

**UNIVERSITY OF EL SALVADOR**  
**SCHOOL OF ARTS AND SCIENCES**  
**FOREIGN LANGUAGES DEPARTMENT**



**THE IMPACT OF ENGLISH FOR SPECIFIC PURPOSES (ESP)  
METHODOLOGY ON THE STUDENTS' READING COMPREHENSION: CASE  
OF STUDENTS OF TECHNICAL ENGLISH II AT THE SCHOOL OF  
CHEMISTRY AND PHARMACY, UNIVERSITY OF EL SALVADOR, SEMESTER  
II, YEAR 2015**

**PRESENTED BY:**

**JOHANNA CLARIBEL ÁLVAREZ DE MANGANDI AF07003**

**HELMER BALTAZAR GARCÍA SALAZAR GS93013**

**FINAL RESEARCH REPORT IN ORDER TO OBTAIN THE DEGREE OF  
BACHELOR OF ARTS IN ENGLISH WITH EMPHASIS IN TEACHING**

**JORGE HOMERO LLANES MÁRQUEZ LÓPEZ, MA.**

**RESEARCH ADVISOR**

**MANUEL ALEXANDER LANDAVERDE, M.A.  
COORDINATOR OF GRADUATION PROCESSES**

**JULY, 2016**

**MAIN UNIVERSITY CAMPUS, SAN SALVADOR, EL SALVADOR**

**AUTHORITIES OF THE UNIVERSITY OF EL SALVADOR**

José Luis Argueta Antillón, M.A.

RECTOR (Temporary)

ACADEMIC VICE-RECTOR

Dr. Ana Leticia Zavaleta de Amaya

SECRETARY-GENERAL (Temporary)

**AUTHORITIES OF SCHOOL OF ARTS AND SCIENCES**

José Vicente Cuchillas Melara, M.A.

DEAN

Edgar Nicolás Ayala, M.A.

VICE-DEAN

Rafael Ochoa Gómez, M.A.

SECRETARY

**AUTHORITIES OF THE OF FOREIGN LANGUAGE DEPARTMENT**

José Ricardo Gamero Ortiz, M.A.

HEAD OF THE DEPARTMENT

Manuel Alexander Landaverde, M.A.

COORDINATOR OF GRADUATION PROCESSES

Jorge Homero Llanes Márquez López, M.A.

RESEARCH ADVISOR

## ACKNOWLEDGMENTS

### **JOHANNA CLARIBEL ÁLVAREZ DE MANGANDI**

I am grateful to God for the good health and wellbeing that were necessary to complete this research. I wish to express my sincere thanks to my parents for being my support and guarantee on my professional studies. Furthermore, I am really grateful with my husband for his moral support and love to overcome every hurdle that I faced during this time. Finally, I would like to express my sincere gratitude to my advisor Jorge Homero Llanes Márquez López for the continuous support related to this study, for his patience, motivation, immense knowledge and his eagerness to help.

## TABLE OF CONTENTS

<b>AUTHORITIES OF THE UNIVERSITY OF EL SALVADOR.....</b>	<b>ii</b>
<b>ACKNOWLEDGMENTS .....</b>	<b>iii</b>
<b>TABLE OF CONTENTS .....</b>	<b>iv</b>
<b>INTRODUCTION.....</b>	<b>vi</b>
<b>CHAPTER 1 .....</b>	<b>1</b>
<b>1. STATEMENT OF THE PROBLEM.....</b>	<b>1</b>
1.1 Description of the problem .....	1
<b>1.2 Objectives.....</b>	<b>3</b>
1.2.1 General objective: .....	3
1.2.2 Specific objectives: .....	3
<b>1.3 Research questions.....</b>	<b>4</b>
1.3.1 General research question: .....	4
1.3.2 Specific research questions: .....	4
<b>1.4 Justification .....</b>	<b>5</b>
<b>1.5 Delimitation of the research.....</b>	<b>7</b>
<b>CHAPTER 2 .....</b>	<b>9</b>
<b>2. THEORETICAL FRAMEWORK .....</b>	<b>9</b>
2.1 Historical background .....	9
<b>2.2 Definitions.....</b>	<b>12</b>
<b>2.3 English for Specific Purposes.....</b>	<b>14</b>
<b>2.4 The Importance of Reading Comprehension .....</b>	<b>18</b>
2.5 Teaching Reading for ESP .....	18
<b>2.6 Theories of Reading Comprehension .....</b>	<b>19</b>
<b>2.7 ESP Reading Material.....</b>	<b>20</b>
<b>2.8 Reading book for Chemistry and Pharmacy students.....</b>	<b>21</b>
<b>CHAPTER 3 .....</b>	<b>22</b>
<b>3. METHODOLOGY.....</b>	<b>22</b>
3.1 Type of study .....	24
3.2 Hypotheses .....	24
3.3 Research design .....	25

3.4 Population and Sample .....	25
3.5 Data gathering process .....	26
<b>CHAPTER 4 .....</b>	<b>28</b>
4. DATA ANALYSIS AND INTERPRETATION .....	28
4.1 Analysis of the results from the questionnaire.....	28
4.1.2 Pearson's chi-square coefficient test .....	28
4.1.3 Analysis of the results from the reading test.....	29
4.1.4 Bivariate Analysis .....	29
4.1.5 Reading comprehension test analysis .....	48
<b>CHAPTER 5 .....</b>	<b>58</b>
5. CONCLUSIONS AND RECOMMENDATIONS.....	58
5.1. Hypotheses' test .....	59
<b>5.2 Recommendations .....</b>	<b>60</b>
<b>CHAPTER 6 .....</b>	<b>61</b>
6. REFERENCE .....	61
<b>CHAPTER 7 .....</b>	<b>64</b>
7. APPENDICE .....	64
7.1 Appendix A: Questionnaire	
7.2 Appendix B: Reading comprehension test for Technical English II students	
7.3 Appendix C: photographs	
7.4 Appendix D: Research Timetable	

## INTRODUCTION

This research is focused on identifying the impact of English for Specific Purposes (ESP) methodology on learners' reading comprehension of Technical English II students at the School of Chemistry and Pharmacy, University of El Salvador, semester II, year 2015 in order to present guidelines aimed at improving the students' learning process.

This study is divided into twelve chapters as follows:

Chapter one, in which the authors deal with aspects related to the statement of the problem, which mentions the reasons to investigate about ESP methodology. This chapter also contains the research question, objectives, the justification and the delimitation of the research.

Chapter two makes reference to the theoretical framework, which is divided into two aspects, historical background and the theoretical framework. The historical background presents data related to ESP methodology and its different development stages. The theoretical framework deals with important theories related to ESP methodology written by other researchers.

Chapter three makes reference to the methodology followed by the authors explaining how this investigation was developed and finished. Hence, the researchers deal with details related to the type of this study and the research design. This chapter also makes reference to the research topic, the general hypothesis and the alternative one. It also makes reference to the population and sample and the instruments used in the research, i.e. a questionnaire and a reading test.

In chapter four the researchers present the analysis and interpretation of the results obtained during the investigation process. Such results are shown by means of graphs, histograms and circle charts. /

Chapter five contains the conclusion and recommendations.

Chapter six contains the bibliographic references and chapter seven is made up of appendices.

## CHAPTER 1

### 1. STATEMENT OF THE PROBLEM

#### 1.1 Description of the problem

Effective English language education is essential around the world. Nowadays, many students want to learn English according to their needs. Indeed, Teaching English for Specific Purposes (ESP) is a practical discipline with the most important objective of helping students to learn. Therefore, this paper makes an attempt at making a study about the impact of English for Specific Purposes (ESP) methodology on the learners' reading comprehension: Case of students of Technical English II at the School of Chemistry and Pharmacy, University of El Salvador, Semester II, year 2015, in order to present guidelines aimed at improving the students' learning process.

This research is carried out because students require English teaching according to each study field and their needs. Indeed, teaching ESP is aimed at developing learners' skills in English depending on the area of their professional field. It means that such teaching should be connected to students' specific (professional) demands. Therefore, the theory regarding ESP methodology should be compared or contrasted with reality as observed at the School of Chemistry and Pharmacy at the University of El Salvador. Indeed, the professors in charge of Technical English II can introduce changes or modifications to their methodology based upon the students' reactions to their class. These are the important reasons for conducting this research.



This investigation is conducted with the interest not only in identifying whether ESP methodology has a positive or negative impact on students' reading comprehension, but also in presenting guidelines aimed at improving the students' learning process.

Through years, those people who studied Licenciatura en Idioma Inglés Opción: Enseñanza had the chance to be teacher assistants in order to be in charge of Technical English courses in different study fields at the University of El Salvador such as Medicine, Biology, Chemistry and Pharmacy, among others. They can realize that many learners did not have the skills to cope with reading comprehension tests. That is why the researchers seek to determine if English for Specific Purposes methodology has an impact on students' reading comprehension. Therefore, this study is conducted with the following methodology: The population is 250 participants from Technical English II course at the School of Chemistry and Pharmacy, University of El Salvador, semester II, year 2015. They are distributed in four groups (three groups in the morning and one group in the afternoon). In other words, this study will be conducted with the whole universe of students, that is, it will be a census. Furthermore, this study is correlational and the type of research is quantitative. In fact, data collection is focused on the instruments to be used, i.e, a questionnaire and a reading test.

## **1.2 Objectives**

### **1.2.1 General objective:**

To identify the impact of English for Specific Purposes (ESP) methodology on learners' reading comprehension of Technical English II students at the School of Chemistry and Pharmacy, University of El Salvador, semester II, year 2015 in order to present guidelines aimed at improving the students' learning process.

### **1.2.2 Specific objectives:**

- To determine if ESP methodology in the Technical English II subject fulfills students' needs in terms of their study field with the purpose of suggesting learning activities oriented to students' learning progress.
- To identify the relationship between ESP methodology and students' reading comprehension in order to present guidelines aimed at improving the students' learning process.
- To determine if Chemistry and Pharmacy students understand text related to their study field which is written in English so as to make proposals on the matter.

### **1.3 Research questions**

#### **Research topic:**

THE IMPACT OF ENGLISH FOR SPECIFIC PURPOSES (ESP) METHODOLOGY ON THE STUDENTS' READING COMPREHENSION: CASE OF LEARNERS OF TECHNICAL ENGLISH II AT THE SCHOOL OF CHEMISTRY AND PHARMACY, UNIVERSITY OF EL SALVADOR, SEMESTER II, YEAR 2015

#### **1.3.1 General research question:**

- What is the impact of ESP methodology on the Technical English II students' reading comprehension at the School of Chemistry and Pharmacy, University of El Salvador, semester II, year 2015?

#### **1.3.2 Specific research questions:**

- Is there a significant relationship between ESP methodology and students' reading comprehension of Technical English II at the School of Chemistry and Pharmacy, University of El Salvador, semester II, year 2015?
- Do Chemistry and Pharmacy students understand texts related to their study field?
- Does ESP methodology subject fulfill students' needs in terms of their study field?

## **1.4 Justification**

The importance of this research lies on the following facts:

1. The theory regarding ESP methodology should be compared or contrasted with reality as observed at the School of Chemistry and Pharmacy at the University of El Salvador.
2. The students of the School of Chemistry and Pharmacy need to apply their learning of Technical English in the reading of books, magazines, periodicals, and the like which contain information related to their study field.
3. The professors in charge of Technical English II can introduce changes or modifications to their methodology based upon the students' reactions to their class.
4. Even though the Technical English I and II courses have been taught under ESP methodology since many years ago, in the School of Chemistry and Pharmacy, there is no research regarding the pros and cons of ESP methodology. Therefore, this makes this research very urgent.

It is a challenge for the English professors to use this methodology to teach English in a specific area to accomplish their goals and fulfill students' needs. Academically and socially the intention of this research project is to provide reliable findings, using adequate instruments in order to present guidelines aimed at improving the students' learning process at the Chemistry and Pharmacy School with the purpose of being useful for the university community.

This research will contribute to other studies which will be carried out in the future since today there is not much research about ESP available related to such topic at the University of El Salvador. Therefore, this study is focused on identifying the impact of ESP methodology on students' reading comprehension: Case of students of Technical English II at the School of Chemistry and Pharmacy, University of El Salvador.

### **1.5 Delimitation of the research**

This study was focused on students from the School of Chemistry and Pharmacy and it was carried out with all groups of Technical English II during semester II, year 2015, at the University of El Salvador. The instruments of data collection were done through a students' questionnaire and a reading test to obtain data from four groups of Technical English II. After collecting the data, the authors of this paper proceeded to analyze and interpret the data obtained. The results were analyzed in a quantitative way. They were also reflected in a statistical analysis in order to identify the impact of ESP methodology on learners' reading comprehension of Technical English II. The purpose of this research, as explained before, was to present guidelines aimed at improving the students' learning process.

The groups for the researchers' project were distributed as shown below:

#### **Group 01**

Class: Monday and Wednesday.

Schedule: From 11:00 am to 12:00 pm.

Classroom: 201

Professor: Victor Gonzalez.

**Group 02**

Class: Monday and Wednesday.

Schedule: From 7:00 am to 8:00 am

Classroom: 202

Professor: Victor Gonzalez.

**Group 03**

Class: Monday and Wednesday.

Schedule: From 8:00 am to 10:00 am

Classroom: 204

Professor: Gloria Elizabeth Garcia de Chegüén.

**Group 04**

Class: Monday and Wednesday.

