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Implementing an ESP Course to Computer Sciences Students: Case Study of Master's Students at the University of Mustapha Stambouli Mascara

Thesis Submitted to the Department of English Language in Candidacy for the Requirement of a Doctorate Degree in ESP.

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Statement of Originality

I hereby declare that this doctoral thesis entitled, Implementing an ESP Course to Computer Sciences Students: Case Study of Master's Students at the University of Mustapha Stambouli Mascara and supervised by Dr. Noureddine Mouhadjer of Abou Bekr Belkaid University of Tlemcen is my own work and, to my knowledge, all the sources that I have used and/ or quoted have been indicated and acknowledged by complete reference.

Signed: Djamila BENCHENNANE

14/06/2018

DEDICATION

I dedicate this thesis to:

All my family members: Dad may Allah bless his soul, Mom may Allah grant her health and a long life, my sisters and my brother.

My teachers, colleagues, friends and those who helped me to achieve this work.

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This thesis would not have been possible without the help of Allah.

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LIST OF ABBREVIATIONS

CBA Competency Based Approach

ICT Information Communication Technologies

EAP English for Academic Purposes.

EBP English for Business Purposes.

EFL English as a Foreign Language.

ELP English for Legal Purposes.

ELT English Language Teaching.

EMP English for Medical Purposes.

EOP English for Occupational Purposes.

ESP English for Specific Purposes.

EST English for Science and Technology.

TSA Target Situation Analysis

LSA Learning Situation Analysis

PSA Present Situation Analysis

LMD Licence-Master-Doctorat.

AMA Analyse Mathématique et Applications

GDA Géométrie Différentielle et Applications

RSD Réseaux et Systèmes Distribués

ISI Ingénierie des Systèmes Informatiques

SITW Systèmes d'Information et Technologie Web

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ABSTRACT

English is not only a means of communication but, also, a language which is taught in different fields to fulfill occupational and academic purposes around the globe. One illustrative example is the teaching English in the field of Computer Science which is the main field of research for the present study. English is taught in this field at university for scientific and technical purposes. The current situation is that Master's students in Computer Science, in the faculty of Technology at Mascara University face problems in using English language, though, they are required to use it somehow effectively in their field of study for scientific purposes. Thus, this research work aims at investigating how English for Specific Purposes course is taught in this field. This study also tries to find out what makes learners weak, in order to provide some suggestions that may enhance the teaching of ESP in this field to help learners cope better with their difficulties. This thesis is a case study research that deals with the description of the courses in Computer Science. This research work focuses on three research instruments for data collection which are: students' questionnaire, teachers' interview, and classroom observation. Both qualitative and quantitative methods for data analysis will be used in this research work to analyze these data. The results reveal that both experienced and novice teachers encounter difficulties in their respective careers and teachers of English need training to improve their own levels and to learn modern methods of teaching; furthermore, to reach success in the teaching of ESP, the computer science department takes measures which seem to be somehow efficient but need improvement. Therefore, an ESP course for Computer Science Master's students is proposed for implementation.

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GENERAL INTRODUCTION

All over the world, many communities use not only their native language but other foreign languages also. In a well developed industrial society it is essential to know other languages since language is considered to be knowledge. With the advent of the invent of the internet many changes have occurred in our modern world allowing not only communication and exchanging ideas using the common language we share but taking decisions about teaching / learning foreign languages. Learning foreign languages is the basis of better communication. It is, as well, the source of technological progress as it enables rapid exchange of information mainly with the advent of 'globalization' languages are needed for work, for relocation or mobility, for relatives or friends who speak a different language, for research or study, for travel, etc.

Language study involves developing skills and can raise one's abilities to function in other spheres of life. It also increases as an outcome of foreign language study because one learns new ideas while learning a new language. In studying a foreign language, one is faced to new ideologies and cultures. There is a different aspect to foreign language study, which says that studying a foreign language makes one more eligible to venture certain fields.

Being aware that languages are of a great value, Algeria started implementing them in its educational system since its independence: French as the first foreign language and English as the second one. Later on, new foreign languages were introduced such as German, Spanish, and Italian at secondary schools where pupils of "Lettres et Langues", in addition to French and English, have to study one of these languages.

At university level, French and English are not only taught as the main languages in their respective departments, but also as foreign languages in other departments such as the Faculty of Medical Sciences, Economics,

Computer Science, etc, where English language is taught for Specific Purposes (ESP).

Algeria has realized that languages are of a great necessity; so, in order to enter the world of technology and development, it uses French as an asset to be able to communicate with the west and English as a tool which will allow it to take part in the business world. This could be possible through ESP and that is why the teaching of English for Specific Purposes emerged in the country. Teaching English in Algeria has improved but still requires efforts in preparing textbooks along with authentic materials that should be available.

Teachers of English need training to improve their own levels and to learn modern methods of teaching. The present thesis is, then, about implementing an ESP course for Computer Science students. It will take the department of Computer Science, at University of Mascara as a case-study.

First, it will deal with the description of the courses taught at this department. It will, then, evaluate the English courses through observation, teachers' interviews and students' questionnaires. Next, these tools will be analyzed and the results discussed in order to implement an ESP course for Computer Science Master Students. In the end, it will suggest some recommendations to motivate learners and make ESP teaching more effective.

This research is important to be conducted since it investigates how ESP is taught in this department and what obstacles both learners and teachers face every day. Furthermore, this thesis tries to prove the necessity of doing internship in the field (in companies) , and this will be of a great help and enables learners to develop what they have learned especially while being face to face with specialists or natives.

The problem that this thesis attempts to raise, is about the fact that the department employs teachers who have been trained in general English and are not specialists in the field, i.e., they are far from being subject specialists. They find themselves teaching in a field which is not theirs: "strangers in a home

land area" and are not experienced in teaching English for specific purposes as well. Although, they do their best to teach the language, they sometimes find it difficult to master or even understand some particular concepts. In terms of subject contents, the learners often know more than their teachers since it is their subject matter.

The problem is that no pre-set objectives are defined in the teaching of English for Specific Purposes and students' needs are somehow not totally taken into account. As a result, the students fail in their attempt to acquire the basic knowledge of both the English language and the Computer Science in which they are specializing. Each year, 25% of first year students pass in the English course in Semester One, and 32% in Semester Two, whereas, for the Computer Science courses only 23% pass (Department of Computer Science Guide, University of Mascara, 2011).

On the other hand, learners who have learned general English before, find themselves dealing with a completely different English. Now, it is no more the language they know, but a more technical one, and it is not easy for them to understand when they have to read subject-specialty texts. Therefore, the aim of this thesis is to study whether an analysis of needs is present in the development of the English programs for Master students at the Department of Computer Science and how far such needs are taken into consideration in the teaching of that Language.

Mascara Computer Science students (for the academic year 2011) were distributed as follows:

- L1: a total of 270,
- L2: a total of 69,
- L3: a total of 52 (as will be described later in the thesis.)

Our concern will be Master students who will study for two years to obtain a Computer Science Master degree.

The thesis aim is to describe the courses taught for Computer Science Master students. Among the two levels dealt with, only Master 2 level will be considered. Thus, some courses of such level will be described. We will then evaluate the ESP course through observation, teachers' interview and students' questionnaires. To be objective, the interview will be the methodological tool to examine certain issues concerning the teachers' views, which may confirm the research hypotheses.

The thesis takes as research questions the following:

1/ Do language teacher's experience / inexperience have any influence on success and failure in language learning?

2/ Is there a correlation between failure in language learning and the teacher's lack of in-service training?

3/ Are the measures taken by the Computer Science Department to reach success in ESP teaching efficient?

On the basis of these research questions, we will try to examine and prove these hypotheses:

1/ Both experienced and novice teachers encounter difficulties and failure during their respective careers.

2/ An in-service training held several times during the year can be of a great help to avoid failure.

3/ The Computer Science Department takes measures which seem to be somehow efficient to reach success in the teaching of ESP but need improvement.

The thesis is divided into four chapters. Chapter one deals with Literature Review. An overview on the field of ESP is provided, followed by definitions of ESP as well as its different types. We will show that the four language skills (listening, speaking, reading and writing) can be a requirement of the target situation in an ESP context. We will, then, highlight the necessity of course design and try to shed light on the various roles of the ESP

practitioner in motivating learners. The chapter shows, as well, the importance of needs analysis to determine the content of an ESP course.

Chapter two is for research design and procedures. It describes the research design, approaches, and procedures by giving the rationale behind using the case study. Then, an overview of the quantitative and qualitative approaches is provided. A full description of the combination method of both qualitative and quantitative approaches is used, as well, in this study to analyze the obtained data. To do so, semi-structured interview and participant observation are used as instruments.

Chapter three tackles data analysis and interpretation. It deals with the analysis of the students' questionnaires and teachers' interviews. The purpose behind interviews is to draw a comparison among teachers and to see whether they encounter the same difficulties in teaching. As for the questionnaire, it is designed to elicit data from the informants to investigate the students' awareness of their language use and areas of difficulties. In other words, it helps us to draw a profile of the learners' needs, lacks, wants, learning styles and strategies.

Chapter four deals with suggestions and recommendations for teachers and learners. One example is providing training for both of them. Teachers will be trained by subject specialists and will work collaboratively or the department would recruit ESP teachers since there are a few ESP specialized teachers. As for learners, they will do an in-service training in companies such as Sonatrach, or even harbors, where they can be face to face with specialists and natives.

As far as this thesis is concerned, much is still to be explored and investigated. Problem solving is as everlasting as life, and so are many other struggles in the educational system. It is hoped that this modest contribution will be best developed and enriched by future researchers who will add more to make it more beneficial.

Chapter One

Literature Review

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1-1 Introduction

The emergence of English as a global language led to the appearance of a new field in English language teaching which is ESP. Thus, it is necessary to cope with the different teaching situations and needs of learners. ESP addresses the communicative and written needs and practices of particular professional or occupational groups. As a result, the students need to master this language.

Accordingly, this chapter deals with the background of ESP in terms of the concept of specialized language, types of ESP and needs analysis. It also provides different aspects in the four skills and finally represents a relationship between ESP and those educational skills. It will then highlight the necessity of course design and will try to shed light on the various roles of the ESP practitioner in motivating learners.

Furthermore, the chapter will show the importance of needs analysis to determine the content of an ESP course. Accordingly, different methods are used to draw the profile of needs of learners which is the concern of the following chapter.

1-2 Definitions of ESP

English for Specific Purposes (ESP) is a way of teaching / learning English for specialized subjects with some specific educational and vocational purposes. There are different needs for different purposes of English language like English for Economics, English for business, English for Secretaries, English for Technicians and others. Thus, ESP is an approach to language learning based on learners' needs. Therefore, ESP is goal-directed. It is an approach to language teaching based on learners' needs and reasons for learning a language as stated in Hutchinson et al. (1987:19): "*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". Yet, ESP should be seen simply as an "approach" to teaching, not a product.

Munby (1978:2) defines ESP as, *"ESP courses are those where the syllabus and materials are determined in all essentials by the prior analysis of the communication needs of the learner"*. The notion of ESP courses and communication needs are emphasized in ESP context.

For Mackay and Mountford (1978:4), English for Specific Purposes is: "A restricted repertoire of words and expressions selected from the whole language because that restricted repertoire covers every requirement within a well defined context, task or vocation."

In this respect, ESP is a language tailored according to specific needs to match specific situations. Respectively, Mackay and Mountford (1978:2) adds that ESP:

> *" is generally used to refer to the teaching of English for a clearly utilitarian purpose, this purpose is usually defined with reference to some occupational requirements, (e.g.: for international telephone operators)… or vocational training programmes, (e.g.: for hotel and catering staff)…or some academic or professional study, (e.g.: engineering)…"*

Mc Donough (1984) thinks that ESP is a focus of language teaching activity which certainly has its own range of emphases and priorities. It is stressed that ESP is a kind of language teaching activity.

Johns and Dudley-Evans (1993: 116) propose the general and revised definition provided by Strevens in 1988 and which they seem to agree on. First of all, and according to this definition, ESP can be considered as the basis for broad divisions of various EAP (English for Academic Purposes), EOP

(English for Occupational Purposes "e.g. English for Business"), and EVP (English for Vocational Purposes). EAP includes also EST (English for Science and Technology) as an important part of ESP because there is a greater demand on science and technology for the purposes of transferring scientific knowledge and of mastering technology.

Secondly, Strevens (1988) attempts to describe ESP with its possible characteristics. He distinguishes "four absolute characteristics" from "two variable characteristics". The four absolute characteristics correspond to the identified needs of the learner, the topics under study and the content to be taught, contrasting ESP with *"general English"*, and ESP in relation to *"syntax, lexis, discourse, semantics, etc., activities"* (Johns and Dudley-Evans, 1993: 116). In fact, they are the necessary features to identify such a process as being ESP. The two variable characteristics, on the other hand, are that they may or may not be part of the whole process in particular situations. They consist in, first, teaching ESP without following any existing methodology simply because it may not be appropriate in certain cases, and second, restricting teaching the skill or skills to be learned. Briefly saying, these characteristics can be considered as the necessary criteria for the fulfillment of ESP teaching which focuses on the learner's needs seeking for successful learning and without wasting time.

According to Johns and Dudley-Evans (1993: 117), among the characteristics enounced by Strevens (1988), two important aspects (absolute features), namely needs assessment and discourse analysis, have particularly attracted the attention of the researchers because of their primary importance and to which they have given priorities. For example, Johns (1991), Robinson (1989, 1991), Jacobson (1986), just to name only few of them, have used needs assessments in order to identify and to understand the complexity of the ways learners acquire and use language for specific tasks. In discourse analysis, researchers have developed different approaches to know how syntax,

semantics, lexis, etc. are introduced and used in scientific subjects (EST), in authentic texts either for academic or occupational purposes.

Among the first works that were achieved in the early sixties concerning these absolute characteristics, in discourse analysis, there is an important contribution of Barber published for the first time in 1962. As Johns and Dudley-Evans (1993: 117) state, Barber's work is based on an analysis of important features of language met in authentic texts and that he calls "word or item counts". Widdowson (1983) and Swales (1990) have also worked with the same view in mind to understand how learners use these features of English language in various situations.

Another and second important approach based on "communicative notions" has inspired Kennedy (1987) for example, who contributed with his work to develop discourse analysis. The third approach based on text feature analysis and particularly on the principle of *concordancing* is used by Johns (1991) and Strevens (1988). This concept of *concordancing* has been applied in material design in classes of science and technology.

Some other approaches have been developed concerning text analysis, but Swale's approach (1990) provides useful information of great insight in an original contribution which he calls "genre-analysis" and which is influential for reading texts in science and technology.

The aforementioned approaches deal with written discourse, but a few researchers have thought about investigating both spoken and written discourses in one particular field, for instance Dubois (1987, 1988) in biomedicine, Bazerman (1989) in physics, and Dudley-Evans (1998) in economics. Nevertheless, whatever the kind of analysis which is undertaken, it is focused on the learner who is now the centre of interest of this ESP trend. Besides, wide perspectives are to be opened to the learner and new goals are to be pursued.

Dudley-Evans and St. John (1998), in a more recent study, have modified Strevens' (1988) definition and exposit their revised view on ESP in terms of 'absolute' and 'variable' characteristics.

Absolute Characteristics

- ESP is defined to meet specific needs of the learners;
- ESP makes use of underlying methodology and activities of the discipline it serves;
- ESP is centered on the language appropriate to these activities in terms of grammar, lexis, register, study skills, discourse and genres appropriate to these activities.

