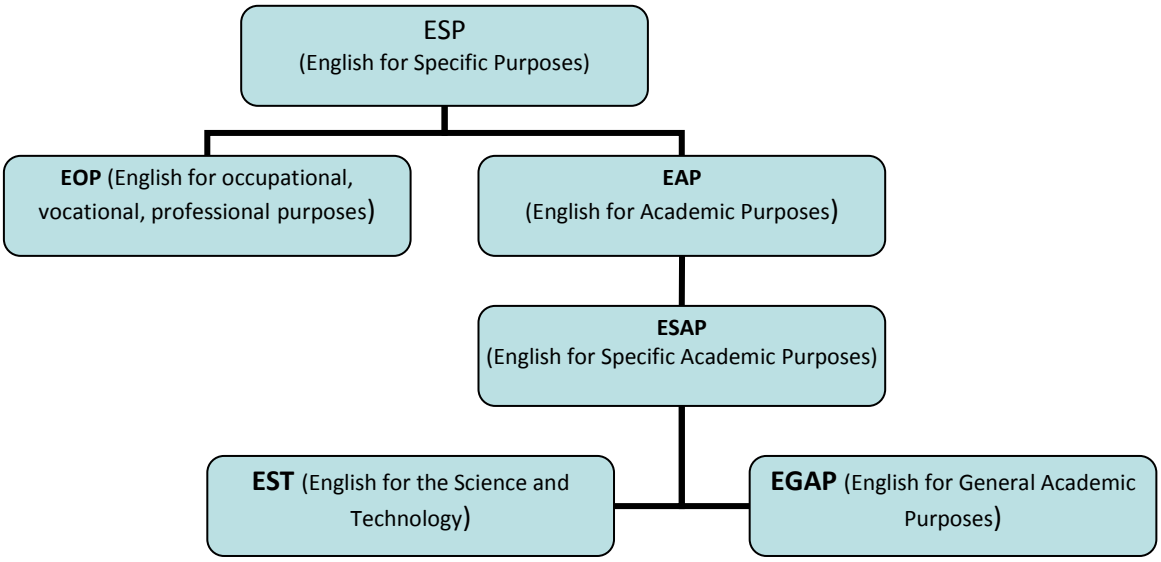


Figure 5. Adapted from Jordan's model for the categories of ESP (Jordan, 1997)

This figure shows the different categories that the ESP is broken up. The first category is related to EOP (English for occupational, purposes). Here is an example of it in the business of tourism: At the beginning of each new session (and before we get to open the textbook or any other material), "student reporters" tell the class about the latest issues in the world of business (especially issues related to the hospitality industry). Students try to consider questions such as these:

- "How is Morocco doing in its bid to attract 10 million tourists by 2020?"
- "Are there any new resorts being built?"
- "How are the airlines coping with the recent global financial crisis?"

The EOP (English for occupational, purposes) would be of service to those who use English as a tool to carry out their daily tasks, or exercise their profession, for example, to communicate in public, speak with clients, etc.

These questions allow students to keep abreast of new developments and get used to the language of business. EVP (English for vocational, purposes), EPP (English for professional, purposes). The EAP stands for (English for Academic purposes). On the other hand, would be for those who need to read and understand textbooks or exchange scientific thoughts with other colleagues from an academic world. That is also why it is being currently taught in educational institutions, with its place within the University curriculum. English for Academic Purposes (EAP), often identified as a sub-category of English for Specific Purposes (ESP), is described by Bernard Coffey (1984:4) as a student's need for "quick and economical use of the English language to pursue a course of academic study" (p.4). Jordan (1989:151/1997), an author with extensive research and practical experience in the area of EAP, concludes that there is general agreement that EAP can be further divided into two additional groups: 1. "Common core" or "English for General Academic Purposes" (EGAP), 2. "Subject-specific" or "English for Specific Academic Purposes" (ESAP) as proposed by Coffey (1984:4) and Blue (1988:3), respectively (Jordan, 1989:151). In other words, in the first instance, general academic language as well as study skills including strategies for reading, writing, speaking and listening effectively for all academic subjects would be taught. In the second case, vocabulary and skills specific to a subject of study (as well as its curriculum) would be also taught. For example, Psychology, are emphasized. Jordan argues that in the first as well as the second scenario, study skills are a "key component" of EAP (1997:5). Essentially, the goal of the ESAP tutoring project was to help the tutees build bridges to close the "skills gap" between the skills developed in the general pre-academic English (EGAP) course, and

the actual skill demands of the elected content course they are required to attend. The aim, in other words, was to focus on the skills that the tutees still needed to develop to be successful in the content class. A good example of the EST is the following exercise from the Telecommunications field: word study short forms some technical words have common short forms. In some cases the short form is used much more frequently than the full form. For example:

Full form	Short form
a facsimile message	a fax

Exercise 1 What are the short forms for these terms?

1. Amplifier _____
2. Video Recorder _____
3. Television _____
4. Potentiometer _____
5. Coaxial Cable _____

Exercise 1 Which terms represent these short forms?

1. A/D _____
2. phones _____
3. mike _____
4. CRT _____
5. phone _____

Upon reconsideration, we soon arrive to a conclusion that ESP must be thought of not as a product of language analysis, but as an approximation to the needs of a person who is going to learn English. At the same time, it must be considered as an approach for language teaching with some concrete objectives and purposes. In other words, the particular needs will determine skills and semantic, structural and discursive contents.

3.4 THE EXPANDING FOCUS OF ESP

What does English for science and technology encompass? Halliday (1993a: 69– 85) comments that a text is recognized as scientific English because of the combined effect of clusters of features and, importantly, the relations of these features throughout a text. Yet characteristic forms and

vocabulary of science or technology should not be considered as separate from the genres in which they occur, because linguistic differences are part of what constitutes genre. Similarly the genres of science and technology partially constitute the various disciplines, and cannot be separated from them.

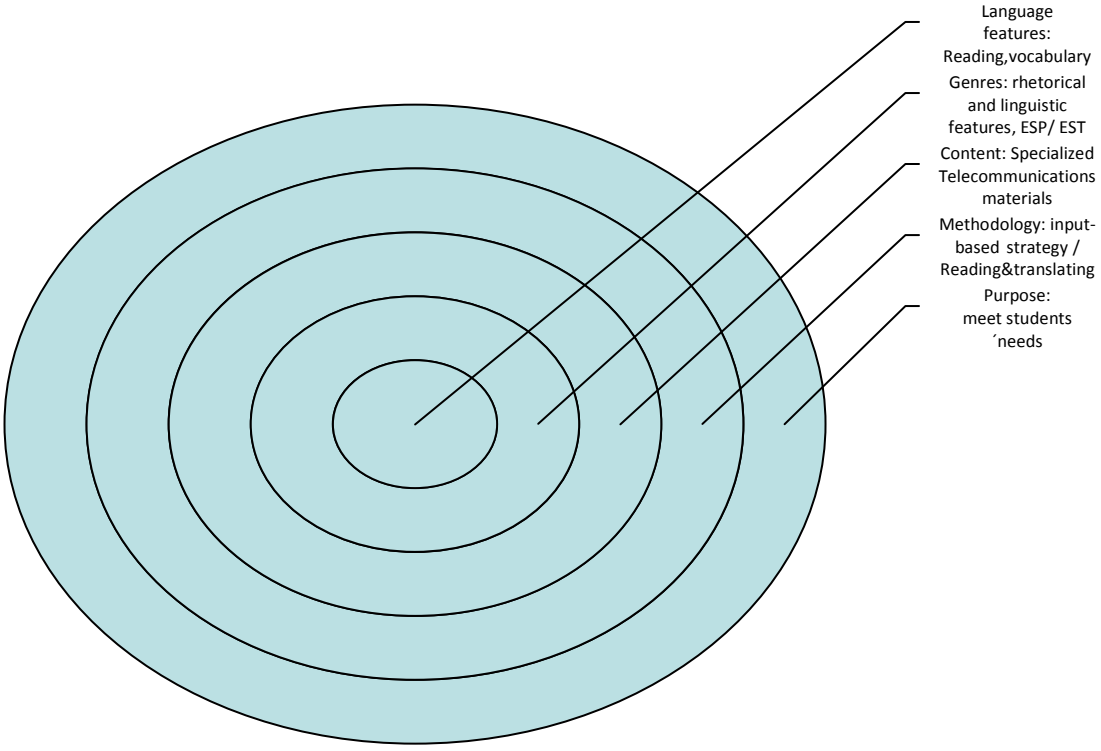


Fig. 6 EST as an expansion of ESP.

The Fig. 6 is an outline of the EST features concerning the components that make up the whole scope of the course design. The core of the radial in fig. 6 is the language features which describe the reading, translating and the building of specialized vocabulary. Then the next ring describes the genre which refers to rhetorical and linguistic features of genres related to the technical English or better known as English for the science and technology. Then comes the content which concerns the specialized authentic material. Then the methodology is referred to the genre instruction which applies the input-based strategy focusing on reading comprehension and translation. After that is the purpose which talks about the student's needs. This is ring points out

to the description of the necessities that need to be fulfilled by the course design. Finally the audience which addresses to the learners in tertiary education that belong to the Electronics and telecommunication major´s students from the Facultad Tecnológica at the Universidad Mayor de San Andrés.

3.5 ENGLISH FOR SCIENCE AND TECHNOLOGY (EST)

A significant discovery at that time was that the ways in which we speak a language and write in a language vary. The significance of this discovery was that, as a result of these variations in language use, language teaching could be tailored to professional situations. In the late 1960s and the early 1970s, there were first attempts to teach English for Science and Technology (EST). It was the first variety of language for specific purposes that received scientific attention. Hutchinson and Waters (1987: 6, 19), Swales (1980), and Selinker and Tarone (1981: 43) were among the EST pioneers. English for Electronics and Information Technologies belongs to the group of English language variety of English for Science and Technology. In this project we see EST as a genre in which the emphasis is not on the pure sciences subjects, but on applied science to technology as is the case of the major of Electronics and Telecommunications at the Facultad de Tecnología at the Universidad Mayor de San Andres.

3.5.1 EST genres

To gain insight into the genres of the technological community, researchers have worked on identifying key EST genres. This project has noted that genres in any discipline or discourse community come in related sets, but in our case some specific genres such as the academic readings of books related to the telecommunications field, and the lab reports, and the instruction manuals of some laboratory equipment for electronics have been identified as the most utilized at the Facultad Tecnológica at the UMSA. Particularly the students from the faculty read electronics textbooks for learning the subject matter in English. This means that he register of the language is highly specialized vocabulary of the area of electronics and the use of some acronyms.

3.5.1.1 Rhetorical features

The register features, provide an insight into the value system of particular science and technology disciplines as in our case Electronics and Telecommunications and its discourse community. As a discipline, ESP regards students as benefitting from explicit instruction in genre structure. For example the particular texts that the telecommunications students face are: abstracts when they read thesis in English, in which the there is a tendency of the student writers to hedge more, avoid personal attribution, and distance themselves from their claims. Another genre identified in the field is the translation of laboratory equipment which is plagued of instructions and which uses a directive language. Finally Electronics textbooks use abstract nominalizations as subjects of processes. It can be noticed that a number of register differences. For example, personal subjects such as “We” in thesis refer to researchers; in textbooks they refer to reader and writer. Textbooks are written largely in the present tense because textbooks limit information to published research that is already accepted by the research community, and are thus presented as all fact. In addition, in textbooks there are few hedges, use logical connectors, photographs, naturalistic drawings and diagrams and a range of metadiscoursal markers.

3.5.1.2 Linguistic features

Some linguistics features are distinguished in the learning of technical English, that is, the types of English ranges from specialized terminology to some syntactic and grammatical features which are particularly found in articles of electronics and instruction manuals for the laboratory.

3.5.1.2.1 Grammatical features of EST

Particular grammatical structures and vocabulary items are used more frequently in scientific and technical writing. A common analysis shows that the passive tense is used more frequently in such writing than in general English and identified a set of sub-technical vocabulary items that were more likely to occur. The vocabulary is made in two categories: academic and specialized. The former relates to academic terms and the latter to specialized vocabulary in the telecommunications field.

Meaning in technology tends to be expressed nominally rather than causally, with meaning " buried " within the clause rather than explicitly signaled between clauses by use of conjunctions:

Clausal packaging of meaning:

Fiber optic is destroyed because the potential difference exceeds in voltage.

Noun verb conj noun verb prepositional group

Nominal packaging of meaning:

The potential difference causes Fiber optic destruction.

Nominal group verb nominal group

Between these two examples, the actions "exceeds" and "destroy" (most naturally or " congruently " expressed as verbs) become nominalized into the nouns and destruction , a less expected, " less spoken " way of expressing this meaning. Similarly, the conjunction because, which signals the causal relation between two clauses is re - expressed as a verb, causes , and buried in a single clause, a less expected, " more written " way of expressing this meaning. Halliday (1993b: 69– 85) has labeled these more written uses of language "grammatical metaphor" because these meanings are metaphorical with respect to the grammar used to express them.

3.5.1.2.2 Syntactic Features of EST

Gerber, M. (1970) claims that these are the syntactic features: passive, tense and aspect and the modal verbs, non-defining relative clauses, rhetorical devices, nominal style and nominalization, the use of the article, the restricted use of personal pronouns, new plurals. Here is a sample of the syntactic features extracted from the classroom activities:

Language study Describing components

Exercise1. Two questions we may need to answer when we describe components are:

1. what is it called?
2. what does it do?

In other words, we need to be able to:

1. label components.
2. describe their function.

We can use these ways of labelling components:

- It ***is called*** a Silicon diode.

- It ***is known*** as a Germanium transistor.

We can describe the language components like this:

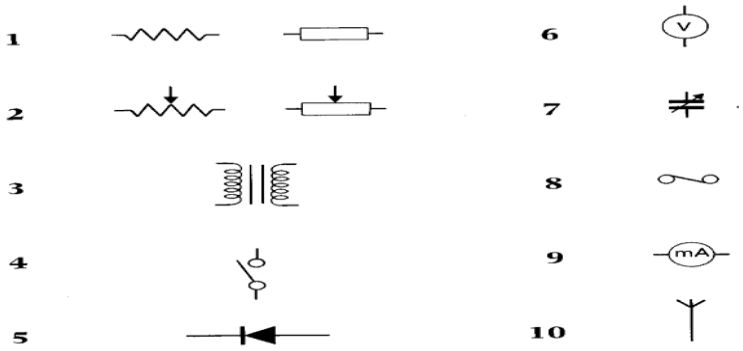
- A cell ***provides*** electricity.
- Cells ***changes*** chemical energy into electricity.

Exercise 2. Here are some circuit symbols. label them and describe their function. For example:

Fig. 3 __h__ It's called a transformer. Answer: (It steps AC voltages up or down).

This list of functions may help you.

a. varies cappacities in a circuit
b. rectifies alrernating current
c. adds resistance to a circuit
d. mesures very small currents
e. breaks a circuit
f. protects a circuit
g. varies the current in a circuit
h. steps AC voltages up and down
i. receives RF signals
j. measures voltagesFig.



Fig, 7 Describing functions

Links are made between them and ESP course designs, instructional materials. Thus the work moves back and forth between descriptions of ESP theories, teaching practice. Hence the present paper draws on a wide range of examples of teaching practice from around the world and from different branches of ESP. In this project we will focus on EST (English for the science and technology), on the Telecommunications field in particular.

More recently, proposals include the notion that ESP should teach students concepts from their discipline, as well as language, in order to develop their 'underlying competence' (Hutchinson & Waters, 1985: 35). This is true for our project because we are to include the main concepts of

Telecommunications and Electronics applied to the present course design. Beyond this, however, exploration of the objectives of ESP teaching has been limited. This project aims to work toward addressing these gaps. It sets out to examine ideas about learning and teaching as well as ideas about language in ESP.

Generally, ESP has not been much concerned with the debates and issues emerging in recent years in the field of second language acquisition (Dudley-Evans & St. John, 1998: 85; Bloor, 1998: 37). Published reports of research focusing on language acquisition in ESP have been limited. One exception is the study of interlanguage use in relation to discourse domains by Selinker and Douglas (1985:38). It has also been noted that few studies have set out to investigate the effectiveness of ESP courses (Dudley-Evans & St. John, 1998:85). Beyond this, however, the exploration of the objectives of ESP teaching has been limited. This paper aims to work toward addressing these gaps. It starts out to examine ideas about learning and teaching as well as ideas about language in ESP.

Whereas general English Language Teaching tends to set out from point "A" toward an indeterminate point, ESP seems to lead learners to a known destination. ESP is an essentially practical endeavor because ESP means on going from "A" to "B" in the most time- and energy-efficient manner. Nevertheless, within ESP there are proposals and counterproposals, arguments and counterarguments about the nature of the destination (views of what is meant by knowing a language for special purposes) and the best way of getting there (views of learning and teaching). Therefore, although practical in orientation, ESP, like any other language teaching enterprise, is based on ideas about the nature of language, learning, and teaching.

3.6 SYLLABUS DESIGN

Syllabus is a 'subpart of curriculum which is concerned with a specification of what units will be taught', It is not easy to separate the issues concerning syllabus design set up for specific purposes programs from general language teaching. Designing a syllabus to a specific group in a particular situation is not a simple task for the designers aiming at achieving learners' requirements, since the existence of various concepts and basis dealing with syllabus. Thus, it seems of great importance to define "syllabus" in order to have a better understanding of what it actually meant by the term in education. Hutchinson & Waters (1987: 80) define "Syllabus" as "... a document which says what will (or at least what should) be learnt". In the same vein,

Robinson (1991: 34) states that syllabus is “a plan of work and is, thus, essential for the teacher, as a guideline and context of class content.” The above assertions point out that the syllabus first concerns the teacher, and that it helps him/her plan courses. Basturkmen (2006:20) argues that “in order to specify what language will be taught, items are typically listed and referred to as the syllabus”. She exemplifies the definition by giving a standard view of the syllabus through the figure below**.**

A syllabus:

1- Consists of a comprehensive list of content items (words, structures, topics) process items (tasks, methods)
2- Is ordered (easier, more essential items first)
3- Has explicit document
4- Is a public document
5- May indicate a time schedule
6- May indicate preferred methodology or approach
7- May recommend materials

Figure 8: Characteristics of a syllabus (Course in Language Teaching, CUP, 1996: 177 in Basturkmen 2006:21).

Another issue in defining”syllabus‟ is that it is “an instrument by which the teacher,..., can achieve a certain coincidence between the needs and the aims of the learners, and the activities that will take place in the classroom” (Yalden 1987:86) that is to say that the syllabus is “a teaching device to facilitate learning” (Nunan 1988:6) which organises classroom activities according to learners aims and requirements after the process of needs identification and analysis.

Munby continues saying (1978:2) ESP courses are: “Those where the syllabus and the materials are determined by the prior analysis of the communication needs of the learner.”This means that the identification of learners' needs is the first step upon which the ESP course is going to be designed.

Thus, the ESP course takes into consideration not only the subject area of the learners, but also the lexical, semantic and structural aspects of the language characteristics of that specialized area.

3.6.1 Conditions to Syllabus Design

Harmer (2001: 26) establishes some rules that should be taken into consideration when designing a syllabus, and states that "every syllabus needs to be developed on the basis of certain criteria" (Harmer, 2001:295), which consist of:

a- Learnability: the content should be organized in a gradual manner in order to be more efficient, i.e. from the easier themes to the more complex ones.

b- Frequency: integration of the most frequent items used in target language.

c- Coverage: incorporate the terminology and structures that have wider coverage in the use of the language.

d- Usefulness: set up language forms and skills that are adequately useful for the learners.

The above requirements are a must when designing a syllabus for the following reason: First, in our case both the content (subject matter: Telecommunications and Electronics) and the language skills, grammar, lexis and the material were designed from the most simple to the most difficult. Secondly, the most frequent grammar and syntactic structures found in the materials. That is, the simple present and the passive voice were the most frequent verb tenses. Then the coverage refers to the widest coverage of terminology and structure found in the materials like books, articles and manuals. Finally, the usefulness has to do with the items of the course content that are the most useful to learn in order to have a fundamental understanding of the telecommunications field. As well as the skills needed to process the learning: reading strategies and translation techniques.

3.6.2 Type of syllabus.

The curriculum design process associated with forward design can be represented as: A grammar-based syllabus model concerns linguistic forms to be included into the course. According to the current syllabus, grammar material comprises Present and Past Simple, Continuous, Perfect, and Perfect Continuous Tenses, as well as Passive constructions and Modal verbs. However, ESP experience shows that the course duration does not allow paying special attention to the listed grammar topics. Moreover, they make part of course pre-requisite which is General English, level B2. This said, it is vital to remember that almost a third of students start their ESP

course with only level A1 completed, and even that level can often be questioned which makes it impossible to entirely ignore grammar.

3.6.2.1 Topical Syllabus

This syllabus is one that is organized around themes, topics, or other units of content.

Advantages of topical syllabus:

- They facilitate comprehension
- Content makes linguistics form more meaningful
- Content serves as the best basis for teaching the skills areas
- They address students' needs
- They motivate learners
- They allow for integration of the four skills
- They allow for use of authentic materials

(Brinton, Snow, and Wesche 1989; Mohan 1986: 1-2)

3.6.2.2 Characteristics of content-based syllabus

With content-based instruction, learners are helped to acquire language through the study of a series of relevant topics, each topic exploited in systematic ways and from different angles, as outlined in Mohan's "knowledge framework", (Nunan, 1988: 49-50.) Content syllabuses certainly give learners a lot of exposure to the language, which is good.