Schedule: From 1:00 pm to 2:00 pm

Classroom: 205

Professor: Gloria Elizabeth García de Chegüén.

## CHAPTER 2

### 2. THEORETICAL FRAMEWORK

#### 2.1 Historical background

From the early 1960's, English for Specific Purposes (ESP) has grown to become one of the most prominent areas of EFL teaching today. Furthermore, its development is reflected in the increasing number of universities offering a master's degree in ESP, e.g, the University of Birmingham, and Aston University in the UK, and in the number of ESP courses offered to overseas students in English speaking countries. In Japan too, the ESP movement has shown a slow but definite growth over the past few years. In particular, increased interest has been spurred as a result of the Monbusho decision in 1994 to largely hand over control of university curricula to the universities themselves. This has led to a rapid growth in English courses aimed at specific disciplines, e.g, English for Chemists, instead of the more traditional 'General English' courses.

In the XXI century, the learning of English came to be very important in the economic, social, political, and socio-cultural transformation of El Salvador. The English Language can give students more opportunities because its learning has become an essential factor of the academic formation and the professional development. In the area of ESP the technological media are an additional device that helps the professors to make learning more meaningful, concrete, effective, and interesting.

The ESP methodology over the years has gone through five stages, which, according to Hutchinson and Waters (1987), take shape in five approaches or theories:



Register analysis: This stage took place in the sixties. The aim of the analysis was to distinguish between specialized languages and common languages, creating an interest in identifying the grammatical and lexical features of these registers and to design the teaching materials. The main motive behind register analyses was the pedagogic objective of making the ESP course more relevant to learner's needs. The most representative authors of this stage are, Halliday, McIntochs and Strevens (1964), Ewer and Latorre (1969) and Swales (1971).

Rhetorical or discourse analysis: It appeared in the seventies. The basic hypothesis of this stage expressed by Allen and Widdowson (1974), dealt with the unfamiliarity of the students with the English use. This fact consequently could not be solved by a course which simply provided further practice in the composition of sentences, but only by one which developed knowledge of how sentences are used in the performance of different communicative acts.

Target situation analysis: This approach appeared in the eighties and its aim was to relate language analysis more closely to learner's reasons for learning; therefore, the course of ESP was designed through identifying the motivations of the students to learn the language and the situations in which they would use it. From this information, the elaboration of the course would allow students to achieve the goal that had been raised. Its main representative is Chambers (1980).

Skills and strategies: This approach also appeared in the eighties and concentrated its efforts on reading and listening strategies, which permitted the students to acquire the necessary tools that would allow them to deduce the sense of a spoken or written text.

A learning-centered approach: Represented by the proposed approach of Hutchinson and Waters (1987), for whom the questions of how to teach and how to learn acquire more relevance than language, its uses and the contents.

## 2.2 Definitions

There are some special terms that need to be explained to understand this thesis. They are presented as follows.

- Reading comprehension

It is the process of making meaning from text. The goal, therefore, is to gain an overall understanding of what is described in the text rather than obtaining meaning from isolated words or sentences.

- ESP (English for Specific Purposes)

It can be defined as the use of a particular variety of English in a specific setting of use which is justified towards the learners' needs. Some people describe ESP as simply being the teaching of English for any purpose that can be specified.

- EAP (English for academic purposes)

This concept entails training students, usually in a higher education setting, to use language appropriately for study; it is one of the most common forms of English for specific purposes (ESP). An EAP program focuses instruction on skills required to perform in an English-speaking academic context across core subject areas generally encountered in a university setting.

- English for Occupational Purposes (EOP)

EOP refers to the specific ways English is used in different work and professional situations. It examines the field of teaching English in occupational settings as a particular instance of general workplace training and development. English for Occupational Purposes includes the acquisition of English to get on far better with professional life such as English used by doctors to communicate with patients, researchers and scientists who want to publish their scientific achievements in reputed journals or present their papers in international seminars, and engineers who want to accomplish their tasks in English.

- Necessities

Necessities are what the learners have to know in order to function effectively in the target language situations. By observing the target situations, we can gather information about necessities.

### **2.3 English for Specific Purposes**

This study is focused on identifying the impact of English for Specific Purposes (ESP) methodology on learners' reading comprehension: case of students of Technical English II at the School of Chemistry and Pharmacy, University of El Salvador, semester II, year 2015 in order to present guidelines aimed at improving the students' learning process. Therefore, the theoretical framework is oriented to providing a concrete understanding of the theories behind this research based on both variables. Hence, ESP will be detailed in four stages: First, a definition; second, the types of ESP; third, the characteristics of ESP and, finally, the role of ESP teachers.

“English for specific purposes is a term that refers to teaching or studying English for a particular career or for business in general” (International Teacher Training Organization, 2005). Furthermore, Hutchinson (1987) states that "ESP is an approach to language teaching in which all decisions as to content and methods are based on the learner's reason for learning". According to Dudley-Evans (1997) the meaning of ESP is clarified giving an extended definition in terms of 'absolute' and 'variable' characteristics. Therefore, definition of ESP related to absolute characteristics is express in general terms: First, ESP is defined to meet specific needs of the learners. Second, ESP makes use of underlying methodology and activities of the discipline it serves. Third, ESP is centered on the language appropriate to these activities in terms of grammar, lexis, study skills, discourse and genre. Moreover, ESP may use, in specific teaching situations, a different methodology from that of General English. Furthermore, ESP is likely to be designed for adult learners; also, it could be for learners at secondary school level. Finally, most ESP courses assume some basic knowledge of the language systems on the learners' part.

Looking at university context “English for Specific Purposes” is much in demand today. In fact, most professors and university students realize that in careers like Chemistry and Pharmacy ESP is considered a better choice because it provides students with necessary information concerning their study field. However, very few know that ESP offers significant insights into the broad scope of it. According to Carter (1983), there are three types of ESP: First, English as a Restricted Language: This is used for specific contexts, for example a pilot, or a waiter, which is used for specific contexts, but knowing this type of English may not help to communicate effectively outside the specific context. Second, English for Academic and Occupational Purposes: English for Academic Purposes (EAP), for example, English for medical studies, English for Occupational Purposes (EOP), English for technicians. Third, English with Specific Topics: it is uniquely concerned with anticipated future English needs, for example: scientists requiring English for postgraduate studies or attending a conference.

According to Carter (1993) there are three characteristics of English for Specific Purposes courses: First, authentic material: The use of this material is entirely feasible and many students whose first language is not English may need help with both the languages of academic disciplines and specific study skills required for the course. The authentic material uses a variety of different resources, including the Internet. Second, purpose-related orientation refers to the fact that orientation lessons must be according to the needs of the learners. Finally, self-direction: Learners must have a degree of freedom to decide what, when and how they will study. Moreover, researchers Hutchinson and Waters say that in order to do ESP courses effectively and consequently achieve a satisfactory goal, it is necessary to follow some characteristics or features that are mentioned as follows:

a) Selecting materials: Choosing ESP material determines the running of the course and underlines the content of the lesson. Good material should help professor in organizing the course or, what is more, it can function as an introduction into the new learning techniques and supports professors and learners in the process of learning. Good material should be based on various interesting texts and activities providing a wide range of skills.

b) Types of activities with text: In ESP course, activities can be a source for new vocabulary, communicative or reading skills. Professors should be aware that working with texts as much effectively as possible is necessary to involve students' skills.

c) Creating a learning environment or motivation creating a positive learning atmosphere in the classroom makes teaching and learning more pleasant for both sides of the process, for a professor and a learner, and it supports students in their work. If professors create a positive learning atmosphere, they will create a good student's motivation. Harmer describes motivation as "some kind of internal drive that encourages somebody to pursue a course of action" (Harmer, 1991, p 14). The role of motivation during each activity is inevitable. Students should be motivated as much as possible to enjoy the activity and achieve its real aim.

Finally, looking at the role of ESP teacher, the researchers realized that those professionals who have been graduated from Licenciatura en Idioma Ingles Opcion: Enseñanza major are specialized in English Language but they are not specialized in a specific field. On the other hand, there are professors who are specialized in a specific field but they are not specialized in English. So, an ESP teacher should focus not only on meeting the learners' specific needs in the field of particular disciplines but also on

providing satisfying learning background (Designing course, setting goals and objectives, selecting material and the like).

The ESP professor has additional roles to those of the general purpose English professors. In fact, Robinson (1991) states that the ESP professor not only teaches, but also very often, she/he is involved in designing, setting up and administering the ESP course. Moreover, ESP professors need to be confident that they have the skills that will help their learners, such as knowledge of how to make learning successful, how to make language memorable, and how to motivate learners. Learning should be a joint process based on the professor's expertise in language and methodology and the learner's subject knowledge. Indeed, professor Victor Manuel Gonzalez Rivera is a pioneer in the ESP area at the University of El Salvador. However, he has not taken any training on the ESP area, but he has learnt about ESP by himself for twenty years. Professor Gonzalez has prepared authentic material for Chemistry and Pharmacy School. Also, he has been teaching Technical English to students of Chemistry and Pharmacy School during these years. That is why he states that students' needs are focused on reading and writing skills.



## **2.4 The Importance of Reading Comprehension**

Reading comprehension is the process of making meaning from text. The goal, therefore, is to gain an overall understanding of what is described in the text rather than obtaining meaning from isolated words or sentences. According to Kintsch 1998; van Dijk and Kintsch reading comprehension is the ability to read a text, process it and understand its meaning. Also, it is defined as the level of understanding of a text or message. This understanding comes from the interaction between the words that are written and how they trigger knowledge outside the text or message. Furthermore, Comprehension is a "creative, multifaceted process" which depends upon: phonology, syntax, semantics, and pragmatics. Moreover, there are specific traits that determine how successfully a reader will comprehend text, including prior knowledge about the subject, well developed language, and the ability to make inferences.

## **2.5 Teaching Reading for ESP**

Teaching reading for ESP is a challenge for professors since it is quite different from General English because ESP reading focuses on fulfilling students' specific needs in order to use it in their specific field. Carrel (1988) assures that in high education or in other programs, which uses teaching subjects written in English, reading becomes the pioneer among all the other skills of the English language. Carrel, et al. (1989) also assure that the ability to read and comprehend the written text is considered as one of the most important factors of success in the university learning. Elbeshbeshy (1993) indicates the importance of reading skills for the students who study English for specific purposes. She also indicates that it has been proved that reading is the most important skill needed for those students. Furthermore, the aim of the ESP course is not to teach the content of the book, but to teach

high-transfer skills that are only incidentally being developed through texts that are the same as or similar to those used on their content courses. Also, it is important to establish that the objectives of the course have to be well defined; in other words, what professors expect the students to be able to do at the end of the course. In fact, it is contended that the main differences between a regular ESL reading skills course and this type of ESP course are: first, the use of authentic, non-simplified, directly relevant texts in their field of specialization. Second, a focusing on the students' immediate reading needs. However, accepting the fact that reading skill is of great importance for all students, high importance for ESP learners is attached because their proficiency or deficiency in this skill would have a great effect on their future academic and professional progress. From all what has been mentioned, it is clear now that we should pay more attention to the reading skill as it is the most important skill ESP students need for their future academic.

## **2.6 Theories of Reading Comprehension**

According to Gunning (1996) there are three main theories of reading comprehension. These theories are Schema Theory, Mental Models, and Proposition Theory. First, Schema Theory: Gunning (1996) defines a schema as the organized knowledge that one already has about people, places, things, and events. Moreover, Kitao (1990) says the schema theory involves an interaction between the reader's own knowledge and the text, which results in comprehension. In fact, in attempting to comprehend reading materials, students can relate this new information to the existing information they have compartmentalized in their minds, adding it to these "files" for future use. Therefore, based on the Schema Theory, depending on how extensive their "files" become, their degree of reading comprehension may vary. Second, Mental Model Theory: This model can be thought of as a mind movie

created in one's head, based on the reading content. Gunning gives a detailed description of this process, stating that a mental model is constructed most often when a student is reading fiction. Indeed, the reader focuses on the main character and creates a mental model of the circumstances in which the character finds himself or herself. Also, the mental model is re-constructed or updated to reflect the new circumstances as the situation changes, but the items important to the main character are kept in the foreground according to Gunning, (1996). Finally, Proposition Theory: This involves the reader constructing a main idea or macrostructure as they process the text. In fact, these main ideas are organized in a hierarchical fashion with the most important things given the highest priority to be memorized (Gunning, 1996).

## **2.7 ESP Reading Material**

ESP professors are expected to provide students with appropriate reading material .Selecting reading material for the ESP class is a challenge for them as it involves a lot of preparation and study, a lot of searching and thinking, as well as student's involvement in the material selection process. Regardless of the textbook used in the reading program, the English professors often find it necessary to use additional readings as supplements. The selection of an appropriate reading passage is very important and not an easy thing to do because developing a reading program runs into several steps of defining: the purpose of reading, the cognitive level of understanding, and the appropriate level of difficulty and the appropriate length.

The material used for ESP classes should be authentic or not has been widely questioned by those who advocate the use of professor-made material. The rationale for selecting authentic material may include the following:

- Simplification of language does not ensure comprehension.
- Students can be provided with different strategies to ensure a better reading comprehension.
- It is better to simplify the reading process rather than the text

On the other hand, there are researchers and practitioners who consider that professors should create their own reading material or adapt the existing ones. Researchers such as Lotherington-Woloszcyn and Cray justify the adaptation of reading material in order to satisfy students' needs. The reasons that they have provided for the use of simplified texts are as follows:

- Adapting material can make them accessible, interesting and informative.
- Attention should be given to what the learners find easy and interesting.
- If the text is poorly presented, it can always be improved.
- Professor-created materials are based on authentic texts.