Variable Characteristics

- ESP may be related to or designed for specific disciplines
- ESP may use, in specific teaching situations, a different methodology from that of General English
- ESP is likely to be designed for adult learners, either at a tertiary level institution or in a professional work situation. It could, however, be for learners at secondary school level;
- ESP is generally designed for intermediate or advanced Students;
- Most ESP courses assume some basic knowledge of the language system, but it can be used with beginners. (Dudley-Evans and St. John, 1998:4-5)

This definition shows clearly what are the absolute characteristics that can be found in any field of ESP, whereas for the variable characteristics; the investigator can notice what changes from one branch to another in the ESP realm.

For Hutchinson et al. (1998:19):

> *"ESP is an approach to language learning based on learners' needs. Thus, ESP is goal-directed, it is an approach to language teaching in which all decisions as to content and method are based on the learners' reason for learning. Yet, ESP should be seen only as an approach to teaching not as a product".*

Dudley-Evans and St John (1998), while defining ESP, stress on two aspects of ESP methodology. All ESP teaching should reflect the methodology of the disciplines and professions it serves; and more specific, in ESP teaching the nature of the interaction between the teacher and learner may be very different from that in a general English class. This is what they meant by 'specific ESP teaching has its own methodology'. They also believe that language should be included as a defining feature of ESP.

While the specified needs arising from needs analysis relate to activities that students need to carry out (rather than language) , a key assumption of ESP is that these activities depend on associated language that students need to be able to manipulate to carry out the activity .

Tomlinson (2003: 307) points out that *"... English for Specific Purposes (ESP) is an umbrella term that refers to the teaching of English to students who are learning the language for a particular work or study-related reason"*. ESP is concerned with different areas based on academic or professional fields where English of specialism is needed such as business, medicine, law, engineering, history, art, etc.

In the same line of thought, Basturkmen (2006:18) in her turn, states that:

> *"ESP is understood to be about preparing learners to use English within academic, professional or workplace environments and a key feature of ESP course design is that the syllabus is based on an analysis of the needs of the students."*

While examining the set of definitions cited above, we may say that the majority of researchers agree on the fact that ESP is about both specific context and the learners' specific needs for learning the target language. According to Harding (2009: 07), the sense of ESP is related more with two elements: purpose and vocation. He says that *"... ESP is the coal-face of International English: it is its practical application. And it's not just the coal-face: it's the production line, the operating theatre, the reception desk, and the building site".* ESP is a very important field of teaching; it is the practical implementation of English language teaching.

Kaosar (2014) shows (in the following table) that English for Specific Purposes is specialized English language teaching to develop specific skills according to the needs of the learner. During the first few decades, the science of ESP has developed considerably.

Stage	**1970s-1980s**	**1980s-2000s**	**21st Century**
Teaching Modes	Structural	Communicative	Integrative
View of Language	Structural (a formal structural system)	Cognitive (a mentally-constructed system)	Socio-Cognitive (developed in social interaction)
English-Teaching Paradigms	Grammar Translation and Audio-Lingual	Communicative Language Teaching	Content -Based, ESP/EAP

Table1.1: ESP and Learners' Needs (Kaosar, 2014: 2, quoted from Kern & Warschaeur, 2000 :11)

From this table, we may consider that ESP has developed through time: as far as the teaching modes are concerned, it started with the structural mode then moved to the communicative one to develop to the integrative. It was viewed as structural then cognitive to end with development in social interaction. It was taught through Grammar translation and audio-lingual methods. However, this did not help much since learners tended to be frustrated when it came to communication. That is to say, though they knew grammatical rules by heart, they failed to speak. From this, the communicative approach appeared to give learners the opportunity to speak fluently without giving too much attention to grammatical mistakes, i.e., content-based (ESP/EAP).

1-3 Background of ESP

The field of English for Specific Purposes has developed to become a major force and prominent area in ELT and research. It refers to the teaching of a specific language whether scientific or technical to students with specific goals in all domains.

1-3-1 The Concept of Specialized Language

ESP is an approach to language teaching. In this new branch of teaching, the methods and content are based on learners' goals. In other words, it looks for the reasons behind learning this language as well as the nature of the learning context. Hutchinson and Waters (1987:19) state that: *"ESP is an approach to language teaching in which all decisions are based on learner's reason for learning".* Thus, ESP is an approach to language teaching which is directed by specific needs and determined by reasons for learning.

The term specialized represents situations where the learner has some specific goals to learn English. In the same vein, Harmer (1983:1) defines ESP as follows: *"Situations where the student has some specific reasons for*

wanting to learn a language" .i.e. ESP has developed to meet specific learners' needs of language. Moreover, Basturkmen (2006:18) argues that:

> *"In ESP, language is learnt not for its own sake or for the sake of gaining general education, but to smooth the path to entry or greater linguistic efficiency in academic, profession workplace environments."*

This means that ESP seeks to develop the learners' competencies in different areas, such as: specific field, profession, or workplace.

Finally, it is necessary to add that ESP is an important branch of ELT, to the extent that it gives importance to the learning process. In other words, the focal point of this area of research is the learners' needs in their specialty. This enables them to use the language appropriately in the different specific contexts.

1-3-2 Types of ESP

The English language has attained the status of a global language. English language has become internationally the most accepted language, due to the overall authority of English over the world economy and business and within the scientific flow in all the fields namely technology, medicine, engineering, etc. According to Strevens (1987:56) *"English is used by more people than any other language on the earth, although its mother-tongue speakers make up only a quarter or a fifth of the total".*

The tree below represents some common divisions made in ELT. The top branches of the tree show the level at which ESP courses occur. The branches below this level indicate that they can be divided into two main types of ESP considering whether the learner requires English for Academic study (EAP) or for work / training, such as English for Occupational Purposes (EOP), English for Vocational purposes (EVP), or Vocational English as a Second Language (VESL).

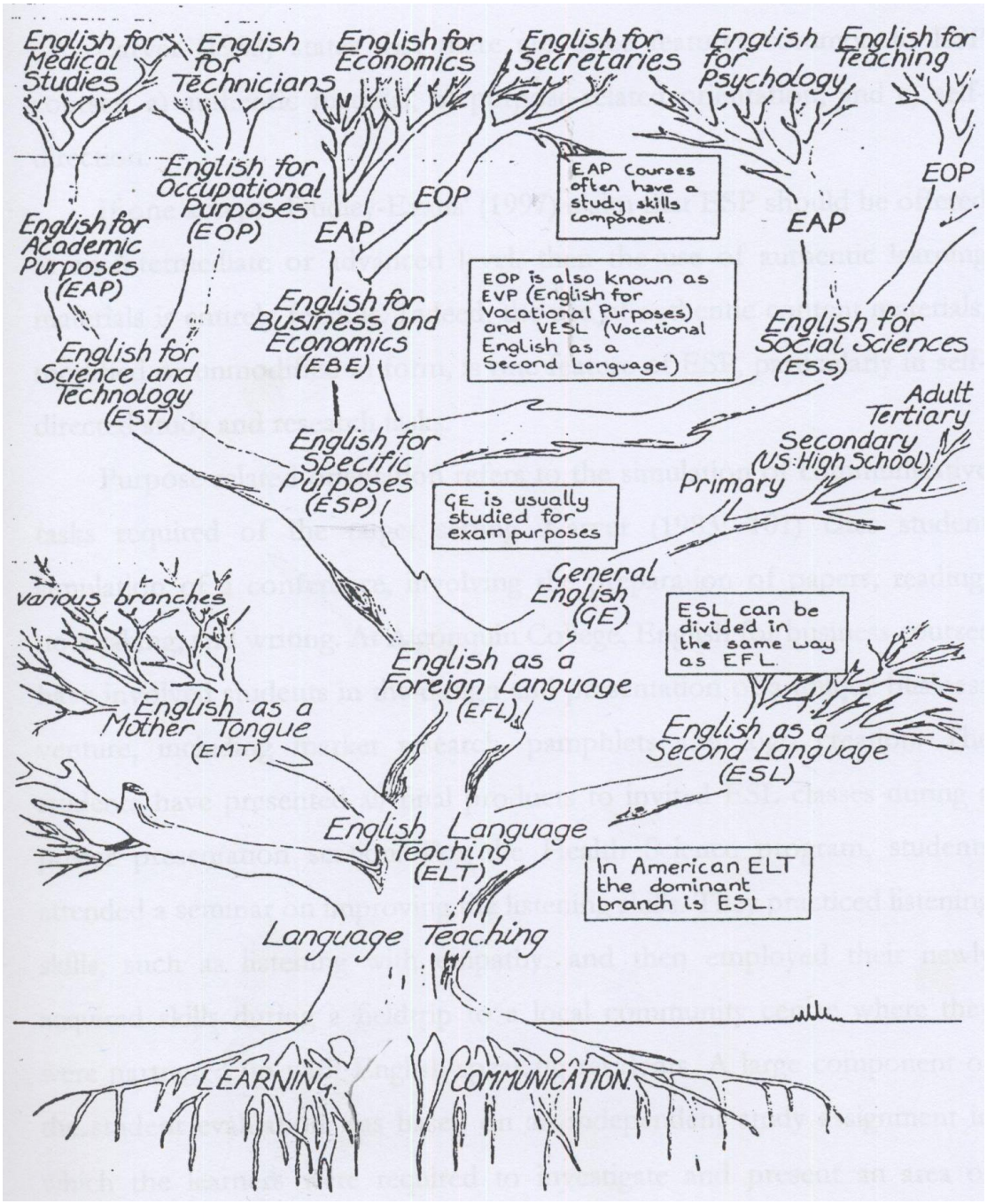

Figure 1.1: ELT tree, Hutchinson and Waters (1987: 17)

From the tree above, we may consider that People can study and work simultaneously. Therefore, it is not a clear-cut distinction. In addition, the language learnt or used in a study environment will be used later when the student returns to a job. As for the next level, it is likely to distinguish ESP

courses by the general nature of the learner's specialization. Three large categories could be distinguished here: EST (English for Science and Technology), EBE (English for Business and Economics) and ESS (English for the social sciences).

Hence, ESP today is taught in all the scientific and technological fields and it is divided by many specialists into different acronyms as it will be shown below:

A) English for Academic Purposes (EAP)

English for Academic Purposes is learnt because it is part of the curriculum. It entails training students, usually in a higher educational setting, to use language appropriately for study. Yet, in order to understand (EAP), one has to look at the different classifications made by different subject-specialists of the teaching/ learning language. Hence, according to the tree of Hutchinson & Waters (1987) simplified in figure (1.1), EAP is a sub-branch of ESP that is divided into: English for Science and Technology (EST), English for Business and Economics (EBE), English for Social Science (ESS). Every one of these branches is divided into two: for work and for academic study which have their own branches depending on the learners' needs and qualifications.

Moreover, according to Kennedy and Bolitho (1984:5) adapted from Strevens (1977) ESP is divided into two parts: English for Occupational Purposes (EOP), and English for Academic Purposes (EAP). All in all, (EAP) is placed under the heading of ESP, but in fact, what distinguishes EAP from other fields of ESP? According to Coffey (quoted by Jordan, 1997:4), EAP has two divisions: Common Core or Subject Specific. This reminds us by the definition proposed by Dudley-Evans and St. John (1998) of *Absolute* and *Variable* characteristics. The two divisions have been described by Blue (quoted by Jordan, 1977:4) as: English for General Academic Purposes (EGAP), and English for Specific Academic Purposes (ESAP).

Nonetheless, the point is crucial that more than often academic activities bear a research character and thus the use of English for academic purposes cannot be strictly separated from the use of English for research purposes (Kramina, 2000:40). Thus, foreign language learning where English for Academic Purposes is an innovative activity (Ilyinska, 2004: 18) is an integral part of research.

The purpose of EAP is to teach specific skills such as: reading texts, writing reports, taking notes and so forth for students at the tertiary-level institution.

In this vein, Kennedy *et al* (1984:4) point out that: "*EAP is taught generally within educational institutions to students reading English in their studies."*

B) English for Occupational Purposes (EOP)

The acronym (EOP) stands for English for Occupational Purposes. Thus, one may not see a clear distinction between EAP and EOP, so is for Hutchinson and Waters (1987: 16):

> *"this is, of course, not a clear-cut distinction: people can work and study simultaneously; it is also likely that in many cases the language learnt for immediate use in a study environment will be used later when the student takes up, or returns to, a job."*

Perhaps this explains Carter's rationale for categorizing EAP and EOP under the same type of ESP. However, EAP and EOP are different in terms of focus on Cummins (1979) notions of CALP versus BICS. BICS refers to the language skills used in the everyday informal language used with friends, family and co-workers, whereas CALP refers to a language proficiency required to make sense of and use academic language. Hence, Kennedy and Bolitho (1984) presented a clear distinction between the two acronyms EAP

and EOP in which ESP is divided into two disciplines: Occupational and Academic Training, as presented in the diagram below:

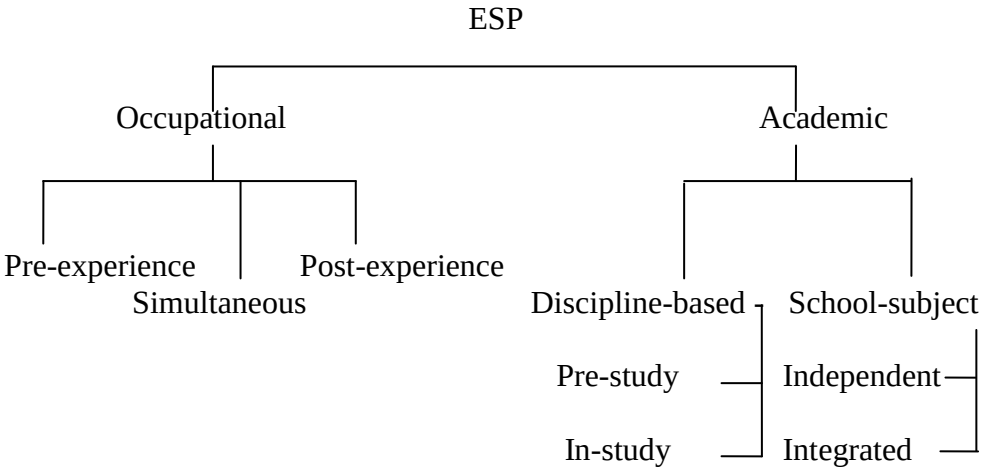

Diagram 1.1: Types of ESP Courses,
Source: Kennedy and Bolitho 1984:5 adapted from Stevens 1977

According to the diagram above, ESP is divided into two disciplines: Occupational and Academic Training. Within English for Occupational purposes, one can distinguish three forms of language acquisition: Pre-experience, Simultaneous, and Post-experience. As far as English for Academic Purposes is concerned, it is divided into two main training methods. The first one is discipline-based and here the academic English is considered as a discipline in itself, not only a vocational language which is divided into a pre-study training and In-study training. The second one is school-subject which means that English is part of the curriculum and it is divided into: *independent* subject (taught as a language study), and *integrated* subject (when it is taught in connection to a specific school subject).

All in all, Helen Basturkmen (2006: 11) posits that:

> *"ESP is concerned with preparing students to enter target discourse communities (academic, professional, and workplace) with distinct and evolving communicative practices."*

Although there are differences concerning the types of ESP, the two categories of EAP and EOP are widely accepted nowadays in ESP teaching area. The purpose of EOP is to fulfil occupational purposes which may include: medicine, law, banking, administration and so forth. Kennedy et al (1984: 4) write: *"EOP is taught in a situation in which learners need to use English as part of their work profession."*

A similar, but a more recent definition has been given by Dudley-Evans *et al* (1998:7) in which they assert that:

> *"The term EOP refers to English that is not for academic purposes, it includes professional purposes in administration, medicine, law and business and vocational purposes for non-professionals in work or pre-study work."*

The diagram below adapted from Johns (1991) shows that ESP has been divided into two main areas: EOP and EAP. The latter has two subdivisions: EST and EAP. Apart from EAP which has been divided into two main branches where EST appears as the oldest branch of ESP and EAP which includes all other labels regardless EST. EOP has its own two major fields, too: EPP 'English for Professional Purposes' and EVP 'English for Vocational Purposes'.