The Content-Basics perspective assumes that language learning is a by-product of a focus on meaning—on acquiring some specific topical content. This view has supporters who hold that to teach language as if it were a set of patterns or rules or interactions apart from content is not only misguided, but impossible (Crandall 1997: p 312). Citing Brinton, Snow, and Wesche (1989*: 1-2*), Stoller (2002: 103) states: In a content-based approach, the activities of the language class are specific to the subject matter being taught, and are geared to stimulate students to think and learn through the use of the target language. Such an approach lends itself quite naturally to the integrated teaching of the four traditional language skills. For example, it employs authentic reading materials which require students to understand information but to develop technical vocabulary and translate it from the target to the source language as well.

The primary purpose of instruction, according to Reilly (n. d.) and Richards and Rodgers (2001) is to teach some content or information using the language that the students are also learning. The students are simultaneously language students and students of whatever content is being taught. The subject matter is primary, and language learning occurs incidentally to the content learning. The content teaching is not organized around the language teaching, but vice-versa. Content-based language teaching is concerned with information.

An example of content-based language teaching is a Telecommunications and Electronics class taught in the language the students need or want to learn, possibly with linguistic adjustment to make the Telecommunications more comprehensible.

Content-based syllabus is yet another realization of the analytic and process approach to syllabus design. It differs from task-based syllabuses in that experiential content, which provides the point of departure for the syllabus, is usually derived from some fairly well defined subject area such as Telecommunications (Nunan, 1988:18, 49-50).

3.7 VOCABULARY FOR ENGLISH FOR SPECIFIC PURPOSES

ESP vocabulary can be referred to in the literature by very different names from one study to another. These terms include special purpose, specialized, technical, sub - technical, and semi - technical vocabulary. In essence, such terms usually refer to the vocabulary of a particular area of study or professional use. Vocabulary in ESP is important for several reasons. First of all, teachers and learners need to know that precious classroom time is directly related to their language needs. They should be reading material that contains key ideas and the language of their field and using those ideas and language. ESP vocabulary covers everyday words that take on specialized meanings in particular contexts (think of “monitor” in computer science and “diode” in Electronics). Secondly, understanding and using this special purposes vocabulary shows that these learners belong to a particular group. Learners need that language to show understanding, “make meaning and engage with disciplinary knowledge ” (Woodward - Kron 2008 : 246).

3.7.1 Introduction: the categories of ESP vocabulary

ESP vocabulary can be referred to in the literature by very different names from one study to another. These terms include special purpose, specialized, technical, sub - technical, and semi -

technical vocabulary. In essence, such terms usually refer to the vocabulary of a particular area of study or professional use. The range of a word is important in ESP. That is, a specialized word would have a narrow range of use within a particular subject area. This means that specialized words are expected to belong to a particular subject area at university or to a professional discipline.

Vocabulary in ESP is important for several reasons. First of all, teachers and learners need to know that precious classroom time is directly related to their language needs. They should be reading material that contains key ideas and the language of their field and writing using those ideas and language. The approach we have considered in this course is the following: The other approach conceptualizes all language as being for specific purposes (Basturkmen 2006:18) which means specialization should begin early.

3.7.2 Enhancing technical vocabulary knowledge in ESP courses

English has become a lingua franca of science and technology and all kinds of communication in almost every part of the world. This implies that mastering the English language is a prerequisite for students and professionals of every field. Thus, after learning the first 2,000–3,000 most frequent words, the primary goal of English for Specific Purposes (ESP) learners is the acquisition of the technical vocabulary of the field in which they are specializing. Several studies that have investigated the vocabulary needed for academic study demonstrated that academic vocabulary 'gives 8.5% coverage of academic texts' (Nation, 2001:188). This fact imply that one of the main issues in ESP courses is developing students' knowledge of academic and technical vocabulary, since apart from the rhetorical structure of texts, vocabulary is the main differentiator between general and specialized English discourse. It has been seen that in the telecommunications field, technical vocabulary gives 60 % coverage of technical texts.

Nation (2001) suggests that after learners have mastered the first 2,000–3,000 words of General English, they should direct their vocabulary learning at academic vocabulary and, subsequently, the specialized vocabulary of a particular field or technical vocabulary. Technical vocabulary is the vocabulary 'that is recognizably specific to a particular topic, field or discipline' (Nation, 2001, p. 198).

Nation states that it can be divided into four categories depending on the degree of 'technicalness', that is, it can be more or less technical 'depending on how restricted a word is

to a particular area' (Nation, 2001:198–199). However, the words in the first category clearly point to the particular field, as these are purely technical terms. Nation (2001: 199) points out that the person who knows these words is likely to have some knowledge of the field and that 'these words can only be learned and really understood by studying the field'. It is of great importance an activity that would be useful for learners was creating a glossary of Electronics –Telecommunications terms.

3.7.3 Specialized Vocabulary Building for Telecommunications

The syntagma specialized language or language for specific purposes is generally used to indicate a linguistic sub-system that combines linguistic peculiarities of a specialized field, studied in relation to the general language. In a more narrow meaning, the term refers to an approach used in foreign language teaching that targets a specific audience. In current studies, the term language for specific purposes tends to be replaced by communication for specific purposes, which entails the usage of the specialized language in specific professional communication situations (Guerguieva-Steenhoute 2008: 33).

3.8 ESP TEACHING METHODOLOGY

Methodology encompasses the types of learning activities, procedures and techniques that are employed by teachers when they teach and the principles that underlie the design of the activities and exercises in their textbooks and teaching resources. Once a set of teaching processes has been standardized and fixed in terms of principles and associated practices it is generally referred to as a "method",

Is there a specific methodology for ESP? Another important issue in teaching foreign language for specific purposes is associated with developing and improving learning materials**.**

The point here is simply that with forward design, decisions about how to teach follow from decisions about the content of a course and decisions about output or learning outcomes followed from decisions about methodology.

In the literature, it's claimed that ESP is based on vocabulary or reading comprehension rather than learning a language structure or field. Many searches and discussions have been made about ESP. Hutchinson and Waters (1987: 6) stated that ESP is not an approach it's a product but this is

debatable. Its syllabus, content and how to present are definitely different from general English learning. In the ESP classroom, learners are more likely required to be at intermediate level to be able to achieve their target. Therefore, learners are guided, observed and differentiated in ESP classrooms rather than teaching the target language word by word.

Language learning is not only acquiring grammatical structure but also its function. It is important for electronics students to be able to present their ideas or exchange their opinions or follow the technological development all over the world. Most universities all over the world have been offering ESP courses besides the general English lessons, including the U.M.S.A., to boost their confidence in this field.

When we talk about specific methodology, we mean all language aspects from reading complex articles to making a presentation. Hutchinson and Waters (1987:6) claimed that there is no specific methodology for ESP. The same principles apply with ELT methodology in general. It can be arguable whether there is a specific methodology for ESP; my experience is that knowing General English methodology does not make a teacher successful in techniques that the teacher implements in the classroom. For example; if the teacher is not familiar with such specific subject matter as the satellite or power station, he won't be able to want to prepare his own material for this matter. It is not always possible to find what material you want to use during the course in the course book. In ESP courses, the teacher has to put more effort than General English courses.

Robinson identifies two characteristic features of ESP methodology: ESP can base activities on students' specialism (but need not do so), and ESP activities can (but may not) have a truly authentic purpose derived from students' target needs. Dudley-Evans and St. John (1998) maintain that what characterizes ESP methodology is the use of tasks and activities reflecting the students' specialist areas. Post-experience ESP learners have specialist knowledge from working or studying in their specialist areas and a 'deep-end strategy' (p. 190) can be used.

3.8.1 Eclectic Method

Selection of appropriate methodology or methodologies is another integral component of ESP teaching process. Much research has offered deep insights into the fact that no single teaching methodology can be sufficient to address diverse and peculiar needs of ESP learners (Hutchinson, 1998: 26; Rao, 2001: 26; Widdowson: 27, 1983; Stern: 26, 1992; Javid, 2010: 23) and ESP practitioners have to pick and choose from a host of teaching methodologies to run an effective

ESP course. The specific demands of modern challenges in the field of ESP have forced ESP practitioners to “move away from … following one specific methodology” and select “techniques and activities from a range of language teaching approaches and methodologies” and this trend is termed as eclectic approach (Wikipedia encyclopedia). This approach demands that the teacher “decides what methodology or approach to use depending on the aims of the lesson and the learners in the group” (ibid., p. 1). Widdowson (1983:130) suggested that appropriate teaching methodology should be placed “at the very heart of the operation with course design at servicing its requirements” and to address their specific needs. This provide the basic foundation of a successful ESP course because it specifies “what’ and ‘how’ of such courses. Meeting these specific needs requires a selection of methods and approaches. Xiao-Yun et al. (2007: 1) have reported that “eclecticism in language teaching holds that although no single language teaching method manages to meet all the teaching and learning needs, many methods have valuable insights that should be drawn on in order to match the course design objectives.

3.8.2 Input-based Strategies

This method is to be considered on this course design. It deals with getting the students of the telecommunications field to be exposed to a special kind of language that belongs to a genre called English for Telecommunications. Basturkmen (2006: 18) states that Input based strategies rest on the idea that learning occurs primarily through exposure to language input in the form of written or spoken texts and language descriptions. Input is seen as a “sine qua non” of learning. This author identified two distinct subcategories of input-based strategies. The first is premised on the idea that input is sufficient for learning and the second on the idea that input needs to be followed by student output for learning to occur (p. 115). Students are primarily provided with language input inasmuch as exposure to it is understood to promote learning. He says that learning comes about as the students see evidence (sometimes also termed positive evidence) of how language works or how language is used in workplace, academic, or professional target environments. Students do not need to be pushed into immediate production in order to learn.

Basturkmen (2006: 18) further views that teaching can simply provide positive evidence about how language works or is used by exposing students to authentic texts and engaging them in comprehension activities, or teaching can go beyond this simple exposure to language input and aim to help students notice specific language features or forms in it through the use of awareness-

raising activities (p. 115). Through the use of such activities, teachers should aim to direct students' attention to the targeted forms or features in the input so that the students will develop explicit knowledge of them. This course has suggested a number of techniques for awareness raising, such as input flooding (exposure to multiple samples of the feature), especially those features associated with specialized terminology found in technical manuals' articles and books related to the Electronics field.

3.8.3 Reading Approach Method

Reading becomes important because it is an active skill which involves inferencing, guessing, predicting etc. It also has some grammatical and syntactic features found in technical discourse. By reading. Therefore, students will know about the tenses, kinds of tenses and how to use it.

This approach is selected for practical and academic reasons for specific uses of the language in undergraduate or scientific studies. The approach is for people who do not travel abroad for whom reading is the one usable skill in a foreign language.

The priority in studying the target language is first, reading ability and second, translating. Only the grammar and vocabulary necessary for reading comprehension is taught. Minimal attention is paid to pronunciation or gaining conversational skills in the target language. From the beginning, a great amount of reading is done in L2, both in and out of class. The vocabulary of the early reading passages and texts is strictly controlled for difficulty. Vocabulary is expanded as quickly as possible, since the acquisition of vocabulary is considered more important than a grammatical skill. Translation reappears in this approach as a respectable classroom procedure related to comprehension of the written text.

Introduction

Over the years teachers have used a variety of approaches to teach reading and writing.

Definition

A reading approach is a way to start teaching beginning readers. Also known as: method

Discussion

Various approaches begin by

- teaching learners to get meaning from whole chunks of text
- teaching whole words and going on to larger chunks of text
- teaching whole words and breaking them down into smaller parts

• teaching parts of words and putting them together into whole words, or

• teaching meaning, whole words, and parts of words from the very beginning.

The approaches overlap with some common elements appearing in all of them. The information here is introductory. You will need to study these approaches in more detail to understand the distinctions.

Kinds

Here are some kinds of reading approaches:

An analytic approach to reading, an eclectic approach to reading and a synthetic approach to reading among others.

Therefore, a new approach focusing on the development of reading skill has emerged. The basic principles of this approach are presented as follows:

1. The teaching of grammar is restricted. It is only taught to ease the reading comprehension.
2. The presentation of vocabulary is highly controlled at the beginning and then expanded at the later stages.
3. Translation is regarded as a fruitful classroom practice.
4. Among the other language skills, reading comprehension receives the highest attention and it is heavily emphasized.
5. The teachers do not need to have a good oral proficiency in the foreign language since the foreign language is not used as a tool for communication in the classroom environment.

3.8.4 Grammar–Translation Method

The grammar–translation method is a method of teaching foreign languages derived from the classical (sometimes called traditional) method of teaching Greek and Latin. In grammar–translation classes, students learn grammatical rules and then apply those rules by translating sentences between the target language and the native language. Advanced students may be required to translate whole texts word-for-word. The method has two main goals: to enable students to read and translate technical texts written in the source language, and to further students' general intellectual development.

There are two main goals to grammar–translation classes. One is to develop students' reading ability to a level where they can read technical texts in the target language. The other is to develop students' general mental discipline. The users of foreign language wanted simply to note things of

their interest in the literature of foreign languages. Therefore, this method focuses on reading and writing and has developed techniques which facilitate more or less the learning of reading and writing only. As a result, speaking and listening are overlooked.

Method:

Grammar–translation classes are usually conducted in the students' native language. Grammar rules are learned deductively; students learn grammar rules by rote, and then practice the rules by doing grammar drills and translating sentences from the target language. More attention is paid to the form of the sentences being translated than to their content. When students reach more advanced levels of achievement, they may translate entire texts from the target language. Tests often consist of the translation of Technical texts.

There is not usually any listening or speaking practice, and very little attention is placed on pronunciation or any communicative aspects of the language. The skill exercised is reading, and then only in the context of translation.

3.8.5 Genre- based teaching on ESP Learners' Reading Comprehension

It has been demonstrated that reading is a vibrant area of ESP that continues to attract attention in the realms of pedagogy and research, despite perceptions that it is not as challenging to acquire or use as other skills.

As discussed briefly earlier, a key notion of reading that has evolved in ESP is its situated nature in specialized discourse contexts. While there are certain reading strategies that can be taught as stand - alone components of a reading course (e.g. skimming and scanning), in helping students navigate the complex textual worlds of specific disciplines, reading's situatedness also requires an accounting of both the overt and the less obvious (but just as important) features and subtleties of disciplinary discourse. This is where they need to develop the socioliterate competence. Johns (1997: 356), cited earlier, aims at creating in the classroom; this is how they gain deeper and more meaningful engagement with target community texts. Discourse and genre analysis continue to play major roles in this endeavor.

Another approach that has been used to provide authentic input to teaching is through the use of discourse analysis – a procedure that is used to study the nature of different text types, the ways they are used, and their lexical, grammatical, and textual features. This is particularly important in the design of courses in English for Special Purposes where the identification of the

lexical, syntactic and textual structures of different genres is a pre-requisite to teaching specialized genres.

3.8.6 Translation as a Method

The presentation starts with a question: can anyone translate? Or only highly specialized professionals such as lawyers and scientists? To answer this question he makes a distinction between factual knowledge and procedural knowledge.

Factual knowledge is the knowledge of the subject and specific terminology of the text we are translating. Procedural knowledge is the knowledge of methods and techniques to transfer the meaning from one language to another.

Highly specialized professionals have the factual knowledge, but if they lack the procedural knowledge they might not be able to re-express the text in another language. What are the main strategies that allow translators to translate? The two main approaches are literal or non-literal translation. Under each option there are several translation techniques available. If the translator chooses a literal or direct translation, he will be able to choose among:

- Loan
- Calque (divided into Lexical calque and Structural calque)
- Word-for-word translation

If he chooses a non-literal translation (also called oblique, dynamic or sense-for-sense translation) he can choose among

- Omission
- Amplification
- Modulation

3.9 APPROACHES TO TEACHING ESP

There are several strategies for teaching a course on the telecommunications field, however in this course there was a need to employ the most common : the reading strategies and the translation techniques so that we could achieve the planned objectives of the course. The former has utilized skimming, scanning, guessing vocabulary by context. Known words, unknown words,

and cognates. The latter has used literal translation, modified translation, omission, and amplification.

3.9.1 Reading strategies and ESP

In the context of "English for specific purpose"(ESP) however, Hudson (1991: 2) examined whether the emphasis on reading for content improved reading comprehension as well as knowledge of reading strategy and general reading ability in an ESP project. He concluded that the content comprehension approach can improve reading comprehension as well as knowledge of grammar and general ability to read English for science & technology.

Reading strategy training makes learners independent learners of language which is considered to the ultimate goal of language learning. Learning how to use strategies effectively, the readers do not require looking up to their teacher to provide them with the correct answer or define the new vocabulary for them all the time. This means that ESP learners become autonomous learners of language who can handle their reading requirements and get the meaning out of the printed material in the best possible way.

In short, Readers with lower level language proficiency might benefit from reading strategy instruction where they learn to monitor their comprehension and use their background knowledge with the help of a teacher who models the steps of the instructional process, and where they discuss their strategies while reading the text. The reading teacher in this kind of instruction assumes the role of a guide, a model, or stimulator rather than the provider of the correct answers to comprehension questions.

The main concern of ESP have always been with needs analysis, text analysis, and preparing learners to communicate effectively in the tasks prescribed by their study or work situation. ESP is an enterprise which involves education, training and practice, and drawing upon three major realms of knowledge: language, pedagogy and the students' specialist areas of interest.

The most useful skill in teaching this course are some reading strategies to ESP readers such as the following:

3.9.1.1 Skimming

Skimming refers to the process of reading only main ideas within a passage to get an overall impression of the content of a reading selection.

How to Skim:

* Read the title.
* Read the introduction or the first paragraph.
* Read the first sentence of every other paragraph.
* Read any headings and sub-headings.
* Notice any pictures, charts, or graphs.
* Notice any italicized or boldface words or phrases.
* Read the summary or last paragraph.

3.9.1.2 Scanning

Scanning is a reading technique to be used when you want to find specific information quickly. In scanning you have a question in your mind and you read a passage only to find the answer, ignoring unrelated information.

How to Scan**:**

* State the specific information you are looking for.
* Try to anticipate how the answer will appear and what clues you might use to help you locate the answer. For example, if you were looking for a certain date, you would quickly read the paragraph looking only for numbers.
* Use headings and any other aids that will help you identify which sections might contain the information you are looking for.
* Selectively read and skip through sections of the passage.

3.10 TYPES OF TRANSLATIONS

Terminology is a prime example. It has been well documented that terms, particularly high-tech terms, are often borrowed directly from English, creating new terminology which often does not exist in the target language. In English-Spanish translation, this phenomenon is called "Spanglish"

in reference to words borrowed from English and combined with a Spanish prefix or suffix, or both. An example is "escanear," the Spanish equivalent sometimes used for the English term "to scan." The existence of "Spanglish" not only gives rise to questionable translations, but is also a concrete illustration of the predominance of the English language in the high-tech field.

There is also a tendency to use words that appear similar to their English counterparts rather than terms which simply match the concepts. An example that immediately comes to mind is "hacer clic," which means "to click," while a correct match for the concept is "presionar" or "pulsar."

The following is a list of common "Spanglish" terms found on the Internet. While they bear a close resemblance to the English term, they are either not officially approved by the *Real Academia Española de la Lengua* or may designate a very different concept.

Some common "Spanglish" terms found on the Internet

ENGLISH	SPANGLISH	SPANISH
boot (v.)	*botar*	autoarrancar, iniciar, arrancar
check (v.)	*chequear*	comprobar, verificar, revisar
click (v.)	*cliquear*	pulsar, presionar, hacer clic
command	*comando*	orden, mandato
decode (v.)	*decodificar, descodificar*	descifrar
(by) default	*defecto*	predefinido, predeterminado, prefijado
display (v.)	*displayar, displayear*	mostrar
emphasize (v.)	*enfatizar*	recalcar, subrayar, resaltar
enter (v.)	*entrar*	introducir, poner, aceptar
indent (v.)	*indentar*	sangrar
initialize (v.)	*inicializar*	iniciar
nominate (v.)	*nominar*	designar, proponer
range	*rango*	campo, dominio

3.10.1 Translation Methods and Techniques

Despite several disputes on the role of translation, it is being employed as a useful language-learning tool in the ESP classroom. As Nigel J. Ross (2000: 61) argues ‘The real usefulness of

translation in the EFL classroom lies in exploiting it in order to compare grammar, vocabulary, word order and other language points in English and the students' mother tongue.

Literal translation occurs when there is an exact structural, lexical, even morphological equivalence between two languages. According to the authors, this is only possible when the two languages are very close to each other. The literal translation procedures are: Literal translation, word for word translation, e.g., the ink is on the table (La tinta está en mesa)

3.10.1.1 Literal Translation.

To translate a word or an expression word for word, e.g., "She is reading an Electronics book" as "Ella está leyendo un libro de electronica". In contrast to the SCFA definition, it does not mean translating one word for another.

A word-for-word translation can be used in some languages and not others dependent on the sentence structure: "El equipo está trabajando para terminar el informe" would translate into English as "The team is working to finish the report". Sometimes it works and sometimes it does not. For example, the Spanish sentence above could not be translated into French or German using this technique because the French and German sentence structures are different. And because one sentence can be translated literally across languages does not mean that all sentences can be translated literally. "El equipo experimentado está trabajando para terminar el informe" translates into English as "The experienced team is working to finish the report" ("experienced" and "team" are reversed).