## **2.8 Reading book for Chemistry and Pharmacy students**

Many years ago, the professor Victor Manuel Gonzalez started teaching English to Chemistry and Pharmacy School students. During that time, he realized about the kind of needs that students faced. Therefore, he decided to create a book called *English for Chemistry and Pharmacy Students*. This book includes a variety of topics related to Chemistry and Pharmacy field. In fact, this book has been used until today with the purpose of presenting a suitable authentic material for learners. Nowadays, Professor Gonzalez assures that students have achieved satisfactory results with the application of ESP methodology and the authentic materials.

## CHAPTER 3

### 3. METHODOLOGY

To gather the information for this study, there was a field of research that included the School of Chemistry and Pharmacy, University of El Salvador. Also, to obtain the data required, quantitative method was carried out to obtain important information during this process. In fact, questionnaires and a test of reading comprehension were administered to the students under study.

The analysis unit was taken from the universe of 190 students who were studying Technical English II with professors Victor Manuel Gonzalez Rivera and Gloria Elizabeth Garcia. This research was carried out through a census because this is one of statistical operations not working on a statistical sample, but on the total population. Therefore, all learners who were taking Technical English II with these teachers at the School of Chemistry and Pharmacy, semester II, year 2015, were part of this investigation. However, the researchers took into consideration to administer a pilot test in order to know if there was reliability and validity in the instrument. Based on the aim of this study, this investigation was conducted under the guidelines of a correlational study since this research was carried out to identify the impact of ESP methodology on students' reading comprehension level in order to verify if there was relationship between them. Moreover, this study was developed through a non- experimental design where the variables were not deliberately manipulated.

The analysis of the instrument was made by using the Pearson correlation coefficient test and the SPSS program in order to measure the degree of relationship between two variables. Therefore, the instruments that were applied during the study were the questionnaires and a test of reading comprehension in order to determine whether or not the two variables were correlated. That is why the researchers gave out a structured questionnaire and a test of reading comprehension to all students of the four groups of Technical English II (The first group was scheduled from 11:00am to 12:00 pm. The second one was scheduled from 7:00am to 8:00am. The third group, from 8:00 to 10:00 am. Finally, the fourth group from 1:00 to 2:00 pm).

### **3.1 Type of study**

This research was classified as a correlational study with the goal of identifying the relationship between the two variables which are ESP methodology (independent variable) and students' reading comprehension level (dependent variable). Therefore, this study was focused on determining whether or not two variables are correlated to each other. This meant to find out if both variables were independent or not.

Finally, this investigation was centered on identifying the impact of English for Specific Purposes (ESP) methodology on reading comprehension level of Technical English II students at the School of Chemistry and Pharmacy, University of El Salvador, semester II, year 2015 in order to present guidelines aimed at improving the students' learning process.

### **3.2 Hypotheses**

#### **Research topic:**

THE IMPACT OF ENGLISH FOR SPECIFIC PURPOSES (ESP) METHODOLOGY ON THE STUDENTS' READING COMPREHENSION: CASE OF LEARNERS OF TECHNICAL ENGLISH II AT THE SCHOOL OF CHEMISTRY AND PHARMACY, UNIVERSITY OF EL SALVADOR, SEMESTER II, YEAR 2015

#### **3.2.1 General Hypotheses**

**H<sub>i</sub>**.ESP methodology and students' reading comprehension level of Technical English II are related to each other.

### **3.2.2 Alternative hypothesis**

**Ho.** There is no significant relationship between ESP methodology and students' reading comprehension level.

### **3.3 Research design**

This study was based on a non-experimental research design where researchers cannot control, manipulate or alter the variables but instead, it relies on interpretation or interactions to come to a conclusion.

Non-experimental research design can be classified into the category of transactional correlational design, which is helpful in identifying the relationship between two or more non manipulated variables which are measured in a given time. In fact, this research was focused on determining the relationship of such variables as ESP methodology and students' reading comprehension.

### **3.4 Population and Sample**

#### **3.4.1. Population**

This study took place at the School of Chemistry and Pharmacy University of El Salvador, semester II, year 2015. The population was the students from the School of Chemistry and Pharmacy taking the class of Technical English II, groups 01, 02, 03 and 04.



### **3.4.2. Sample**

This research was carried out through a census because this is one of statistical operations not working on a statistical sample, but on the total population. Therefore, all learners who were taking Technical English II with professors Gloria Elizabeth Garcia and Victor Manuel Gonzalez Rivera at the School of Chemistry and Pharmacy, semester II, year 2015, were part of this investigation.

### **3.5 Data gathering process**

The data gathering process was carried out through a questionnaire and a reading comprehension test which were provided to every student from Technical English II, School of Chemistry and Pharmacy, University of El Salvador, semester II, year 2015.

According to Bostwick and Kute, 2005, the measurement seeks to "establish a correspondence between the real world and the conceptual world." Therefore, before applying the instruments, the researchers took into account two essential aspects of research: validity and reliability. In fact, the instruments were validated by expert judgment and reliability was carried out with a pilot test with 20 students. The value of Cronbach's alpha was applied to the results and it obtained a 0.65 of reliability.

The instruments applied in this research were:

#### **3.5.1 Questionnaire instrument**

The questionnaire consisted of a series of 12 questions related to the ESP methodology and reading comprehension. The types of questions were closed with a series of categories for

the students' answer. The researchers administered the questionnaire to all students of Technical English II, semester II, year 2015.

### **3.5.2 Reading Test**

The reading text was taken from the book (English for Chemistry and Pharmacy students) created by professor Victor Manuel Gonzalez Rivera who is in charge of teaching Technical English I and Technical English II courses to students at the School of Chemistry and Pharmacy. The researchers added 9 closed questions to the reading in order to determine if students had understood the text.

### 4.1 Analysis of the results from the questionnaire

The questionnaire was designed with the purpose of identifying the relationship between the dependent variable and the independent variable. Therefore, the statistical procedure used to analyze the data collected was Pearson's chi-square test. This procedure was carried out throughout the program SPSS (IBM SPSS Data collection). This program is focused on text analytic and statistical analyses. Thus, this program was useful for the process of data analysis.

#### 4.1.2 Pearson's chi-square coefficient test

The test Chi-square allows researchers to determine whether there is a relationship between two categorical variables. It should be stressed that this test indicates whether there is a relationship between the

variables. The chi-square test is defined by the following equation:  $X^2 = \sum [(O_i - E_i)^2 / E_i]$  where  $(O_i)$  is the observed frequency count for the  $i$ th level of the categorical variable, and  $(E_i)$  is the expected frequency count for the  $i$ th level of the categorical variable. The chi-square test is applied to test the null hypothesis. If the value of the significance is less or equal to 0.05, the null hypothesis is rejected. Therefore, both variables are dependent, that is, there is a relationship between them, but if it is greater or equal to 0.05, the null hypothesis is accepted. Both variables are independent.

Degree of freedom	probability alpha value - <i>Alpha</i> ( $\alpha$ )				
	0,1	0,05	0,025	0,01	0,005
1	2,71	3,84	5,02	6,63	7,88
2	4,61	5,99	7,38	9,21	10,60
3	6,25	7,81	9,35	11,34	12,84
4	7,78	9,49	11,14	13,28	14,86

Source: AylmerFisherRonald. "El estadístico Chi-cuadrado y contrastes asociados"

[www.ugr.es/~ analisisdedatos/webcurso/leccion/leccion3/presentacion.ppt](http://www.ugr.es/~ analisisdedatos/webcurso/leccion/leccion3/presentacion.ppt)

#### 4.1.3 Analysis of the results from the reading test

The reading test, University of El Salvador, was conducted with students of Technical English II, School of Chemistry and Pharmacy, with the purpose of determining if learners understand a text related to their study field which is written in English. The statistical procedure was developed through histograms with the program SPSS. The graphics were useful to determine if students answered each reading comprehension question correctly and based on the results the researchers determined if they had understood the English text.

#### 4.1.4 Bivariate Analysis

The data analysis process is presented in bivariate analysis. It studies the relationship between two variables. Therefore, it was carried out through chi-square coefficient test in order to examine the association between categorical variables (nominal or ordinal).

What follows is the presented of the students 'answer to the researchers 'questionnaires on ESP methodology. It also contains tables and pie graphs to illustrate the results as well as the data analysis and interpretation.

## ESP METHODOLOGY AND STUDENTS' READING COMPREHENSION

### Contingency Tables 1

Do you consider that the teacher's methodology is focused on enhancing your reading comprehension?

Which of these skills do you consider that you have developed throughout Technical English I and II related to the Chemistry and Pharmacy field?

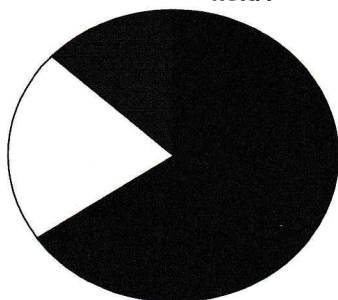
Categories	Frequency	Percentage
Always	74	56.9 %
Sometimes	44	33.8 %
Rarely	12	9.2 %
Total	130	100.0%

Categories	Frequency	Percentage
Reading	85	65.4 %
Writing	28	21.5 %
Listening	17	13.1 %
Total	130	100.0%

Source: Questionnaire passed to four groups (01, 02, 03, and 04) of Technical English II students.

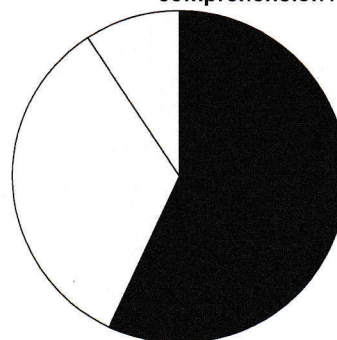
#### • CIRCLE CHART 1

Which of these skills do you consider that you have developed throughout Technical English I and II related to the Chemistry and Pharmacy field?



Reading  
 Writing  
 Listening

Do you consider that the teacher's methodology is focused on enhancing your reading comprehension?



Always  
 Sometimes  
 Rarely

Source: Questionnaire administered to four groups (01, 02, 03, and 04) of Technical English II students.

## Analysis

It was observed that 56.9 % of students considered that always the teacher' methodology is focused on enhancing their reading comprehension, whereas 33.8 % of them said that such situation happens sometimes the teacher' methodology is focused on enhancing their reading comprehension and the remaining 9.2 % expressed that it happens rarely. As to the frequency and percentage of occurrence, reading ranked first (65.4 %); next came writing (21.5%); afterwards, listening (13.1%).

Based on the data, there is a high tendency on the students' part to highlight reading as the skill that they have developed more and a high tendency of students considered that the teachers' methodology is always focused on enhancing their reading comprehension.

### **Pearson's chi-square test based on contingency table 1**

- **Do you consider that the teacher' methodology is focused on enhancing your reading comprehension?**
- **Which of these skills do you consider that you have developed throughout Technical English I and II related to the Chemistry and Pharmacy field?**

	Value of alpha	Degree of freedom	Value of significance
Pearson's chi-square	13.833 <sup>a</sup>	4	.008
Number of validcases	130		

Source: Questionnaire passed to four groups (01, 02, 03, and 04) of Technical English II students.

## **Analysis**

It was observed that the degree of freedom was 4. (Formula  $K = (\text{row number}-1) \times (\text{number of columns}-1)$ ). Degree of freedom =  $(3-1) \times (3-1) = 4$ . The value of alpha was 13.833<sup>a</sup>. In fact; it is within the alpha values. Therefore, there is reliability. On the other hand, the value of significance was 0.008. According to the chi-square test, if the value of the significance is less or equal to (0.05), the null hypothesis is rejected. This means that both variables are dependent since the value of significance is lower than 0.05.