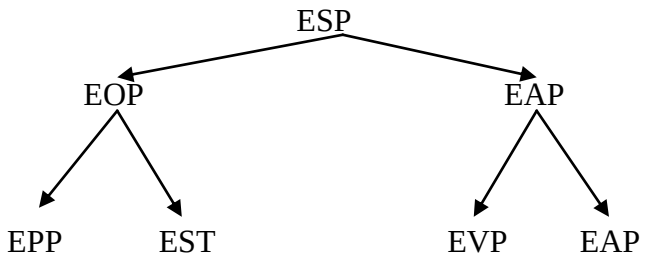

Diagram 1.2: Subdivisions of ESP (Johns 1991 quoted in Jordan 1997: 3)

To sum up, it can be said that trends described in EAP were also present in EOP.

EOP which is either for professional or vocational purposes is about preparing learners to better cope with the requirements of everyday working needs. Whereas EAP courses aim to prepare learners for the studies they will embark in. The focus is on common-core academic language and skills.

C) EAP Vs EOP

The main subfields within ESP state that *"there is no clear-cut distinction"* and they argue that *"in many cases the language learnt for immediate use in a study environment will be used later when the student takes up, or returns to, a job."*(Hutchison *et al* 1987:16)

Years later, Robinson (1991:100) offers a distinction between these two subfields by stating that: *"EAP is thus specific purpose language teaching, differentiated from EOP by the learner: future or practicing student as opposed to employee."* In other terms, the main concern of both EAP and EOP is the learner where his either present or future situation may define his needs as well as the type of ESP course he may engage in.

D) English for Science and Technology (EST)

One area of activity has been particularly important in the development of ESP, is the area usually known as EST (English for Science and Technology). EST has been a matter of debate among researchers, among them McDonough (1984), and Dudley-Evans *et al* (1998), whether it is a branch on its own or a sub-branch shared by both 'EAP' and 'EOP'. The following diagram illustrates this idea:

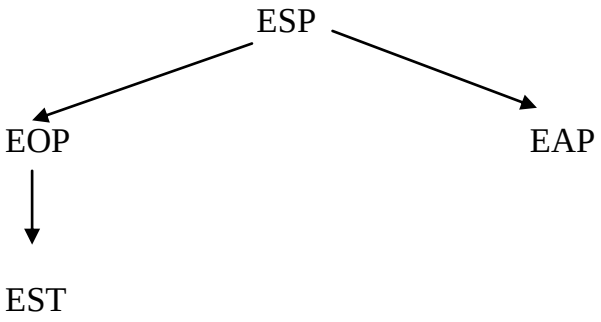

Diagram 1.3: Subdivisions of ESP (Adopted from McDonough 1984:6)

In this diagram, McDonough (1984) has put EST as a subdivision of EAP in which he emphasized the view that it has an academic orientation. 'EST' refers to teaching English for Scientific and Technological purposes. In this trend, Kennedy *et al* (1984:6) argue that: "*The term 'EST' presupposes a stock of vocabulary items, grammatical forms, and functions which are common to the study of science and technology."* They elaborate further for more precision and clarification to this notion by stating that *"EST is simply an important branch of ESP dealing with scientific content."*(ibid)

Swales (1985: 9), in fact uses the development of EST to illustrate the development of ESP in general:

> *"With one or two exceptions…English for Science and Technology has always set and continues to set the trend in theoretical discussion, in ways of analyzing language, and in the variety of actual teaching materials."*

English for Science and Technology (EST) has been often considered as one of ESP major subdivisions. It is an approach to teach English scientific discourse. It has already been mentioned in the course of ESP development that there were an increasing number of scientists and technologists who needed to learn English for a number of purposes related with special technical fields. Thus, EST emerged as an adequate branch of ESP with the aim to satisfy those learners' needs. In this regard, Kennedy & Bolitho (1984: 6) again state that much of the demands for ESP have come from scientists and technologists who need to learn English for a number of purposes connected with their specialties. It is natural; therefore, that English for science and technology should be an important aspect of ESP proposed by Strevens (1977).

In fact, for many years, EST has been considered as that type of English devoted for science and technology. Just like ESP, various definitions have been given to EST. Widdowson (1979:45), for instance, defines EST not as a separate operation but as a development from an alternative realization of what has already been learnt, that is to say, of existing knowledge. In other words, EST is an amalgamation of the students' background use of scientific knowledge and their English language usage. Many other linguists share Widdowson's view as Hutchinson and Waters (1987) who assert that the knowledge that science students possess should be used as a base for target language learning. Furthermore, Dudley- Evans and St. John (1998) state that

> *"English for specific purposes, and consequently (EST) which is a branch of the former, is centred on the language appropriate to*

the activities of the discipline it serves in terms of grammar, lexis, register, study skills, discourse and genre."

Hence, according to the previously mentioned fact, an EST curriculum should enable the students of science to:

•Obtain information by reading and understanding different text types in science and technology in English.

•Present information pertaining to science and technology at an appropriate level in written or spoken English.

•Think critically and give points of view on issues belonging to science and technology.

It is worth mentioning that Swales (1985) classified three categories under EST:

1. The first one deals with the level of education depending on the context in which it is taught, for example, English taught in: secondary school, and universities.

2. The second category concerns the subject matter, i.e., when English is used for general science, biology, and so forth.

3. The last category deals with the types of activities involved such as: reading, writing, and attending seminars.

Last but not least, it should be mentioned that our study will focus on the third category, namely, the scientific texts' reading comprehension analysis. Thus, in the next stage of our discussion we will attempt to present a portrait of Widdowson's description of the scientific discourse.

Widdowson is considered as one of the most prominent figures who attempted to give a detailed description of the scientific discourse characteristics in Great Britain in particular. Before tackling what exclusive

views Widdowson contributed within the conception of EST discourse, let us first depict some of Widdowson' criticism to those who still believe that EST can be adequately taught through a typical register of specific discourse through the identification of most frequent syntactic and lexical structures. In this regard, Widdowson (1979:38) states: *"I have expressed elsewhere my doubts about the efficacy of the structural approach in general and about its appropriateness for the teaching of science and technology in particular."*

Moreover, Widdowson stands against all views that care only for the surface structure and neglect the deep structure in scientific discourse. According to him, the identified linguistic patterns represent only the apparent surface structure of EST discourse which become with little effect whenever isolated from their context. In fact, it is just a manifestation of the English language usage without any reference to the communicative aspects of language. According to Widdowson (1978: 52), the deep structure is strongly linked to the nature of the scientific text with which a secondary universal code of communication is shared by all scientists in which "*The scientific discourse is a universal mode of communicating, or universal rhetoric which is realised by scientific texts in different languages by the process of textualisation."*

Widdowson considers the scientific discourse a composite of two but related elements: the deep structure that holds the feature of textualisation which is realized by means of language or the surface structure. By textualisation, Widdowson refers to the whole notions, concepts and procedures that characterize the scientific discourse. Widdowson (1979:39) also denotes that the communicative functions of scientific discourse are often neglected whenever a transition from ELT to EST is carried out. For such drawbacks, Widdowson suggested some major remedies. Before hand, he (1979:42) defined the scientific discourse as the verbal and non-verbal realisation of communicative system of science. By non –verbal realization, Widdowson refers to the formulae, diagrams, charts and graphs that constitute modes of communication and at the same time other characteristics of scientific

discourse. According to him, scientific discourse is a set of concepts and procedures that are independent not only in language but also in subject. In other words, the organization of language in its functional realization to produce coherent text in the area of science is universally similar and the only difference is in the text form. His concept to the scientific discourse universality is simply shown in the following figure:

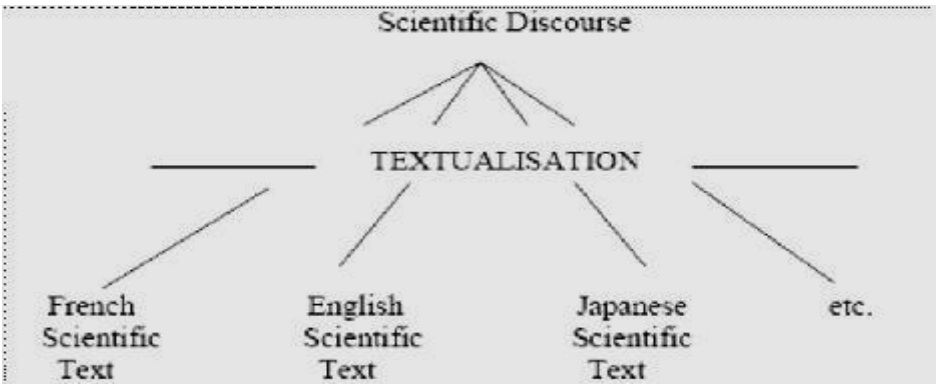

Figure 1.2: Scientific Discourse Universal for All Languages (Widdowson 1979: 52)

Furthermore, he made hint to an important fact when he states that a distinction should be made between teaching the discourse of science as a subject and teaching it as a discipline. In this regard, he (1979:52) says,

> *"The discourse of scientific instruction of science as a subject, such as appears in textbooks, for example, is different from the discourse of scientific exposition, of science as a discipline, and such as appears in research papers."*

He explains that this difference lies in the fact that teaching sciences to the learner at the early stages is much supported by the learner's own experience; or let us say his primary culture. However, along with his or her instruction, the learner develops a secondary culture and approximates to a scientist. At such a stage, the discourse of science as a subject becomes a means to present the discourse of science as a discipline. Again and along with

the idea of textualisation, Widdowson (1979) states that the learner in a teaching situation can use both the previous knowledge of science acquired in his or her own native language and the knowledge of English (usage) to produce an English scientific discourse (use).

Scientific knowledge is not different from other personal knowledge (Polanyi 1962). If we want to make it different instead of trying to make it simply better, it will be the death of science. Similarly, using modernism in economics does not lead to applicable economics but stops progress (McCloskey 1983).

In Economics lots of canons of the 'received views' come from logical positivism. Several of them are rejected by Rhetorical economics. As modern economics states, 'being Scientific' means being different from the rest of society. The main project of the positivist movement was to demarcate science from other forms of thinking. As the following Table shows, we can see how the world is divided into objective and subjective, scientific and humanistic and hard and soft halves. Naturally, all our scientific knowledge can come from the scientific half.

Scientific	Humanistic
Fact	Opinion
Objective	Subjective
Positive	Normative
Vigorous	Sloppy
Precise	Vague
Things	Words
Cognition	Intuition
Hard	Soft

Table 1.2. Dividing the world into scientific and non-scientific halves (McCloskey 1983:510.)

Thus, one may argue that Rhetorical economics has several advantages. The style of economics is neither beautiful nor understandable so rhetorical economics could have a key role in improving the language and style of economics. Rhetorical economics could be of a great help in the teaching of

economics as well: instead of focusing on axioms and verification, concentrating on practice, on the solution of a problem and on scientific discourse between teachers and students should be more efficient.

Carter-Thomas and Rowley-Jolivet (2001) have compared two scientific genres: written proceedings articles and oral conference presentations in physics. Of the four structures analyzed in detail here, extraposition is the only one to occur more frequently in the written articles than in the oral presentations. It is widely employed in the articles not only as a hedging device but also as a means of facilitating information processing for the reader by enabling the given and new elements to be distributed more evenly over the sentence. In the oral presentations, in contrast, such a device is used far less frequently because it is not needed.

The second specialized structure that is found in both modes, namely existential *there*, shows the opposite distribution, being far more frequent in the oral presentations than in the articles. While its traditional function of introducing a new referent into the discourse is apparent in both modes, its role as an enumeration device appears to be particularly marked in the oral presentations, where it helps the audience to follow the discourse organization and to process sequential information. The two authors surmised that the same role was fulfilled by typographical devices in the written article. The use of existential *there* in spoken and written science indicates that the same specialized structure may, therefore, be used in both oral and written modes but not necessarily in response to exactly the same information packaging needs.

It is in the use of the remaining two structures, pseudo-clefts and inversion that the differences in information packaging requirements between spoken and written science appear most clearly. Neither occur in the proceedings articles, but both are frequently used by speakers in their presentations. Pseudo-clefts serve to slow down the discourse flow in the oral presentations, highlighting the division between given and new information and

helping the listener to focus on a particular item of information. They would therefore interpret the use of this syntactic resource as being linked to the constraints of the real-time processing of information in speech.

Live communication is ephemeral in nature; as a result, the speaker needs structures which enable him to refocus the audience's attention whenever necessary in order to ensure that they do not lose the thread of his argument. Writing, on the other hand, is not ephemeral, and so does not require such attention markers to the same extent.

The use of inversion in the oral presentations seems having the same function of assigning focus to new information. Furthermore, this structure plays a great role in ensuring that the principle of end-weight is respected. The main reason for its frequent occurrence in scientific conference presentations is the communicative context of this genre, namely the need for the speaker to integrate the verbal and the visual two channels of communication. For drawing the audience's attention to the visual display, prior to commenting verbally on it, and for guiding the audience's reading of the visual itself, inversion is the preferred structure.

Indeed, inversion with an initial place adverbial is such a natural packaging strategy in this enunciative context that the very term 'inversion' would seem to be a misnomer. They believe that by studying information packaging arrangements we can gain greater insight into why, in a specific context, certain structures are preferred or not. The implications of this in pedagogical terms are numerous. Their study is in fact part of a wider project in which they intend to go on to study the differences between how native and non-native speakers package information. Carter-Thomas and Rowley-Jolivet 2001: 19) state that:

> *"... specialised structures are not always used efficiently by non-native speakers in science. Non-native speakers seem to differentiate less between written and oral modes of scientific*

> *communication, tending to overuse, in oral presentations, structures that are typical of writing such as the passive, and not to use structures that are typical of speech such as pseudo-clefts and inversion. In other words, they lack pragmatic competence. As a result, this makes their discourse much more difficult for the listener to comprehend and process."*

Eszter Petho 2005, while defining the concept of 'rhetorical economics', quoted:

> *"Rhetoric is the study and practice of persuasive expression, an alternative since the Greeks to the philosophical programme of epistemology. The rhetoric of economics examines how economists persuade – not how they say they do, or how their official methodologies say they do, but how in fact they persuade colleagues and politicians and students to accept one economic assertion and reject another."*

(Eatwell 1987:174 in Eszter Petho 2005: 1)

Jean-Claude Beacco, Daniel Coste, Piet-Hein van de Ven and Helmut Vollmer et al (2010) elicited the relationship between knowledge and language and explained that language is both an instrument for social communication and it has been used, through oral transmission and writing, to fix and store information and knowledge. It also enabled it to be transmitted over time, this verbal representation of knowledge has allowed for discussion and scientific disputes.

They carried on explaining that the scientific and technical fields are defined by shared forms of knowledge building based on common protocols and concepts. In this respect, they are communities of practice which bring together social players sharing research objects, ways of building, discussing

and validating knowledge, and a collective history. This collaborative knowledge building, where ideas and results are shared, creates a specific culture and interrelated institutions: team, laboratories, research centers, academies, journals etc.