3.10.1.2 Omission description

Vázquez Ayoroa (1977:177–187) uses the term operative technical procedures, although he sometimes refers to them as the translation method. He combines the SCFA prescriptive approach with the Bible translators, descriptive approach and introduces some new procedures:

• Omission. This is to omit redundancy and repetition that is characteristic of the SL, e.g., to translate: "The committee has failed to act" by "La comisión no actuó", omitting the verb to fail and avoiding over-translation: "La comisión dejó de actuar".

Table 1

	Omission
The committee has failed to act in telecommunications (E) ⇒	⇒ La comisión no actuó en telecomunicaciones. (Sp)

3.10.1.3 Amplification

Amplification vs Economy. These procedures are similar to concentration and dissolution. Amplification occurs when the TL uses more signifiers to cover syntactic or lexical gaps. For example:

Table 2

	Amplification
Microwaves are waves with higher frequencies. (E) ⇒	⇒ Las microondas son ondas que usan frecuencias más elevadas en Telecomunicaciones. (Sp)

3.10.1.4 Modulation

Oblique translation occurs when word for word translation is impossible. The oblique translation procedures are:

• Modulation is shift in point of view, whereas transposition is a shift between grammatical categories. Modulation is a shift in cognitive categories. Modulation consists of using a phrase that is different in the source and target languages to convey the same idea:

For example:

Table 3

	Modulation
Microwaves are waves with higher frequencies. (E) ⇒	⇒ En una trasmisión de microondas se usan frecuencias más elevadas. (Sp)

3.11 THE ROLE OF ESP TEACHERS AND LEARNERS

Most authors agree that the ESP teachers' works involve much more than teaching. Dudley-Evans and St. John (1998: 85) prefer the term ESP Practitioner as this definition seems to be more detailed and complete. They distinguish the following roles of ESP practitioners as illustrated in figure 10.

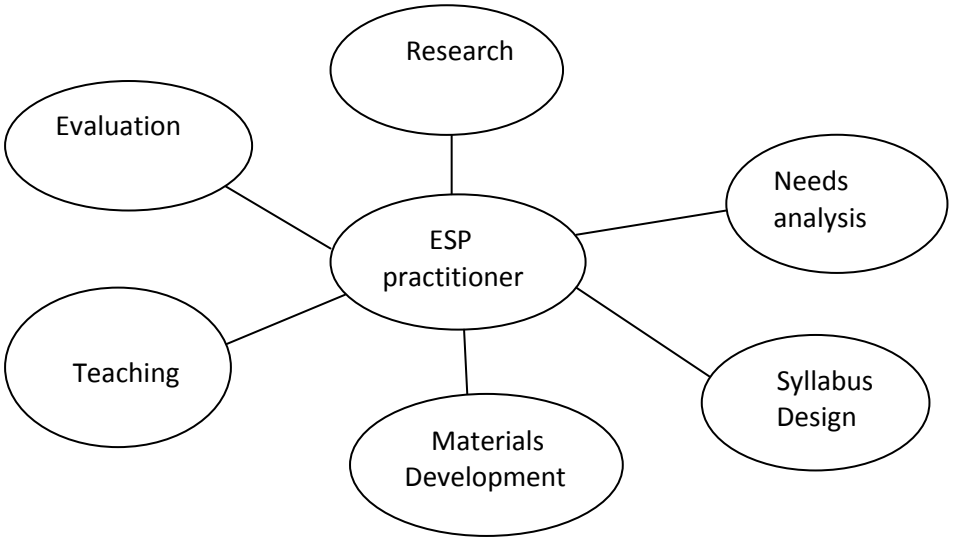


Figure 9. The role of the ESP Teacher

3.11.1 The responsibility of the teacher for ESP

Who are ESP teachers? They are teachers at vocational schools, colleges and universities, as well as any other teachers who deal with their students' professional development. Professional ESP teachers are experts in teaching English for any profession, able to design teaching materials based on the content material presented by the professors, or experts in the subject.

What do they teach? ESP teachers teach academic skills to future (or real) professionals. They teach English for the profession and encourage their students to use their background knowledge along with the academic skills in dealing with all sorts of authentic information in their profession. ESP teachers design courses according to their students' professional needs, having in mind their target language use situation.

First and above all, the role of ESP teachers' teaching style has significant differences from general English teachers. Swale (1985:6) mentioned that ESP teachers should consider needs analysis, course design, and materials adaptation; however, some ESP teachers are not well trained in such a broad range. Hutchinson (1987: 6) pointed out that the ESP teachers are based on accumulating experience to master in course design and materials. A good ESP teacher should be adept at applying ESP teaching materials to facilitate students' learning, including multiple vocabularies and structure modifications.

A teacher that already has experience in teaching English as a Second Language (ESL) can exploit his /her background in language teaching. She should recognize the ways in which her/his teaching skills can be adapted for the teaching of English for Specific Purposes. Moreover, he/she will need to look for content specialists for help in designing appropriate lessons in the subject matter field he/she is teaching. As an ESP teacher, we must play many roles. We may be asked to organize courses, to set learning objectives, to establish a positive learning environment in the classroom, and to evaluate students' progress.

The idea that ESP is a general language plus specialized vocabulary, advocated by some laymen, has already been rejected. University teachers who think that in ESP teaching they are not responsible for transferring area specific knowledge are in minority now. Teachers have to understand the meaning of specialized terms, they have to know and understand the basic facts, mechanisms and processes they discuss with their students, and they have to have some rudimentary knowledge in the subject matter they teach.

In order to increase the effectiveness of the courses they teach, ESP teachers are expected to learn many new things that will help them make their teaching better and more effective. These include learning:

– how to respond to learners' needs,

– what to prioritize in an ESP course (speacialized terminology for the Telecommunications field),

– how to select and incorporate authentic materials into the course,

– how to evaluate teaching materials using quantitative methods,

– how to make use of online materials,

– what new teaching techniques to implement (e.g. genre based-teaching),

– how to teach for translation purposes,

ESP teachers need to put a lot of time and energy into being better performers in what they do professionally.

ESP teachers who will follow these developments and who will be open to possible challenges in the future are likely to succeed. Teachers need to change and develop – changes lead to improvements in the quality of ESP teaching. Changes should not be avoided; change resistant teachers find it difficult to adapt to the changing needs of their students, to develop, and improve as ESP teachers.

3.11.2 The Responsibility of the Student for ESP

Robinson (1980: 6) suggested that ESP practitioners should be aware of the actual needs of ESP learners in different areas, rather than focusing on the language institution or work supervisors for course development. For ESP learners, age and motivation are two interrelated roles. As adult learners are highly motivated, therefore, they usually have academic and professional goals, and hope to achieve and enhance their performance levels in both professional and language areas. Robinson (1991: 87) suggested that curricula developers should be conscious of the fact that ESP learners have high degrees of intrinsic and extrinsic motivations. They engage in active learning, are aware of their learning progress, effectively improve their learning motivations, participate fully in classroom activities, and closely monitor their learning progress.

What is the role of the learner and what is the task he/she faces? The learners come to the ESP class with a specific interest for learning, subject matter knowledge, and well-built adult learning strategies. They are in charge of developing English language skills, in our case the grammar, technical vocabulary and reading comprehension of electronics texts and translations of manuals to reflect their language knowledge and skills. They have opportunities to understand and work with language in a context (Electronics and telecommunications) that they comprehend and find interesting. In this view, ESP is a powerful means for such opportunities. Students will acquire English as they work with materials which they find interesting and relevant and which they can use in their professional work or further studies. Learners in the ESP classes are generally aware of the purposes for which they will need to use English. Knowledge of the subject area enables the students to identify a real context for the vocabulary and structures of the ESP classroom. They are constantly expanding vocabulary, becoming more fluent in their fields, and adjusting their linguistic behavior to new situations or new roles. ESP students can exploit these innate competencies in learning English.

3.12 DEVELOPMENT OF COURSES AND MATERIALS

In order to develop an ESP course, the teacher becomes a course developer, and therefore, he/she should determine to devise multiple methods and to draw on multiple sources for information. So, the development of courses and materials in particular settings and for different groups of learners has been and will continue to be of great importance to ESP. There are certain key issues that ESP teachers must consider when they develop materials. ESP materials need to be more visually illustrative to help learners showing the processes of relationship, and the language used in the illustration has to be functional. Therefore, ESP material should be visual based in order to improve learners' visual literacy like increasing the power of observation and reporting what they observe.

In ESP context, materials play an important role. Apart from becoming a teaching-learning source, materials can act as reference. Dudley-Evans and St John (2002: 35) assert that there are two reasons for using materials which seem significant in the ESP context. First reason is materials act as a source of language. In some situation in which English is a foreign language, not a second language like in Bolivia. In this context materials play a crucial role in exposing learners to the language.

Second reason is materials have a role as a learning support. As a learning support, according to Dudley-Evans and St John (2002: 35), "materials need to be reliable, that is, to work, to be consistent and to have some recognizable pattern." Third reason is materials can be for motivation and stimulation, and the last reason is materials can be used for a reference.

3.11.1 Developing own Materials

Due to the characteristics of ESP which focuses on specialist subjects and unavailable commercial materials in the market, very often ESP teachers need to design or develop the materials themselves. In fact, there are some advantages of creating our own teaching materials. Richards (2007:35) mentions three advantages of creating our own materials.

First advantage is relevance. Materials can be produced that are directly relevant to the students and institution's need. Using available commercial textbook does not guarantee this relevance. Second advantage is developing expertise. The last advantage of creating our own

materials according to Richards is flexibility. Materials that are produced by the institution can be revised or adapted quickly as needed. They are more flexible than commercial course books.

3.11.2 Teaching Resources

It seems that textbook issues in ESP are not basically different from those in General English. Foreign language teaching practice at the UMSA is peculiar in that we do not usually stick to one textbook no matter whether we teach General English or ESP. There are the usual problems with textbooks: incompatibility of some material in them with the local culture, which makes it harder for students to perceive the material; a textbook may not agree with individual level demands of students, which raises a need for material adaptation; textbooks may not go well with course duration, which causes teachers to think of 'time-fillers'; some material may need including more tasks and exercises according to the needs of students. As was said, the mentioned issues are true for both General English and ESP.

In the light of lack of appropriate textbooks the question remains: 'What sources can be used as study material for the course? At the UMSA teachers have found the answer in using different authentic materials, as well as textbooks for Electronics and Telecommunications written in English. Reading materials that can equip them to be able to read English textbooks are highly needed.

Due to the characteristics of ESP which focuses on specialist subjects and unavailable commercial materials in the market, very often ESP teachers need to design or develop the materials themselves. In fact, there are some advantages of creating our own teaching materials. Richards (2007:35) mentions four advantages of creating our own materials.

CHAPTER IV

PROPOSAL DEVELOPMENT

This project is aimed to designing a suggestion of technical English for the Telecommunications major of the " FACULTAD TECNOLOGICA DE LA UNIVERSIDAD MAYOR DE SAN ANDRES" in La Paz in order to teach students technical vocabulary related to their field through a well-designed methodology that suits their needs . The reason of the present project is oriented towards the creation of a course design which takes into account the learner needs, lacks and wants regarding the ESP and especially the EST (English for the Science and Technology) in its methodological design.

The subjects of the project were the students who were studying Electronics and Telecommunications major at the " FACULTAD TECNOLÓGICA DE LA UNIVERSIDAD MAYOR DE SAN ANDRES". The course went on for six months, every weekday 3 times a week. On Mondays, Wednesdays, and Fridays, 3 hours per day.

The following course design takes into account the students' necessities, contents, and selection of material which has been used along the training. In order to design an appropriate syllabus, a needs analysis questionnaire has been applied to the students at the beginning of the course. The main aim of that was to get reliable data about their learning needs, and wants to give them a sound knowledge on the Telecommunications field , enhancing their technical vocabulary and to design the kind of materials that best suits their needs. Appropriate Techniques and strategies for language learning will be employed. To be understood by the students, different kind of resources have been used , just to name a few: flash cards, pictures, etc. The use of these materials have helped students to facilitate the retention of technical vocabulary like the names of parts of equipment, understand articles related to the subject specific field, and the learning of technical vocabulary in context of reading technical articles. Besides that, materials for the use of different, methods for translating reading material from manuals from English to Spanish have been developed.

In the first chapter of this course project we described the needs, lacks and wants of the telecommunications department's students. These needs are also identified in this chapter in order to state the goals of the course. The second chapter described the proposal, its rationales, objectives and the scope of the course. In addition, it identifies the achievement indicators, the

work plan and the theoretical framework in order to provide a complete insight of the course design. The third chapter explicates the development of the course through the sequence of activities including stages, teaching materials, teaching process implementation, participants, beneficiaries, timing, evaluation, achieved goals and experiences that were attained throughout the development of this supervised work.

4.1 SEQUENCE OF ACTIVITIES

4.1.1 Timetable

The design and the development of the project were controlled by a timetable which was created to achieve the course objectives within a scheduled timeframe. The timetable has helped to frame all the activities and procedures within the expected six - month period. (See appendix 1).

4.1.2 Stages of the Supervised Work

4.1.2.1 Project Design Stages

The project design stages were divided into four phases which are depicted in the next chapter:

Phase	Activity	Months
First Phase	○ Preliminary and collaborative meetings. ○ Diagnostic questionnaires and of both students and professors of the telecommunications department. ○ Needs analysis	June
Second Phase	○ Proposal ○ Syllabus Design ○ Selection of teaching materials and tasks	July

Third Phase	Teaching process implementation: o Learning techniques: reading strategies and translation techniques o Learning language skills: grammar, reading, translation and technical vocabulary.	August to November
Fourth Phase	o Assessing the students' progress Pre-test on skills: Reading, vocabulary and translation. Post- Test (ongoing tests) on the same skills to know the students'progress throughout the entire course.	September to November

Chart 5. Project Design Stages

4.1.2.2 Phases Description

a) First Phase

Before designing this proposal, it was important to collect information about the prospective students. Several reunions took place with undergraduate students and the Head of the Telecommunications department with the purpose of clarifying objectives and the necessary requirements of the ESP course design. Some relevant needs have been identified during these meetings in which many factors have been taken into consideration, namely, the planning and implementation, the size class, duration of the course; especially the Telecommunications department's expectations regarding responsibility, punctuality and performance throughout the course.

Additionally, a diagnostic questionnaire was administered which gathered data of all students' past experience with learning regarding English learning. This questionnaire was aimed at evaluating the students' and professor's relevant needs so to have a complete view of the course (See appendix II).

b) Second Phase

Firstly, the proposal was elaborated taking into account the results of the needs analysis of the students. This gave response to the needs of the telecommunications' students and professionals and suggestions from some professors from the Telecommunications department. The syllabus focused on the topics related to electronics and telecommunications, it was mainly content-based, however, some attention was paid to the grammatical structures, reading techniques with short articles regarding electronics and telecommunications, and the translation methods.

The readings have been classified by their degree of complexity that went from the most simple to the most complex. In order to improve the students' comprehension of the reading materials, some reading techniques such as skimming, scanning, known and unknown words have been applied as part of the learning strategies. In addition, some manuals have been used as part of the translation.

c) Third Phase

It describes the Teaching process implementation that teacher has used such as the Learning techniques: reading strategies and translation techniques as well as the language skills the students have employed during this phase. This phase is referred to the Teaching process implementation which deals with the pedagogy, that is the methodology applied to the teaching-learning process. We have implemented some teaching methods and techniques which provides the students with the" how to" in order for the students to understand and intake all the new input by using different language skills such as reading, listening, technical vocabulary, translation techniques such as literal, omission, , amplification and modulation.

d) Fourth Phase

This phase has a great importance because it shows the results of the study. In fact, the type of evaluation criteria for the summative assessment was a qualitative rubric. These rubrics gave the following grades: a grade of Excellent, Very good, Good and Needs improvement in order of importance, being Excellent the highest performance and Needs improvement the lowest. .

4.2 TEACHING MATERIALS AND RESOURCES

Teaching materials plays an important role in the teaching – learning process. They were also essential in motivating students. The selection of teaching materials was based on the learners' English language level and Electronics subject specific topics such as integrated circuits, Mobile phones, Satellites, GPS system, and Digital television among others (see Appendix 4). Finally, teaching materials and digital resources were chosen based on students' interest. A grammar guide was specifically designed for electronics students of the Electronics Department . It contained ten units and each unit contained different structure forms and tenses like Structure, Information questions and examples of sentences related to Electronics & Telecommunications. In addition, the grammar guide was created to observe the students' progress and to offer them practice about grammar, spelling and vocabulary. Altogether, the teaching materials motivated and kept students eager to continue learning technical English. (See Appendix 6).

Both the grammar guide and classroom translation samples were applied in a period of six months. During the reading and translation process, photocopies of exercises, electronics texts and articles, dictionaries and markers were used in order to have an interactive and dynamic class.

Finally, Internet resources was an interesting tool that gave students the opportunity to read and translate different articles about telecommunications. For example, students read and translate text related to Optic Fiber. This resource increased the student's motivation and interest I improving their grammar. Also they used the dictionary of electronics were suggested to the students to help them to understand the meaning of some words.

4.3 PARTICIPANTS

The participants in this Supervised Work Project included:

The students of telecommunications, Juan José Chambi Paco as the inter has developed this course design Project and its resources. The Institutional Advisor Lic. Julia Torrez provided feedback, supervised and evaluated the classes at the Electronics Department throughout the development of this course design Project.

The Head of the Electronics Department, Lic. Nixson Vargas Mamani, has evaluated the

teaching process of the course design Project at the Electronics Department.

4.4 BENEFICIARIES

The direct beneficiaries of this Project were thirty students from the Telecommunications and Electronics Department at The Mayor de San Andres University through the course design Project entitled:

" A PROPOSAL OF TECHNICAL ENGLISH FOR THE FIELD OF TELECOMMUNICATIONS AT THE TELECOMMUNICATIONS AND ELECTRONICS DEPARTAMENT OF THE FACULTAD TECNOLÓGICA DE LA UNIVERSIDAD MAYOR DE SAN ANDRES IN LA PAZ"

Thirty registered students were benefited by the teaching of the ESP course.

4.5 TIMING

The proposal started in June , and it finished in November 2015. Throughout those four months Electronics students took the classes three times a week, on Mondays, Wednesdays and Fridays from 15:00 to 18:00 hours at the Electronics Department facilities. The English course lasted three hours per class.

4.6 ASSESSMENT

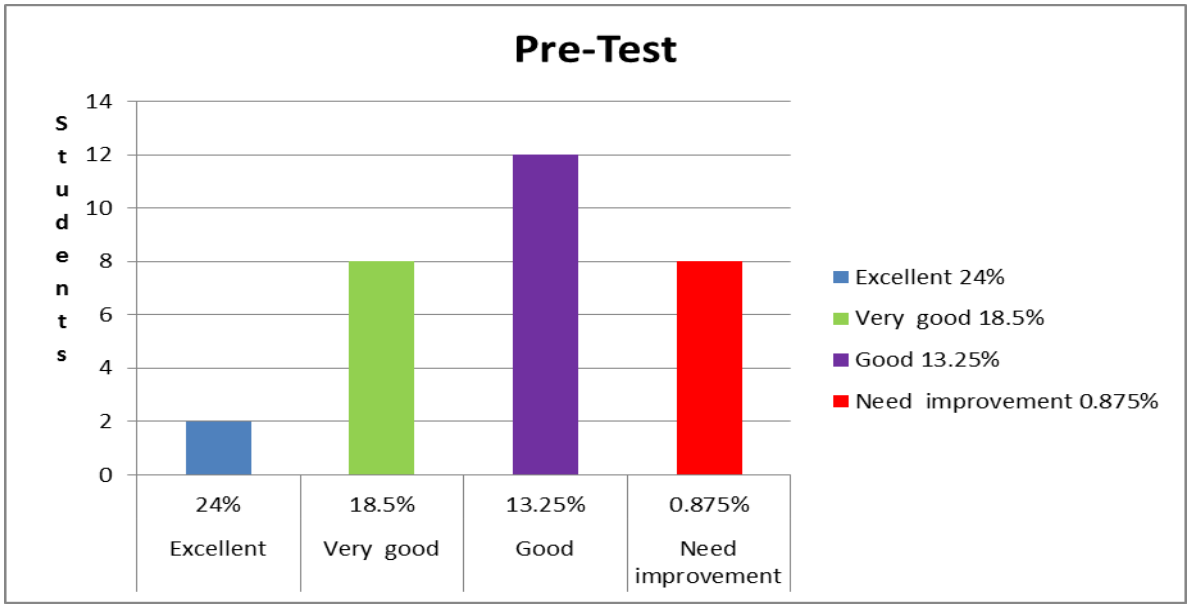
Assessment instruments are needed in specific purpose courses, as in all language programs, first, to give learners an opportunity to show what they have learned and what they can do with the language they have learned by being given the same instructions and the same input under the same conditions. Tests are needed secondly to get a " second opinion " about students ' progress and help confirm teachers ' own assessments and help them make decisions about students ' needs.

The teaching process has been evaluated throughout a four – month period which lasted the whole course. The teacher assessed the students' performance in order to achieve the objectives of the course and accurately measure the students' progress. In the development of the course, Electronics students were evaluated with the following evaluating qualitative criteria using this rubrics: a grade of Excellent, Very good, Good and Needs improvement.

At the beginning of the course a Pre-test on language skills were taken: on reading comprehension, grammar structure and translations techniques, in addition, one mid-term and one final test were given to the students during the whole semester.