## ESP METHODOLOGY AND STUDENTS' READING COMPREHENSION

**Contingency Table 2**

- **Do you consider that the class content contributes you to enhance your Chemistry and Pharmacy knowledge?**
- **Does the teacher provide vocabulary that helps you to understand reading texts?**

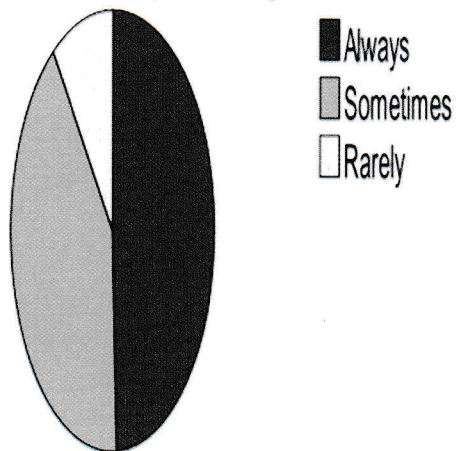
Categories	Frequency	Percentage
Always	64	49.2 %
Sometimes	53	40.8 %
Rarely	13	10.0 %
Total	130	100.0 %

Categories	Frequency	Percentage
Always	91	70.0 %
Sometimes	37	28.5 %
Rarely	2	1.5 %
Total	130	100.0 %

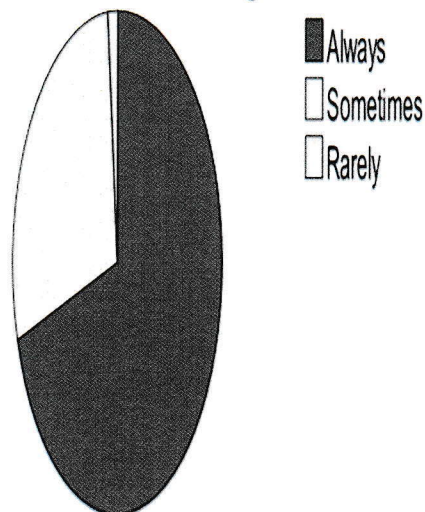
Source: Questionnaire passed to Technical English II groups (01, 02, 03, and 04)

• **CIRCLE CHART 2**

**Do you consider that the class content contributes you to enhance your Chemistry and Pharmacy knowledge?**



**Does the teacher provide vocabulary that helps you to understand reading texts**



Source: Questionnaire passed to Technical English II groups (01, 02, 03, and 04)



### Analysis:

Base on the contingency table 2 and the circle charts the 49.2% of the students indicated that the class content always contributes to enhance students' Chemistry and Pharmacy knowledge. Whereas 40.8% of learners regarded that such situation happens sometimes. Meanwhile, 10 % expressed it happens rarely. On the other hand, it was observed that 70 % of students said that the teacher always provides vocabulary that helps them to understand reading text. While 28.5 % of them considered it happens sometimes and only 1.5 % reported it happens rarely.

Based on the data, the vocabulary provided in class has a great importance on students' understanding reading texts. Moreover, students perceived that class content contributes to enhance their Chemistry and Pharmacy knowledge.

### Pearson's chi-square test

- **Do you consider that the class content contributes you to enhance your Chemistry and Pharmacy knowledge?**
- **Does the teacher provide vocabulary that helps you to understand reading texts?**

	value of alpha	Degree of freedom	value of significance
<b>Pearson's chi-square test</b>	13.139 <sup>a</sup>	4	.001
Number of cases	130		

Source: Questionnaire passed to Technical English II groups (01, 02, 03, and 04)

## **Analysis**

It was observed that the degree of freedom was 4 and the value of alpha was 13.139 which are within the alpha value.

Based on the results, the value of significance is lower than 0.05. Therefore, the class content which is focused on Chemistry and Pharmacy field and the vocabulary provided by the teacher in order to help students to understand reading texts. Both variables are dependent based on the results of Pearson's chi-square test.

# ESP METHODOLOGY AND STUDENTS' READING COMPREHENSION

Contingency table 3

- Do you consider that reading comprehension in English is one of your main needs in your study field?

- Do you consider that throughout Technical English I and II you became able to comprehend a text in English?

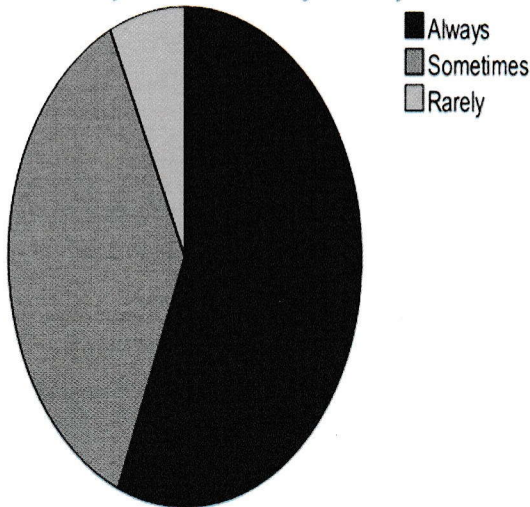
Categories	Frequency	Percentage
Always	73	56.2 %
Sometimes	48	36.9 %
Rarely	9	6.9 %
Total	130	100.0 %

Categories	Frequency	Percentage
Always	17	13.1 %
Sometimes	88	67.7 %
Rarely	25	19.2 %
Total	130	100.0 %

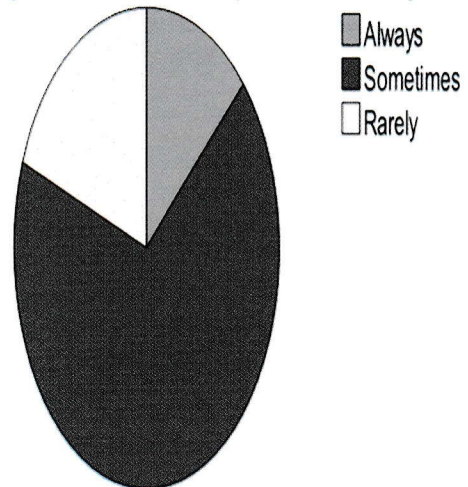
Source: Questionnaire passed to Technical English II groups (01, 02, 03, and 04)

### • CIRCLE CHART 3

Do you consider that reading comprehension in English is one of your main needs in your study field?



Do you consider that throughout Technical English I and II you became able to comprehend text in English?



Source: Questionnaire passed to Technical English II groups (01, 02, 03, and 04)

## Analysis

The results indicated that more than half of students (56.2 %) considered that reading comprehension in English is always one of their main needs in their study field. While 36.9% of them said that it occurs sometimes and only 6.9% regarded it happens rarely. On the other hand, the majority of learners admitted that they sometimes and always become able to comprehend text in English and the remaining 19.2 % expressed that such situation occurred rarely.

Based on the data, there is a high tendency on the students' part to highlight reading comprehension as one of the main needs in their study field. As well as, a high tendency of students considered they were able to understand texts in English throughout Technical English I and II.

### Pearson's chi-square test

- **Do you consider that reading comprehension in English is one of your main needs in your study field?**
- **Do you consider that throughout Technical English I and II you became able to comprehend text in English?**

	Value of alpha	Degree of freedom	Value of significance
Pearson's chi-square Number of cases	14.742 <sup>a</sup> 130	4	.005

Source: Questionnaire passed to Technical English II groups (01, 02, 03, and 04)

## **Analysis**

When asked about if the reading comprehension is related with English for Specific Purpose. Pearson's chi-square test revealed a value of alpha of 14.742 and the degree of freedom of 4 which are within the alpha values. Therefore, the results shown that students' reading comprehension and learners' main needs related to Chemistry and Pharmacy field have a significant relationship to themselves since the value of significance is lower than 0.05.

## ESP METHODOLOGY AND STUDENTS' READING COMPREHENSION

**Contingency table 4**

- **Do you consider that the teacher uses Technical English related to Chemistry and Pharmacy?**

	Frequency	Percentage
Always	85	65.4%
Sometimes	43	33.1%
Rarely	2	1.5%
Total	130	100.0%

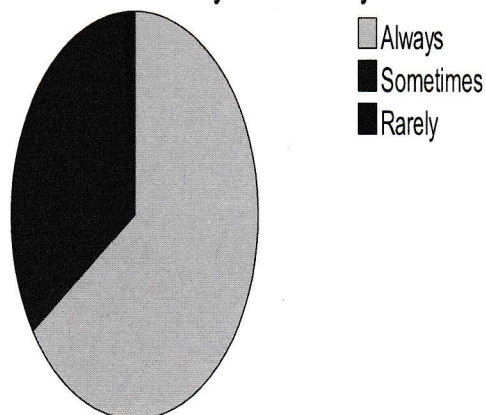
- **Do you consider that the teacher' methodology is focused on enhancing your reading comprehension?**

	Frequency	Percentage
Always	74	56.9%
Sometimes	44	33.8%
Rarely	12	9.2%
Total	130	100.0%

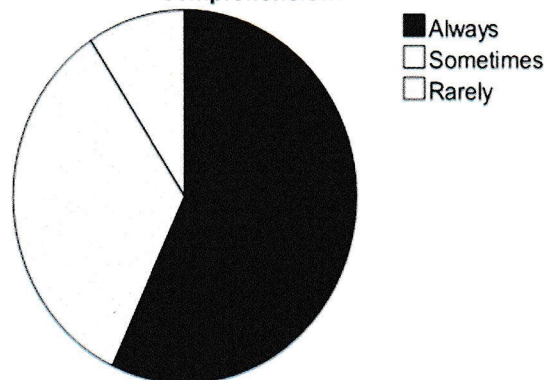
Source: Questionnaire passed to Technical English II groups (01, 02, 03, and 04)

### • CIRCLE CHARTS 4

**Do you consider that the teacher use Technical English related to Chemistry and Pharmacy?**



**Do you consider that the teacher' methodology is focused on enhancing your reading comprehension?**



Source: Questionnaire passed to Technical English II groups (01, 02, 03, and 04)

## Analysis

When asked about how often the Technical English II teacher used Technical English related to their study field, 65.4% of students admitted that this happened always, whereas 33.1 % of them said it was sometimes observed. The remaining 1.5% expressed that such situation occurred rarely. As to the methodology applied by the teacher and its incidence on students' reading comprehension, 56.9% of subjects under study answered that their teacher's methodology was focused on enhancing their students' reading comprehension. As shown by the data, most students considered that the teacher not only use Technical English related to their study field, but also his/her teaching is focused on reading comprehension.

### Pearson's chi-square test

- Do you consider that the teacher uses Technical English related to Chemistry and Pharmacy?
- Do you consider that the teacher's methodology is focused on enhancing your reading comprehension?

	Value of alpha	Degree of Freedom	Value of significance
Pearson's chi-square	13.885 <sup>a</sup>	4	.008
Number of cases	130		

Source: Questionnaire passed to Technical English II groups (01, 02, 03, and 04).

### **Analysis**

The value of alpha was 13.885 and the degree of freedom was 4. Moreover, it was observed that the value of significance was 0.008.

### **Interpretation**

As revealed by the data, the teaching material is related to students' major and the teacher's method (ESP) highlights the students' reading comprehension.



## ENGLISH FOR SPECIFIC PURPOSES FOCUSED ON STUDENTS' NEED

Contingency table 1

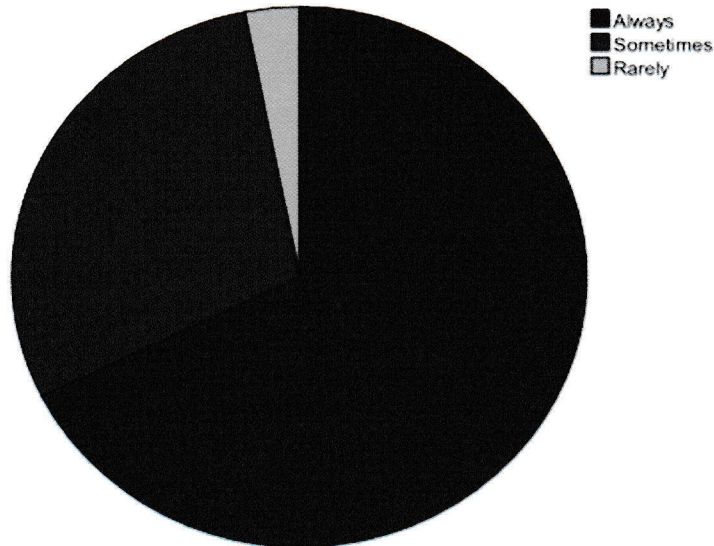
Do you consider that the Technical English subject is useful for your major?

categories	frequency	Percentage
Always	88	67.7 %
Sometimes	38	29.2 %
Rarely	4	3.1 %
Total	130	100.0 %

Source: Questionnaire passed to Technical English II groups (01, 02, 03, and 04).

CIRCLE CHART 1

Do you consider that the Technical English subject is useful for your major?



Source: Questionnaire passed to Technical English II groups (01, 02, 03, and 04)

### Analysis

The contingency table and the circle chart revealed that 67.7 % of students considered that Technical English subject is always useful for their major whereas 29.2% of them stated that it occurs sometimes and the remaining 3.1 % expressed that it happens rarely.

## **Interpretation**

As revealed by the data, there is a high tendency on the students' part to highlight the Technical English subject as a useful course for their major.

## ENGLISH FOR SPECIFIC PURPOSES FOCUSED ON STUDENTS' NEED

Contingency table 2

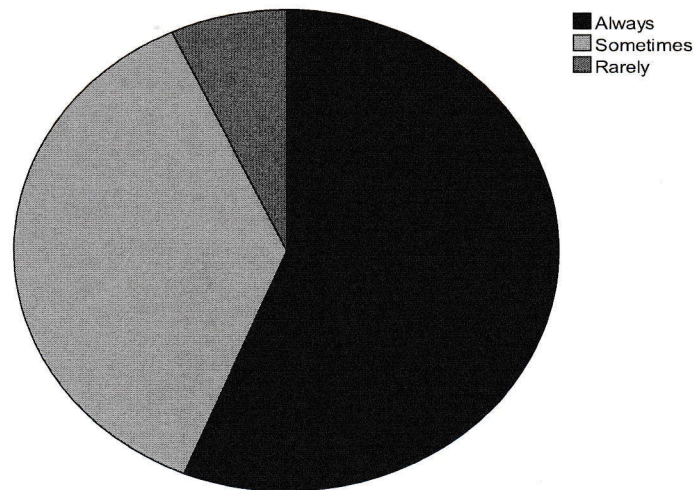
**Do you consider that reading comprehension in English is one of your main needs in your study field?**

Categories	Frequency	Percentage
Always	73	56.2 %
Sometimes	48	36.9 %
Rarely	9	6.9 %
Total	130	100.0 %

Source: Questionnaire passed to Technical English II groups (01, 02, 03, and 04)

CIRCLE CHART 2

**Do you consider that reading comprehension in English is one of your main needs in your study field?**



Source: Questionnaire passed to Technical English II groups (01, 02, 03, and 04).