The teaching of vocabulary and scientific subjects is not simply a matter of learners learning new words denoting new concepts or new categories related to the particular area of study, in the first instance because the words of knowledge are also ordinary words and it therefore involves something other than a set of strictly defined and unambiguous lexical items. It will be important, however, to master, to varying degrees depending on the level of scientific competence aimed for, the rules for forming the terms of specialist vocabularies (e.g. the significance of suffixes (*-isis, -asis, -osis* etc in medicine or chemistry), the role played by abbreviations (*DNA*), compound word formation, etc). Jean-Claude Beacco, & all, (2010:10) argued :

> *.....In addition to the differences in discourse genres from one language to another, knowledge is expressed and disseminated in the form of different genres. In the case of published texts, for example, the following may be identified: genres internal to communities, where new knowledge is expounded and discussed; genres for transmitting knowledge outside scientific communities through education (textbooks, course books, summaries etc),with the necessary forms of didactic transposition; genres used for dissemination or popularisation: magazines aimed at the general public, encyclopaedias etc.....*

From this perspective, one may argue that language is essential for structured subject teaching leading to scientific literacy. We should not forget that school is responsible for providing all learners with solid experience of scientific knowledge: such knowledge is necessary for their understanding of

the world and their personal and social life, where ignorance is always a major drawback.

E) English for Business and Economics (EBE):

If tracked further down in the tree of Hutchinson and Waters (1987), EBE is one branch of ESP that can be divided into EAP and EOP. However, what is the scope of EBE in particular? This is quite difficult to answer. Dudley-Evans and St. John (1998) maintain that: "*Business English is difficult to define and limit in linguistic terms".* (1998: 54). The term encompasses a wide range of ESP courses, to such an extent that it is becoming common practice to speak of General Business English (Boswood, 2002). Furthermore, many English teaching methodologies are applicable both in teaching BE and ESP. Thus, EBE is still part of TEFL and within the scope of ELT in general.

Then, Business English courses taught in colleges and universities can generally be regarded as EAP, although it is hard to make a clear-cut distinction EAP and EOP, for, the end purpose since they both prepare for employment in the end. However, the means and ways to achieve the end purpose may differ from each other due to the different scope and focus in teaching areas. Hence, with globalization widespread, many organizations and companies are now operating across national boundaries, and employees need to have cross-cultural understanding (Liu & Beamer, 1997).

Besides, the last but not least problem in EBE is the requirement for teachers or practitioners who are engaged in practical teaching and materials or curriculum design. Hence, as for the level of ESP teacher's subject knowledge, it is generally thought (Dudley-Evans and St. John, 1998); (Robinson, 1991) and (Hutchinson and Waters, 1987) that the teacher must have a working knowledge of the conceptual framework of the subject and actively engage the learner.

ESP in general and EBE in particular are an approach and a bridge between general English teaching and business teaching in English. Then, EBE practitioners should assume more roles and responsibilities than common language teachers. ESP has emerged to satisfy learners' needs. According to Kennedy and Bolitho (1984), some of those needs are important for their studies, whereas others are crucial for their work and profession. The former is called English for academic purposes (EAP) and the latter is referred to as English for occupational purposes (EOP). EAP and EOP are the main common parts that can be subsumed under the field of ESP. Each of which has its own characteristics.

Due to its development, ESP is divided into two main categories according to Hutchinson and Waters (1987) which are:

- English for Academic Purposes (EAP)
- English for Occupational Purposes (EOP).

Robinson (1991:2) points out that: "*The students study English not because they are interested in the English language or English culture as such but because they need it for study or work purposes."*

In other words, English is learned whether for Academic or Occupational Purposes. This is related on the field of study in which English is taught. Evans and St John (1998:7) have provided a diagram through which they classify EAP and EOP according to the discipline.

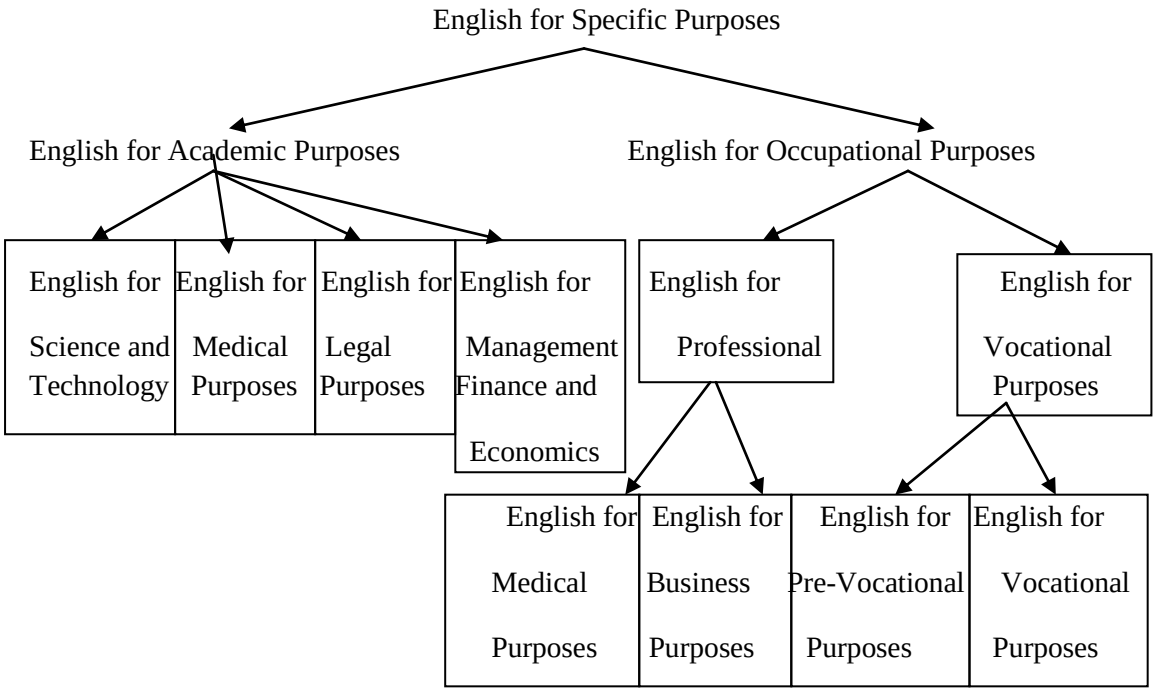

Figure 1-3 ESP Classification by Professional Area (adapted from Dudley Evans and ST John, 1998:6).

In EAP, English for Science and Technology (EST) has been the main area. It is a discipline that includes this language at tertiary level. English is also taught for Medical Purposes (EMP) and for Legal Purposes (ELP) at this level. English is taught in all the domains: Business, Finance, Banking and Economics. Thus, learners have to study English to achieve educational purposes as Kennedy and Bolitho (1984) note that: "EAP is taught, generally within educational institutions to students needing English in their studies". Thus, English is available in all the domains for making learners as competent as possible to communicate in different specialties.

The term EOP, on the other hand, refers to professional purposes in administration, Medicine, Law and Business. Moreover, in vocational purposes, there are two subdivisions: Vocational English is concerned with the language of training for specific trades or occupations, and Pre- Vocational English is concerned with finding job through interview skills (Dudley Evans, 1998).

What differentiates General English from Specific English is that General English (GE) is mostly used to refer to the English taught at primary, middle or secondary schools with an immediate objective for exams. However, in English for Specific Purposes (ESP) learners are generally adult highly motivated learners, having already some background knowledge of the English language seeking to learn English to fulfill particular purpose; academic, professional or scientific. Therefore, they are aware of their needs, i.e., the target needs. As a result, learners' awareness is supposed to be of a significant importance and even much higher than that of General English.

ESP is learning and learner oriented, with a conception and preference for communicative competence. Defined to meet the specific needs of the learners, ESP makes use of methodology and the activities of the discipline it serves by focusing on the language appropriate to these activities (Gatehouse, 2001). As a specific approach to language teaching, ESP requires that all decisions as to content and method be based on the learner's reason for learning (Hutchinson and Waters, 1987:19).

This can be illustrated in the figure below:

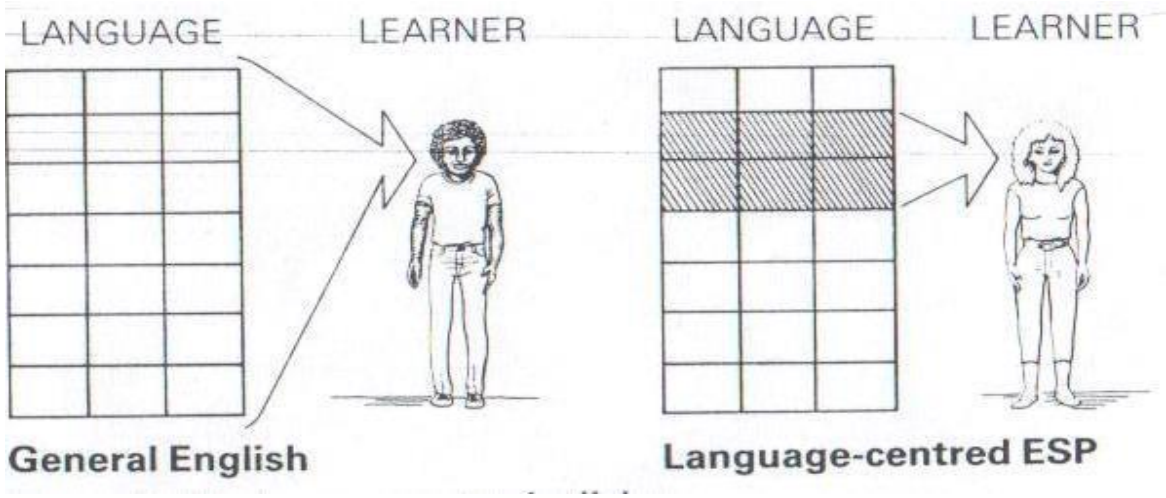

Figure 1.4: GE vs ESP (Hutchinson & Waters, 1987: 67)

This research is concerned with English in Computer Science for scientific purposes which is considered as a branch of EST. Thus, learners have

to be informed with all the new investigations in this area which are provided in English language.

1-4 Corpus Linguistics and ESP

Corpus Linguistics (CL) and English for Specific Purposes (ESP) have some common aspects:

- **innovative** methodology
- interest in **learning**
- by examining **data**
- which is **unfiltered**

Flowerdew (1998: 541-552), explains the necessity to have *"Corpus Linguistic Techniques applied to Textlinguistics".* Danielsson and Mahlberg (2003), point that: *"There is more to knowing a language than knowing its words: using parallel corpora in the bilingual classroom".* Pérez-Paredes (2003), too, states that: *"Small corpora as assisting tools in the teaching of English news language: A preliminary tokens-based examination of Michael Swan's Practical English Usage news language wordlist"*

He also finds that Swan's word list contains words not common in corpora and concludes that students need access to various corpora. Fuentes and Rokowski added "Using Corpus Resources as Complementary Task Material in ESP" (2003).

Pereira de Oliveira (2003), "Corpus Linguistics in the teaching of ESP and Literary Studies" are of a great importance. Scott (2005) tried to find out whether there is a link between Corpus Linguistics and ESP. He explained the rapidly-developing field of Corpus Linguistics (CL) and its potential for informing ESP teachers, researchers and students. Celani (2005) asked the following questions: What is available now in CL? Is the traffic one-way or can

ESP inform CL too? Does CL only help us understand the characteristics of genres or can it help us get at topics such as how learners might cope with it, e.g. via key words?

From what was said above, one may think that today's structure involves us to study the characteristics of CL and the characteristics of ESP, to see whether there exist Linkages. It seems there are studies involving both. Thus, we are in need of directions for us to advance in.

As far as the characteristics of CL are concerned, we may cite:

-**Data**-driven,

-Empirical

-Generating theory

-… but not **driven by** theory

-**Discovery**-oriented

-Software/Tool-oriented

-Dependent on the corpora

-… but hardly **widespread**!

-Technology & gadgets

-Uncertain **status** as a discipline

-**Innovative** in methodology

-Focus on "the **language**"

As far as the characteristics of ESP are concerned, we also may cite:

-Forced upon us not by theory …

-…but by **globalization**

-Backs to the wall …

-… untrained teachers told to do it …

- so an origin of **desperation**

-Students **unhappy**

-Still uncertain **status** as a profession

-Challenging established practice

- use of L1
- mono-skill approach
- no textbook
- ELT methods (audio-lingualism, PPP, TBL etc.) not necessarily appropriate
- student knows more than teacher
- authentic text

-**Innovative** in methodology

1-5 Stages in ESP

The key stages in ESP are needs analysis, course design, materials selection, teaching and learning, and evaluation. These elements are not separate but linearly-related activities representing phases that are independent.

1-5-1 Needs Analysis

Having dealt with the concept of specialized language and the types of ESP, it is also worth to speak about needs analysis because ESP course is designed to meet specific needs of the learners. Therefore, it is necessary to analyse the needs of Computer Science master students.

Some terms have been introduced to describe the various factors and perspectives which have helped the concept of needs to grow. Thus, a confusing plethora exists, for instance, needs are described as objective and subjective (Brindley, 1989:65), perceived and felt (Berwick, 1989:55), target situation / goal- oriented and learning, process-oriented and product- oriented

(Brindley, 1989:63); furthermore, there are necessities, wants and lacks (Hutchinson and Waters, 1987:55).

Thus, needs analysis (NA) precedes pedagogy. The aim of needs analysis is to know learners as people, as language users and as language learners to know the target situations and learning environment to be able to interpret the data appropriately. The findings from a needs analysis are not single or unique; thus, they depend on who asks the questions and how the responses are interpreted. It is necessary to match needs analysis to suitable situations: needs analysis is a first step carried out before a course so that a course outline, materials and other resources can be in place before teaching begins.

1-5-1-1 Definition:

ESP is understood to be about preparing learners to use the English language within academic, professional or workplace environments. So that, the first step in an ESP course design is Needs Analysis. It is also known as needs assessment. It has an important role in the process of designing and carrying out any language course, especially in English for Specific Purposes (ESP). In this vein Hutchinson and Waters (1987:54) argue that: "*If we had to state in practical terms the irreducible minimum of an ESP approach to course design, it would be needs analysis".*

Evans (1998:121) has established the key stages in ESP which are needs analysis, course and syllabus design, teaching and learning situation, assessment and evaluation. These are the major steps of ESP content as they are shown in the following cycle:

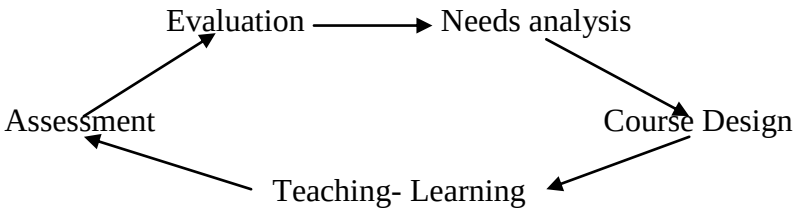

Figure 1-5 Stages in the ESP Process: Theory (adapted from Dudley Evans and ST John, 1998:121).

Thus, Evans sees that these are the major steps to contribute ESP content. One of them is needs analysis. In the same vein, Nunan (1988:13) focuses more on information-gathering process, he states that: "*techniques and procedures for collecting information to be used in syllabus design are referred to as needs analysis*."

According to Iwai et al (1999), the term needs analysis generally refers to the activities that are involved in collecting information. It will serve the basis for developing a curriculum that will meet the needs of a particular group of students. On the other hand, Richards and Platt (1992: 242-243) define needs analysis as: "*the process of determining the needs for which a learner or group of learners requires a language and arranging the needs according to priorities*".