4.7 EVALUATION RESULTS

Based on the tests applied in the course, the following results were obtained:

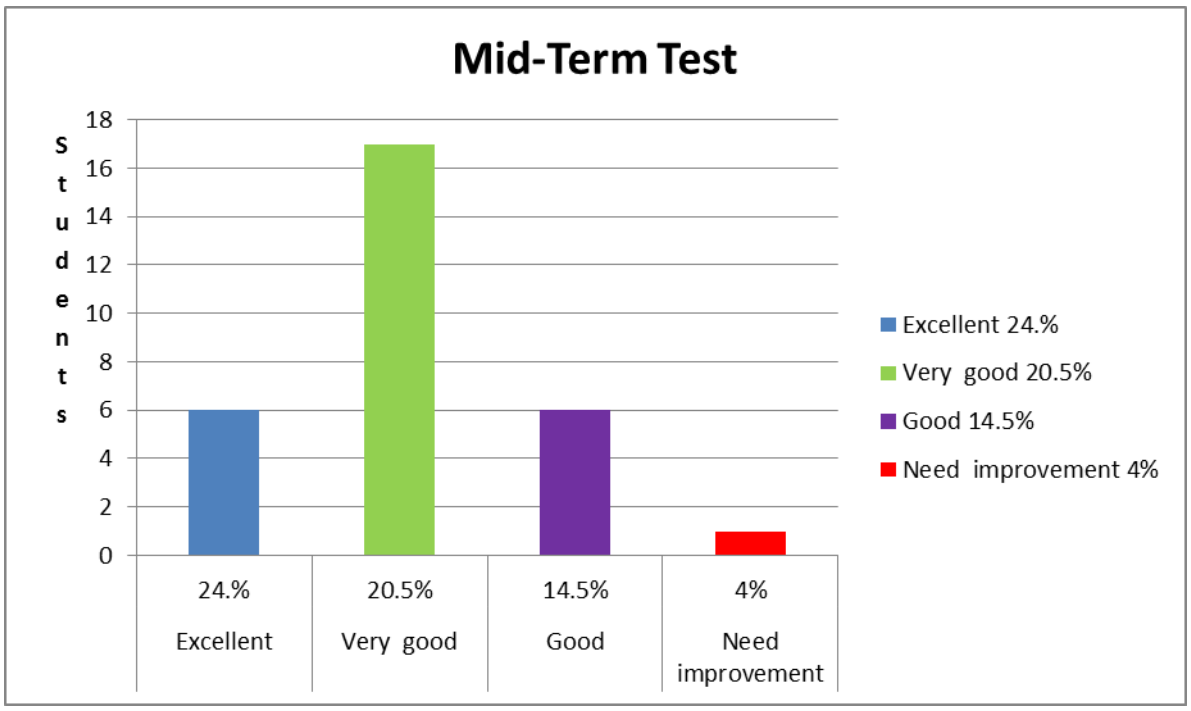


Graphic 13 Pre-test results

a) The Pre-test given consisted of grammar, technical vocabulary, reading comprehension and translation.

Number of students: 30 took then test.

Out of 30 students, two scored excellent, 8 very Good, 12 good and 8 need improvement. In short the results shoe that the majority of the class showed a good competence of English getting good scores; 8 students scored very good and 12 students scored good. However, a respectable number of students, that is 8 students showed a poor performance in the four skills which shows that not everybody had the same English competence.

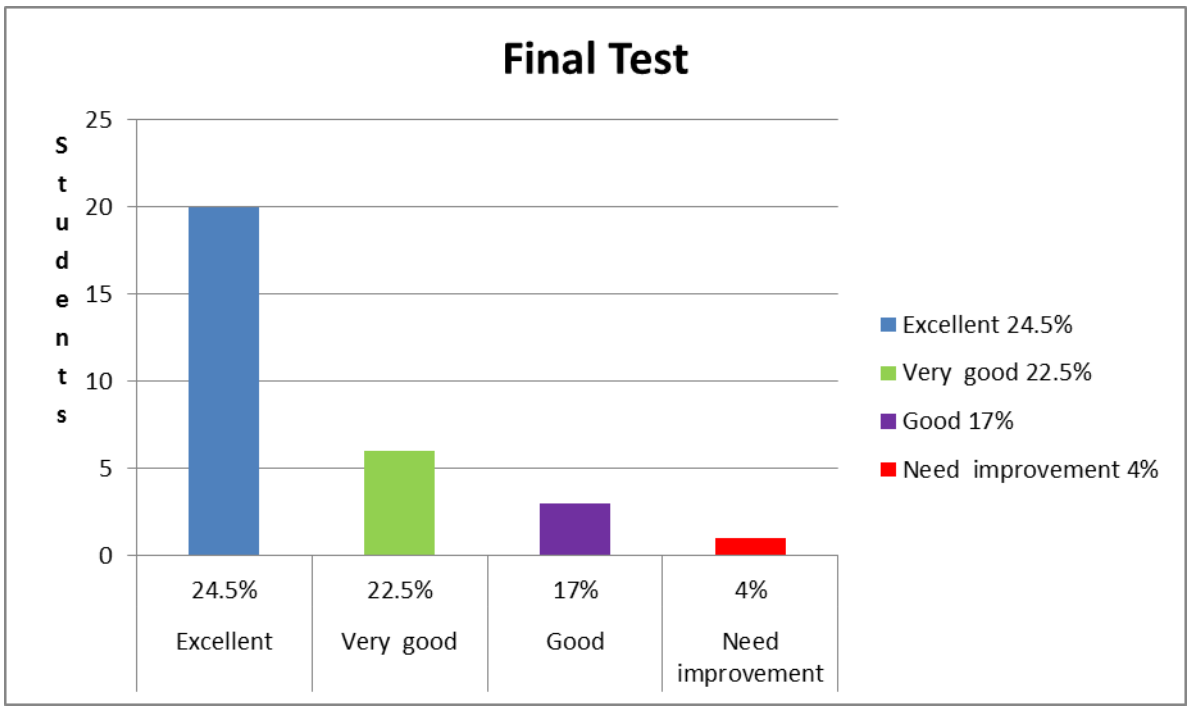


Graphic 14 Mid-Term results

b) The Second term test consisted of grammar, technical vocabulary, reading comprehension and translation.

Number of students: 30.

Out of 30 students, 6 scored excellent, 17 very good,6 good, and 1 needs improvement. This table shows that there has been a significant improvement in the students'competence in the four skills in relations to the first test. In short, the results of the mid-term test, on the one hand, show an increase of the English competence because this time more students got better scores, infect, 17. On the other hand, the numbers of students with low performance has been reduced to only 1.



Graphic 15 Final Test Results

b) The final test consisted of grammar, technical vocabulary, reading comprehension and translation.

Number of students: 30.

Out of 30 students, 20 scored excellent, 6 very good, 3 good, and 1 needs improvement. This table shows that the students' competence has improved significantly in relation to both the first and the second tests in the four skills: of grammar, technical vocabulary, reading comprehension and translation. In conclusion the final test shows that the number of students scoring Excellent was higher than the Pre-test, increasing notably from 2 to 2students, On the other hand. The low performers were notably reduced. This shows that the training the students got during the course has been notably helpful to them in order to improve their general English competence on the Telecommunications field.

4.8 ACHIEVED GOALS

The achieved goals of the two stages of the supervised work were as follows:

Project Design

- Students' needs were identified through a meeting with the Head of the Electronics department and through the conducting of both students´ and teachers´ questionnaires.
- One syllabus was designed for technician English.
- Teaching materials and articles were selected and adapted for the course.

Teaching of the ESP course

- Ten topics focused to the language were taught.
- Grammatical structures and technical electronics vocabulary were taught gradually.
- The text guide, articles and reading techniques were applied.
- Ten articles about telecommunications were used for translations.

4.9 EXPERIENCES

During the time spent at the educational institution – The Electronics and Telecommunications department– a lot of experience in teaching a ESP course has been gained in conveying our knowledge of technical English.

First, we started with the elaboration of the project course design based on the students 'needs and the difficulties they had in translating some texts, books and articles, in special some laboratory equipment manuals.

Second, a meeting was held with the Telecommunications head Department Lic. Nixson Vargas Mamani and the institution's Advisor, Lic. Julia Tórrez who helped us to focus better on the students' needs and with their cooperation we could exchange ideas and were able to create an innovative and comprehensive ESP project for the Telecommunications department.

Third, during the course the students were very engaged and motivated with the project and showed a lot of interest on it because the course included very updated topics and related to the new technologies of the Telecommunications field so they could be able to understand the readings and translate them in a fairly way.

Fourth, as for the classroom management, the students worked most of the time individually, and in some occasions, they formed groups. Cooperative learning was fostered when forming groups in order to learn from each other with the purpose of sharing their knowledge of Electronics and in this way, they could improve their translations they had already made. In addition, they were given a lot of practice with varied topics related to their field which were very

systematic, that is they were given topics from the most simple to the most complex so the class could be more dynamic.

Fifth, for us as interns, it was a pleasure to have provided the students of the Telecommunications department a useful training in using all the language skills regarding ESP since all the linguistics knowledge obtained in our Linguistics department were conveyed to the students to attain the course objectives. However, it was a challenging issue because extra effort had to be done in order to work with students that came from different semesters which was somewhat difficult because of the different levels of Electronics and Telecommunications knowledge the students had, but fortunately the problem was solved by giving them extra explanations about the subject matter.

In short, all of the experience gained during the time of the ESP course, was very useful to us because it helped us improve and enhance our knowledge of teaching technical English so we could become professional instructors in ESP in a near future.

4.10 METHODS

A method that primarily suited the student's long-term needs was carefully designed (see figure 10). Although the learning process itself proceeds in bit-by-bit, cumulative, 'bottom-up' fashion, it has been guided toward some ultimate goal or standard. Thus the design and development of this ESP course the course based on the students subject- specific needs taking into account their needs for a lifetime– and also their ESP language skills required to use effectively the English language, especially for reading comprehension and translating related to technology. But above all, in such an insight, reading comprehension and translating has been the major skills required.

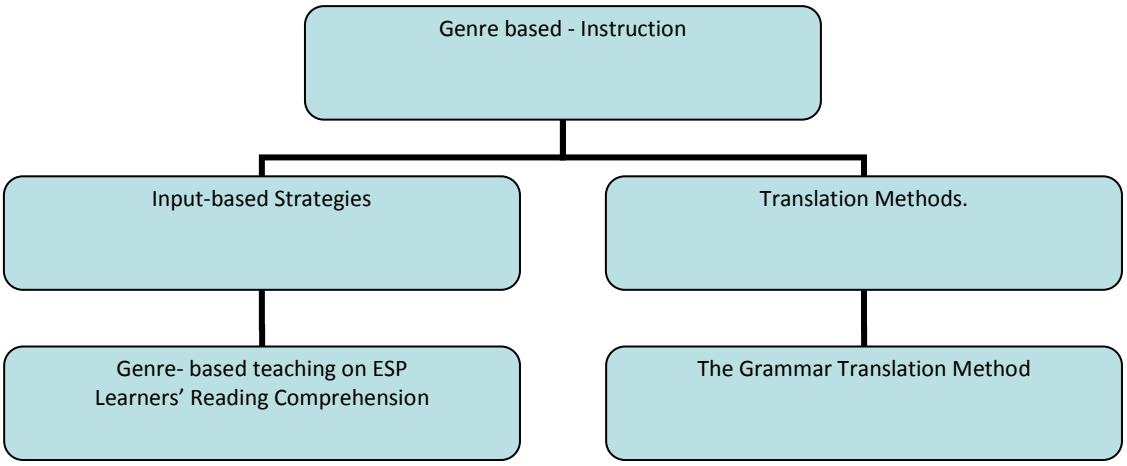


Fig. 10 Methods flow chart

The above figure describes the flow chart of methods use in the course design. In general the method for designing the course is focused on the Genre based - Instruction. This genre approach emphasizes a carefully scaffolded series of reading tasks, including pre - reading activities, vocabulary and comprehension exercises. The students read excerpts from science and technology textbooks as well as articles related to Electronics and Telecommunications in order to improve both reading comprehension significantly. The methodology is mainly focused on two approaches, namely the Input-based Strategies which the use the reading method. That is the instructor selects some subject specialist texts for reading comprehension and specialized lexis. In fact, this strategy provides positive evidence about how language works or is used by exposing students to authentic texts and engaging them in comprehension activities. The reading methods such as skimming, scanning and vocabulary building and the translations methods are the main methods used in the course. The former uses Reading as the main skill because students need to develop reading comprehension of technical texts during the course while the latter is referred to learning how to develop some interesting translating techniques in order to understand books and manuals that have been written in English. It's a mix of two methods: the Reading approach and the translation methods. In the former the skill exercised is reading with and in the latter translation from the target language. In this part, the Grammar Translation Method has been applied, which focuses only on reading comprehension. The Translation Method is a term that designs the general focus and approach of the translation of a text, whereas the translation technique implies using adequate techniques that focuses on syntax and grammar variations of the sentences.

The following chart depicts the methods and sub-methods used in this ESP project related to the Telecommunications field

Methods	Genre-based – Instruction	
Skills	Reading comprehension	Translation
Sub- Methods	Input-based Strategies Genre- based teaching on ESP Learners' Reading Comprehension	Translation methods. The Grammar Translation Method
Strategies/techniques	Skimming Scanning Cognates	Literal Omission Amplification Modulation
Resources and materials	Authentic reading articles of telecommunications from either ESP textbooks or websites.	Authentic articles, manuals, and books of Telecommunications.
Types of assessment	Formative assessment: 10 quizzes on reading that included some reading strategies like Skimming, scanning, matching the appropriate headings for each of the 10 articles. Cognate's identification on the articles. Reading comprehension questions, (See appendix **IV**) Summative assessment: - A pre-test at the beginning of the course that measured the students' ability on reading comprehension, vocabulary. - A mid-term test and a final test measured the same above skills.	Formative assessment: 10 quizzes on translation of the whole article and the specialized vocabulary using the different translation techniques, (See appendix **IV**) Summative assessment: A pre-test at the beginning of the course that measured the students' ability on translation. - A mid-term test and a final test measured the same above skills.

Chart 6. Course Methodology and Assessment.

CHAPTER V

EVALUATION AND RESULTS

5.1 DESCRIPTION The present chapter describes the results after the application of our course design.

We started off with a questionnaire that was applied to the telecommunications and electronics major's students. This questionnaire was conducted at the Facultad Tecnológica at the very beginning of the study in order to know the importance of English for Telecommunications and Electronics which is used in different subjects within the curriculum. Afterwards, we could draw the following conclusions: All the students need to know both General English and Specialized English (ESP) related to the Telecommunications field because the career only offers General English only in the first semester which is not enough.

In accordance with our project, in order to verify the students' previous knowledge of the four skills, the pre-test threw the following results.

CHART N° 6 PRE-TEST

	Number of students	Grammar	Vocabulary	Reading	Translation	Mean score
Excellent	2	24%	24%	24%	24%	24%
Very good	8	18%	18%	19%	18%	18.25%
Good	12	13%	13%	14%	13%	13.25%
Need improvement	8	0.75%	1%	1%	0.75%	0.875%
TOTAL	30				Class mean score	56.375%

The students were assessed on their skills being given a pre-test. As it is shown on the above table, that chart portrays the results of the pre-test which was administered at the beginning of the semester. This shows the scores in the four different skills. That is grammar, vocabulary, reading, and translation. The total number of students taking the pre-test was thirty. The last column shows the mean score. That is 2 students scored 24% in the four skills, 8 students scored

18.25% in the four skills, 12students scored 13.25% in the four skills and 8 students scored 0.875% in the four skills. The Pre-Test Mean score of the whole class (30 students), was 56.375%.

In accordance with our project, in order to verify the students' progress, the final evaluation threw the following results.

CHART N° 7 FINAL ASSESSMENT SCORES

	Number of students	Grammar	Vocabulary	Reading	Translation	Mean score
Excellent	20	25%	24%	25%	24%	24.5%
Very good	6	23%	23%	22%	22%	22.5%
Good	3	17%	17%	17%	17%	17%
Need improvement	1	4%	5%	4%	3%	4%
TOTAL	30				Class mean score	68%

As it is shown in the Chart 2, there are 30 students that took the three tests during the whole semester: The students were assessed on the four skills. That is, Grammar, Vocabulary, Reading and Translation. The last column of the chart shows the mean score in the four skills. Out of 30 students, 20 scored 24.5%, 6 scored 22.5%, 3 scored 17%, and 1 scored 4%. The Pre-Test Mean score of the whole class (30 students), was 68%.

At the end of the course there was an improvement in the student's general performance in the ESP competence in the four skills. Comparing the pre-test with the final-test, in the pre-test the students scored 56.375% and in the final-test, they scored 68% which shows a great improvement in their English competence regarding the four skills.

A low percentage of students showed some of the following problems:

- New vocabulary in the Telecommunications field was something the students had to deal with because they lacked the subject-specific knowledge.
- They did not recognize some verbs in the sentences they read due to the fact that some students only basic knowledge of English.
- They did not know how to use the dictionary because some students did not know how to recognize parts of speech, e.g., they did not know if a word was a verb or a noun, etc.

- They tend to use the literal translation techniques more than the others because they had not been trained in the use of other translation techniques.

One of the reasons why the students showed a low performance was that they had a low English competence, they ignored some specialized terminology because they only studied general English and not ESP. The student lacked the knowledge of the subject specific in the Telecommunications field because they were in the first semester of their career. In addition they lack knowledge of the translation techniques.

In addition to these three exams, ten quizzes were taken in each class. (See appendix 4). This at the same time served to take the students attendance.

Throughout the course, some skills and sub-skills were successfully acquired by the students: grammar, technical vocabulary and translation techniques. In addition, in our classes, as part of the learning strategies, the students were given a remedial class for dispelling some doubts, that is, a deeper explanation of past classes about different topics related to telecommunications. As a result of this, the students learned to translate fairly well, utilizing the translation techniques learned, they were able to translate books, texts, articles, and laboratory manuals which are very useful to enhance their knowledge in the field.

5.2 COMMENT OF WEAKNESSES

It has been a great experience sharing my knowledge on the subject matter of Telecommunications and my knowledge of English language skills, as well as the sill of designing an ESP course for the aforementioned field with the students of the Telecommunications department. In the first class, we started off assessing the student's knowledge of some English skills such as Reading comprehension, technical vocabulary, and translation of technical texts from English to Spanish. That was like a pre-test in order to assess both the student's knowledge on the subject and the knowledge of English language skills and Technical vocabulary.

5.2.1 Multilevel English Knowledge Groups

Our class was multi-level English with students coming from different English competencies: basic, elementary and intermediate. In general the students' low competence was something we had to deal with. However, the problem of teaching students of different English levels in one group was really challenging. The system of teaching languages at the UMSA, in particular at the Telecommunications department, allows every student to achieve at least B1 level. Their English competence is not homogeneous, because they got their English in different places, namely, the CBA, the CETI, and others at high school. Thus their competency is multi-varied: from complete beginners to intermediate. As a result, teachers have students from A1 to B1 levels in the same class. It seems that the difference is not so big; however, in practice it leads to some other problems, like shyness of students with lower levels and the fact that the students had a different knowledge of the subject matter. This problem was solved by giving a remedial class for everybody, but especially addressed to the weak students. In third class the students were given the basics of grammar with examples related to the telecommunications field.

5.2.2 Telecommunications Different Knowledge Levels

Some of the students taking the course were in the first semester, while others were in the last semester of their career. So this became a problem because some of them could not readily understand some specialized terminology because their knowledge of Electronics was different. This was seen after the students took the placement test; the results were not the most satisfactory (See appendix V). In most cases, they face challenges in grammar and vocabulary structure of English, as well as translation. The most remarkably difference in that pre-test was in the translation skill as they completely ignored the translation techniques, so they translated the texts in a literal way (word by word) and the translation from English to Spanish was unintelligible and not clear. That was one of the weaknesses we noticed in the students performance.

As the course went in progress, the students were improving their language skills and sub-skills; in grammar, vocabulary, reading comprehension as well as in translation.

It is worth reckoning that this ESP course was designed so that the students could enhance and improve all the language skills they have employed. Finally, the students realized how important is translating a text from one language to another. Moreover, they asked the Telecommunications Head department to continuing giving these ESP course because they thought the course was very

engaging, challenging and that it played an important role in their professional training. They also suggested incorporating these courses in the major's syllabus.

5.2.3 Lack of Suitable Materials

There were some problems encountered in teaching English for students majoring in telecommunications. The problems are, among other things, unavailable suitable reading materials or course book and limited number of meeting sessions. English is only taught for 360 minutes per week, and in one semester the meeting sessions are only 14 times.

5.2.4 Evaluation of Materials

The materials used in this course have been of great usefulness because they were based on the students' needs analysis and therefore have been adequately suited to the course. The selection of materials has proven to be one of the keys of success in students' motivation and engagement to the course. The use of illustration and picture for teaching vocabulary has been a fundamental methodological tool for enhancing technical terminology. Moreover, the creation of a text guide as seen in (appendix VI) has served the students as guided practice in order to become familiar with the materials and gain a good insight of the subject matter of Telecommunications. This, however, was not enough because, teachers need to do research and constantly update their materials to engage our students with the course.

The indicators show how to achieve the objectives of the course. That is, they indicate an objective way to conduct an activity that can be practiced by the students and measured objectively by the teacher using different tools like quizzes, practices and exams.