## **Analysis**

It was observed that more than half of students (56.2%) regarded that reading comprehension in English is always one of their main needs in their study field, while 36.9% of them considered it happens sometimes and only 6.9 % of learners expressed that it occurs rarely.

## **Interpretation**

Based on the data, ESP methodology worked in an effective way in helping students' needs related to their study field to comprehend English reading texts.

## ENGLISH FOR SPECIFIC PURPOSES FOCUSED ON STUDENTS' NEED

Contingency table 3

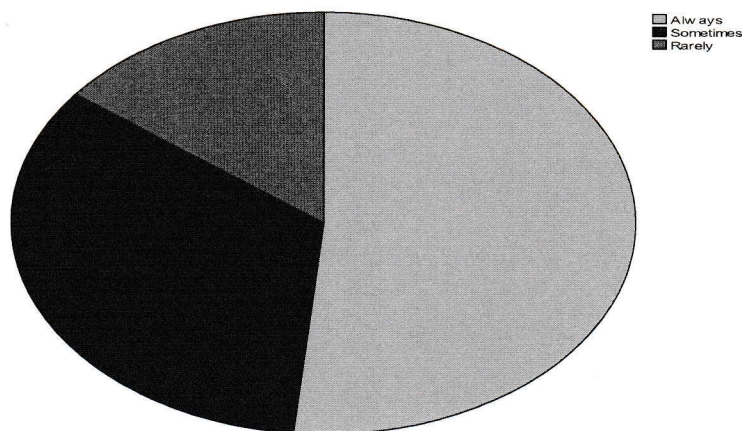
**Do you consider that Technical English is useful to help you to achieve your goals within the Chemistry and Pharmacy field?**

Categories	Frequency	Percentage
Always	67	51.5 %
Sometimes	44	33.8 %
Rarely	19	14.6 %
Total	130	100.0 %

Source: Questionnaire passed to Technical English II groups (01, 02, 03, and 04).

### CIRCLE CHART

**Do you consider that Technical English is useful to help you to achieve your goals within the Chemistry and Pharmacy field?**



Source: Questionnaire passed to Technical English II students(groups 01, 02, 03, and 04).

## **Analysis**

It was revealed that 51.5% of students regarded that Technical English has always helped to achieve their goals within the Chemistry and Pharmacy field, while 33.8% of them considered it happens sometimes and only 14.6 % of learners expressed that it occurs rarely.

## **Interpretation**

Based on the data, Technical English worked in an effective way in helping students to achieve their goals within their study field.

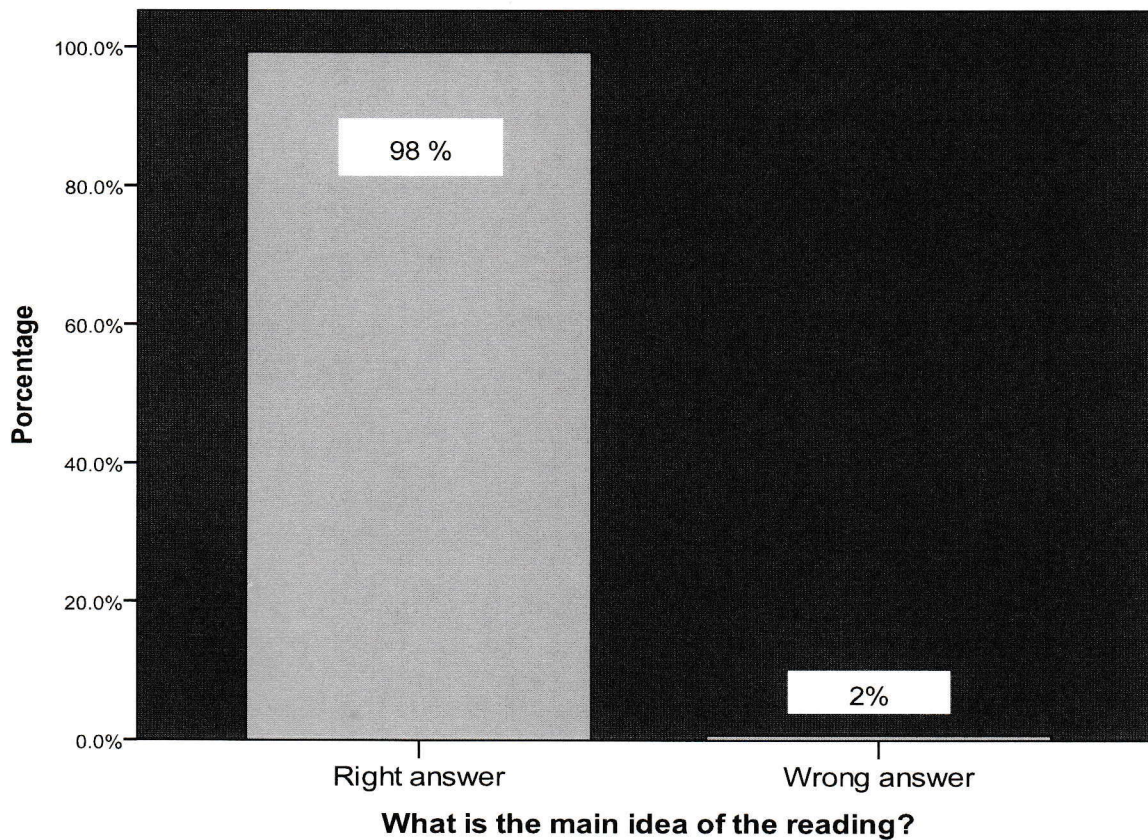
#### **4.1.5 Reading comprehension test analysis**

The reading test was carried out with students of Technical English II, School of Chemistry and Pharmacy, University of El Salvador. The test was a reading related to acetaminophen. Also, this test had nine questions based on reading comprehension. In fact, five of them had three possible answers, but only one of them was the right response. On the other hand, the last four statements had the option to answer true or false.

The analysis was developed as follows: SPSS provided the graphs. To sum up, all the graphs represent the percentage of students who answered each question in a right or wrong manner in order to determine if students understand the text related to their study field.

**Graph 1**

**Reading comprehension test**



Source: Reading comprehension test passed to 4 groups (130 students) of Technical English II.

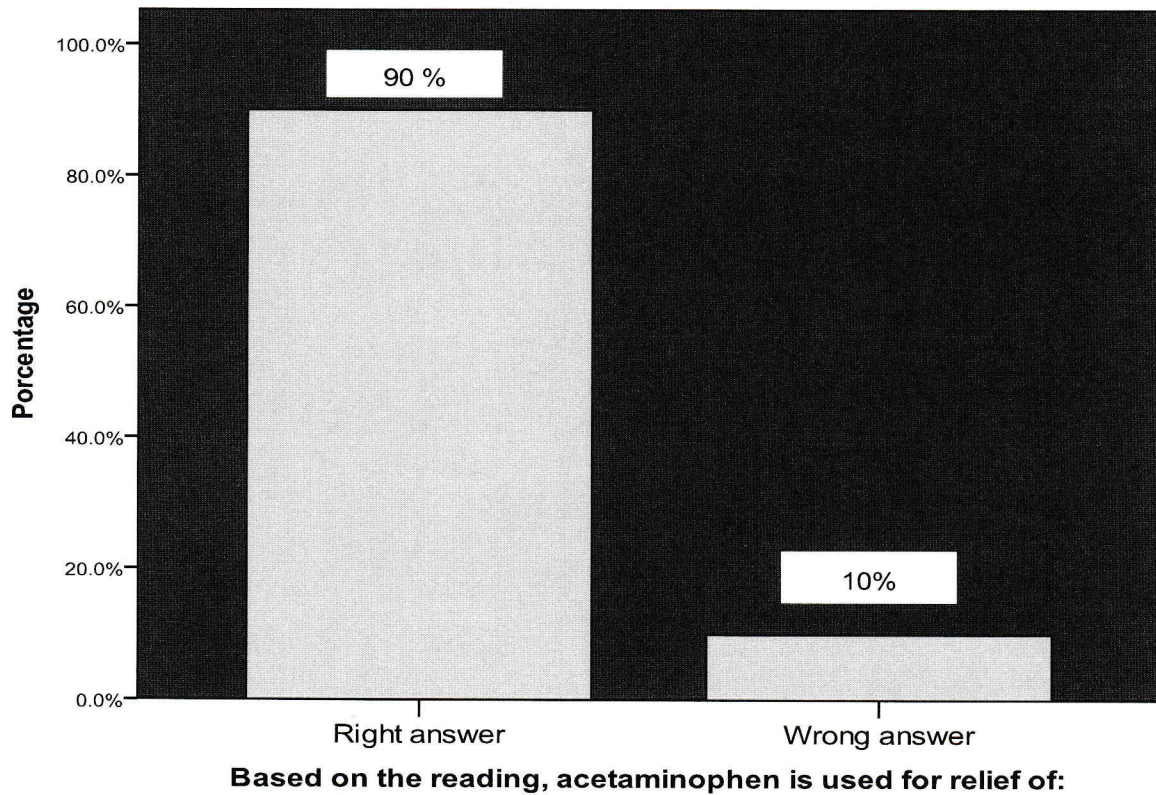
**Analysis:** As shown by the graph, students answered almost unanimously (98%) in a correct manner. Only 2% of them selected the wrong answers.

**Interpretation:** Based on the data, it is revealed that the subjects under study showed an excellent level of comprehension of the reading passage through ESP methodology.



**Graph 2**

**Reading comprehension test**



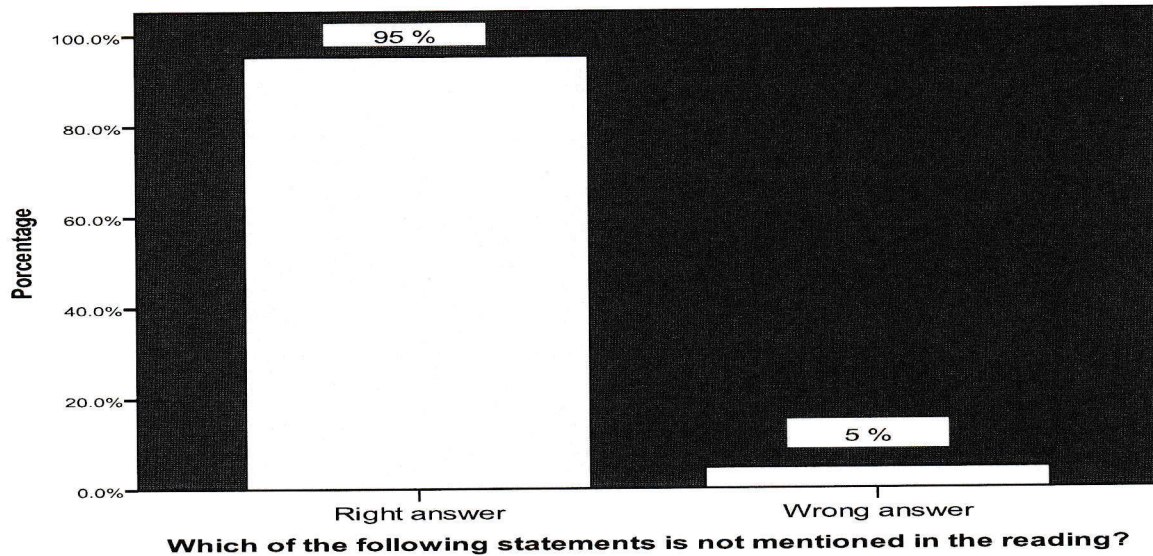
Source: Reading comprehension test passed to 4 groups (130 students) of Technical English II

**Analysis:** Most students (90 %) interpreted the text in a correct manner whereas only 10 percent of them misunderstood the passage.

**Interpretation:** As revealed by the data, the ESP methodology worked in an effective way in helping the students to understand the technical English text.

**Graph 3**

**Reading comprehension test**



Source: Reading comprehension test passed to 4 groups (130 students) of Technical English II

**Analysis:** Three possible answers were given to students of Technical English II as follows:

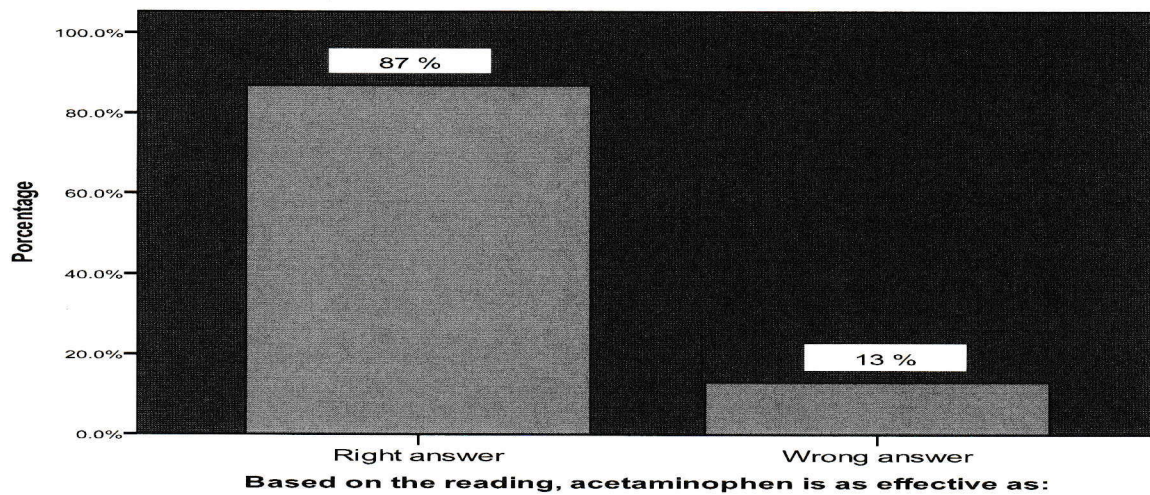
- A) Acetaminophen belongs to a class of drugs called antipyretics.
- B) Acetaminophen belongs to a class of drugs called analgesics.
- C) Acetaminophen belongs to a class of drugs called H2 blockers.