Thus, this explains the specific purposes for which the language is needed and the situation in which the language will be used. It relies on gathering information about learners' level of proficiency in the English language through different methods taking into account:

> *"Age, sex, previous experience with second language learning, proficiency in the native language, personality factors, language attitudes and motivation, learning intelligence, sense modality preference, sociological preference, cognitive style, learner's strategies and learner's errors."*
>
> (Altman and James, 1980)

As a result, the notion of needs analysis deals with both personal and social developments of learners. It tries also to identify their behaviors through this language as well as methods of learning.

Moreover, needs analysis is interpreted in two different ways. This represents what has been stated earlier:

> *"On the one hand, it can refer to what learner needs to learn to do with language once he or she has learned it. This is goal-oriented definition of needs and relates to terminal behaviour, the ends of learning. On the other hand, the expression can refer to what the learner needs to do actually to acquire the language. This is a process-oriented definition of needs to transitional behaviour, the means of learning."*
>
> (Widdowson, 1981:2)

As a result, needs analysis explains what and how of a course. In other words, it determines the content of the course and behaviors of learners towards the language. In addition to this, it denotes what learners have to do in order to acquire the language in the specific context.

1-5-1-2 Types of Needs:

Hutchinson and Waters (1987:55) identify the following sub-divisions or taxonomies of needs analysis:

1-5-1-2-1 Target Needs:

They see that target needs are an important aspect in needs analysis, since they fall under three types of distinctions which are:

A) **Necessities:**

Necessities are determined by the demands of the target situation (Hutchinson and Waters: 1987), what the learner has to know in order to

participate effectively in the target situation. Thus, it is concerned with learners' needs in the target language for the sake of being communicatively competent and to use the language effectively in the specialized field.

B) **Lacks:**

Learners' necessities are not enough as a step in target needs. According to Hutchinson and Waters (1987:55-56) the concern in ESP is with the needs of particular learners. It is necessary to know what the learner knows already in order to decide which of the necessities the learner lacks.

C) **Wants:**

This step takes into consideration learners' views and wants and the reasons behind integrating this language in their specialization. Since they have an idea about their necessities as well as their lacks, certainly they can detect their wants from the previous steps towards that language. This step can help teachers a lot for course design since, they are informed about learners' wants for successful language learning and teaching (Hutchinson and Waters, 1987).

1-5-1-2- 2 Learning Needs:

This step will determine how learners will be able to move from the point of lacks to necessities. Hutchinson and Waters (1987:61) claim that: *"It is naive to base a course design simply on the target objectives, and that the learning situation must also be taken into account, since the target situation is not a reliable indicator."*

Accordingly, learning needs seek for more steps in the target language. It includes: knowledge, skills, strategies and motivation of learning. These concepts are very important aspects to conduct learning needs as a step in needs analysis. Bowers (1980) (quoted in Jordan, 1997: 26) has also noted the importance of learning needs:

> *"If we accept…that a student will learn best if what he wants to learn, less well what he only needs to learn, less well still what he either wants or needs to learn, it is clearly important to leave room in a learning program for the learner's own wishes regarding both goals and processes."*

Thus, target needs cannot fulfill the concept of needs analysis, since it does not look for the learning needs which are a necessary step in course design. It also looks for what learners need to learn as well as their language background.

Accordingly, needs analysis is divided into two main types: target needs and learning needs. The first one has three main steps which are: Necessities, Lacks and Wants. All these steps can be shown in the following diagram:

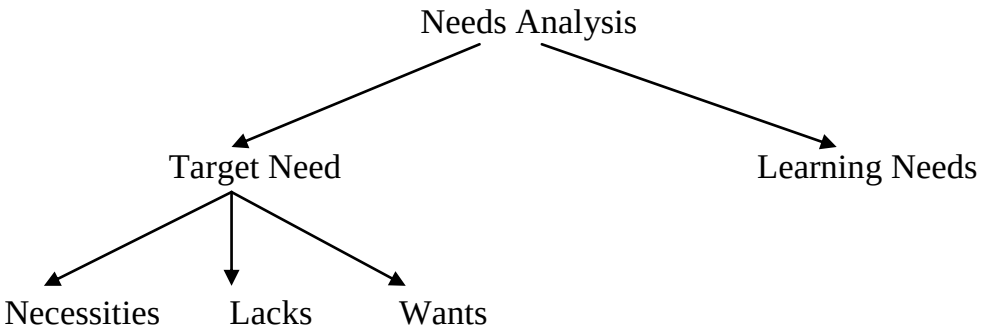

Figure1-6 The Taxonomy of Needs Analysis (adapted from Ounis, 2005)

1-5-1-3 Approaches to Needs analysis:

Under the classification of Hutchinson and Waters (1987) of needs analysis, the following elements have been developed:

A) **Target -Situation Analysis:**

Munby's approach (1978:23) focuses on students' needs at the end of a language course and target-level performance. Thus, he is concerned with communicative syllabus design. He adds that:

> *"Model collects data about the learner rather than from a learner …as a reaction, more recent needs analysis procedures have been developed which deliberately adopt a very different starting point, reasserting the value of the judgment of the teacher or involving the learner from the start".*

Thus, he argues that practical constraints should be considered in the needs analysis. Munby's approach is influential to the extent that it focuses on learners' development from the starting point. In the same vein, Hutchinson and Waters (1987:59) claim that: "*The analysis of target situation needs is in essence a matter of asking questions about the target situation and the attitudes towards that situation of the various participants in the learning process."*

Hence, they see that target situation analysis is concerned with questions about the target language in the learning process. Furthermore, these questions include attitudes and the participant's level in the target situation.

B) **Present-Situation Analysis:**

It is provided by Richterich and Chancerel (1977). The PSA deals with the students' state of language development at the beginning of the language course. Information is sought on levels of ability, resources and views on language teaching/learning. Thus, it is a combination between the two approaches: TSA and PSA.

C) **Strategy Analysis:**

Allwright (1982) is a pioneer in this area. His starting point was from the perception of the students of their needs. In this sense, he made a distinction between needs (the skills which a student sees as being relevant to himself), wants (those needs on which the student puts a high priority in the available, limited time), and lacks (the difference between the student's present competence and the desired competence). Allwright's concern is also to help

students to identify skill areas and their preferred strategies of achieving the skills.

D) **Means Analysis:**

An important step in the development of needs analysis is the attempt to adapt language courses to local situations, for example: materials, cultural attitudes and methods. This approach has been called means analysis (Holliday and Cooke 1982).

The importance of this approach is that it starts from positive points. In other words, what might be achieved with certain given factors. It allows sensitivity to situations which acknowledge the social context of education and give more attitudes to teachers.

1-5-1-4 The Role of Needs Analysis in an ESP Course Content:

Needs analysis has a vital role in the process of designing and carrying a course in an ESP context as explained by Basturkmen (2006:18) who states that: *"the task of the ESP course developer is to identify the needs of the learner and design a course around them".*

Accordingly, Evans and John (1998:125) argue that needs analysis in ESP determine the following steps (see figure 1-4):

- Professional information about the learners: the tasks and activities learners are/will be using English for- target situation analysis and objective needs.
- Personal information about the learners: factors which may affect the way they learn such as previous learning experiences, cultural information, reasons for attending the course and expectations of it, attitude to English- wants, means and subjective needs.
- English language information about the learner: what their current skills and language use are (present situation analysis).

- The learners lacks: the gap between present situation analysis and target situation analysis-lacks.
- Language learning information: effective ways of learning the skills and language- learning needs.
- Professional communication information about learners: knowledge of how language and skills are used in the target situation.
- What is wanted from the course.
- Information about the environment in which the course will be run (means analysis).

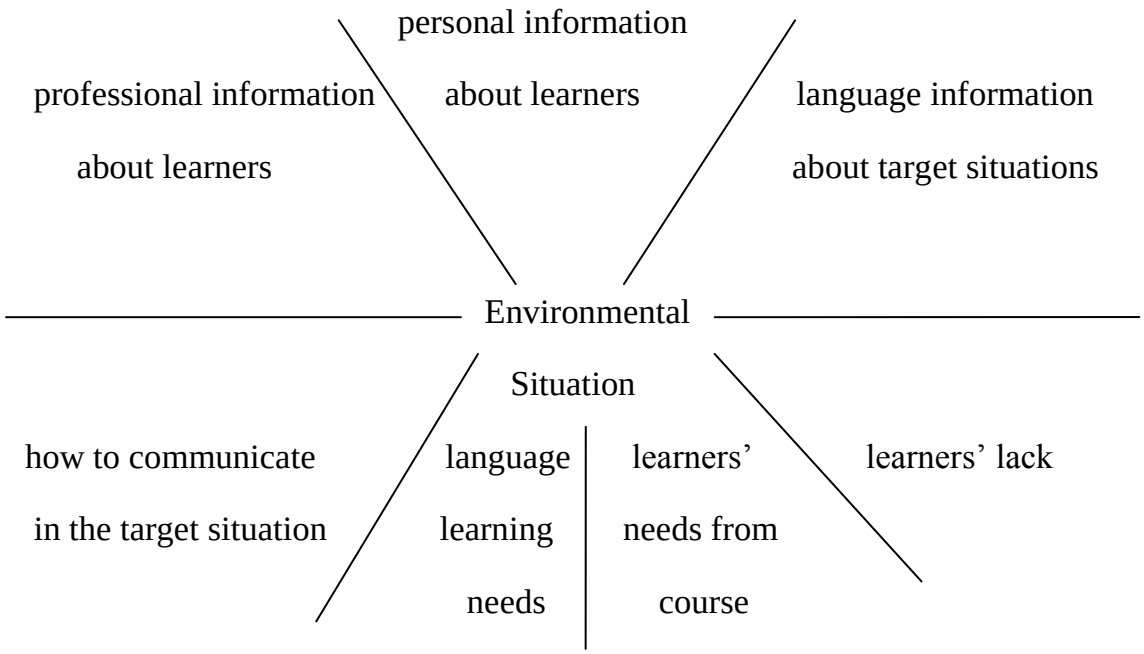

Figure 1-7 what does Needs Analysis Establish (adapted from Dudley Evans and ST John, 1998:125).

1-5-2 Course Design:

Course design refers to the process of planning and structuring a course to achieve the needed goals and by which the raw data about a learning need is interpreted in order to produce an integrated series of teaching-learning

experiences, whose ultimate aim is to lead the learners to a particular state of knowledge. From the this definition, one may say that the aim of the ESP courses is to prepare the learners in accordance with specific language skills (as detailed in what follows) and vocabulary needed in their own field in order to be able to communicate effectively in the target situation.

1-5-2 -1 Speaking:

All four language skills (Listening, Speaking, Reading and Writing) are needed in an ESP context according to the needs of particular group of learners in the specialized area. One of these skills is sometimes more emphasized than the others. This depends on the objectives of language course, methods of teaching and needs of learners. However the four skills are interrelated. This is clarified in the following diagram:

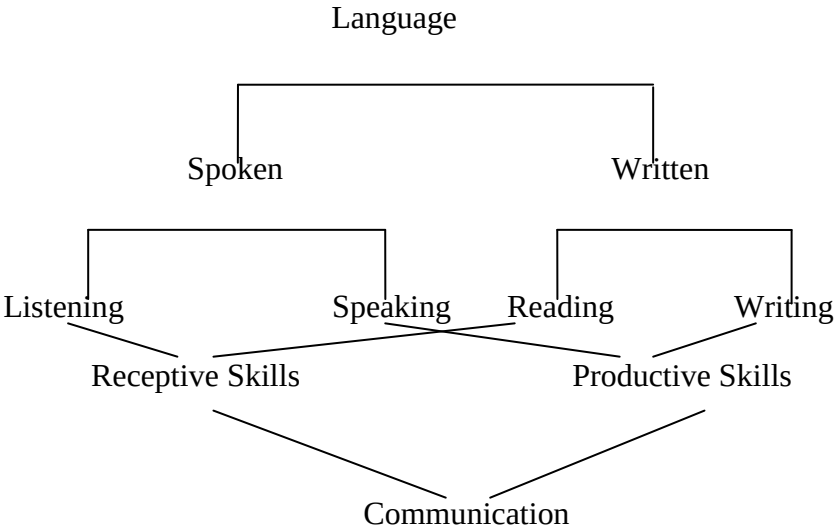

Figure1-8 Inter-Relationship of the Four Skills (adapted from Robinett: 1978).

Language can be either spoken or written. Spoken language is divided into: listening and speaking, whereas, reading and writing are classified under the written language. Furthermore, Listening and Reading skills are considered as receptive skills since there is a direct contact with the target language. In

addition to this, speaking and writing are productive skills through which there is a performance of language capacities in terms of speaking the language.

Rivers and Temperley (1978), too, provide a diagram which represents the processes involved in learning to communicate and which distinguishes between skill-using and skill-getting. The authors make two points about this diagram: firstly, skill-getting and skill-using do not represent successive stages in language learning. Secondly, there is a bridged gap between the two processes. For this reason, they suggest using pseudo-communicative to skill getting activities which lead naturally into spontaneous communication.

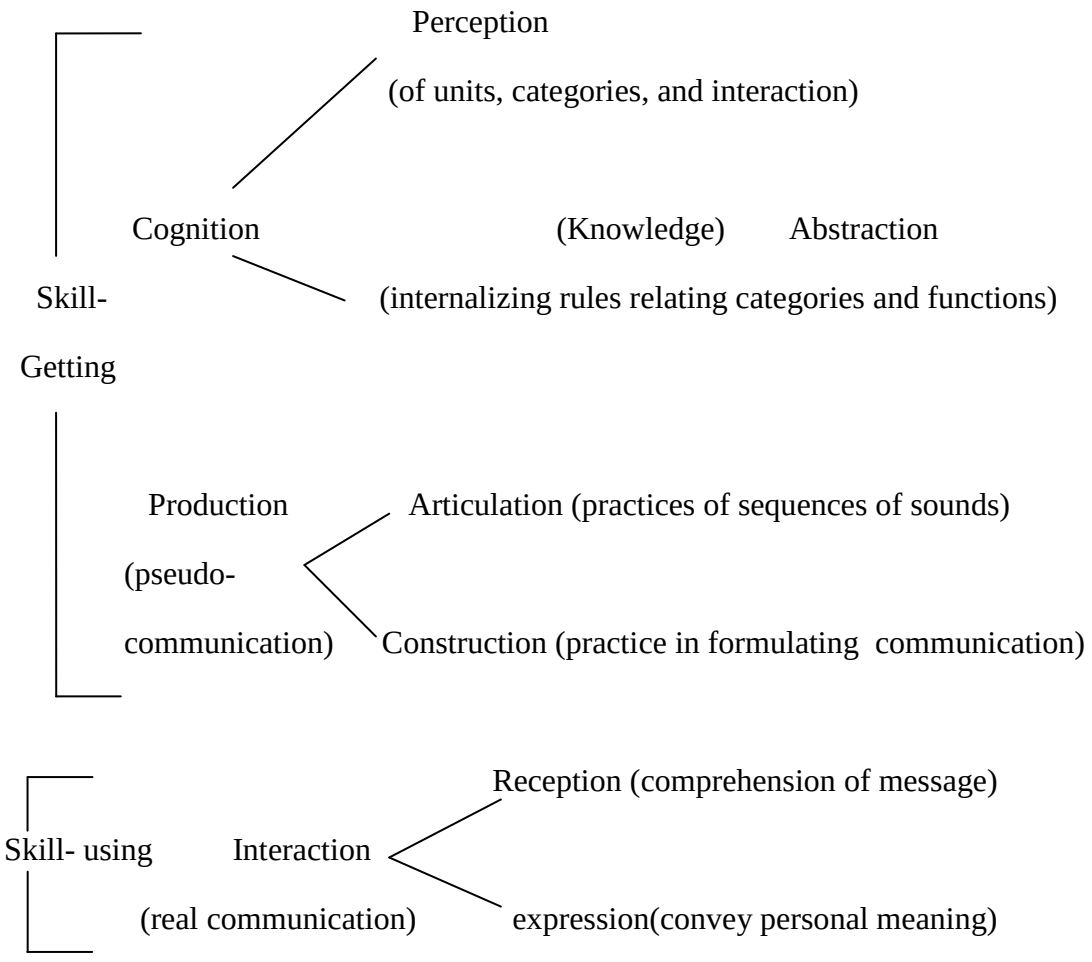

Figure1-9 Skill Getting and Skill Using (adapted from Rivers and Temperley's Framework, 1978:55).