CHAPTER VI

CONCLUSIONS AND RECOMMENDATIONS

The conclusions and recommendations of the Guide Work are presented in this chapter. The conclusions are based on the theoretical and practical findings, while the recommendations are based on the obtained results, the weaknesses and strengths of the students.

6.1 CONCLUSIONS

Once the course design was successfully elaborated and applied during the classes, the following conclusions have been drawn:

Before designing this technical English course, it was crucial to meet the following requirements:

Firstly, the most relevant telecommunications students' needs were identified after conducting a questionnaire and having meetings with the Telecommunications Head Department. As a result of this, a syllabus for the course was elaborated containing the topics related to Electronics and Telecommunications based on the data gathering. This data helped us to design the grammar guide (Appendix VI) which contained structures, showing examples related to the field in order to help the students to have a good insight of knowing how to develop grammar accuracy and understand the readings.

In addition, the materials, texts, articles, and assignments were chosen from authentic sources and adapted to be used throughout the course.

In designing the course, four very important aspects were taken into consideration: First, the grammar included the following verb tenses: present simple, present continuous, past simple, past continuous, simple future, future continuous, present prefect, modal verbs, comparative and superlative adjectives, and adverbs. The vocabulary introduced was technical terminology. This consisted in guessing new words by context, use of technical dictionary if necessary and use of clippings and acronyms. Then for reading, some strategies were introduced such as skimming,

scanning, cognates recognition and for translation, some translation techniques such as literal, omission, amplification, and modulation were taught which facilitated the students to do an efficient translation work.

Second, the use of the grammar guide and the texts about new technologies in the Telecommunications field played an important role through the students' learning process.

Third, the course was designed to focus on some language skills and the students were being able to skillfully translate any texts related to the Telecommunications field.

Fourth, since the Telecommunications department lacked a syllabus of Technical English, we designed an ESP course with the purpose of bridging that gap in order to include Technical English in the curriculum's department so that the students could be able to receive a rich input of up- to date subject-specific knowledge.

The Telecommunications department and the students proposed and suggested some subject specific topics to be introduced in the syllabus. Consequently, the course content has been engaging to the students because it contained up-to-date topics regarding the field. Furthermore, the translations techniques the students learned have been very novel and useful for translating technical texts. The specialized lexis concerning clippings, acronyms and the jargon related to Electronics have helped them in their reading comprehension and code switch of languages in the articles. The implementation of ESP at the " Facultad Tecnológica " de La Universidad Mayor de San Andrés has improved their knowledge of technical English concerning reading comprehension, grammar, specialized lexis and translation. In this sense, the purpose of this project has been fully achieved according to the initial objectives.

As another benefit from the project, the students, as a by-product were ready to understand technical texts and translate them readily.

Other students have improved their English from the basic to the Upper-Intermediate level. Students have been trained in the use of different translation techniques.

Finally, we can assert that the entire designed objective was successfully achieved as we had expected. Such objective was to develop an upper-intermediate level of Technical English course focused on the following linguistics skills such as reading comprehension of texts, identifying and understanding specialized terminology, using translation techniques, and grammar related to the Telecommunications field.

Additionally, the students showed a great interest and enthusiasm in every class.

6.2 RECOMMENDATIONS

Taking into account our acquired knowledge and our gained experience in teaching an ESP course in Electronics, throughout the project and the learning process, we think we could give the following advice after a four-month work at the institution as an intern.

First, this project which was exclusively designed for the Electronics and Telecommunications' students should be continued because it was focused on training the students to adequately translate any text in the Telecommunications field and keep on giving this course to improving the students' knowledge on the field and so that they will be ready to face the challenges in their profession.

Second, the language skills and strategies used in this course were focused on the new technologies of the information superhighway and should be continued using the same methodology and even improve it. Also the students should be provided with updated articles so that the students are motivated and they could enhance their skills in the field.

Third, we also suggest the Telecommunications head department to insert two technical English courses in the curriculum: Technical English I and Technical English II because the present program only includes one English course which is not technical but only general.

Fourth, since our proposal was introduced for the first time, we hope that it could be considered by the Telecommunications Department and might also enhance in the future.

Fifth, we have suggested that Technical English I and Technical English II could be taught in the last semesters of the Electronics Department because at this point the students have an upper knowledge of the subject-specific.

In short, all the methodology of this course such as lesson plans, learning activities, materials can be utilized as a guide in order to do some practices of technical terminology in the related field taking into account all the above mentioned language skills of the project.

REFERENCE

- Aebersold, J. A., & Field, M. L. (1997). From teacher to reading teacher: Issues and strategies for second language classroom. Cambridge: Cambridge University Press. In teaching reading strategies to ESP readers, Amirian, Seyyed Mohammad Reza. International Journal of Research Studies in Educational Technology 2013 October, Volume 2 Number 2, 19-26.

- Anderson, N. J. (1991). Individual differences in strategy use in second language reading and testing. In The effect of strategies-based instruction on student's reading comprehension of ESP texts. Majid Kh. Moghadam Mirza Koochak Khan Higher Fisheries Education Centre (p. 2). (www.itvgil.ac.ir).

- Alderson. (2000). Assessing reading. Cambridge University Press .pp307-9. In The effect of strategies-based instruction on student's reading comprehension of ESP texts. Majid Kh. Moghadam Mirza Koochak Khan Higher Fisheries Education Centre (p. 2). (www.itvgil.ac.ir).

- Basturkmen, H. (2006). Ideas and Options in English for Specific Purposes. London and New jersey: ESL and Applied Linguistic Professional Series: Eli Hinkel, Edition. to English for Specific Purposes (ESP)". Abou Bekr Belkaid University – Tlemcen Faculty of Arts and Languages Department of English, p 18.

- Belcher, Diane. 2006. "English for specific purposes: Teaching to perceived needs and imagined futures in worlds of work, study and everyday life". Teaching English to Speakers of Other Languages Quarterly 40, 133-56. In Helen Basturkmen Between territories and domains: an ESP-oriented enquiry in the borders Course development, genre analysis, and the role of ESP in education. Asp 64 (2013), Domaines, territoires et frontières en anglais de spécialité. p 5.

-Benesch, S. (2001) Critical English for Academic Purposes. Mahwah, NJ: Lawrence Erlbaum. In The Handbook of English for Specific Purposes. Brian Paltridge and Sue Starfield. This edition first published 2013© 2013 John Wiley & Sons, Inc Wiley-Blackwell.p 35.

- Block, E. (1986). The comprehension strategies of second language readers. TESOL Quarterly, 20(3), 165- 187. http://dx.doi.org/10.2307/3586295. In teaching reading strategies to ESP readers. Amirian, Seyyed Mohammad Reza. International Journal of Research Studies in Educational Technology 2013 October, Volume 2 Number 2, 19-26.

- Bloor, M. (1998). English for Specific Purposes: The preservation of the species. English for Specific Purposes Journal, 17(1), 47–66. In Ideas and options in English for specific purposes / Helen Basturkmen. The University of Auckland (p. 37). Lawrence Erlbaum Associates, Publishers, 2006 Mahwah, New Jersey London.

- Brinton, Snow, and Wesche (1989); Mohan 1986. *In A Description of Prototype Models for Content-Based Language Instruction in Higher Education. María DueñasDepartamento de Filología Inglesa. Universidad de Murcia.p. 1-2*
http://www.publicacions.ub.es/revistes/bells12/pdf/art04.pdf

- Brown, J. D. (1995). The elements of a language curriculum. Boston, MA: Heinle & Heinle. In Enhancing technical vocabulary knowledge in ESP courses,Nina Daskalovska, Goce Delcev University, Republic of Macedonia. Journal of the IATEFL ESP SIG. Professional and Academic English Journal of the English for Specific Purposes Special Interest Group, (p. 36).

- Carrell, P. L. (1998). Can reading strategies be successfully taught? Retrieved on February 4th, 2009 from http://www.jalt-publications.org/tlt/files/98/mar/carrel.html. In teaching reading strategies to ESP readers. Amirian, Seyyed Mohammad Reza. International Journal of Research Studies in Educational Technology 2013 October, Volume 2 Number 2, 19-26.

- Carrell, P., Pharis, B., & Liberto, J. (1989). Metacognitive strategy training for ESL reading. TESOL Quarterly, 23(4), 647-678. http://dx.doi.org/10.2307/3587536. In teaching reading strategies to

ESP readers . Amirian, Seyyed Mohammad Reza. International Journal of Research Studies in Educational Technology, 2013 October, Volume 2 Number 2, 19-26.

- Chambers, F. (1980). A re-evaluation of need analysis. ESP Journal, 1, 25-33. In Muhammed Ali Chalikandy. A Comprehensive Method for Teaching English for Specific Purpose. AWEJ Volume.4 Number.4, 2013, p 312.p 315.

- Celce-Murcia, D. (2001). Teaching English as a second or foreign language. United States: Heinle & Heinle. In teaching reading strategies to ESP readers. Amirian, Seyyed Mohammad Reza. International Journal of Research Studies in Educational Technology 2013 October, Volume 2 Number 2, 19-26.

- Chen, Y. (2006). From common core to specific, The Asian ESP Journal, June 2006, Vol, Article3. In English for Specific Purposes (ESP), Innovation and technology, Mary Ellen Butler-Pascoe. English education and ESP June 2009: pp 1-15.

- Coffey, B. (1984). ESP-English for specific purposes. Language Teaching, 17 (1), pp. 2-16. In ENGLISH FOR SPECIFIC ACADEMIC PURPOSES: A PILOT TUTORING PROJECT WITH UNDERGRADUATE ESL STUDENTS IN A SOCIOLOGY COURSE Christine Sager. The American University. p2.

- (Crandall 1997). - Dudley-Evans, T., & St John, M. J. (1998). Developments in ESP: A multi-disciplinary approach. Cambridge: Cambridge University Press. In Muhammed Ali Chalikandy. A Comprehensive Method for Teaching English for Specific Purpose. AWEJ Volume.4 Number.4, 2013, p 312.

- Dudley-Evans and Maggie Jo St John. (1998) Cambridge: CUP. 301 pp Developments in English for Specific Purposes. In A Multi-Disciplinary Approach http://www.aelfe.org/documents/text2-Palmer.pdf

- Dudley-Evans, T. (2001). English for Specific Purposes. In R. Carter &D. Nunan (Eds.), The Cambridge Guide to Teaching English to Speakers of Other Languages (pp. 131- 136). Cambridge:

Cambridge University Press. In Muhammed Ali Chalikandy. A Comprehensive Method for Teaching English for Specific Purpose. AWEJ Volume.4 Number.4, 2013, p. 315.

- Dudley-Evans, Tony, and Maggie Jo St John. (2002). Developments in ESP: A multidisciplinary approach. Cambridge: The Press Syndicate of the University of Cambridge. In Hamzah Puadi Ilyas, Designing Reading Materials for Telecommunications Engineering. p 35.

. (Guerguieva-Steenhoute 2008). In The Role of the Teacher and Appropriate Choice of Material for Teaching French for Specific Purposes in Kenyan Universities Millicent Otieno* Journal of International Academic Research for Multidisciplinary Impact Factor 2.417, ISSN: 2320-5083, Volume 4, Issue 4, May 2016, p 33.

- Halliday , M. A. K. (1993b) Some grammatical problems in scientific English. In M. A. K. Halliday and J. R. Martin (eds.), Writing Science . 69 – 85 . London : The Falmer Press.

- Harmer, J. (2001). The practice of English Language Teaching. (Third edition). Essex: Pearson Education. In "An Introduction to English for Specific Purposes (ESP)". Crookes and S.M Grass (Ed). Tasks in a pedagogical Context. Celeveland, UK: Multilingual Matters 9-44. In Abou Bekr Belkaid University – Tlemcen Faculty of Arts and Languages Department of English, p 26.

- Hosenfield, C. (1984). Case studies of ninth grade readers. In J. C. Alderson & A. H. Urquhart (Ed.), Reading in a foreign language: Applied linguistics and language study (pp. 231–240). New York: Longman. In teaching reading strategies to ESP readers. Amirian, Seyyed Mohammad Reza. International Journal of Research Studies in Educational Technology 2013 October, Volume 2 Number 2, 19-26.

- Hudson, T (1991) A Context comprehension approach and technology to reading English for science. TESOL Quarterly 25/; 77-104(EDS) methodology in language teaching (P.288 291) Cambridge. In The effect of strategies-based instruction on student's reading comprehension of ESP texts. Majid Kh. Moghadam Mirza Koochak Khan Higher Fisheries Education Centre (p. 2). (www.itvgil.ac.ir).

- Hutchinson, T., & Waters, A. (1985). ESP at the crossroads. In J. Swales (Ed.), Episodes in ESP (p. 177–187) Oxford: Pergamon. In Ideas and options in English for specific purposes / Helen Basturkmen. The University of Auckland (p. 32). Lawrence Erlbaum Associates, Publishers, 2006 Mahwah, New Jersey London.p 35.

- Hutchinson, T. & Waters, A. (1987). English for Specific Purposes: A learning-centered approach. Cambridge University Press. In Current Situation of English for Specific Purposes (ESP) Curriculum at Chaoyang University of Technology (CYUT)-A Pilot Study Hsiu-Hui Su Chaoyang University of Technology Chiu-Yen Weng Chaoyang University of Technology(p. 6, 19).

- Hutchinson, T. (1988). Making materials work in the ESP classroom. In ESP in the classroom: Practice and evaluation, (Chamberlain, D.; Baumgardner, R. J.) eds: ELT document 128: 62-70. In http://iteslj.org/Techniques/Zhenhui-Teaching Styles.html. In English for Specific Purposes: Role of Learners, Teachers and Teaching Methodologies Dr. Choudhary Zahid Javid. European Scientific Journal July 2015 edition vol.11, No. 20 ISSN: 1857 – 7881 (Print) e - ISSN 1857- 7431. p.26.

- Hyland, K. (2006). English for academic purposes: An advanced resource book. London: Routledge. In ARTESOL English for Specific Purposes Interest Section ESP E-journal. A Refereed International Journal of Issues in Teaching English for Specific Purposes Volume 2, No 1. November 2012.p 17.

- Hyland, K. (2002). Specificity revisited: how far should we go now? English for Specific Purposes. 21 (4): 385-395. In Research and discussion note Specificity revisited: how far should we go now? Ken Hyland*www.elsevier.com/locate/esp. p 393.

- Iwai, T., Kondo, K., Limm, S. J. D., Ray, E. G., Shimizu, H., and Brown, J. D. (1999). Japanese language needs analysis. Available at: http://www.nflrc.hawaii.edu/Networks/NW13/NW13.pdf. In Introduction to Needs Analysis by: Mehdi Haseli Songhori. English for Specific Purposes world, Issue 4, 2008, www.esp-world.info, (p.1).

- Janzen, J. (2001). Teaching strategic reading. In J. C. Richards & W. A. Renandya (Eds.), Methodology in language teaching: An anthology of current practice (pp. 287-294). Cambridge:

Cambridge University Press. In teaching reading strategies to ESP readers. Amirian, Seyyed Mohammad Reza. International Journal of Research Studies in Educational Technology 2013 October, Volume 2 Number 2, 19-26.

- Janzen, J. (1996) Teaching strategic reading. In Jack Richards and Willy A. Renandya university press. In The effect of strategies-based instruction on student's reading comprehension of ESP texts. Majid Kh. Moghadam Mirza Koochak Khan Higher Fisheries Education Centre (p. 2). (www.itvgil.ac.ir).

- Javid, C. Z. (2010). Addressing the causes that hinder effective English language teaching in Saudi universities: A case study.Bani-Swaif University Journal, 80, 479-513. Egypt. ©ARC Page | 26. A Comparative Study of English for Specific Purposes (ESP) and English as a Second Language (ESL) Programs.p 23.

- Johns, A. (1991). English for specific purposes: Its history and contribution. In Celce-Murcia, M. (Ed). Teaching English as a second or foreign language (pp.67-77). Boston, MA: Heinle & Heinle. In Introduction to Needs Analysis by: Mehdi Haseli Songhori. English for Specific Purposes world, Issue 4, 2008, www.esp-world.info, (p. 3).

- Johns, A,. & Dudley-Evans, T. (1991). English for Specific Purposes: International in scope, specific in purpose. TESOL Quarterly, 25,297-314. In English for Specific Purposes (ESP), Innovation and technology, Mary Ellen Butler-Pascoe. English education and ESP June 2009: pp 1-15.

- Johns , A. M. (1997) Text, Role and Context: Developing Academic Literacies . Cambridge : Cambridge University Press. In The Handbook of English for Specific Purposes by Brian Paltridge and Sue Starfield. This edition fi rst published 2013 © 2013 John Wiley & Sons, Inc. p 356.

- Jordan, J. J. (1997). *English for academic purposes: A guide and resource book for teachers*. Cambridge: Cambridge University Press. In ENGLISH FOR SPECIFIC PURPOSES 'A paper on the special area of English of the non-specialist ESP English instructor' Hasan BĐLOKCUOĞLU The European University of Lefke English Preparatory School, Service English Branch Lecturer. p 85.

- Kennedy, C., & Bolitho, R. (1984). English for specific purpose~. London: Macmillan.. In The Effect of Keyword Method on ESP Vocabulary Learning. I-Ju Chen Hui-Jing, Hsiao National Changhua University of Education Ling Tung University. p 48.

- Kumaravadivelu, B. (2006). TESOL methods: Changing tracks, challenging trends. TESOL Quarterly (40)59–81. In In ENGLISH FOR SPECIFIC PURPOSES: ROLE OF LEARNERS, TEACHERS AND TEACHING METHODOLOGIES Dr. Choudhary Zahid Javid. European Scientific Journal July 2015 edition vol.11, No.20 ISSN: 1857 – 7881 (Print) e - ISSN 1857- 7431. p. 26.

- Kennedy, c., & Bolitho, R. (1984). English for specific purpose~. London: Macmillan.. In The Effect of Keyword Method on ESP Vocabulary Learning. I-Ju Chen Hui-Jing, Hsiao National Changhua University of Education Ling Tung University.p 28.

- McDonough, J. (1984). ESP in perspective: A practical guide. London: Collins ELT. In Introduction to Needs Analysis By: Mehdi Haseli Songhori. English for Specific Purposes world, Issue 4, 2008, www.esp-world.info Introduction to Needs Analysis. Mehdi Haseli Songhori p 27.

- Macaro E (2002) Teaching and learning a second language. Continuum Publication Ltd. P 136. In The effect of strategies-based instruction on student's reading comprehension of ESP texts. Majid Kh. Moghadam Mirza Koochak Khan Higher Fisheries Education Centre (p. 2). (www.itvgil.ac.ir).

- Martínez, I. A. (2011) Capitalizing on the advantages of the Latin American EAP situation: Using authentic and specific materials in EAP writing instructions. Iberica, 21, 31-48. In ARTESOL English for Specific Purposes Interest Section ESP E-journal. A Refereed International Journal of Issues in Teaching English for Specific Purposes Volume 2, No 1. November 2012. p 65.

- Mumby, J. (1978). Communicative Syllabus Design. Cambridge: Cambridge University Press. In "An Introduction to English for Specific Purposes (ESP)". Abou Bekr Belkaid University – Tlemcen Faculty of Arts and Languages Department of English, p 17

- Nation, I. S. P. (2001). Learning vocabulary in another language. Cambridge: Cambridge University Press. In Enhancing technical vocabulary knowledge in ESP courses, Nina Daskalovska, Goce Delcev

University, Republic of Macedonia. Journal of the IATEFL ESP SIG. Professional and Academic English Journal of the English for Specific Purposes Special Interest Group (p. 24-25).

- Ross, Nigel J. (2000). *Interference and Intervention: Using Translation in the EFL Classroom.* Modern English Teacher, 9/3: 61-66. In See discussions, stats, and author profiles for this publication at: http://www.researchgate.net/publication/261641087 "The usefulness of translation in foreignlanguage learning: students' attitudes"ARTICLE · JANUARY 2014. p 61.

- Nunan, D. (1988). Syllabus Design. Oxford: Oxford University Press. In "An Introduction to English for Specific Purposes (ESP)". Abou Bekr Belkaid University – Tlemcen Faculty of Arts and Languages Department of English, p 18, 49-50.)

- Oxford, R., & Crookall, D. (1989). Research on language learning strategies: Methods, findings, and instructional issues. Modern Language Journal, 73, 404-419. http://dx.doi.org/10.1111/j.1540-4781.1989.tb05321.x. In teaching reading strategies to ESP readers. Amirian, Seyyed Mohammad Reza. International Journal of Research Studies in Educational Technology 2013 October, Volume 2 Number 2, 19-26.

- Rao, Z. (2001). Matching teaching styles with learning styles in East Asian Contexts. The Internet TESL Journal,7(7). Available online http://iteslj.org/Techniques/Zhenhui-TeachingStyles.html. In ENGLISH FOR SPECIFIC PURPOSES: ROLE OF LEARNERS, TEACHERS AND TEACHING METHODOLOGIES Dr. Choudhary Zahid Javid. European Scientific Journal July 2015 edition vol.11, No.20 ISSN: 1857 – 7881 (Print) e - ISSN 1857- 7431. p 26.