According to the results, 95 % of students selected letter “C” as a statement which was not mentioned in the reading, while 5% of learners considered the other options. Therefore, the right answer was letter “C” since it was not mentioned in the reading.

**Interpretation:** As shown by the data, ESP methodology provided the students with reading comprehension at a highly accurate level of efficiency.

**Graph 4**

**Reading comprehension test**



Source: Reading comprehension test administered to 4 groups (130 students) of Technical English II

**Analysis:** Three possible answers were presented:

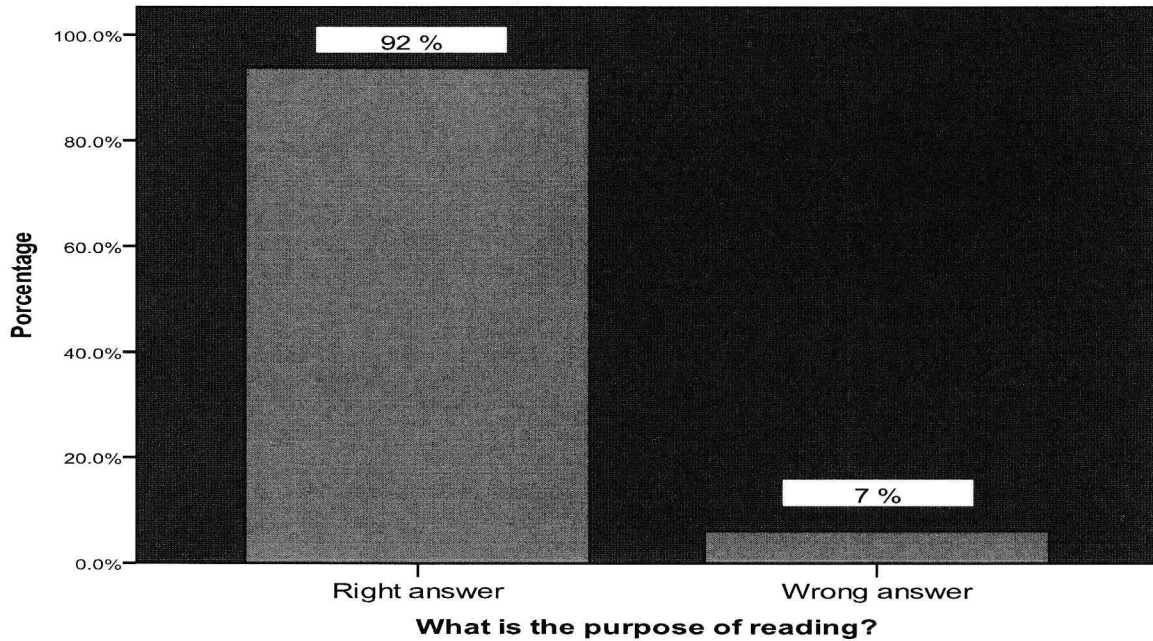
- A) Aspirin and amoxicillin.
- B) Aspirin and ibuprofen.
- C) Ibuprofen and mebendazole

The graph shows that 87 % of students said acetaminophen is as effective as aspirin and ibuprofen (option “B”). In fact, it was the right answer. In contrast, 13 % of them did not choose the correct answer.

**Interpretation:** As revealed by the data, most students showed a very good level of reading comprehension as a result of their English learning process through ESP methodology.

**Graph 5**

**Reading comprehension test**



Source: Reading comprehension test administered to 4 groups (130 students) of Technical English II

**Analysis:** The possible answers were the following:

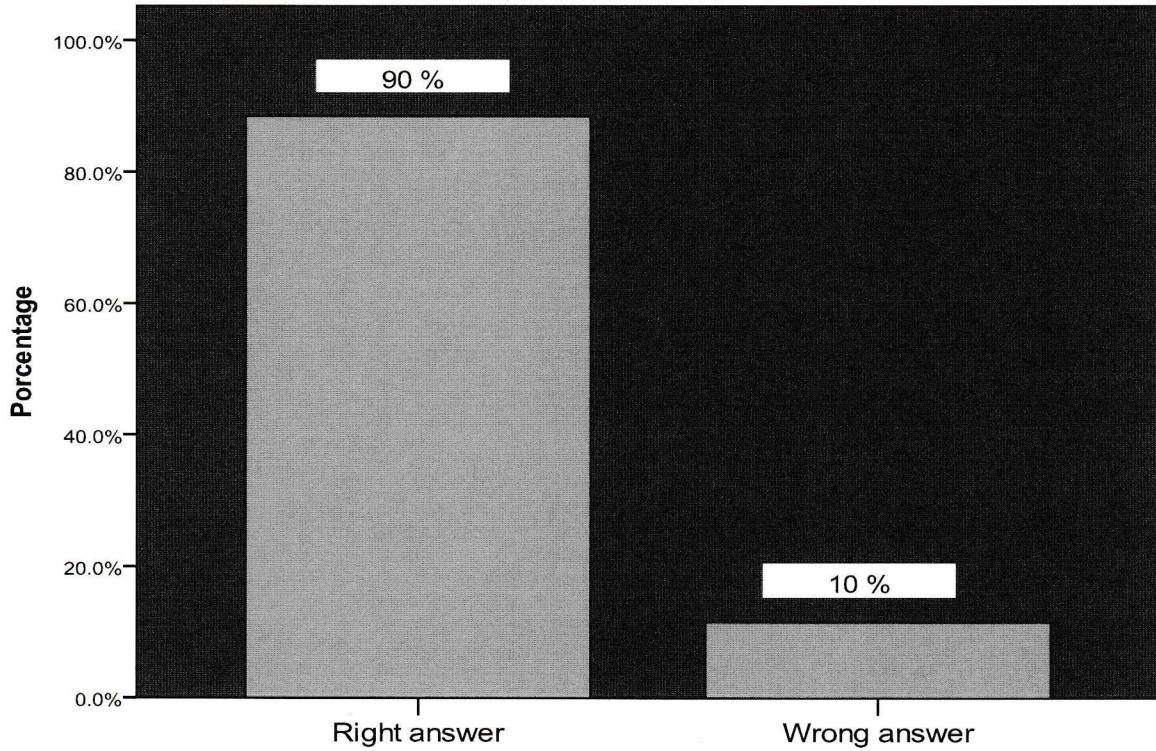
- A) To inform.
- B) To entertain.
- C) To express an idea

A high percentage of students (92%) identified the right answer.

**Interpretation:** As shown by the data, the level of reading comprehension on the students' part was excellent, which indicates ESP methodology efficiency.

**Graph 6**

**Reading comprehension test**



**Acetaminophen belongs to a class of drugs called antidepressants.**

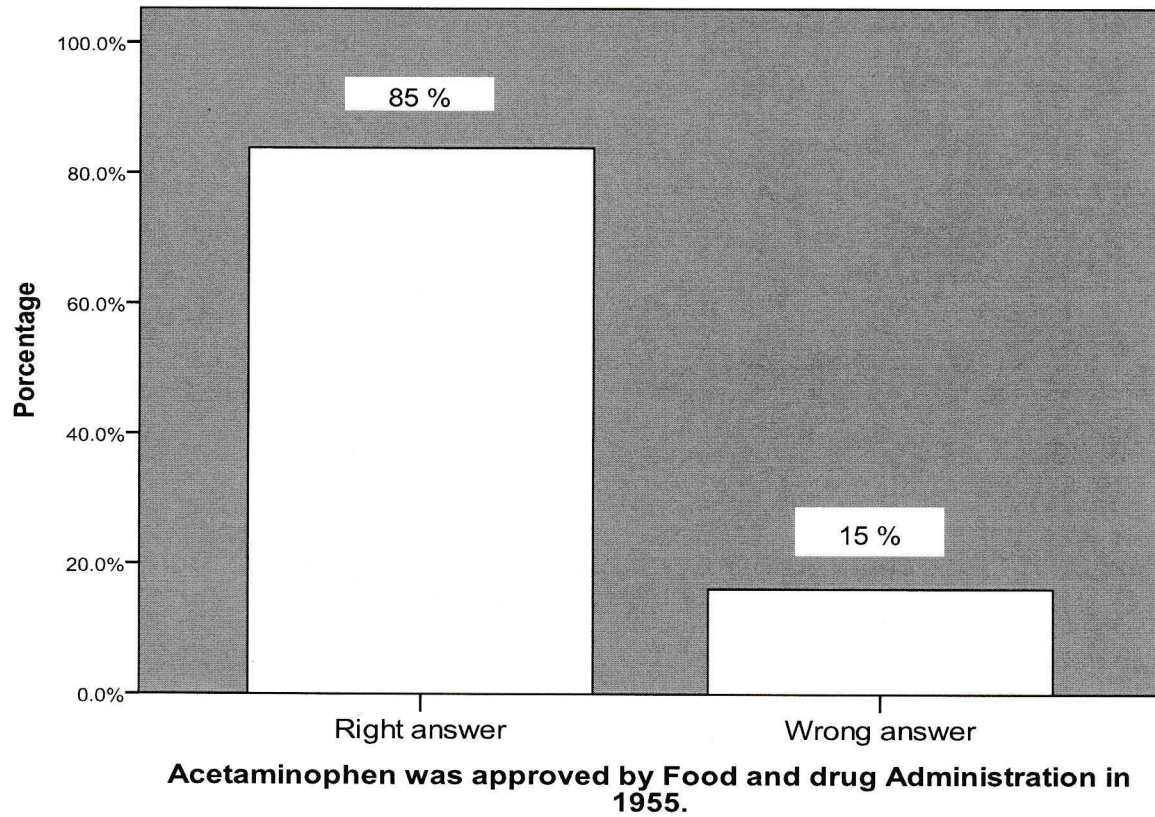
Source: Reading comprehension test administered to 4 groups (130 students) of Technical English II

**Analysis:** The right answer was identified by almost all the students (90%). Only a tenth of them chose the wrong answer.

**Interpretation:** As shown by the graph, the subjects under study revealed a very high degree of reading comprehension.

**Graph 7**

**Reading comprehension test**



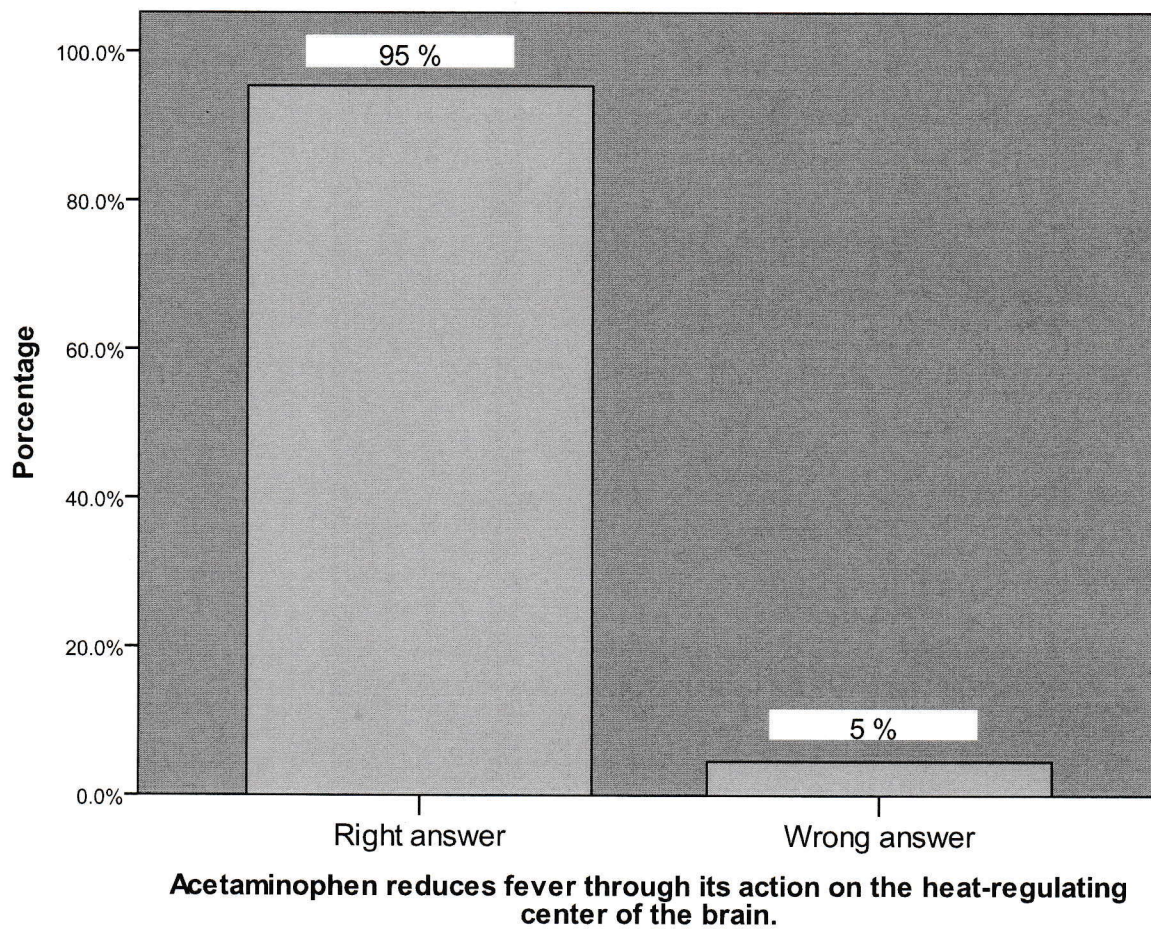
Source: Reading comprehension test administered to 4 groups (130 students) of Technical English II

**Analysis:** The students' answer was correct in most cases (85%), which revealed a very good level of comprehension on their part.