We can deduce from this diagram that language skills are divided into: skill-getting and skill- using. Skill Getting is divided into cognition which derived from perception or abstraction, in addition to production through practicing sounds which leads to spontaneous communication. Skill- using deals with interaction through reception and expression for conveying message and this is a real communication.

1-5-2-1-1 Speaking in ESP:

Speaking for academic purposes in an ESP context used to describe spoken language in various academic settings that is associated with the genre or activity. Moreover, Richards and Rodgers (2001:161) offer the four communicative views of language in which the researcher find that they focus more on the speaking skill:

- Language is a system for the expression of meaning.

- The primary function of language is for interaction and communication.

- The structure of language reflects its functional and communicative uses.

- The primary units of language are not its grammatical and structural features, but categories of functional and communicative meaning.

1-5-2-1-2 Speaking in Computer Science:

As it has been stated earlier, ESP is about to meet the learner's needs to learn the language. Also, it is concerned with their communicative needs whether in academic, professional or workplaces. So, it is necessary to include productive skills and particularly the speaking skill in an ESP course. This can be achieved through oral communicative techniques or task-based activities. This creates a sort of interaction between learners which leads to spontaneous communication. This can be applied for EAP.

On the other hand, learners of Master in Computer Science learn English for scientific and technical purposes. They need to develop the speaking skill in English language, in order to prepare them for future researches.

1-5-2 -2 Listening:

Listening involves a focus on the meaning of the text and on making links between meaning in different parts of the text. That is to say it involves guessing the meaning of unknown words from the context and understanding the role of logical connectors. The listener does not get another opportunity to catch the meaning of the listening text. As a result, in listening, learners have to recognize the redundancy used in the text to improve their ability to follow the topic.

1-5-2-2-1 Listening in ESP:

The listening text must be authentic in source and purpose. Reading aloud from a written text does not reflect normal use and such listening lacks authenticity and purpose. For instance a business person talking about his area of expertise to non-experts is different in content and purpose from how he talks to peers.

1-5-2-2-2 Listening in Computer Science:

Good listening is vital in Computer Science. It goes beyond understanding the words and the key points; It may be considered as a skill and an art.

Active listening involves the non-verbal and the verbal encouragement given to a speaker: for example, non-verbal physical expressions, gestures and movements. Paraphrasing and summarizing may also be involved to allow the speaker know that his message has been heard. Thus, active listening is about showing that one has been listening and understanding.

Thus much comprehension work has evolved around note-taking and showing understanding by answering questions on the content. If the speaker does not feel he has been heard, he will then keep repeating the point or withdraw from active participation.

1-5-2 -3 Reading:

Reading helps in the socialization of individuals as they learn more about their, and others' societies and cultures. It can be discussed from a psychological point of view, for reading develops the psychology of people through close contact with the outside world. It also helps in shaping one's affective aspects. It can be seen from a philosophical and an educational angle where reading plays a critical force and a major role in widening one's knowledge in various disciplines related to philosophy and education. Finally, reading can be observed from the cognitive perspective in regard to the complex operations occurring at the level of this language skill. The purpose of reading and the balance between skills and language affect the teaching of reading.

From this account, it can be said that there is a new vision to understand and describe reading. A shift from considering it as a passive skill, in its first old approaches, to an active one in which a reader's mental abilities are highly included. This is clearly seen in the definition afforded by Grellet (1981:8),who stated that reading is *"an active skill constantly involves guessing , predicting , checking , and asking oneself questions"*. Therefore, reading is not; as most of us may think, a simple passive process in which words are attached in a linear relationship uttered and understood one at a time.

Reading can be described as the process of extracting meaning from printed or written material. That is, the ability to decode meaning from graphic symbols. The reader starts from the graphic code, through decoding he / she could reach meaning. In the reading process, the identification of the graphic symbols as well as the interpretation into meaning are both crucial.

As it has been mentioned, there was a bit of confusion about the nature of reading, among those interested in this scope. At first, it was seen as a visual process where the prime concern under study and analysis is the ability to decode the written words, in which eye movement, perceptual span and letter shapes considered the core characteristics of the whole affair. However, later on, this view have been altered since human thinking and understanding are taken into account ,i.e., both visual and non-visual information and features are stepping stones in the reading operation.

Nuttal (1982:4) in her definition of reading put: *"…. In reading, the main purpose is the extraction of meaning from writing. Our business is with the way the reader gets a message from a text"*. According to her, the main concern in the process is the way of extracting, i.e., decoding the message transmitted by the writer. In other words, what is important for her is the procedure of grasping messages.

Again, in reading, the identification of the graphic symbols (deciphering),and then interpreting them into meaning, are two necessary paths towards comprehension. This implies that reading is a mental cognitive operation that requires an interrelation between language and thought. From the psycholinguistic perspective, reading is a process where the reader brought into a closer contact with the ideas of a writer who is *"actually distant in space and time"* (Davies,1995:1).

For Goodman (1988:12), the reader has to make sense of the text read, so that to extract the piece of information needed, he defined reading as: *"….A psycholinguistic process in that it starts with a linguistic surface representation encoded by a writer, and ends with meaning which the reader constructs .There is thus an essential interaction between language and thought in reading".*

To sum up, in recent researches, reading is mainly considered a cognitive activity that requires a certain amount of thinking on the part of the learner. It is viewed as a close connection and interaction between the reader, as an active

participant, and the text or the written message. Reading therefore implies a strong relationship between the syntactic structure and the meaning extraction. Shortly, the reader moves from printed texts to thinking and meaning guessing .This seems to be the same view raised by Widdowson (1979) cited in Carrell, Devine & Eskey (1988:56) who described reading as an interactive process. He noted:

> The reading process is not simply a matter of extracting meaning from the text ,rather it is one in which the reading activates a range of knowledge in the reader's mind that he or she uses ,and that in turn may refined and extended by the new information supplied by the text.

Goodman (1967, 1976, 1988) and other researchers such as Smith (1971, 1988, 1994), who favored the top-down approach to reading, called the above definition *"the psycho-linguistic guessing game"* (1988:57).Hence, he and many others have suggested that reading is basically *"concept-driven".* They have formulated tenets of *"communication theory"* based on the fact that the reader produces hypotheses about the message of the text, then samples textual cues to confirm or reject those hypotheses Clarke (1988) cited in Carrell et al (1988:115).

To conclude, according to those who defend the psycholinguistic concepts, reading is an active mental private process which involves an interaction between the reader and the text. Grabe (1988) cited in Carrell et al (1988:56-57) named this an *"interpretive process"*.

1-5-2-3-1 Reading in ESP:

Thre main stages in designing and teaching a reading course will be discussed below:

1. The selection of texts:

Texts are generally chosen by institutions the textbooks available on the market and by teachers through the textbooks or any additional material they provide. However, learners and subject specialists need to take part in the selection of books.

Subject specialists can contribute to text selection such as in EAP and EVP. In deciding what to choose, ESP teachers will balance needs and motivational factors. That is to say learners can bring texts that they need to understand or think would be interesting.

While discussing reading materials we should note that the reading behavior is not an isolated unit of structure, rather it is an amalgamation of different factors all interacting to produce reading. In defining the reading comprehension process, McShane (2005:72) quoted the one presented in *the Rand Report*, Reading for Understanding, where this skill was described as: "*The process of simultaneously extracting and constructing meaning through interaction and involvement with written language".*

This imparts obviously that without written materials (texts), there is no reading. The above reference to *extracting* and *constructing* is to stress both the importance and the insufficiency of the text as a determinant of reading comprehension. Thus, as said before, comprehension entails the reader, as an active participant who does the comprehension, the text, as a comprehended material, and the activity ,as practiced element.

According to Snow (2002) cited in McShane (ibid.), in considering the reader, the reading process involves all the capacities and knowledge he / she brings to the act of reading. As for materials, it is broadly constructed to include any printed or electronic text. Meanwhile, activities, purposes, processes, and consequences associated with the act of reading are also accounted.

2. Extracting and recording information:

Highlighting the relevant information on the actual text with a short document may be an appropriate strategy. This could be done through presenting the facts in a business letter or fax highlighted in one color and the calls for action in another. With longer or complex documents extracting the information and reorganizing it and fitting it in with existing knowledge is necessary. This could be done through visual representations.

1-5-2-3-2 Reading in Computer Science:

For reading to be successful, teachers have to focus on material. Material development in ESP is a problem faced by most of teachers. While it may come true that a successful teacher can make almost any set of reading materials work in class, it is apparent that the adequately conceived exercises drive the teacher to work more efficiently with students to overcome some of their reading problems.(Ajideh,2006). For Hutchinson and Waters (1987), materials should stimulate learners to learn, in our case motivate them to read.

Though providing materials is a challenging task, teachers need to bring those which are appropriate for their students 'proficiency level, interests and needs, i.e. they should be relevant. Good materials are those which include, for example, selected interesting texts, and effective agreeable and amusing activities that would allow students to exploit their existing knowledge and to create new ones. Materials so that have to be flexible and systematic, since the choice is much more dependent on each group of students' situation.

Because in our modest investigation, we are concerned with ESP students, we may assume that materials need to be linked with their specific area of study. They should provide more practice in language skills rather than merely linguistic forms.

As we have referred to before, texts and activities' selections are two paths towards efficient teaching and learning. Therefore, concerning the text, it is regarded as a seductive structure which brings people to the reading world.

1-5-2-4 Writing:

EFL students have to develop a sound proficiency in writing skills in order to respond successfully to university writing assignments. They are required to have a command of the linguistic system of English and to master the sentence and paragraph structures to be able to complete different types of writings either as home or class assignments. These students are required to write when realizing exercises, research papers, report, etc. and when answering the examinations they are to take in the various modules of their curriculum.

1-5-2-4-1 Writing in ESP:

Above all, the learners should be able to criticize, synthesize, analyze coherently a situation and ultimately undertake research. In sum, these students need to master all the writing skill, and thus, be competent writers who understand and master the writing conventions of the language. They also need to present coherently and convincingly their findings in a written form.

Students should be taught not only language forms and structures but how to set their writing goals, and to develop effective strategies to reach these goals as well. In sum, to promote learning of the writing skill and improve its performance, it is important to design a writing curriculum that develops a two-directional teaching procedure working in a parallel manner: to promote students' strategic competence (by developing within the learner a vision of writing as a process and build up the related strategies and reinforcing their metacognition) and consolidate their linguistic knowledge.

1-5-2-4-2 writing in Computer Science:

It is important to build up students' linguistic competence. Then, besides strategy training, the teaching program will try to activate and reinforce students' passive lexical, grammatical and orthographic knowledge and language structure so that students learn to edit their compositions. Language accuracy and appropriateness are also given due attention through the use of those strategies looking for clarity of content and accuracy of language (e.g. revision and self-monitoring). Moreover, it is important to teach students to write for an audience and to take into consideration the reader's expectation and use the appropriate mode of discourse relevant to the topic type and text type.

Writing in English will be rarely done by EFL students outside the classroom (which could be an occasional letter to a pen-friend, an e-mail, or a short formal letter to an institution).Therefore, most EFL writings will meet the institution requirements i.e. reports, articles, summaries, outlines, abstracts, research papers and essays. In their writings students will be required to use different modes of discourse such as narration, description, exposition, and argumentation. Consequently, it is essential that EFL students be taught how to produce these types of writing as pointed out by Reid (2001:153): "Exposing ESL students to the functions and forms of the writing requirements and assignments they are almost certain to encounter in their future courses is essential to EAP instruction."

So, students need to know how to write for each type of text, being fluent and accurate, using the required discourse mode and addressing the intended audience. This is necessary to answer subject modules questions, because acquiring knowledge without having the linguistic means to transmit it in the written form will certainly prevent learners from academic success.

1-5-3 The Use of Materials

Some teachers may use the same ESP material for different classes ignoring the variation among different classrooms. Also, some of them may use the same material in all lectures. In this situation, students will get bored and may hate this class. That is why appropriate ESP materials selection would be important and can play a crucial role in ESP lesson planning. Ellis and Johnson (1994) distinguish between two levels of materials selection. The first one occurs at the beginning of the course when teachers suggest their textbooks and materials. The second level occurs when the teacher is going to select items from the chosen textbook.

Materials are vital components for what happens inside the ESP classroom because they control the process of teaching and learning. In other words, materials should satisfy learners' needs; teachers have to select the relevant materials according to them, taking into account their students' interests and motivation. In order to help learners, the teacher may adapt, supplement, and elaborate those materials.

In this context, ESP materials should not be chosen randomly but should be selected appropriately in order to foster learners' capacities. It is thus crucial to mention that materials must be enjoyable, initiative and creative so that to reach the ultimate aims of both teaching and learning processes. It is here that the ESP teacher's role as a researcher is very important; he tries to look for the appropriate materials for the classroom from what is available concentrating on learners' needs respecting factors, such as, learners' specialty, age, sex, society, background knowledge, academic objectives and requirements, proficiency levels, cultural aspects, and learning/teaching styles.

Textbooks, dialogues, activities, including new technologies such as video and audio tapes, computer software, visual aids and others can be covered under ESP materials. Many educationists think that ESP materials may affect computer science students' proficiency more than any other elements of

the course. Jarvis & Pastuszka (2008:20) convincingly argue that the internet could have a more useful role in English for Academic Purposes and call for the inclusion of *"computing for academic purposes (CAP) as an aspect of EAP …if we are to fully equip our students in a computer-dominated academic environment."*

Thus, ESP materials should be authentic and valuable in order to meet learners' needs and interests. Also, it would be useful to have a variety of ESP materials. Since students' understanding of vocabulary is very limited, the vocabulary in ESP materials should be controlled so that to foster students' understanding of the selected materials. For lower level students, grammar also should be involved.

An ESP practitioner is a course designer and materials provider. The selected materials should be useful, meaningful and interesting for students. Some teachers do not care a lot about materials selection and they may select any material or even use the same ones every time. In fact, this may demotivate their students because ESP materials may affect a lot the level of students. A problem occurs when the teacher does not find adaptable materials to the needs of a particular class, so he is supposed to select and exploit suitable texts and to write suitable exercises.

Some considerations must be taken into account when selecting activities such as the specialty, age, sex, society, background knowledge, academic objectives and requirements, proficiency levels, cultural aspects and learning/teaching styles, etc. If these considerations are not respected, the classroom would be boring. Moreover, it is very dangerous that teachers do not select what may motivate their learners because this may leave a negative impact on them and this will not encourage them, and the classroom would be boring. In this context, Dudley-Evans and St John (1998:152) point out: *"Introducing some specific work into the ESP class, either as the main focus of the course or to supplement the common-core features of the course is generally beneficial".*

Furthermore, there are some criteria to follow while selecting ESP material: Not all students enjoy them and not all lessons provide appropriate ESP materials selection. There is no rule for selecting or adapting them but some said that following specific criteria may make it easier for them. Paul (1996) proposes a division of the lesson into two parts: educational and fun sections. Selecting materials for ESP students does not resemble the same as selecting for general English students which need only print, audio, and video materials as Ellis and Johnson (1994) point out. For ESP teachers, the selection extends the use of what is available. Sometimes, they need to adapt or look for over the shelf materials in order to help ESP students achieve their aims.