- Reilly (n. d.) and Richards and Rodgers (2001). In Current Trends in Syllabus Designand Materials Development. Cheng Xiaotang School of Foreign Languages and Literature, Beijing Normal University. p. 39

- Richards, Jack C. (2007). *Curriculum Development in Language Teaching*. Cambridge: Cambridge University Press. In HAMZAH PUADI ILYAS, Designing Reading Materials for Telecommunications Engineering. p 35.

- Richards, J. (2001). Curriculum development in language teaching. Cambridge, Cambridge University Press. In Assessing Students' Perceived Language Needs in a Needs Analysis .Martin Balint Kwansei Gakuin University, School of Policy Studies. p 26.

- Richards, J. C., & Rodgers, T. S. (1987). Approaches and methods in language teaching. Cambridge: Cambridge University Press. In Ideas and options in English for specific purposes / Helen Basturkmen. The University of Auckland (p. 37). Lawrence Erlbaum Associates, Publishers, 2006 Mahwah, New Jersey London.

- Richterich , R. and Chancerel , J. L. (1977) Identifying the Needs of Adults Learning a Foreign Language . Strasbourg: Council of Europe/Oxford : Pergamon . Robinson , P. (1991) ESP Today: A Practitioner ' s Guide . Hemel Hampstead, UK : Prentice - Hall. In English for Specific Purposes 'A paper on the special area of English of the non-specialist ESP English instructor' Hasan Bđlokcuoğlu, The European University of Lefke English Preparatory School, Service English Branch Lecturer, p. 87.

- Robinson, P. (1980). ESP (English for Specific Purposes). New York: Pergamon. In Current Situation of English for Specific Purposes (ESP) Curriculum at Chaoyang University of Technology (CYUT)-A Pilot Study Hsiu-Hui Su Chaoyang University of Technology Chiu-Yen Weng Chaoyang University of Technology(p. 6).

- Robinson, P. (1991), ESP today: A Practitioner's Guide. Hemel Hemstead: Prentice Hall. In English for Specific Purposes 'A paper on the special area of English of the non-specialist ESP English instructor' Hasan BĐLOKCUOĞLU The European University of Lefke English Preparatory School, Service English Branch Lecturer, p. 87.

- Selinker, L., Tarone, E. & Hanzeli, V. (1981). English for Academic and Technical Purposes: Studies in Honour of Louis Trimble. M.A.: Newbury House. In Elżbieta Jendrych Kozminski University, Warsaw Developments in ESP Teaching. Studies in Logic, Grammar and Rhetoric. VERSITA Journal 34 (47) 2013 DOI: 10.2478/slgr-2013-0022, p. 43

- Selinker, L., & Douglas, D. (1985). Wrestling with 'context' in interlanguage theory. Applied Linguistics, 6(2), 190–204. In Ideas and options in English for specific purposes / Helen Basturkmen. The University of Auckland (p. 38). Lawrence Erlbaum Associates, Publishers, 2006 Mahwah, New Jersey London.

- Shirazi, M. A. (1995). The effect of pre-reading strategies on reading comprehension of Iranian ESP readers. Unpublished Masteral thesis, Allameh Tabatabaei University, Tehran. In Teaching reading strategies to ESP readers Amirian, Seyyed Mohammad Reza Hakim Sabzevari University, Iran. International Journal of Research Studies in Educational Technology 2013 October, Volume 2 Number 2, 19-26

- Stern, H. H. (1992). Issues and options in language teaching. Oxford University Press: Oxford. In In ENGLISH FOR SPECIFIC PURPOSES: ROLE OF LEARNERS, TEACHERS AND TEACHING METHODOLOGIES Dr. Choudhary Zahid Javid. European Scientific Journal July 2015 edition vol.11, No.20 ISSN: 1857 – 7881 (Print) e - ISSN 1857- 7431. p.26.

- Strevens, P. (1977).Special-purpose language teaching: A Perspective. Language Teaching and Linguistics Abstracts 10, 3. In Muhammed Ali Chalikandy. A Comprehensive Method for Teaching English for Specific Purpose. AWEJ Volume.4 Number.4, 2013, p 311.

- Stoller, F. (2002). Promoting the acquisition of knowledge in a content based course. In J. Crandall & D. Kaufman (Eds.), Content-based instruction in higher education settings (pp. 109–123). Alexandria, VA: TESOL. In Content-Based Instruction in the Foreign Language Classroom: A Discourse Perspective. Silvia Pessoa.et.al.Carnegie Mellon University. p 103.

- Swales, J. (1985). (ed.), Episodes in ESP, Pergamon, 1985. In Current Situation of English for Specific Purposes (ESP) Curriculum at Chaoyang University of Technology (CYUT)-A Pilot Study Hsiu-Hui Su Chaoyang University of Technology Chiu-Yen Weng Chaoyang University of Technology (p. 6).

- Swales, J. (1990). Genre analysis: English in academic and research settings. Cambridge: Cambridge University Press. In Ideas and Options in English for Specific Purposes, Chapter 1, p 4.

Helen Basturkmen. The University of Auckland. Lawrence Erlbaum Associates, Inc. 2006. Mahwah, New Jersey. U.S.A. p. 38.

- (Tintaya, 2008). Proyecto de investigación Universidad Mayor de San Andrés. Instituto de Estudios Bolivianos. Editorial: La Paz, Bolivia: Instituto de Estudios Bolivianos: UMSA Asdi/TB-BRC, 2008. p 55.

- Vázquez-Ayora, G. (1977): Introducción a la traductología, Washington: Georgetown University Press. In Translation Techniques Revisited: A Dynamic and Functionalist Approach. Lucía Molina and Amparo Hurtado Albir. Universitat Autónoma de Barcelona, Barcelona, Spain.(p. 177–187)

- Widdowson, H. G. (1983). Learning Purpose and Language Use. Oxford University Press. Oxford. Wikipedia, the free encyclopedia. Available online http://en.wikipedia.org/wiki/Pragmatism. In English for Specific Purposes: Role of Learners, Teachers and Teaching Methodologies Dr. Choudhary Zahid Javid. European Scientific Journal July 2015 edition vol.11, No.20 ISSN: 1857 – 7881 (Print) e - ISSN 1857- 7431. p.27.

- Wilkins, D.A. (1976). Notional Syllabus. Oxford: Oxford University Press. In Crookes and S.M Grass (Ed). Tasks in a pedagogical Context. Celeveland, UK: Multilingual Matters 9-44. In "An Introduction to English for Specific Purposes (ESP)". Abou Bekr Belkaid University – Tlemcen Faculty of Arts and Languages Department of English, p 25.

- Xiao-yun, Y.; Zhi-yang, Z; Peixing, D. (2007). Principled Eclecticism in College English Teaching in China. Professional Teaching articles,17(1). Available online asian-efl-journal.com/pta_Jan_07_yuy.pdf. In English for Specific Purposes: Role of Learners, Teachers and Teaching Methodologies Dr. Choudhary Zahid Javid. European Scientific Journal July 2015 edition vol.11, No.20 ISSN: 1857 – 7881 (Print) e - ISSN 1857- 7431. p.26.

- Yalden, J. (1987) Principles of Course Design for Language Teaching. Cambridge: Cambridge University Press. In "An Introduction to English for Specific Purposes (ESP)". Abou Bekr Belkaid University – Tlemcen Faculty of Arts and Languages Department of English, p 19.

WEB SITES

- Skimming and Scanning definitions (From College Reading and Study Skills and Academic Reading and Study Skills for International Students)
http://pioneer.netserv.chula.ac.th/~pkanchan/html/skim.htm

- Heather Leighton High-Tech Translation in the Information Age (Terminology Update, Volume 33, Number 2, 2000, page 17).
http://www.btb.termiumplus.gc.ca/tpv2guides/guides/favart/indexeng.html?lang=eng&lettr=indx_titls&page=9W9KK43rhksE.html

- Reading approach method https://www.google.com.bo/#q=Reading+Approach+method

APPENDIX I.

STUDENT'S SUMMATIVE ASSESSMENT GRAPHICS

There were given 3 tests in all: one pre-test, one Mid-term Tests and one Final Test.

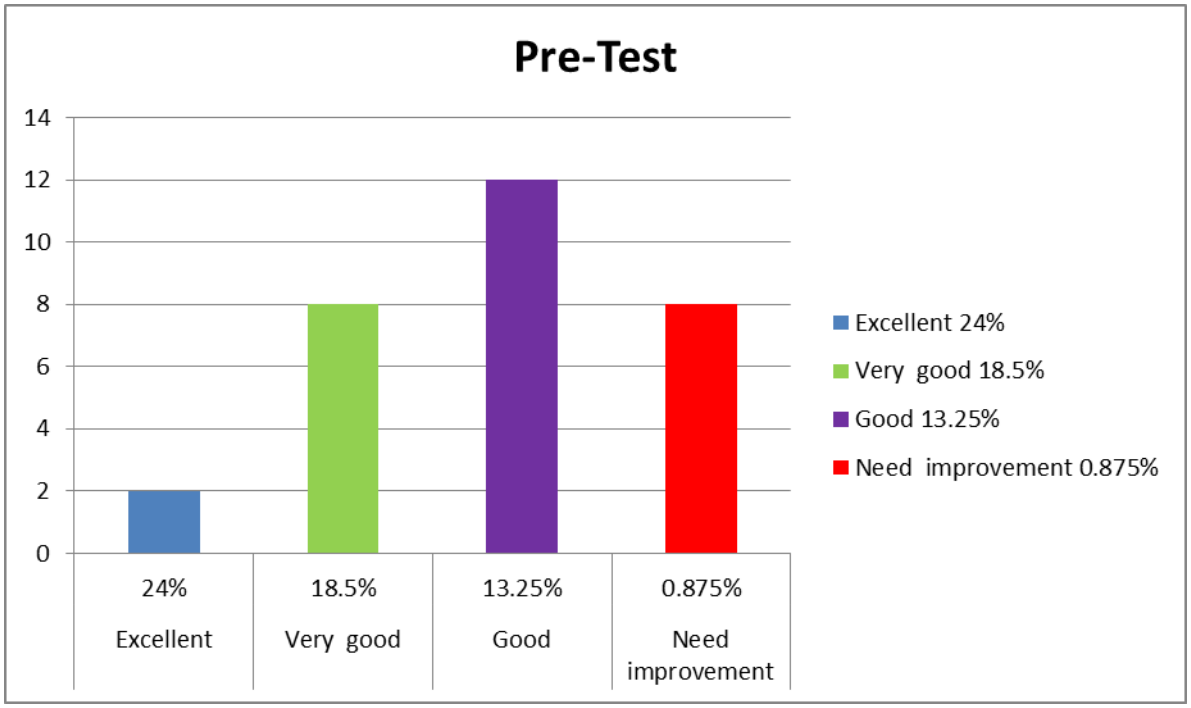


Fig. 1

a) First term test

Number of students: 30

Out of 30 students, 2 scored excellent, 8 very good, 12 good and 8 need improvement.

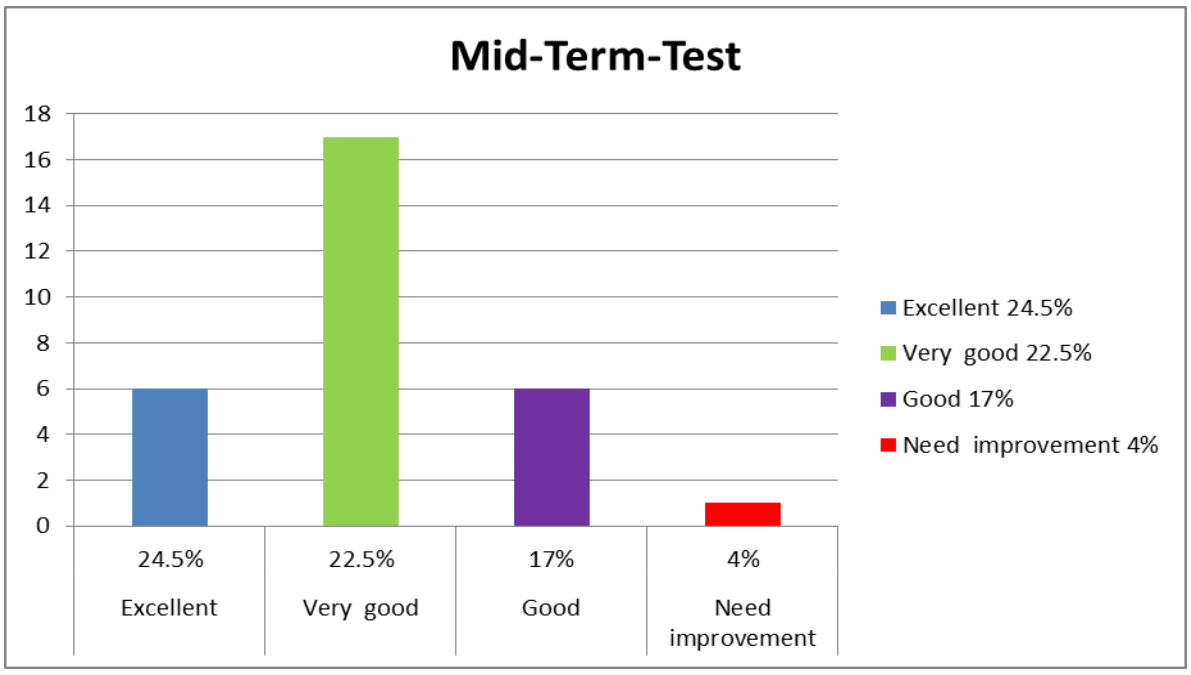


Fig. 2

b) Second term test

Number of students: 30.

Out of 30 students, 6 scored excellent,17 very good,6 good, and 1 needs improvement

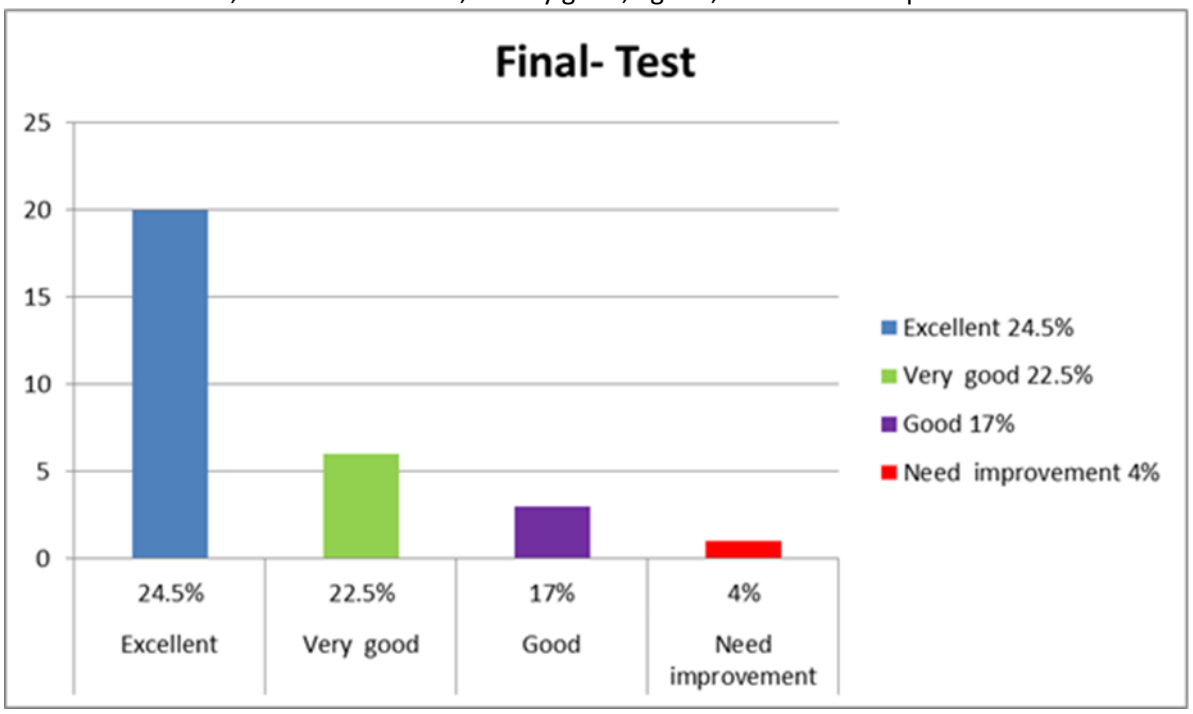


Fig. 3

c) Final Test

Number of students: 30

Out of 30 students, 20 scored excellent, 7 very good, 2 good, and 1 needs improvent.

APPENDIX II.

CLASSROOM LESSON PLANNING

LESSSON PLAN 1

I. General Information

- Setting: Facultad Tecnológica de la UMSA.
- Learners level: Technical English I for Electronics Students
- Class time: 180 minutes.
- Teacher: Juan José Chambi Paco.

II. Objectives

- General objectives:
  - Students will be able to identify and use technical vocabulary related to "Passive Components. "
- Enable objectives:
  - Student will be able to write short sentences describing passive components.
  - Student will be able to translate short paragraphs about passive components.

III. Materials

- Handouts
- Short text
- Markers
- Flash Memory

IV. Lesson procedure

Strategy: (5 m)

The Strategies for all stages mainly consist of a teacher-student interaction. The Interaction deals with developing individual and collective responsibility.

Warm-up (15 m)

- The Teacher shows the students a picture of the different passive components to arise the students' interest in Technical English by asking the following question:

What is the name of this component?

Then the students try to guess the component's name.

Main task (45 m)

- The teacher introduces students to the Simple Present Tense and types of Translations techniques.

- The Students read five sentences in the simple present tense related to the different components.

Then, they write three sentences on their own using the simple present tense related to the topic.

- The Students receive a handout and name different components to learn technical vocabulary. The Students identify new vocabulary in their handouts to do exercises by filling out the blanks with the name of the components in English.
- Students read text and teacher explains the meaning of those new words.
- The teacher provides a technical article related to the components and the students translate it from English to Spanish using the literal translation technique.

Follow-up (15 m)

- Once the students have completed the hand out, the teacher gives a quiz.
- The teacher explains the importance of passive components.
- Students write and/or orally describe the passive components that are used in electronic circuits.

VI. Evaluation

- Students write a four-line summary about what they have learned in class today.

VI. Reference

Inmaculada Alvares de Mon ´´English for Electronics´´ McGraw-Hill, 1990

"English for students of electronics and telecommunications" Wydawnictwo Politechniki, 2015.

LESSON PLAN 2

I. General Information

- Setting: Facultad Tecnológica de la UMSA.
- Learners level: Technical English I for Electronics Students
- Class time: 180 minutes.
- Teacher: Juan José Chambi Paco.

II. Objectives

General Objectives:

- Students will be able to identify and use technical vocabulary related to "Electronic Circuits."

Enable Objectives:

- Student will be able to write short sentences describing electronic circuits.
- Student will be able to translate short paragraphs about electronic circuits.

III. Materials

- Handouts
- Short text
- Markers
- Flash Memory

IV. Lesson Procedure

Strategy: (5 m)

The Strategies for all stages mainly consist of a teacher-student interaction. The interaction deals with developing individual and collective responsibility.

Warm-up (15 m)

- The Teacher shows students a picture about different electronics circuits to arise the students' interest in Technical English by asking the following question:

What is the name of this electronic circuit by filling out the blanks with the name of the circuit in English?

Then the students try to guess the electronic circuit's name.

Main task (45 m)

- The teacher introduces students the Present Continuous Tense and the literal translation technique.
- The students read five sentences in the present continuous tense related to different electronic circuits.

  Then, they write three sentences on their own in present continuous tense related to the topic.

  The students receive a handout and name different circuits to learn technical vocabulary. The Students identify new vocabulary in their handouts to do exercises by filling out the blanks with the name of circuits in English.
- Students read the text and the teacher explains the meaning of those new words.
- The teachers provides a technical article related to circuits and the students translate it from English to Spanish using the literal translation technique.

Follow-up (15 m)

- Once the students have completed the handout, the teacher gives a quiz.
- The teacher explains the importance of electronic circuits.
- Students write and/or orally describe electronic circuits that are used in Electronics.

VI. Evaluation

- Students write a four-line summary of what they learned in class today.

VI. Reference

Inmaculada Alvares de Mon ´´English for Electronics´´ McGraw-Hill, 1990

"English for students of electronics and telecommunications" Wydawnictwo Politechniki, 2015.

LESSON PLAN 3

I. General Information

- Setting: Facultad Tecnológica de la UMSA.
- Learners level: Technical English I for Electronics Students
- Class time: 180 minutes.
- Teacher: Juan José Chambi Paco.

II. Objectives

General Objectives:

Students will be able to identify and use technical vocabulary related to "Integrated Circuits."

Enable Objectives:

- Student will be able to write short sentences describing integrated circuits.
- Student will be able to translate short paragraphs about integrated circuits.

III. Materials

- Handouts
- Short text
- Markers
- Flash Memory

IV. Lesson Procedure

Strategy: (5 min)

The Strategies for all stages mainly consist of a teacher-student interaction. The Interaction deals with developing individual and collective responsibility.

Warm-up (15 m)

- The Teacher shows students a picture about different integrated circuits to arise the students' interest in Technical English by asking the following questions:

What is the name of this integrated circuit?

Then the students try to guess the integrated circuit name.

Main task (45 m)

- The teacher introduces students to the Simple Past Tense and the Amplification translation technique.
- The Students read five sentences in the simple past tense related to the different integrated circuits.