**Interpretation:** As revealed by the graph, the subjects under study showed reading proficiency after being taught English with ESP methodology.

**Graph 8**

**Reading comprehension test**



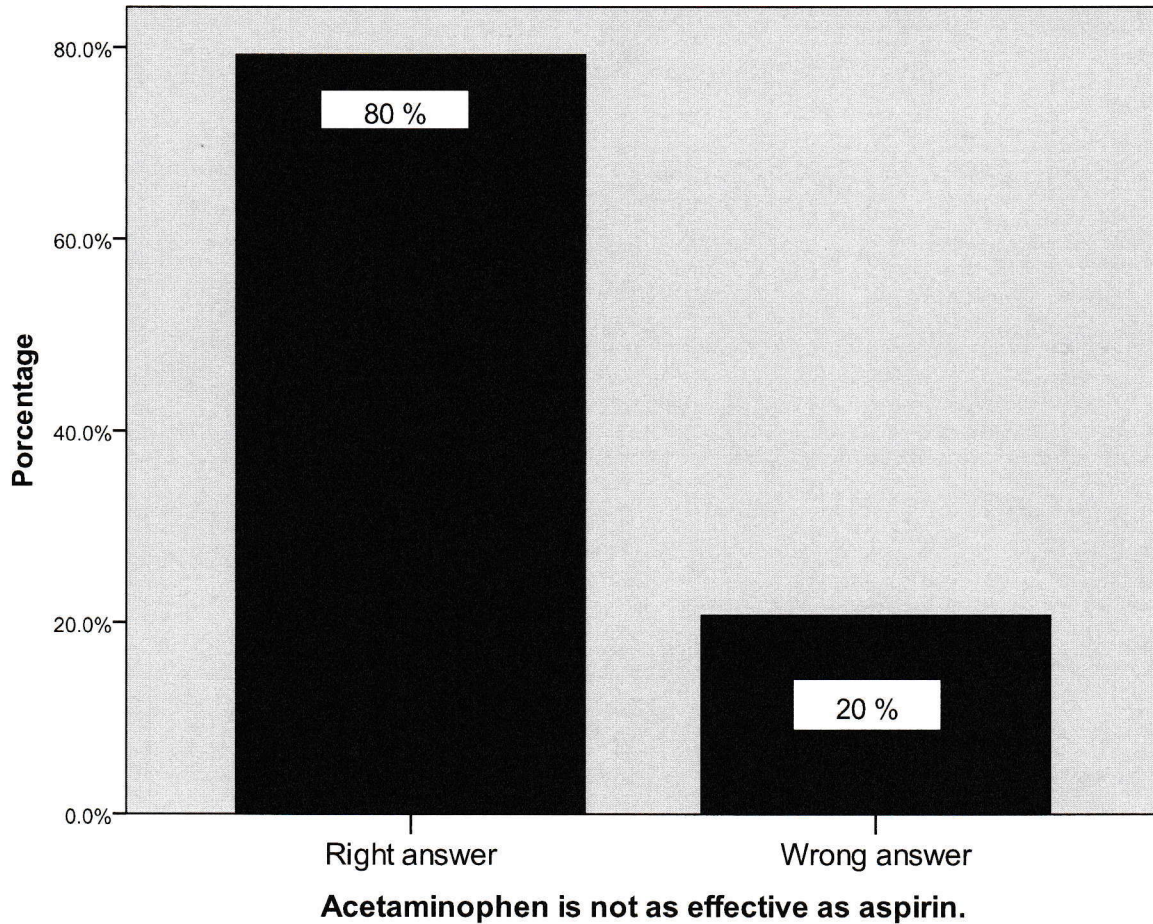
Source: Reading comprehension test administered to 4 groups (130 students) of Technical English II

**Analysis:** The majority of subjects under study (95%) provided the correct answer.

**Interpretation:** As revealed by the graph, the students' comprehension level was excellent after having received English teaching based on ESP methodology.

**Graph 9**

**Reading comprehension test**



Source: Reading comprehension test administered to 4 groups (130 students) of Technical English II

**Analysis:** According to the graph, eighty percent of students chose the correct option and only twenty percent of them chose the wrong answer.

**Interpretation:** As revealed by the data, the students under study showed a high comprehension level of reading when ESP is applied.



## CHAPTER 5

### 5. CONCLUSIONS AND RECOMMENDATIONS

Based on the outcomes of this research, the following conclusions can be drawn:

It was concluded that teacher's methodology is focused on reading comprehension. In fact, students from School of Chemistry and Pharmacy assured that the skill developed throughout Technical English I and II was the reading skill. Moreover, a significant percentage of them considered to be able to comprehend a text in English. Indeed, the reading comprehension test revealed that the majority of students answered correctly all the questions. Therefore, the researchers determined that most learners were able to comprehend the English text.

In this study, it was found out that the teacher's methodology was focused on Chemistry and Pharmacy field as English for academic purposes (EAP) since it was proved that the majority of students considered that the teacher used Technical English related to Chemistry and Pharmacy field.

In this research it was concluded that the reading material is related to students' academic field and the class content contributed to enhance their chemistry and pharmacy knowledge.

It was concluded that ESP methodology worked in an effective way in helping students' needs related to their study field in order to comprehend English texts readings.

## **5.1. Hypotheses' test**

### **5.1.1 General Hypotheses**

**Hi.** ESP methodology and students' reading comprehension of Technical English II are related to each other.

According to the results of Pearson's chi-square test, ESP methodology and reading comprehension are related to each other since the values of significance were less or equal to 0.05. Therefore, there is a positive relationship between both variables.

### **5.1.2. Null hypothesis**

**Ho.** There is no significant relationship between ESP methodology and students' reading comprehension.

The null hypothesis was rejected due to the results of the contingency tables and Pearson's chi-square test, since it did not reflect a value of significance higher than 0.05.

## 5.2 Recommendations

Based on the findings of this research, the following recommendations can be drawn:

For the University of El Salvador

- To focus the English methodology according to ESP principles and techniques students' study field in order to help learners to fulfill their needs.
- The professor in charge of teaching Technical English in the different schools should design ESP material related to students' study field in order to develop specific reading skill in the different fields

For the School of Chemistry and Pharmacy.

- To continue to teach Technical English by using ESP methodology.
- To arouse students' awareness with regard to the importance of ESP methodology for improving their reading comprehension level when reading bibliographic material related to their study field.

## CHAPTER 6

### 6. REFERENCE

- Dudley-Evans, T., & St John, M. (1988). *Developments in ESP: A Multi-disciplinary Approach*. Cambridge: Cambridge University Press.
- García P., López J., and Tejada M., (2015). “ESP approach used in English II of the bachelor of Arts in Library Science of the literature Department, School of Sciences and Humanities, University of El Salvador, year 2014”. San Salvador School of Foreign Languages Department, University of El Salvador.
- Gonzalez V., (2014) “English for Chemistry and Pharmacy Students segunda edicion. San Salvador, Universidad de El Salvador.
- Hutchinson, T. & Waters, A. (1987). *English for Specific Purpose: A Learning centered approach*. Cambridge: Cambridge University Press.
- Kennedy, C. & Bolitho, R. (1984) *English for Specific Purposes*. London: Macmillan.
- Mejía Salvador I (2006) *Guía Para la Elaboración de Trabajos de Investigación Monográfico o Tesis*.

- Negrea, V. (2010). *“English for Specific Purposes (ESP)” in Curriculum Development. Euromentor Journal.*
  
- Nunan, D. (1987). *The teacher as Curriculum Developer: An Investigation of Curriculum Processes within the Adult Migrant Education Program.* South Australia: National Curriculum Resource Centre.
  
- Nutall, Christine. (1996). *Teaching Reading Skill in a Foreign Language.* Second Edition. Oxford: Heinemann.
  
- Rivers, Wilga .M. (1981). *Teaching foreign language skills in foreign language skills.* Chicago: University of Chicago Press.
  
- Students from the 6th & 7th semester of the Foreign Languages Department (1990). Seminar on “Classroom Techniques for Teaching English as Second Language (ESL) and English for Specific Purposes (ESP). San Salvador Foreign Language Department, University of El Salvador.
  
- Taborga, H. (1982). *Cómo hacer una tesis.* México D.F.: Editorial Grijalvo. S.A.

## INTERNET SOURCES

- AbdeslamBadre (May, 2005). Needs Analysis: A Valuable Tool for Designing and Maintaining Effective ESP Curriculum Needs Analysis: A Valuable Tool for Designing and Maintaining Effective ESP Curriculum. Retrieved from: <http://es.slideshare.net/abdeslambadre/needs-analysis-a-valuable-tool-for-designingand-maintaining-effective-esp-curriculum-by-abdeslam-badre>.
- Anthony, L. (1997), *Defining ESP and the role of ESP practitioners*", Retrieved From:<http://Antlab.Sci.wasida.Ac.Jp>. Retrieved in April, 2012.
- Block, E. (1986). *The comprehension strategies of second language readers*. TESOL Quarterly, 20(3), 165- 187. <http://dx.doi.org/10.2307/3586295>
- Brunton, M. (2009). *English for Specific Purposes: An account of ESP*", Retrieved in April, 2012: <http://Esp.world.Info>.
- William, K. (2010), in what ways, if any, does the role of the ESP teacher differ from that of a teacher of GE? And to what extent is it necessary for the teacher of ESP to have knowledge of the student's subject or professional discipline? January, 2013.Retrieved from in: [http:// Study mode.com/essays.html](http://Study.mode.com/essays.html).
- Winter 1981 cited in *Designing an ESP reading skill course* Gro Frydenberg retrieved from <http://203.72.145.166/ELT/files/36-3-3.pdf>

## CHAPTER 7

### 7. APPENDICE

#### 7.1 Appendix A: Questionnaire

UNIVERSIDAD DE EL SALVADOR  
FACULTAD DE CIENCIAS Y HUMANIDADES  
DEPARTAMENTO DE IDIOMAS EXTRANJEROS

Semestre II / 2015.

Tema: El impacto de la metodología del Idioma Inglés para propósitos Específicos en la comprensión lectora de los estudiantes: Caso de los alumnos/as de Inglés Técnico II en la escuela de Química y Farmacia de la Universidad de El Salvador, semestre II, año 2015.

Objetivo: Identificar el impacto de la metodología del Idioma Inglés para propósitos Específicos en la comprensión lectora de los estudiantes: Caso de los alumnos/as de Inglés Técnico II en la escuela de Química y Farmacia de la Universidad de El Salvador, semestre II, año 2015.

Integrantes: Johanna Claribel Álvarez de Mangandi (AF07003)

Helmer Baltazar García Salazar (GS93013)

**Instrucciones: Por favor lea cuidadosamente el siguiente cuestionario y marque la mejor respuesta que considere adecuada basada en su experiencia y punto de vista como estudiante.**

Femenino \_\_\_\_\_

Masculino \_\_\_\_\_

#### **METODOLOGÍA DEL IDIOMA INGLÉS PARA PROPÓSITOS ESPECÍFICOS**

1- ¿Considera que la materia de Inglés Técnico es útil para su carrera?

1. Siempre \_\_\_\_\_ 2. A veces \_\_\_\_\_ 3. Rara vez \_\_\_\_\_ 4. Nunca \_\_\_\_\_

2- ¿Considera que el contenido de clase contribuye a mejorar tu conocimiento de Química y Farmacia?

1. Siempre \_\_\_\_\_ 2. A veces \_\_\_\_\_ 3. Rara vez \_\_\_\_\_ 4. Nunca \_\_\_\_\_

3- ¿Considera usted que el profesor utiliza Inglés Técnico relacionado con Química y Farmacia?

1. Siempre \_\_\_\_\_ 2. A veces \_\_\_\_\_ 3. Rara vez \_\_\_\_\_ 4. Nunca \_\_\_\_\_

4- ¿Considera que Inglés Técnico es útil para ayudar alcanzar sus objetivos dentro del campo de Química y Farmacia?

1. Siempre \_\_\_\_\_ 2. A veces \_\_\_\_\_ 3. Rara vez \_\_\_\_\_ 4. Nunca \_\_\_\_\_

5- ¿Considera que la metodología del docente se centra en la mejora de su comprensión de la lectura?