Using authentic materials is very helpful because they have a positive impact on learners' motivation, satisfy learners' needs, and supply authentic cultural information and exposure to real language. On the other hand, using authentic materials may contain difficult language, difficult vocabulary items and complex language structures (Basturkmen, 2010).

Wallace (1992) suggests the following criteria when selecting ESP materials:

• Adequacy: the selected materials should contain appropriate language and information about the course.

• Motivation: They should present interesting content in order to help students be active and work hard in order to understand better. This criterion should be respected in order to make students' work more effectively. Thus, motivation is a key element for learners to appreciate learning. Baleghizadeh and Rahimi's (2011:1013) argue that ESP textbooks should be motivating. They add that:

> *"One of the techniques… to achieve this goal is to use pictures, illustrations, tasks, and authentic materials. The materials should include discussion questions, prediction activities, skimming and scanning exercises, and tasks which stimulate critical analysis and evaluation of what they have read".*

• Sequence: It is important to have materials that are related to the lecture. There must be a relation to previous texts, activities, topics not to miss the sense of a lesson.

• Diversity: The selected material should lead to a range of classroom activities, be a vehicle for teaching specific language structure and vocabulary, and promote strategies.

• Acceptability: It should contain acceptable cultural customs and language. It must not contradict the ESP practice that materials should be based on a thorough analysis of the learners' needs (Bruce, 2011). Bojovic (2006, p. 493) states that ESP materials should be authentic, up-to-date and relevant for the students' specializations.

Thus, ESP materials are the useful means in language teaching. *"Teaching materials are tools that can be figuratively cut up into component pieces and then rearranged to suit the needs, abilities, and interests of the students in the course"* (Graves, 1999:27). They are anything that the teacher may use in order to help learners get better understanding. Such materials can exist in different forms; they can be textbooks, workbooks, texts, activities, etc. In language teaching, they are anything which can be used by teachers or learners to facilitate the learning of a language. Materials may be linguistic, visual, auditory, or kinesthetic, and they may be presented in print, audio or video form, on CD-ROMS, on the Internet or through live performance or display (Longman Dictionary of Language Teaching and Applied Linguistics).

ESP materials must be varied so that to attract and motivate students; they appear in most times interesting, fun and clear. Sometimes, materials are appropriate for the content but sometimes they need to be modified and creative; the teacher has to adapt or supplement in order to fit the local context.

1-5-3-1 Typology of ESP Materials

ESP materials can be done for different reasons and can be presented in different forms. Kennedy and Bolitho (1984) points out that ESP materials are helpful in making students read, then, get the meaning, read then write such as summarizing or paraphrasing, listen when teachers read from them, speak when the teacher motivates his students to communicate, or do different tasks when the teacher integrates different skills. Activities are very useful means in language teaching. They are of different forms: reading, listening, speaking and writing. Each specialty is based on some skills according to students' needs and the form of the present lesson.

A) Materials for Reading

Materials for reading are the texts given to learners to practice them in order to achieve a specific aim or various ones. In Oxford Dictionary, activity is defined as *"a thing that you do for interest or pleasure, or in order to achieve a particular aim"*. According to Kennedy and Bolitho (1984), materials for reading play the role of activities; students are asked to read and try to comprehend as they are allowed to use dictionaries to learn new structures and vocabulary. Students have to skim, scan, relate graphs to text, relate diagrams to text, predict and sequence the structure of a text, and understand elliptical writing-telexes. Such activities are means of joy as well as of teaching and learning. They help students in using and practicing their available language recourses as to develop their own skills, strategies and level of comprehension; they are the practical contribution of theoretical lessons. Each material for reading is given to students in order to make them master specific points which themselves are helpful for their studies.

B) Materials for Writing

When students are given a text and after reading it, they are asked to write something. Here, the aim of the material is to serve the skill of writing. Since English is not their major, ESP students are not asked to write using great styles. Instead, they have to write correct grammar and simple wording. Kennedy and Bolitho (ibid) insist on the importance of being coherent when writing.

Some adult ESP students do not experience too many problems with coherence as there is classroom evidence to suggest that the ability to organize writing coherently is largely transferable from the mother tongue. Conversely, an absence of this ability in English in an adult student is bad news for the ESP teacher as it may signal lack of practice in writing coherently in any language (Kennedy and Bolitho, 1984:86-87).

When implementing written activities, students also must have a purpose. There is no activity without one aim or more as their answers should be relevant to them. ESP students are asked to write reports, take notes, summarize a text, write descriptions of processes and systems, and write letters and telegrams.

C) Materials for Listening

According to Kennedy and Bolitho (1984), materials for listening might be the most difficult choice. They have to be selected in an appropriate way in order to motivate students and make them listen without getting bored. ESP students may listen to lectures, instructions, seminars, meetings, and committees. Then they have to get key words, main ideas, speakers' attitude, and switches of register. The teacher's role here is to be attentive concerning students' reactions and to the atmosphere of each lesson so that to attract students' attention and satisfy their needs in an appropriate way without making them get bored or confused.

D) Materials for Speaking

Though those activities need more work for teachers but it is worth using them. They make the speaking process seems easier and more active as they help in making the students' involvements more obvious. So, the use of speaking activities would highly improve students' retention. Such activities add variety to a range of learning situations, maintain motivation, refresh learners during formal learning, encourage students' interest, help in making teacher-student distance less marginal, and provide more student-student communication. The more students get motivated, the more students get comfortable and can speak confidently (Kennedy and Bolitho, 1984).

E) Materials for Integrated Skills

Activities Materials for integrated skills are those integrating two skills or more: speaking, listening, writing, and reading on the same activity. The use of activities should help in making the lesson well prepared and organized. Moreover, the teacher has to confirm the presence of all available facilities. Teachers must confirm that activities are simple and can provide the instructions that are intended to do. Philips (1997:03) emphasizes that *"the activities should be simple enough to understand what is expected of them",* but some activities may require the four skills and they have a considerable value. Simulation, games and information gap activities, and project work are integrated skills activities.

1-5-3-2 Role of ESP Teaching Materials

Teaching an ESP classroom means to have certain qualities in order to help students in satisfying their needs. ESP students need to know the basic foundations of their specialism. They need to learn the common vocabulary and master different grammar rules in order to achieve the ultimate aims of teaching and learning process. ESP materials are useful when doing so since

they provide helpfulness through appropriate selection of materials that teach vocabulary content and grammar rules.

A) Teaching Vocabulary content

Vocabulary is the backbone of ESP classroom teaching. Ur (1991:60) defines vocabulary as *"... the words we teach in a foreign language."* Thornbury (1997), states that vocabulary and lexis in English are frequently used interchangeably. However, words are the building blocks in a language. One cannot develop his knowledge of a specific specialty unless he gets a rich background of its lexical items.

English learners may face big problems when learning vocabulary and even when moving from one level to a higher one. Macaro (2003) spots the light on vocabulary when learning a foreign language, especially if it deals with different disciplines where sub-technical vocabulary exists and which are considered as the most crucial type of vocabulary to be learned in order to enhance the teaching and learning process within an ESP classroom. When selecting ESP materials, a great consideration must be given to vocabulary content since it presents the main concern of students' needs. In ESP, *"specialized texts of any sort, whatever written or spoken, exhibit various characteristic lexical features"* (Kennedy and Bolitho, 1984:56).

Technical abbreviations, symbols and formulae, highly technical vocabulary, and sub-technical vocabulary are the lexical features of ESP texts. Kennedy and Bolitho (ibid) maintain that teaching vocabulary to ESP students starts from word formation (prefixes and suffixes and identification of word classes) then moves to word relationships (synonymy, contextual clues, selection from alternatives, building up sets, and collocations (Thornbury, 1997). ESP materials are of different forms and contain different vocabulary content; the selection depends on the needs of the course, intended language and the degree of authenticity, and the students' level and specialty.

Words do not exist as isolated items in language. They are integrated in a complex system in which different levels of a lexical item are produced in order to supply a suitable understanding in receptive skills and provide an adequate production of ideas in productive ones. Richards and Renandya (2002:255) say that *"vocabulary is a core component of language proficiency and provides much of the basis for how well learners speak, listen, read, and write."*

B) Teaching Grammar Rules

It has been remarked that vocabulary takes a great part within ESP classrooms. However knowing vocabulary without mastering grammar rules does not help students in their studies since grammar has its importance as well. Though discourse can be understandable with wrong grammar rules' use, but it would not be coherent and appropriate, and the meaning of the discourse would not be accurate. Ur (1991:75) defines grammar as *"... a set of rules that define how words (or parts of words) are combined or changed to form acceptable units of meaning within a language"*.

Grammar can be taught through two different approaches as Harmer (2002:49) states. *"There are basically two ways in which a learner can achieve understanding of a rule, the deductive (rule-driven) path and the inductive (rule-discovery) path"*. Deductive approach is based on teaching grammar from rules; students are asked to retain the definitions, the rules, the examples, and the exceptions. It is very helpful for students to gain more time in practicing exercises. Inductive approach is based on teaching grammar from examples and students are asked to discover the organizational principles and formulate a set of rules. Inductive learning can be an effective means of teaching grammar. Learning inductively means studying examples of language in use, and exploring underlying patterns and rules.

This approach is very helpful in making learners more active through giving more chance to interaction and discussion when giving them the

opportunity to extract rules from the examples. Macaro (2003) proposes two ways that teachers may use when deciding to provide help to their learners in order to get better memorization and understanding of grammar rules. First, practice might be a good solution. It is controlled, contextualized or communicative. It contains series of stages based on activities that are helpful to transfer the information from short to long memory.

Second, consciousness-raising is the other solution. It is an attempt to motivate learners in grammar rules understanding so that their knowledge can be discovered.

The ESP materials that are used to teach grammar rules should respect two principles: efficiency-factor and appropriacy-factor. On the one hand, to be efficient is very crucial. According to Harmer (2002:25), *"when considering an activity for the presentation or practice of grammar the first question to ask is: how efficient is it?".* Efficiency might be measured according to three elements: economy, ease, and efficacy. On the other hand, appropriacy is the second crucial principle of grammar teaching. Learners are different concerning their interests, level, needs and goals, beliefs, values, attitudes, age, materials and resource, experience and expectations, cultural factors, group size, educational context, and the constitution of the group. These variations must be taken into account when trying to be appropriate. These factors are interrelated and cannot be taken separately.

1-5-4 Materials Selection:

The task of the majority of ESP teachers consists in providing good materials by appropriately selecting them from the materials accessible on the market, using them creatively, and adjusting their exercises and tasks to the needs of target learners as well as supplying additional exercises and language input. This implies:

1-5-4-1 Authenticity vs. Simplicity

The debate of whether to simplify texts if they are found to be difficult for the intended readership or keep them intact dates back to the 1970s. As for text simplification, different methods have been studied for their effect on textual understanding among them the method of making the text less syntactically complex. But this *"may have the effect of distorting the message or increasing difficulties in other text features"* (Alderson, 2000:73).

Mountford (1975) showed that the illocutionary force of the scientific articles might change after simplifying them. For Strother and Ulijn (1987), simplifying texts syntax does not make them necessarily more readable, since a thorough syntactic analysis of texts may not be necessary. They further suggest the use for conceptual rather than syntactic strategies for text processing. Conceptual strategies involve processing content words and require lexical and content knowledge. In the context of L2 educational context, Williams and Dallas (1984) suggest a range of different methods for helping readers cope with new words like glossaries, key words section, and vocabulary revision checks. To help L2 readers cope with the vocabulary load of texts from which content knowledge is learnt, they also suggest the use of context in a variety of ways like presentation, definition and illustrations.

The concept of text authenticity, on the other hand, was associated with three interpretations, the most widespread referring to texts that are not specially produced for language learners. Advocates of the use of authentic texts, with the above sense, argue that the latter are more interesting and motivating to learners who are best taught to cope with 'real world 'texts by having experience of them inside the classroom (Grellet, 1981). Grellet also opposes the use of simplified texts because reducing the number of linguistic and extra-linguistic cues from them often results in increasing their difficulty. To overcome difficulties, she proposes to grade the exercises rather than simplify texts. This claim had an earlier support from Davies and Widdowson

(1974) for whom the use of authentic texts is the best opportunity for learners to experience actual instances of language used as communication.

The second interpretation with which the word authentic is used is that authenticity is not a feature of the text; rather it denotes the interaction of reader and text. In other words, the authenticity of a text is measured by the extent to which the reader corresponds to the intentions of the writer which are signaled by linguistic and rhetorical conventions. The third interpretation may be considered as 'reader-centered' extension of the second interpretation (Williams and Moran, 1989). While the interaction in the previous sense is between reader and writer, the interaction in this sense refers to the reader's response (Breen 1985 and Davies, 1984). According to this view a text is authentic when the reader finds it appropriate to his/her purpose, regardless of whether it is written for language teaching purposes or not and of whether it corresponds or not to the writer's purpose. *"This definition is pedagogically useful to the extent that the reader's response is more important than the provenance of the text"*(Williams and Moran, 1989: 219)

Authentic texts are very important in showing real language use though it is sometimes difficult to find appropriate ones. In fact, most teachers prefer to use them. *"Authentic material is any kind of material taken from the real world and not specifically created for the purpose of language teaching"* (Ellis and Johnson, ibid, p.157). Authentic materials are those taken as they are in the original or natural sources. *"It has been traditionally supposed that the language presented to learners should be simplified in some way for easy access and acquisition. Nowadays there are recommendations that the language presented should be authentic."* (Widdowson, 1990:67). Many people prefer such classroom resources because of their natural language use and explanations, as stated in Longman Dictionary of Language Teaching and Applied Linguistics.

In language teaching, the use of materials that were not originally developed for pedagogical purposes, such as the use of magazines, newspapers, advertisements, news reports, or songs are often thought to contain more realistic and natural examples of language use than those found in textbooks and other specially developed teaching materials. On the one hand, using authentic materials is very helpful because they have a positive impact on learners' motivation, satisfy learners' needs, and supply authentic cultural information and exposure to real language. On the other hand, using authentic materials may contain difficult language, difficult vocabulary items and complex language structures as they can be too cultural (Basturkmen, 2010).

Some interesting texts may go beyond students' level and current abilities. This would not make problems only for students, but also for teachers. Simplified materials are materials used by teachers to facilitate the learning process (Basturkmen, ibid). When using authentic materials may not be very helpful and it is difficult for students to understand them since the language and the use of words may be highly complex, the use of simplified ones would be the solution. Simplified materials use understandable language, provide clear objectives, and focus on specific items of the lecture.

1-5-4-2 Criteria for ESP Materials Selection

It seems that most, if not all, ESP lessons include the use of an ESP material or series of materials. Not all students enjoy them and not all lessons provide appropriate ESP materials selection. There is no rule for selecting or adapting them but some said that following specific criteria may make it easier for them. Paul (1996) proposes a division of the lesson into two parts: educational and fun sections. Selecting materials for ESP students does not resemble the same as selecting for general English students which need only print, audio, and video materials as Ellis and Johnson (1994) point out. For ESP teachers, the selection extends the use of what is available. Sometimes, they

need to adapt or look for over the shelf materials in order to help ESP students achieve their aims. When doing so, they need to respect certain criteria.