  Then, they write 3 sentences on their own in simple past tense related to the topic.
- The Students receive a handout and name different integrated circuits to learn technical vocabulary. The Students identify new vocabulary in their handouts in order to do exercises by filling out the blanks with the name of the integrated circuits in English.
- The students read text and the teacher explains the meaning of those new words.
- The teachers provides a technical article related to circuits integrated and the students translate it from English to Spanish using the literal translation technique.

Follow-up (15 m)

- Once the students have completed the handout the teacher gives a quiz.
- The teacher explains the importance of integrated circuits.
- Students write and/or orally describe a circuit integrated that is used in Electronics.

VI. Evaluation

- Students write a four-line summary about what they have learned in class today.

VI. Reference

Inmaculada Alvares de Mon ´´English for Electronics´´ McGraw-Hill, 1990

"English for students of electronics and telecommunications" Wydawnictwo Politechniki, 2015.

LESSON PLAN 4

I. General Information

- Setting: Facultad Tecnológica de la UMSA.
- Learners level: Technical English I for Electronics Students
- Class time: 180 minutes.
- Teacher: Juan José Chambi Paco.

II. Objectives

General Objectives:

- Students will be able to identify and use technical vocabulary related to "Analog and Digital Meters."

Enable Objectives:

- Student will be able to write short sentences describing analog and digital meters.
- Student will be able to translate short paragraphs about analog and digital meters.

III. Materials

- Handouts
- Short text
- Markers
- Flash Memory

IV. Lesson procedure

Strategy: (5 m)

The strategies for all stages mainly consist of a teacher-student interaction. The Interaction deals with developing individual and collective responsibility.

Warm-up (15 m)

- The Teacher shows students a picture of the different passive components to arise the students' interest in Technical English by asking the following questions:

  What is the name of this meter?

  Then the students try to guess the meter's name.

Main task (45 m)

- The teacher introduces students the Past Continuous Tense and the Omission Translation technique.
- The students read 5 sentences in the past continuous tense related to different meters. Then, they write 3 sentences on their own in past continuous tense related to the topic.
- The Students receive a handout and name different meters to learn technical vocabulary. The Students identify new vocabulary in their handouts in order to do exercises by filling out the blanks with the name of meters in English.
- Students read text and teacher explains the meaning of those new words.
- The teachers provides a technical article related to meters and the students translate it from English to Spanish using the Omission translation technique.

Follow-up (15 m)

- Once the students have completed the hand out, the teacher gives a quiz.
- The teacher explains the importance of meters.

The students write and/or orally describe a meter that is used in electronics.

VI. Evaluation

- Students write a four-line summary about what they have learned in class today.

VI. Reference

Inmaculada Alvares de Mon ´´English for Electronics´´ McGraw-Hill, 1990

"English for students of electronics and telecommunications" Wydawnictwo Politechniki, 2015.

LESSON PLAN 5

I. General Information

- Setting: Facultad Tecnológica de la UMSA.
- Learners level: Technical English I for Electronics Students
- Class time: 180 minutes.
- Teacher: Juan José Chambi Paco.

II. Objectives

General objectives:

Students will be able to identify and use technical vocabulary related to " Television"

Enable objectives:

Students will be able to write short sentences describing Television sets.

Students will be able to translate short paragraphs about Television.

III. Materials

. Handouts

. Short text

. Markers

. Flash Memory

IV. Lesson procedure

Strategy: (5 m)

The Strategies for all stages mainly consist of a teacher-student interaction. The Interaction deals with developing individual and collective responsibility.

Warm-up (15 m)

- The teacher shows students a picture of different television to arise the students' interest in Technical English by asking the following question:

What is the device which converts visual images into electrical signals?

Then the students try to guess the device name.

Main task (45 m)

- The teacher introduces students the Future simple tense and the Modulation Translation technique.
- The students read five sentences in the Future simple tense related to different television

sets. Then, they write three sentences on their own in the future simple tense related to the topic.

- The students receive a handout and name different television set to learn technical vocabulary. The students identify new vocabulary In their handouts, to do exercises by filling out the blanks with the name of television set in English.
- Students read text and teacher explains the meaning of those new words.
- The teachers provides a technical article related to television set and the students translate it from English to Spanish using the modulation translation technique.

Follow-up (15 m)

- Once the students have complete the handout the teacher gives a quiz to the students.
- The teacher explains the importance of the television set.
- Students write and/or orally describe a television set that use in telecommunications.

VI. Evaluation

- Students write a four-line summary of what they have learned in class today.

VI. Reference

Inmaculada Alvares de Mon ´´English for Electronics´´ McGraw-Hill, 1990 "English for students of electronics and telecommunications" Wydawnictwo Politechniki,2015.

APPENDIX III

ELECTRONICS/TELECOMMUNICATIONS STUDENT'S QUESTIONNAIRE
THE QUESTIONNAIRE

1.- What is your mother tongue?

a. Spanish b. Aymara c. Quechua d. Other

2.- In which language do you communicate?

a. Spanish b. Aymara c. Quechua d. Other.

3. Do you like communication?

Yes No

4. Once you have learned the English language do you think you will be able to understand the handbooks?

Yes No

5.- Once you have learned the English language do you think you will be able to understand the telecommunication books?

Yes No

6.- The learning of technical English vocabulary would help you to:

a. To understand the functioning of telecommunications system.
b. To understand the operations and programming.
c. To understand the high level languages which use English jargon such as Protocol, Standby, Multiplexing, etc.
d. To understand the acronyms telecommunication meaning like: GSM, VOIP. EIRP, etc.
e. All of them a, b, c, d.

7.- What problems do you have in the process of learning a new languages?

a. Grammar
b. Writing
c. Reading
d. Listening
e. Speaking

8.- How do you think you could learn better the English language?

a. By watching videos and listening to English songs.
b. By practicing and memorizing dialogues.

c. By translation and use of dictionaries.

d. By the use of grammatical structures.

e. By memorizing new words.

9.-What skills would you like to learn in English?

a. Reading

b. Writing

c. Listening

d. Speaking

e. All of them

10.- How would you like to work in classes?

a. Groupwork

b. Pairwork

c. Alone

11.- When you see a new word what do you do to know its meaning?

a. Ask the teacher.

b. Use of the dictionary.

c. Ask your partners.

d. Ignore the word.

12.- Why do you think that the learning of technical English will you help you understand the communications system?

a. Because in this way, I will understand better how telecommunication system works.

b. Because I will understand better the difference between analogical and digital.

c. Because I will improve my knowledge about telecommunication system.

d. All of them.

PROFESSORS' QUESTIONNAIRE

Read carefully the questions and choose the best answer. In some questions more than one answer is possible, so check all that apply.

1) What's your academic degree?

a) Associate' degree (technical)

b) Bachelor's degree

c) Engineer

d) Other specify)_____

2) How long have been studying English?

a) Never

b) For one year

c) For two years

d) For more than three years

e) Other (specify)_____

3) Why do you think your students need to learn English?

a) To understand technical vocabulary in Electronics and Telecommunications

b) To be able to speak the language with fluency

c) To be able to read books and technical manuals related to the field

d) To get a scholarship

e) To be able to use the language as a professional in the Telecommunications field

f) Other (specify)_____

4) What are the language skills that the students need to learn and master more?

a) Reading strategies

b) Grammar

c) Listening comprehension

d) To learn technical vocabulary related to the field

e) To be able to write technical reports related to the field

f) Other (specify)_____

5) How often do your students need to read books in English in the Electronics and Telecommunications field?

a) Reading strategies

b) Always

c) Sometimes

d) Frequently

e) Never

f) Other (specify)_____

6) Why do you think it's necessary for your students to know specialized English in the Telecommunications field?

a) to know how a telecommunications system works

b) To read and understand the telecommunications equipment's technical manuals

c) To translate the telecommunications equipment's technical manuals

d) To do laboratory tasks successfully

f) Other (specify) _____

7) What are the most recurrent problems you students have with technical English?

a) with grammar

b) with reading comprehension

c) with listening comprehension

d) with technical terminology

e) with translation

f) Other (specify)_____

8) What kind of materials are necessary for an ESP course in the field?

a) specialized magazines in English

b) needed textbooks in English for the related subject

c) visual aids and pictures from equipment

d) specialized dictionaries in the Telecommunications field

e) a computer

f) Games

f) Other (specify)_____

9) What percentage of English do you use when you conduct your class?

a) 10%-20%

b) 30%-40%

c) 50%-70%

d) over 80%

e) Other (specify)_____

10) How do you assess your students' performance?

a) through oral tests

b) through class presentations

c) through translation work

d) through written tests

e) Other (specify)_____

APPENDIX IV

CLASSROOM READING, VOCABULARY AND TRANSLATION SAMPLES

TEXT 1

ENGLISH FOR ELECTRONICS

Read the following article carefully:

There are two types of circuits used in electronics: discrete and integrated. Both circuits consist of elements; but, whereas the elements in the integrated circuits (ICs) cannot be separated from their overall assembly, in the discrete circuits they can operate separately from that circuit. These elements are called components, parts or devices and can be divided into active and passive. Transistors and diodes are common active devices. The passive components are resistors, capacitors and inductors.

Part A. READING AND TRANSLATION

Task 1. Skimming: Read the text and write what the text is about.

_____.

Task 2. Scanning: Read the text again and identify the components and write them below in the order they appear._____.

Task 3. Read the text fast and decide which the best heading for the text is.

1. Types of electronics circuits.
2. Basic passive components.
3. Electronic circuit components.

Task 4. Read the text again and underline the cognates you can find in the text. Then write them on the space below. _____.

Task 5. Read the text again and translate it to Spanish in the lines below using the most appropriate technique.

_____

_____

_____.

Part B. VOCABULARY.

Complete the blanks with the most appropriate word.

COMPONENT	PROPERTY	UNIT
resistor	resistance	ohm
capacitor	capacitance	farad
inductor	inductance	henry

1. The unit of …… is the ohm.
2. Basically, a …… consists of two metal plates separated by a dielectric.
3. The unit of …….. is the farad.
4. The Henry is the unit of ……. .
5. The three main types of …….. are: carbon, wire and film.
6. A solenoid is a type of ……. .

TEXT 2

ENGLISH FOR ELECTRONICS

Read the following article carefully.

Integrated circuits (ICs) are probably the most important components in electronics today. An IC a complete electronic circuit, often no larger than a discrete transistor, integrated within a single chip of silicon. This type of IC is known as monolithic IC. It can contain hundreds of transistors, diodes, resistors and capacitors, and all its components and their connections are manufactured in the same production process. Integrated circuits have substantial advantages over discrete circuits. One major advantage of IC is their small size. Thanks to miniature circuitry. Low cost is another advantage of integrated circuits. But perhaps the main advantage of integrated circuits is their high reliability. Therefore ICs usually operate for longer periods of time without a breakdown.

Part A. READING AND TRANSLATION

Task 1. Skimming: Read the text and write what the text is about.

_____.

Task 2. Scanning: Read the text again and identify the advantages and write them below in the order they appear._____.

Task 3. Read the text fast and decide which of the following three phrases summarizes best the

controlling idea of the text.

1. ICs are essential electronic devices.
2. The integrate circuit and its advantages.
3. Advantages and limitations of integrated circuits.

Task 4. Read the text again and underline the cognates you can find in the text. Then write them on the space below. _____.

Task 5. Read the text again and translate it to Spanish in the lines below.

_____

_____

_____.

Part B. READING COMPREHENSION.

Mark the following statements False or True according to the given information of the text.

1. An IC can be as small as a discrete transistor. ( )
2. The manufacture of a silicon chip is much more expensive than that of a transistor. ( )
3. Discrete circuits are much more reliable than ICs. ( )
4. ICs are cheaper than discrete circuits. ( )
5. ICs require more solder joints and mechanical connections than discrete circuits. ( )
6. Discrete circuits operate without a breakdown for shorter periods than ICs. ( )

TEXT 3

ENGLISH FOR ELECTRONICS

Read the following article carefully.

The era electronic communication began in 1837 when Samuel Morse demonstrated an early version of the famous dot/dash signal code that would make world telegraph communication possible. In 1876 the telephone invented by Alexander Graham Bell, sent voice signals over wire circuits.

In 1901 Marconi started experimenting wireless transmission and in the 1920s the first commercial radio broadcastings were successful. In 1936 the British Broadcasting Corporation

(BBC) launched the world's first public television service. Two technological developments have resulted in significant advances in state of communications: computers and satellites. The satellite communication began on June 28,1965, date on which Intelsat I became operational, making possible direct communications between the United States and Europe.

Part A. READING AND TRANSLATION

Task 1. Skimming: Read the text and write what the text is about.

_____.

Task 2. Scanning: Read the text again and identify the proper names and somedates. Then write them below in the order they appear._____

_____.

Task 3. Read the text fast and decide which of the following three phrases summarizes best the controlling idea of the text.

1. Electronic Communication.
2. History of Communications.
3. The Satellite Communication.

Task 4. Read the text again and underline the cognates you can find in the text. Then write them on the space below. _____.

Task 5. Read the text again and translate it to Spanish in the lines below.

_____

_____

_____.

Part B. VOCABULARY.

Complete the blanks with the following verbs:

buy - sell - design - patent - start - develop

1. A team of engineers …….. all the circuits for the prototype.
2. Philips ……. the new disc on July 1972.
3. Philips ……. an optical disc in 1978.
4. Philips and Sony …… to work on an standard for the Compact Disc in summer of 1980.
5. The Compact Disc was ……. in the markers in October, 1982.
6. In 2004s, worldwide ……. about 30 billon CDs.

TEXT 4

ENGLISH FOR ELECTRONICS

Read the following article carefully.

A mobile phone is a wireless electronic device used for telephone and multimedia communications. The earliest generation of mobile phones could only make and receive calls. Today's mobile phones, however, are packed with many additional features that might include a Web or mobile email, a video camera, an MP3 player and a GPS device, among other useful functions.

A mobile phone may also be known as a cellular phone or simply cellphone.

Part A. READING AND TRANSLATION

Task 1. Skimming: Read the text and write what the text is about.

_____.

Task 2. Scanning: Read the text again and identify the functions. Then write them below in the order they appear._____

_____.

Task 3. Read the texts fast and decide which the best heading for the text is.

1. Smart phones.
2. Mobile phone.
3. Inside a cell phone.

Task 4. Read the text again and underline the cognates you can find in the text. Then write them on the space below. _____.

Task 5. Read the text again and translate it to Spanish in the lines below.

_____

_____

_____.

Part B. NOUNS TRANSLATION.

Here there are the different components' names of a cell phone.

Do you know their names in Spanish?

INTERNAL PARTS:

Battery ……..

Mic ……..

Speaker ……..

Ringer ……..

Vibrator ……

Keypad ……

Antenna ……

Display ……

Touch screens ……

Flex ……..

EXTERNAL PARTS:

Hands free ……

Charger ……..

Cover ……..

TEXT 5

ENGLISH FOR ELECTRONICS

Read the following article carefully.

The Global Positioning System (GPS) is a satellite - based system that can be used to locate positions anywhere on the earth. GPS systems are extremely versatile and can be found in almost any industry sector. They can be used to forests, help farmers harvest their fields, and navigate airplanes on the ground or in the air. GPS systems are used in military applications and by emergency crews to locate people in need of assistance. GPS technologies are often working in many areas that we do not normally consider.

Part A. READING AND TRANSLATION

Task 1. Skimming: Read the text and write what the text is about.

_____.

Task 2. Scanning: Read the text again and identify the uses. Then write them below in the order they appear._____

_____.

Task 3. Read the article fast and decide which of these headings is the most appropriate.

1. GPS System.
2. GPS System applications.
3. GPS Technologies.

Task 4. Read the text again and underline the cognates you can find in the text. Then write them on the space below. _____.

Task 5. Read the text again and translate it to Spanish in the lines below.

_____

_____

_____.

Part B. TRANSLATE THE FOLLOWING DEFINITIONS.

Global positioning system applications generally fall into 5 major categories:

1. Location - determining a position.
   ……..
2. Navigation - getting from one location to another.
   ……
3. Tracking - monitoring object or personal movement.
   ……
4. Mapping - creating maps of the world.
   ……
5. Timing - bringing precise timing to the world.
   ……

Part C. Answer the following questions after reading the text above.

6. What is GPS?
   ……
7. How can GPS be used?
   ……

TEXT 6

ENGLISH FOR ELECTRONICS

Read the following article carefully.

A satellite is an object that orbit the Earth such as a planet. A communications satellite works like a relay station: signals transmitted by the ground stations are picked up by the satellite's receiver antennas, their frequency changed and amplified, and then routed via the transmit antennas back down to Earth. The signals are delivered by carrier waves, modulate by frequency, amplitude, or other methods. Each signal has its own frequency and bandwidth (C,Ku,Ka).

Most communications satellites are positioned in geostationary orbit. Geostationary orbit is at an altitude of about 36,000 km.

Part A. READING AND TRANSLATION

Task 1. Skimming: Read the text and write what the text is about.

_____.

Task 2. Scanning: Read the text again and identify the bandwidths and the distance from earth to satellite . Then write them below in the order they appear._____

_____.

Task 3. Read the article fast and decide which of these headings is the most appropriate.

1. Satellite System.
2. Satellite System applications.
3. Satellite Communications

Task 4. Read the text again and underline the cognates you can find in the text. Then write them on the space below. _____.

Task 5. Read the text again and translate it to Spanish in the lines below.

_____

_____

_____.

Part B. Answer the following questions by reading the above text.

1. What is a satellite?

   ……

2. How do communications satellites work?

   ……

3. How high is a geostationary satellite above the centre of the Earth?

   …….

TEXT 7

ENGLISH FOR ELECTRONICS

Read the following article carefully.

Conceptually, satellite television is like broadcast television. It's a wireless system for delivering television programming directly to a viewer's house. Both broadcast television and satellite stations transmit programming via radio signal. Television broadcasting companies convert television programmers into signals. These are then beamed to satellite, which in turn, reflect it back to the earth. Where an LNB (Low Noise Block down converter) that is a small box on an arm that points toward the center of a satellite dish. It receives the signal and sends it to the satellite receiver box that connects to your television.

Part A. READING AND TRANSLATION

Task 1. Skimming: Read the text and write what the text is about.

_____.

Task 2. Scanning: Read the text again and identify the antenna parts. Then write them below in the order they appear._____.

Task 3. Read the article fast and decide which of these headings is the most appropriate.

1. The components of satellite.
2. How satellites TV work.
3. The satellite disk.

Task 4. Read the text again and underline the cognates you can find in the text. Then write them on the space below. _____.

Task 5. Read the text again and translate it to Spanish in the lines below.

_____

_____

_____.

Part B. ANSWER THE FOLLOWING QUESTIONS BY READING THE ABOVE TEXT.

1) What is a satellite television?

……

2) How do communications satellites TV work?

……

3) What is an LNB?

…….

TEXT 8

ENGLISH FOR ELECTRONICS

Read the following article carefully.

Digital TV is a new format of broadcasting. The Digital Television (DTV) is an advanced broadcasting technology that has transformed the television viewing experience. DTV enables broadcasters to offer television with better picture and sound quality, and multiple channelof programming. Since June 13, 2009, full power television stations nationwide have been required to broadcast exclusively in a digital format. The switch from analog to digital broadcasts television is known as the Digital Television Transition.

Part A. READING AND TRANSLATION

Task 1. Skimming: Read the text and write what the text is about.

_____.

Task 2. Scanning: Read the text again and identify the advantages. Then write them below in the order they appear._____.

Task 3. Read the article fast and decide which of these headings is the most appropriate.

1. DTV Systems.
2. Digital Television.
3. DTV Broadcasting.

Task 4. Read the text again and underline the cognates you can find in the text. Then write them on the space below. _____.

Task 5. Read the text again and translate it to Spanish in the lines below.

_____

_____

_____.

Part B. ANSWER THE FOLLOWING QUESTIONS BY READING THE ABOVE TEXT.

The DTV enables the viewer to receive a higher quality video and audio signals than the conventional analog TV:

1. No more ghost images and no noise _____.
2. Digital high – definition _____.
3. Programs simultaneously _____.

4. Subtitled captation broadcasting _____.
5. Adjustable speaking speed _____.
6. Check the news, weather, traffic and sports anytime _____.
7. Interractive programs _____.
8. Receive clear signals on your mobile phone, Laptop, or the TV in your car _____.

Part C. ANSWER THE FOLLOWING QUESTIONS BY READING THE ABOVE TEXT.

1. What is DTV?

……

2. Can you participate in interactive programs?

……

3. Can you display a program guide on your TV screen?

……

TEXT 9

ENGLISH FOR ELECTRONICS

Read the following article carefully.

Community Access television (CATV) is a television distribution system that uses a network of cables to deliver multiple video, data, and audio channels. Note that early CATV systems were all coaxial cable. Nowadays a fiber cable are combined with a coaxial cable. This system is called a hybrid fiber coax (HFC) system. The fiber – optic cable helps overcome attenuation of signals over long distances and problems related to aging components. Fiber also provides more bandwidth for future expansion.

Part A. READING AND TRANSLATION

Task 1. Skimming: Read the text and write what the text is about.

_____.

Task 2. Scanning: Read the text again and identify the functions. Then write them below in the order they appear._____.

Task 3. Read the article fast and decide which of these headings is the most appropriate.

1. Introduction to Cable Television.
2. CATV System.

3. CATV Architecture.

Task 4. Read the text again and underline the cognates you can find in the text. Then write them on the space below. _____.

Task 5. Read the text again and translate it to Spanish in the lines below.

_____

_____

_____.

Part B. TRANSLATE THE FOLLOWING COMPONENTS NAMES.