1. Siempre \_\_\_\_\_ 2. A veces \_\_\_\_\_ 3. Rara vez \_\_\_\_\_ 4. Nunca \_\_\_\_\_

6- ¿Considera que el profesor brinda en la clase el material de lectura adecuado relacionado con su ámbito académico?

1. Siempre \_\_\_\_\_ 2. A veces \_\_\_\_\_ 3. Rara vez \_\_\_\_\_ 4. Nunca \_\_\_\_\_

7- ¿El material de lectura subida por su profesor de inglés en la página virtual se ajustan a su campo de estudio?

1. Siempre \_\_\_\_\_ 2. A veces \_\_\_\_\_ 3. Rara vez \_\_\_\_\_ 4. Nunca \_\_\_\_\_



**METODOLOGÍA DEL IDIOMA INGLÉS PARA PROPÓSITOS ESPECÍFICOS EN  
LA COMPRESION LECTORA DE LOS ESTUDIANTES**

8- ¿Cuál de estas habilidades considera usted haber desarrollado a lo largo de Inglés Técnico I y II en relación con el campo de Química y Farmacia?

1. Leer \_\_\_\_\_ 2. Escribir \_\_\_\_\_ 3. Escuchar \_\_\_\_\_ 4. Hablar \_\_\_\_\_

9- ¿El profesor proporciona vocabulario que le ayuda a comprender textos de lectura?

1. Siempre \_\_\_\_\_ 2. A veces \_\_\_\_\_ 3. Rara vez \_\_\_\_\_ 4. Nunca \_\_\_\_\_

10- ¿Considera que tu profesor proporciona material de lectura actual útil para tu comprensión lectora?

1. Siempre \_\_\_\_\_ 2. A veces \_\_\_\_\_ 3. Rara vez \_\_\_\_\_ 4. Nunca \_\_\_\_\_

11- ¿Considera que a lo largo de Inglés Técnico I y II eres capaz de comprender texto en inglés?

1. Siempre \_\_\_\_\_ 2. A veces \_\_\_\_\_ 3. Rara vez \_\_\_\_\_ 4. Nunca \_\_\_\_\_

12- ¿Entiende el material de lectura que su profesor de inglés le brinda en la clase?

1. Siempre \_\_\_\_\_ 2. A veces \_\_\_\_\_ 3. Rara vez \_\_\_\_\_ 4. Nunca \_\_\_\_\_

**MUCHAS GRACIAS!**

## 7.2 Appendix B: Reading comprehension test for Technical English II students

### Acetaminophen



Acetaminophen belongs to a class of drugs called **analgesics** (pain relievers) and **antipyretics** (fever reducers). The exact mechanism of action of acetaminophen is not known. Acetaminophen relieves pain by elevating the pain threshold, that is, by requiring a greater amount of pain to develop before it is felt by a person. It reduces fever through its action on the heat-regulating center of the brain. Specifically, it tells the center to lower the body's temperature when the temperature is elevated. Acetaminophen was approved by Food and Drug Administration (FDA) in 1951.

Acetaminophen is used for the relief of fever as well as aches and pains associated with many conditions; acetaminophen relieves pain in **mild arthritis** but has no effect on the underlying inflammation, redness and swelling of the joint. If the pain is not due to inflammation, acetaminophen is as effective as aspirin. It is as effective as the non-steroidal anti-inflammatory drug ibuprofen (Motrin) in relieving the pain of osteoarthritis of the knee.

## READING COMPREHENSION TEST

**Highlight the correct answer.**

1. What is the main idea of the reading?
  - A) Acetaminophen can be harmful to our health.
  - B) Acetaminophen is an analgesic that relieves fever and other pains.
  - C) Side effects of acetaminophen.
  
2. Based on the reading, acetaminophen is used for relief of:
  - A) Acetaminophen relieves pain of mild arthritis.
  - B) Acetaminophen relieves pain of gastric reflux.
  - C) Acetaminophen relieves pain of tonsillitis.
  
3. Which of the following statements is not mentioned in the reading?
  - A) Acetaminophen belongs to a class of drugs called antipyretics.
  - B) Acetaminophen belongs to a class of drugs called analgesics.
  - C) Acetaminophen belongs to a class of drugs called H2 blockers.
  
4. Based on the reading, acetaminophen is as effective as:
  - A) Aspirin and amoxicillin.
  - B) Aspirin and ibuprofen.
  - C) Ibuprofen and mebendazole.
  
5. What is the purpose of reading?
  - A) To inform.
  - B) To entertain.
  - C) To express an idea.

Mark with an "X" if the statement is true (T) or false (F) according to the reading.

	T	F
6. Acetaminophen belongs to a class of drugs called antidepressants.		
7. Acetaminophen was approved by Food and drug Administration in 1955.		
8. Acetaminophen reduces fever through its action on the heat-regulating center of the brain.		
9. Acetaminophen is not as effective as aspirin.		

## PRUEBA DE LECTURA COMPRESIVA

- Encierre en un círculo la mejor respuesta para cada pregunta.

**1. ¿Cuál es la idea principal de esta lectura?**

- a) Acetaminofen puede ser dañina a nuestra salud.
- b) Acetaminofen es un analgésico que alivia la fiebre y otros dolores.
- c) Efectos secundarios del acetaminofen.

**2. Basado en la lectura, el acetaminofen se usa para el alivio de:**

- a) Acetaminofen alivia el dolor de la artritis leve.
- b) Acetaminofen alivia el dolor de reflujo gastroesofágico.
- c) Acetaminofen alivia el dolor de la amigdalitis.

**3. ¿Cuál de las siguientes declaraciones NO se cita en la lectura?**

- a) Acetaminofen pertenece a una clase de medicamentos llamados antipiréticos.
- b) Acetaminofen pertenece a una clase de medicamentos llamados analgésicos.
- c) Acetaminofen pertenece a una clase de medicamento llamado bloqueadores H<sub>2</sub>.

**4. En la lectura nos dice que el Acetaminofen es tan eficaz como:**

- a) Aspirina y amoxicilina.
- b) Aspirina e ibuprofeno.
- c) Ibuprofeno y mebendazol.

**5. ¿Cuál es el propósito de la lectura?**

- a) Informar.
- b) Entretener.
- c) Expresar una opinión.

- **Marca una (X) en las siguientes declaraciones basado en la lectura si es verdadero (V) o falso (F).**

	V	F
1. Acetaminofen pertenece a una clase de medicamentos llamados antidepresivos.		
2. Acetaminofen se aprueba en 1955 por food and drugadministration.		
3. Acetaminofen reduce la fiebre través de su acción sobre el centro de regulación de calor del cerebro		
4. Acetaminofen NO es tan eficaz como la aspirina.		

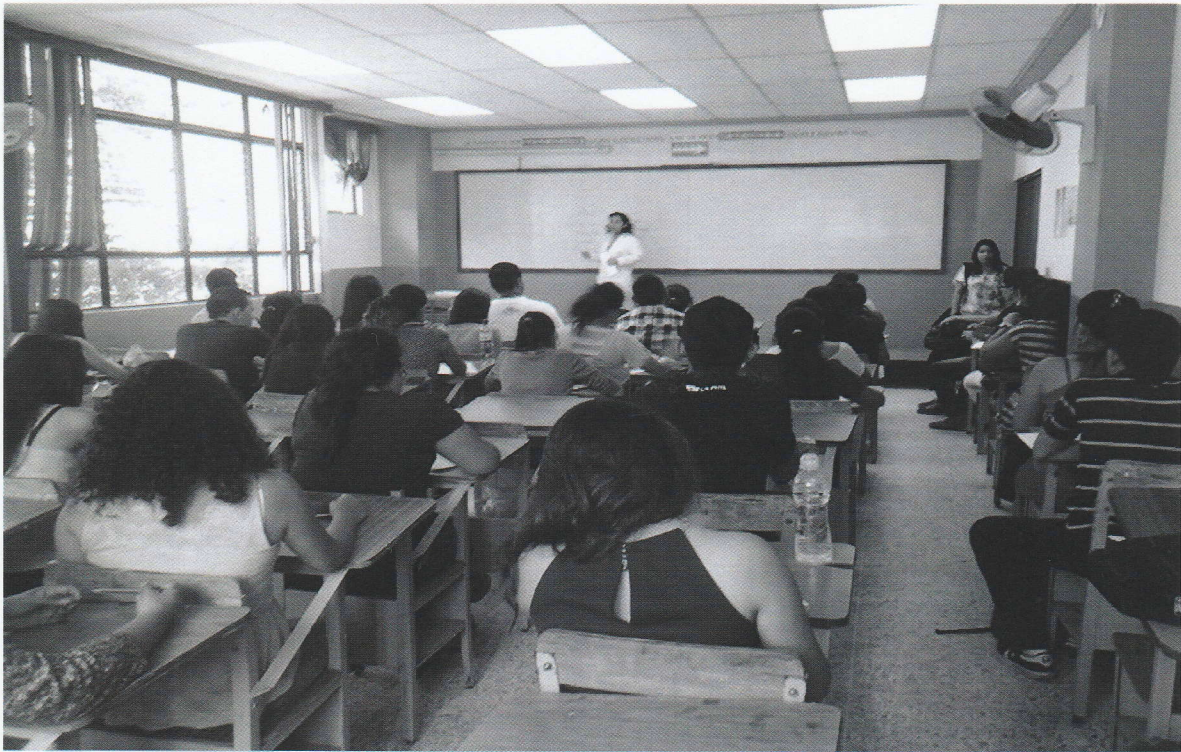
### 7.3 Appendix C: photographs



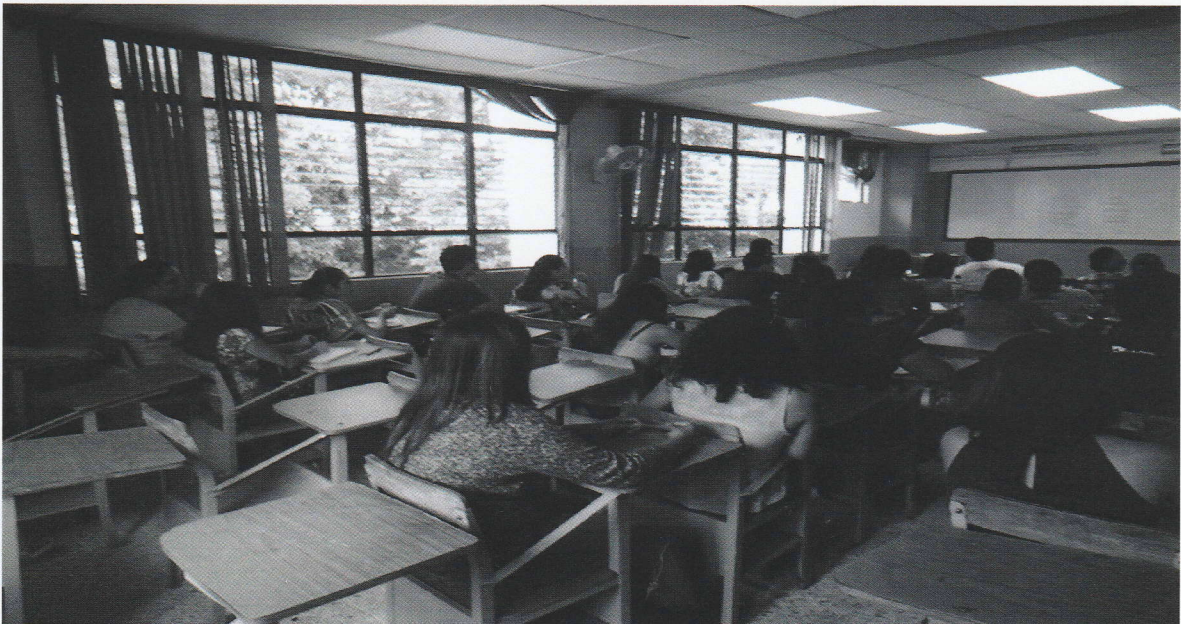
Source: Groups 3 of Technical English II.



Source: Groups 3 of Technical English II.



Source: Groups 4 of Technical English II.



Source: Groups 4 of Technical English II.





## RESEARCH TIMETABLE

Activities carried out in the Thesis Project during the period from December 2015 to January, February and March 2016

ACTIVITIES	MONTH																			
	DECEMBER					JANUARY					FEBRUARY					MARCH				
	1	2	3	4	5	1	2	3	4	5	1	2	3	4	5	1	2	3	4	5
12	x						x	x		x			x							
13			x	x		x	x	x												
14														x	x					
15															x					
16																				x

**TIMETABLE FOR COLLECTING DATA**

<b>Instrument</b>	<b>Group</b>	<b>Time</b>	<b>Place</b>	<b>Date</b>
Reading test	01	11 am-12 pm	201	Wednesday, october 21, 2015
Reading test	02	7 am- 8 am	202	Wednesday, october 21, 2015
Reading test	03	8 am- 9 am	204	Monday, november 9, 2015
Reading test	04	1 pm- 2 pm	205	Monday, november 9, 2015

Questionnaire	01	11 am-12 pm	201	Wednesday, october 21, 2015
Questionnaire	02	7 am-8 am	202	Wednesday, october 21, 2015
Questionnaire	03	8 am-9 am	204	Monday, november 9, 2015
Questionnaire	04	1 pm-2 pm	205	Monday, november 9, 2015