ACTIVE COMPONENTS:

Amplifier ……

Power supply ……..

Optical node ……

PASSIVE COMPONENTS:

Coaxial cable ……..

Fiber cable ……..

Splitters ……..

Taps ……..

Power inserter ……

Line equalizer ……..

Attenuator ……..

Part C. ANSWER THE FOLLOWING QUESTIONS.

1. What is CATV?
   ……
2. What does HFC mean?
   ……

TEXT 10

ENGLISH FOR ELECTRONICS

Read the following article carefully.

A very Small Aperture Terminal (VSAT) is a device – known as small private earth station that is used to transmit and receive data signal through a satellite. VSAT is an excellent way to connect your remote sites and workers with Internet communications for Email, Web Access, Video transmissions, Voice IP over telephone services, or other IP applications for your field operations. The size of the VSAT dish antenna - typically about 4 feet (1.2 m) diameter that is mounted on a roof, or placed on the ground.

Part A. READING AND TRANSLATION

Task 1. Skimming: Read the text and write what the text is about.

_____.

Task 2. Scanning: Read the text again and identify the multiple functions. Then write them below in the order they appear._____.

Task 3. Read the article fast and decide which of these headings is the most appropriate.

1. VSAT network.
2. Parts of a VSAT.
3. VSAT system.

Task 4. Read the text again and underline the cognates you can find in the text. Then write them on the space below. _____.

Task 5. Read the text again and translate it to Spanish in the lines below.

_____

_____

_____.

Part B. TRANSLATE THE FOLLOWING TYPES OF COMPONENTS NAMES.

THE OUTDOOR UNIT (ODU):

Satellite dish ……

Block up converter (BUC) ……

Low noise block converter (LNA) ……..

Feed horn - Wave guide ……..

Orthomode transducer (OMT) ……..

Coaxial cable ……..

THE INDOOR UNIT (IDU):

Modem - satellite router ……

Personal computer ……

Monitor, Telephone, Camera and Microphone ……..

Part C. Answer the following questions:

1. What is VSAT?

   ……

2. What does VSAT mean?

   ……..

APPENDIX V

TEST SAMPLES

TEST I

PART A. GRAMMAR

Put the verbs into the correct form (present simple, present continuous and present perfect)

1. You …… a digital camera. (to have)
2. He …….. an Electronics Engineer . (to be)
3. She …… …… a Electronics book. (to read)
4. I …… …… Technical English. (to study)
5. He …….. …….. …… a cell phone. (to buy)
6. You …… …….. …… your laboratory report. (to write)

PART B. VOCABULARY

Chose the correct word to complete the sentences:

RESISTOR RESISTANCE OHMS

7. The unit of …….. is the ohm.
8. The three main types of …….. are: carbon, wire and film.
9. Resistance is measured in ……..

PART C. READING COMPREHENSION

Resistance a component designed to offer a predetermined resistance to current. The unit of resistance is the ohm (Ω). Generally, resistance values in thousands of ohms is expressed in kilohms (K Ω) and millions of ohms in megaohms (M Ω). Nominal values of resistor are generally based on 25 °C (room temperature) operation.

QUESTIONS

10. What is a resistance? _____
11. What is the unit of resistance? _____
12. Are there three types of resistors? _____

PART D. TRANSLATIONS OF THE ABOVE ARTICLE

_____

_____

_____

TEST II

PART A. GRAMMAR

Put the verbs into the correct form (past simple, future simple or modal verb)

1. He ……. the computer. (to clean)
2. You …….. in the laboratory yesterday . (to be)
3. I …… …….. a new Modem. (to buy)
4. She …… …… Technical English. (to pass)
5. He …….. …….. a cell phone. (to fix)
6. You …… …….. a transmitter. (to check)

PART B. VOCABULARY

Choose the best word that completes the sentences.

TRANSISTORS SEMICONDUCTOR BIPOLAR/UNIPOLAR AMPLIFIERS / SWITCHES

7. …….. are made of ……..
8. They are basically used as …….. and ……..
9. The two main types of transistors are …….. and ……..

PART C. READING COMPREHENSION

Transistor is a device with three terminals. It comes in two types: npn and pnp. Transistors are basically current control devices and can be used as switches and amplifiers. Transistor fall into two main classes: bipolar devices and unipolar transistors (FETs).

QUESTIONS

10. What is a transistor?
11. What does npn and pnp mean?
12. Are there two classes of transistors?

PART D. TRANSLATIONS OF THE ABOVE ARTICLE

_____

_____

_____

TEST III

PART A. GRAMMAR

Put the verbs into the correct form (comparative – superlative adjective and adverbs)

1. This cell phone …….. …….. ……. this one. (old)
2. This computer is …… than that one. (good)
3. This Laptop is ……. …….. to use than this computer. (difficult)
4. He is a …… technician. (good or well)
5. The teacher talked …….. to the students. (clear or clearly)
6. She was sitting in a chair, …….. , reading an electronics book. (calm or calmly)

PART B. VOCABULARY

Choose the best word that completes the sentences.

THE ANTENNA TRANSMISSION LINE COAXIAL CABLE

7. The polarization of the radiated wave is realized by ……..
8. The characteristic impedance of ……. is 75 ohms.
9. The Microwave transmission line use …….

PART C. READING COMPREHENSION

Transmission line is defined as the path of carrying RF energy from source to load. For example the wire used between the TV antenna and television set or the wire used between transmitter antenna and transmitter are known as transmission lines. Transmission lines are characterized by basic three electronic components R,L and C. There are the following types of transmission lines: Balanced two wire, Coaxial Cable, Wave guide, Micro strip and Fiber Optic.

QUESTIONS

10. What is a transmission line?
11. Where is it used a transmission line?
12. Are there five types of transmission lines?

PART D. TRANSLATIONS OF THE ABOVE ARTICLE

_____

_____

_____

APPENDIX VI

GRAMMAR GUIDE FOR ELECTRONICS AND TELECOMMUNICATIONS.

THE SIMPLE PRESENT TENSE

STRUCTURE :

Subject + Verb (s – es) + Complements

Subject + do not / does not + Base verb + Complements

(QW) Do / Does + Subject + Base verb + Complements?

EXAMPLES:

	Subject	Auxliary verb		Base verb	Complement
AFFIRMATIVE	I,YOU,WE, THEY HE,SHE,IT			have has	a cell phone a computer
NEGATIVE	I,YOU,WE, THEY HE,SHE,IT	do does	not not	have	a monitor a flash memory
QUESTION	DO DOES	I,YOU,WE, THEY HE,SHE,IT		have	a transistor? a chip ?

SHORT ANSWERS:

Yes, I do / No, I don't

INFORMATION QUESTIONS:

WHAT	do does	I You We They he she it	do	every day?

USING:

- She never uses her calculator.
- He needs his computer every day.
- Do you like your digital tester?
- Does he have classes at 8 o'clock?
- Where is the laboratory?
- What do you study now?

SPELLING OF FINAL –S AND - ES

a) work – work**s** talk – talk**s** read – read**s** suggest – suggest**s** b) write – write**s** believe – believe**s**	Final –s is added to most verbs. Many verbs end in –e. Final –s is simply added.
c) -sh..... wash – wash**es** d) –ch..... catch – catch**es** e) –ss.....discuss – discuss**es** f) –x .....fax – fax**es** g) –o ..... do – do**es**	The verbs ending in **–sh, -ch, -ss, -x, -o** get a final –es .
h) - consonant + y: cry – cr**ies** fly – fl**ies** try – tr**ies**	If the verb ends in a –y coming after another consonant letter,-y is omitted and –ies is added to the verb.
I) – vowel + -y : play - play**s** stay – stay**s** pray – pray**s**	If the verb ends in a –y coming after a vowel letter, -s is simply added to the verb; -ies is not used.

- **Using adverbs of frequency and adverbial phrases of time**

a) Frequency adverbs

John	always 100% usually (generally) very often often (frequently) sometimes occasionally seldom rarely hardly never 0 %	**gets up early on Sunday mornings.**

Frequency adverbs are used to express how often an activity is performed.

b) Adverbial phrases of frequency

Adverbial phrases of frequency can be used initially and finally in the sentence.

On Wednesdays Every Wednesday Once a week Twice a month Every summer Etc.	She visits her aunt.	On Wednesdays Every Wednesday. Once a week Twice a month Every summer Etc.

- **Using adverbs of frequency with BE**

Ted	Is	always _____100% usually (generally) very often often (frequently) sometimes occasionally seldom rarely hardly never_____0%	late for work.

THE PRESENT CONTINUOUS TENSE

STRUCTURE :

Subject + to be (present) + Gerund verb + Complements

Subject + to be not (present) + Gerund verb + Complements

(QW) to be (present) + Subject + Gerund verb ?

EXAMPLES:

	Subject	Auxliary verb (to be)		Gerund verb	Complement
AFFIRMATIVE	I YOU	Am are		studying	Technical english
NEGATIVE	SHE WE	Is are	not not	fixing	The CPU
QUESTION	IS ARE	He they		buying	a transistor? ?

SHORT ANSWERS:

Yes, I am / No, I am not

INFORMATION QUESTIONS:

WHAT	am is are	I he she it We you They	doing	now?

USING:

- My computer is always breaking down!
- He is studying computer languages this semester.
- Are you reading an Electronics book?
- Is he arriving at 2 p.m.?
- Where is he doing the laboratory?
- What are you studying now?

- **SPELLING OF FINAL –ING**

END OF VERB ------- **-ING FORM**

RULE 1:

A consonant + -e ---------- Drop the –e and ADD –ing

dance ---------- dancing

ride ---------- riding

take ---------- taking

RULE 2:

One vowel + One consonant ---------- Double the consonant and ADD – ing

cut ---------- cutting

plan ---------- planning

run ---------- running

NOTE: Do not double w,y,and x

snow --------- snowing

fix --------- fixing

pay --------- paying

RULE 3:

Two vowels + One Consonant ---------- ADD –ing ; do not double the consonant

keep --------- keeping

read --------- reading

RULE 4:

Two consonants -------- ADD –ing; do not double the consonant

sing--------- singing

wash ------ washing

COMMON TENSE MARKERS

1) **at the moment / now**

The students are studying in the classroom **at the moment / now**.

2) at present

At present all the technicians in the school are meeting.

3) for the time being

My father will buy a new cellphone soon. **For the time being** he is using mine.

4) Currently

IEEE is **currently** holding its annual assembly in Paris.

5) While / When

While the students are listening in the class, I will study the IC.

6) Look! , Listen! Etc.

Look! The TV is making a strange noise.

FUTURE SIMPLE TENSE "WILL "

STRUCTURE:

Subject + Auxiliary Will + Base form verb + Complements

Subject + will not + Base form verb + Complements

(QW) Will + Subject + Base form verb + Complements?

EXAMPLES:

	Subject	Auxliary verb		Base form verb	Complement
AFFIRMATIVE	I YOU	will will		open finish	my document your report
NEGATIVE	SHE WE	will will	not not	buy chat	a new monitor on the Internet
QUESTION	WIll WIll	you they		fix create	the computer ? their email ?

SHORT ANSWERS:

Yes, I will / No, I won't

INFORMATION QUESTIONS:

WHAT	will	I you he she it we you they	do	tomorrow?

USING:

- You will pass Technical English.
- I think he will buy a new antenna.
- Will you fix the transmitter?
- Will he burn the CD for you?
- What will you do in the laboratory this morning?
- When will you buy that tester?

FUTURE CONTINUOUS TENSE

STRUCTURE :

Subject + Auxiliary Will be + Gerund verb + Complements

Subject + will not be + Gerund verb + Complements

(QW) Will + Subject + be + Gerund verb + Complements?

EXAMPLES:

	Subject	Auxliary verb		Gerund verb	Complement
AFFIRMATIVE	I YOU	will be will be		working finishing	at 10 am your report
NEGATIVE	SHE WE	will will	not be not be	using chatting	the osciloscophe on the Internet
QUESTION	WILL WILL	you they	be be	fixing creating	the computer ? their email ?

SHORT ANSWERS:

Yes, I will / No, I won't

INFORMATION QUESTIONS:

WHAT	will	I you he she it we you they	be doing	tomorrow?

USING:

- You will be watching TV.
- I think he will be buying a new cellphone.
- Will you be fixing the Modem?
- Will he be burning the CD for you?
- What will you be doing in the laboratory?
- When will you be buying that oscilloscope?

THE SIMPLE PAST TENSE

STRUCTURE :

Subject + Verb (past) + Complements

Subject + did not + Base verb + Complements

(QW) Did + Subject + Base verb + Complements?

EXAMPLES:

	Subject	Auxliary verb		Base verb	Complement
AFFIRMATIVE	I You			cleaned bought	the cell phone a new Laptop
NEGATIVE	She We	did did	not not	stored damaged	information the flash memory
QUESTION	Did Did	you they		work stored	in the PC? in the flash?

SHORT ANSWERS:

Yes, I did / No, I didn't

INFORMATION QUESTIONS:

WHAT	did	I You He She it We you They	do	yesterday?

USING:

- You bought a new computer two weeks ago.
- Yesterday, we got up early and went to school.
- Did you understand the question?
- Did you make your circuit?
- Where did you study Microprocessors?
- When did you buy that Generator?

- **SPELLING OF "-ED "**

END OF VERB ------- **-ED FORM**	
RULE 1:	A consonant + -e ---------- ADD **-d** dance ---------- danced erase ---------- erased place ---------- placed

RULE 2:	One vowel + One consonant ---------- Double the consonant and ADD **– ed** plan ---------- planned stop ---------- stopped NOTE: Do not double **w** and **x** snow --------- snowed fix --------- fixed
RULE 3:	Two vowels + One Consonant ---------- ADD **-ed** ; do not double the consonant rain --------- rained need --------- needed
RULE 4:	Two consonants -------- ADD **–ed** ; do not double the consonant help--------- helped add ------ added
RULE 5:	Consonant + -y---------CHANGE **–y** TO **–i**, ADD **–ed** worry --------- worried reply --------- replied
RULE 6:	Vowel + -y -------- ADD **–ed**; DO NOT CHANGE -y TO -i play -------- played stay --------- stayed

- **“BEFORE” and “AFTER” IN TIME CLAUSES**

Some clauses begin with a time adverbs such as after, before or when. These clauses are not complete sentences and don’t have a complete meaning. They are just used to give a time reference in a sentence form. Such clauses are called time clauses.

For example;

- “ before I went to school” = a time clause
- “after she finished her homework” = a time clause

- **“WHEN” IN TIME CLAUSES**

Sometimes clauses start with WHEN, which gives the idea of “that time”.

- When I heard a strange sound, I turned on the lights.
- I turned on the lights when I heard a strange noise.

“When clauses" are important because they always happen first when both clauses are in the Simple Past.

For example:

- When the phone rang, I answered it.

  Dependent clause(happens first): When the phone rang

  Independent clause(happens second):I answered it

THE PAST CONTINUOUS TENSE

STRUCTURE :

Subject + to be (past) + Gerund verb + Complements

Subject + to be not (past) + Gerund verb + Complements

(QW) To be (past) + Subject + Gerund verb + Complements?

EXAMPLES:

	Subject	Auxliary verb		Gerund verb	Complement
AFFIRMATIVE	I You	was were		watching working	TV hard
NEGATIVE	He,She,It We	was were	not not	storing damaging	information the flash memory
QUESTION	Were Were	you they		working storing	in the PC? in the flash?

SHORT ANSWERS:

Yes, I was / No, I wasn’t

INFORMATION QUESTIONS:

WHAT	was were	I he she it we you they	doing	last night?

USING:

- You were watching TV at 7 o'clock yesterday evening.
- At this time last week, we were studying Electronics.
- Were you reading an electronics book?
- Was she doing her transmission lines report?
- Where was he going this time yesterday?
- What were you doing at two o'clock?

INTERRUPTED ACTION IN THE PAST

- When I was writing the email, the computer suddenly went off.
- I was watching TV when she called.

PARALLEL ACTIONS

- While Lenny was reading, Tim was watching television.
- Were you listening while he was talking?

THE PRESENT PERFECT TENSE

STRUCTURE :

Subject + have / has + verb (past participle) + complements

Subject + have / has not + verb (past participle)+ complements

(QW) Have / Has + subject + verb (past participle) + complements?

EXAMPLES:

	Subject	Auxliary verb		Base verb	Complement
AFFIRMATIVE	I You	Have have		cleaned bought	the cell phone a new Laptop
NEGATIVE	She We	has have	not not	stored damaged	information the flash memory
QUESTION	Have Have	you they		work finished	in the PC? their report?

SHORT ANSWERS:

Yes, I have / No, I haven't

INFORMATION QUESTIONS:

WHAT	have has	I You We They He She It	read	recently?

USING:

- You have decided to leave tomorrow.
- Helen has bought a cell phone.
- I have often seen Jim with his Laptop in the park.

USING SINCE and FOR

Since expresses the idea that an activity began at a definite time in the past and continues to the present. Since is followed by the mention of a specific point in time such as a specific hour of a day, a month, year, or an event happened at a specific point in the past.

- **SINCE + A SPECIFIC POINT IN THE PAST**

I have been in this laboratory	since +	9 o'clock. friday. june 1999 june 29, 1999 the beginning of this semester yesterday last week I got the scholarship

- I have had this old computer since 2000.
- Tom has worked on this project since last week.

- **FOR + A LENGTH OF TIME**

I have been in this laboratory	for +	ten minutes. three hours ten days about eight years several weeks many years a long time years

- I have had this old computer **for 10 years.**
- Tom has worked on this project for **a long time.**

MODAL VERBS

STRUCTURE:

S + Modal + Base verb + complements

S + Modal not + Base verb + complements

Modal + S + Base verb + complements?

EXAMPLES:

MODAL	**EXAMPLES**	**USES**
CAN **COULD** **BE ABLE TO**	You can fix a cellphone He could pass Electronics She will be able to study antennas	**Ability**
MAY	John may use your phones now	**Possibility**
MIGHT	It might be better to finish this laboratory	**Possibility**
MUST	I must finish this report before 8 p.m.	**Obligation**
SHOULD	You should practice a lot Electronics	**Advice**
WILL	We will learn Technical English	**Promises**
WOULD	You would like to learn Telecommunications	**Offer**

SHORT ANSWERS:

Yes, S + Modal / No, S + Modal not

INFORMATION QUESTIONS:

Where	**can**	**I** **you** **he,she,it** **we** **you** **they**	do	the laboratory?

USING:

- I can download information about optical fiber from the Internet.
- They can fix these transmitters.
- Can you turn on the Modem, please?
- Can you check the Fax machine, please?

THE COMPARISON OF ADJECTIVES

STRUCTURE:

… as + adjective + as …

… not as + adjective + as …

… adjective + er + than …

… more / less + adjective + than …

… the adjective + est …

… the most / least + adjective …

RULES FOR SPELLING:

ADJECTIVE	**COMPARATIVE**	**SUPERLATIVE**
VOWEL + CONSONANTS		
	er	**est**
Fast	faster	the fastest
High	higher	the highest
VOWEL + CONSONANT		
Big	bigger	the biggest
Thin	thinner	the thinnest
ENDING IN Y >	**ier**	**iest**
Easy	easier	the easiest
Noisy	noisier	the noisiest
ENDING IN E >	**r**	**st**
Large	larger	the largest
Wide	wider	the widest
TWO OR MORE SYLLABLES		
Interesting	more interesting	the most interesting
Dangerous	more dangerous	the most dangerous

IRREGULAR FORMS

Good	better	The best
Bad	worse	The worst
Far	farthert / further	The farthest / furthest

USING:

- This Laptop is as fast as this computer.
- This computer not is as fast as this Laptop.
- This digital TV is thinner than analog TV.
- This speaker is noisier than this other one.
- This cellphone is more modern than this one.
- This flash memory is the fastest.
- This Optic Fiber is the most expensive.

TYPES OF ADVERB AND POSITION

STRUCTURE:

Subject + Verb + Adverb of Manner

Sentence + Adverb of Place

Sentence + Adverb of Time or Adverb of Time + Sentence

Subject + Adverb of Frequency + Verb

Subject + Verb To be + Adverb of Frequency

Subject + Verb + Adverb of Degree

RULES

ENDING IN:	**ADD**	**ADJECTIVE**	**ADVERB**
	-ly	Soft	Soft**ly**
- **y**	**-illy**	Easy	Eas**ily**
- **ic**	**-ally**	Tragic	Tragic**ally**
- **le**	**-y**	Simple	Simpl**y**
- **ll**	**-y**	Full	Full**y**
- **e**	**-ly**	Safe	Safe**ly**

IRREGULAR FORMS:

ADJECTIVE	ADVERB
Good	well
Fast	fast
Hard	hard

1. Adverb of manner is used to tell how an action happens. (how)

2. Adverb of place is used to tell the place where an action occurs or where someone does something. (where)

3. Adverb of time is used to tell the time that an action happens or someone does something. (when)

4. Adverb of frequency is used to expresses how often something happens or someone does something. (How often)

5. Adverb of degree is used to give information about the extent or degree of something.

USING:

- The computer runs quickly.
- She can translate well.
- He sent his son abroad to study electronics.
- This antenna propagates all-around the field.
- He is studying technical English today.
- Yesterday, I fixed this cellphone.
- They always do their report at night
- He is always at the laboratory.
- He never answers the cellphone.
- I measure the transistor quite well.
- It was too difficult to program this microprocessor.