Ellis and Johnson (1994) explain the criteria for selecting ESP materials: types of learners and their language level, relevance, learners' age and cultural background, and appropriateness of methodology or style. Moreover, they emphasize the distinction between different types of learners and their language level; pre-experience learners and job-experienced learners. Relevance of language and skills is the second key element that must be respected when selecting materials. Another important criterion is to respect learners' age and cultural background. In other words, types of activities differ among groups of different age, background knowledge and cultural features. The last element is the appropriateness of methodology or style for learners. In other words, *"the trainer should experiment to find out an approach to use with a particular group and then select activities accordingly"* (Ellis and Johnson, 1994:127). Wallace (1992) suggests the following criteria when selecting ESP materials. • *Adequacy*: the selected materials should contain appropriate language and information about the course. • *Motivation*: They should present interesting content in order to help students be active and work hard in order to understand better. This criterion should be respected in order to make students' work more effective. • *Sequence*: It is important to have materials that are related to the lecture. There must be a relation to previous texts, activities, topics not to miss the sense of a lesson. • *Diversity*: The selected material should lead to a range of classroom activities, be a vehicle for teaching specific language structure and vocabulary, and promote strategies. • *Acceptability*: It should contain acceptable cultural customs and language.

1-5-4-3 Characteristics of Motivating ESP Materials

ESP materials are not selected solely to transform information from teacher to learners. In fact, they must be selected for educational purposes as well as for fun and motivation. If the teacher does not think of this side,

learners would not be satisfied and happy concerning what they are learning. Thus, the teacher should focus on what attracts his students for the learning process. It is therefore helpful for teachers to follow the factors that might help in motivating learners. Ellis and Johnson (1994) suggest three perspectives: *credibility*; to use materials which have enough knowledge about the subject and the specialism, *up-to-date materials*; to use novice materials because old ones are old-fashioned ideas and language, and *attractive materials*; to use materials which contain acceptable layout, good visuals, and easy access.

1-5-5 Teaching and Learning

Teaching is an important part of the process of education. Its function is to impart knowledge, develop understanding and skill. Learning, on the other hand, is is the lifelong process of transforming information and experience into knowledge, skills, behaviors and attitudes. The teaching learning process involves a teacher sharing knowledge (either formally or informally) with students who assimilate the knowledge in order to learn and use it. This happens in a classroom where this knowledge is imparted following a certain approach.

Therefore, after setting objectives, the following step is to determine the appropriate approach within which goals are achieved. Three main approaches are in order. The first one is *Language-Centered Approach to Course Design*. It is an approach that focuses on the linguistic performance of the learner in the target situation. This approach starts from the learning situation and theoretical perspectives on language learning to the choice of linguistic items, syllabus, material and evaluation. Even though this model seems logical, it has been criticized on account that it neglects the learners' needs which are the key notion of ESP.

The second one is *Skills- Centered Approach to Course Design.* It is a reaction to the over-concentration on the surface performance by learners, and is the prevailing way to get rid of some inadequacies that were presented by

previous approaches. This model concentrates on competence, performance and objectives identified by the process of learning. In other words, the learner usually learns with specific goals and objectives. Skills- centered approach gives the chance to the learners to achieve what they need focusing on a given skill, reading, writing, etc. (Hutchinson & Waters 1987).

According to Holms (1982), skills-centered approach to course design focuses on determining the strategies that ESP learners aim at and need to develop. It also focuses on post courses improvement of the learning strategies. The last one is *Learning -Centered Approach to Course Design*: which means that course design within ESP, is learning-centered, i.e., this approach to course design emphasizes the learners' needs and the target situation analysis (Dudley Evans & St. John, 1998).

1-5-6 Evaluation

Evaluation is asking questions and acting on the responses. Dudley-Evans and St John (1998:128) state that: *"Evaluation is a whole process which begins with determining what information to gather and ends with bringing about change in current activities or influencing future ones."*

Evaluation is generally described as formative or summative. ESP practitioners are likely to be concerned with formative evaluation which takes place during the lifetime of an activity and the findings help to shape the course during its lifetime. Evaluation can be both qualitative and quantitative. Tests and objective –question questionnaires provide numbers and percentages for individual items. They provide answers to what questions but cannot easily address the how and why. More qualitative methods such as discussions and interviews cover a wider picture, but may be less comparable.

Evaluation in ESP materials is a means based on examining learning materials in order to establish their value. Tomlinson (op.cit, 15) defines materials evaluation as *"a process that involves measuring the value (or*

potential value) of a set of learning materials". Evaluation focuses on the students' satisfaction of their needs. "*in language teaching, the process of measuring the value and effectiveness of learning materials"* (Longman Dictionary of Language Teaching and Applied Linguistics). In other words, evaluation of ESP materials is the judgment of the appropriateness of materials for an ESP classroom. ESP materials evaluation can be done through four stages as explained in the following graph.

ESP materials evaluation is a matching process: *"matching your own analysed needs with available solutions"* (Hutchinson and waters, ibid, p.105). Moreover, this process is helpful to match solutions for problems that occur on the level of materials. Hutchinson and waters (ibid) divide evaluation into four stages as shown in graph (01). In the first stage; defining criteria, the teacher has to set his goals for a specific material. The next stage is subjective analysis where developing and testing the course in terms of materials requirements. The third phase is objective analysis where the teacher focuses on the aims of the material itself. The last stage is matching. It occurs when investigating the problems on the level of both subjective and objective analysis and trying to remedy them through adapting content or methodology. ESP materials evaluation is considered as a crucial part in ESP materials selection since it provides testing them and knowing what is useful and what is not in order to avoid it when selecting for another time.

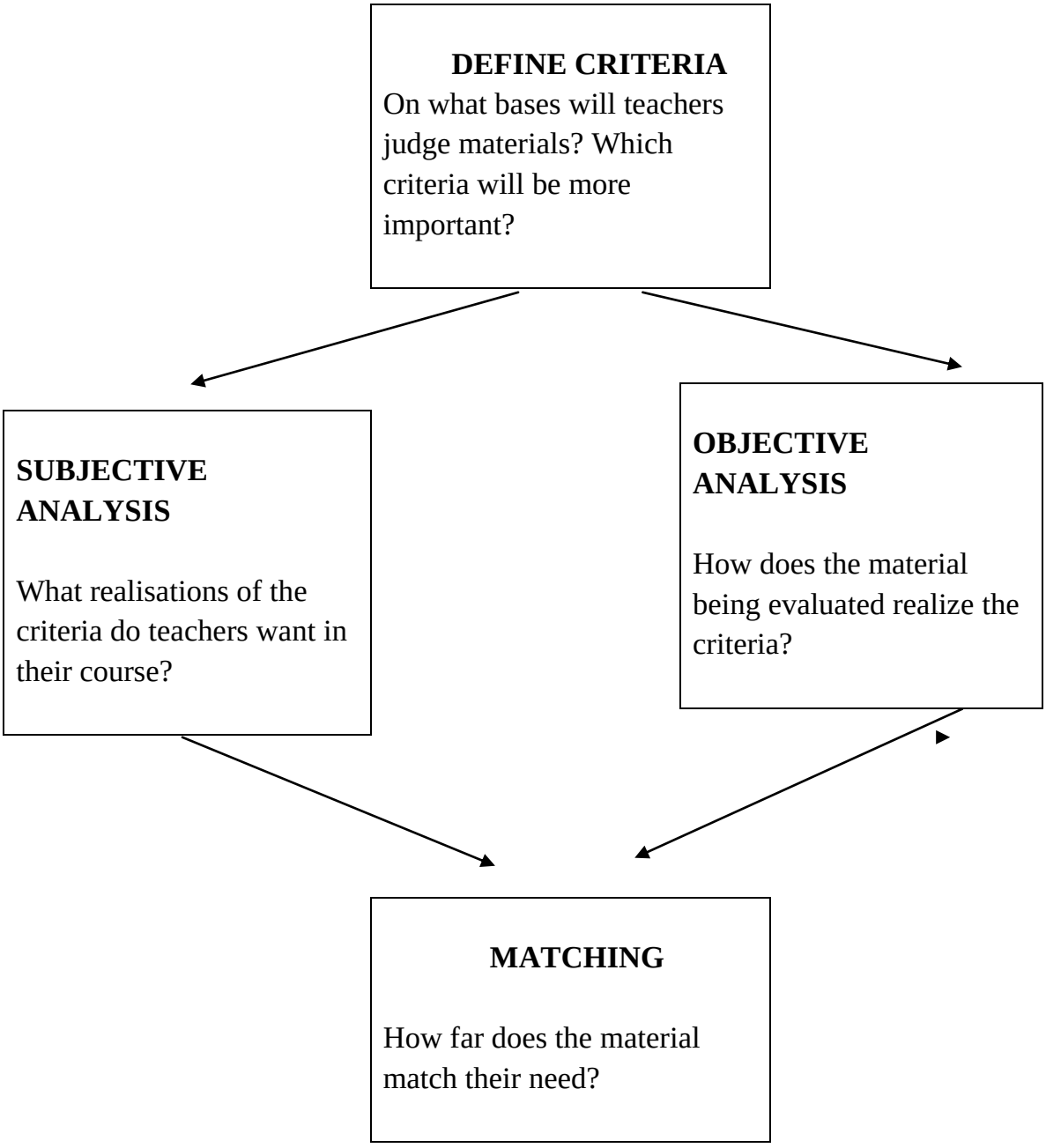

Figure 1.10: The Materials Evaluation Process (adapted from Hutchinson and Waters 1987)

This means that teachers have to evaluate their courses. If assessment is an important part of the course, they should not leave it all to the end. One can get a lot of assessment done during the course to check how much they learnt from the lesson. That is not to say that needs analysis is a waste of time. On the

contrary, we need it as a starting point for teaching. It needs to appear interesting and useful to motivate learners to engage with it.

1-6 ESP Practitioner's Roles

Since ESP teaching is extremely varied Swales (1980), Dudley-Evans et al (1998:13) and many others prefer to use the label 'practitioner' rather than 'teacher', "*to emphasise that ESP works involves much more than teaching".*

According to Robinson (1991:79), "the *role of* the *ESP teacher is a controversial issue"* since *"there is no single ideal role description."*, i.e., playing a different role in each stage of the ESP program starting from data collection and needs analysis, moving to the design of materials, to structuring the classroom and preparing the learning environments, and ending with evaluating the learners' achievements, the teaching materials. In this regard, Dudley-Evans *et al* (1998:13) claim that: *"The ESP practitioner has five key roles: Teacher, course designer and material provider, collaborator, researcher and evaluator".*

The diagram below is an attempt to summarize the different roles of ESP practitioner

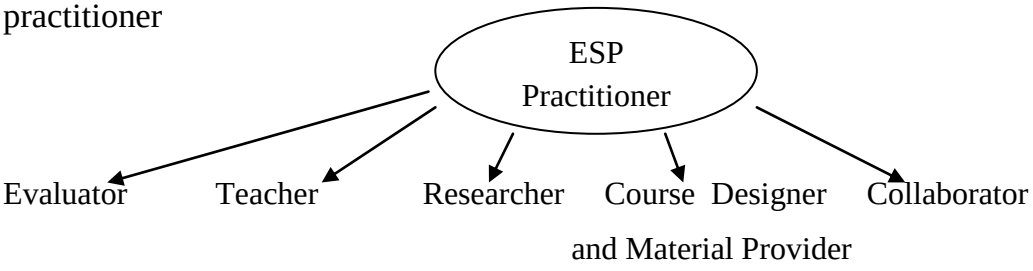

Diagram 1.4: Roles of the ESP Practitioner
(Adapted from Dudley-Evans and St John 2003: 13-16)

From the above diagram, it can be stated that the ESP practitioner needs to perform different tasks while involved in ESP teaching situation. Therefore, the first role which is devoted to him is that of the teacher where he is the

organizer, the consulter, and the negotiator. He then tries to design or plan the course and provides material in case no material is available. He has to collaborate with subject specialists, teaming together to teach or consulting with each other. He may also collaborate with learners and ask them about their wants to involve them in the choice of materials and even the activities; by doing so, he is taking into account their needs which will pave the way to a better grasp of the course. As a researcher, he needs to conduct research about genre analysis and discourse analysis and finally evaluate and assess their courses. ESP practitioners need to evaluate their learners' achievements as well as their courses, and the teaching materials they use. They need to assess themselves, the teaching methods and approaches.

Hence, some of what teachers could do to motivate their students to learn effectively, will be explained below under the headings:

1-6-1 ESP Practitioner as a Teacher

The main point which most of the researchers (Kennedy *et al*, 1984; Hutchison *et al,* 1987; Robinson, 1991; Dudley-Evans *et al,* 1998; and so forth) agree on is that the ESP practitioner is a teacher that needs good qualities of teaching such as the ability to generate communication, flexibility, showing interest in the learners' specialty. While examining the role of the ESP practitioner as a teacher, one may notice that it implies a set of sub-roles s/he is required to play: the classroom organizer, the consulter, and the negotiator. In some cases, s/he is asked to work one-to one. Moreover, s/he needs to be flexible. Dudley-Evans *et al* (1998:14) state that: *"The willingness to be flexible and to take risks is one of the keys to success in ESP teaching."*

1-6-2 ESP Practitioner as a Course Designer and Material Provider

As it has been mentioned before, the ESP practitioner does not only teach; there has been an agreement among researchers (Mackay *et al,* 1978; Swales, 1980; Robinson, 1991; Dudley-Evans *et al,* 1998) that he is required to

have other duties such as designing, setting up and administering the ESP course.

While undertaking an ESP course, the ESP practitioner as a first step needs to plan his course and as a second step he needs to provide materials. The latter should be relevant to his learners' needs. At this level of analysis, Dudley-Evans *et al* (1998) explain the role of the ESP teachers in providing materials. According to them, this process involves:

- First, choosing suitable material which has been published.

- Then, adopting this material if it is not suitable.

- Finally, ESP practitioners are invited to write their own materials when it is not possible for them to find something suitable.

Most of employers favor the kind of materials written by the ESP practitioner himself and this may result in the ignorance of ready-made materials even though it suits the learners' needs. Swales (1980) states:

> *"the role of the materials writer has become such a desirable characteristic of the ESP teacher in the eyes of employers that there is a danger that the advantages of published material are ignored even when that material is suitable for a given situation."*
>
> Quoted in (Dudley-Evans *et al* 1998:15)

Apart from designing suitable materials for his course, the ESP practitioner is applied to work in either collaboration or cooperation with other language teachers, subject specialists, learners and so forth.

1-6-3 ESP Practitioner as a Collaborator

It is presumed in this sense, that teaching ESP is best practiced through either collaboration or cooperation with subject specialist or by cooperation with learners. Dudley-Evans *et al* (1998:16) refer to the term *cooperation*

as*:"When the ESP teacher finds out about the subject syllabus in an academic context or the tasks the students have to carry out in a work or business situation"* and *collaboration* as*: "When there is some integration between specialist studies or activities and the language".* According to them *"the fullest collaboration is where subject expert and a language teacher team-teach classes."*

In the same line of thought, Kennedy *et al* (1984) relate the success of team-teaching to cooperation from both sides; that of the subject teachers and ESP specialists along side with mutual trust. Cooperation and trust are considered to be the most essential ingredients for the success of such process. To collaborate, cooperate or team-teach classes seem quite helpful for the ESP practitioner but s/he needs to be updated, and this can be achieved through keeping touch with research.

1-6-4 ESP Practitioner as a Researcher

ESP practitioner needs, therefore, to be in touch with research in different areas of ESP like EBP, EST, ESS and to include and use the findings of research in his own situation to better cope with the learners' needs. According to Dudley- Evans *et al* (1998:15):

> *"an ESP practitioner has to go beyond the first stage of Needs Analysis -Target Situation Analysis (TSA) which identifies key target events, skills and texts- to observe as far as possible the situation in which students use the identified skills, and analyze samples of the identified texts."*

ESP practitioners are also invited to conduct research about genre analysis and discourse analysis to get a clear idea about those texts used by the learners.

1-6-5 ESP Practitioner as an Evaluator

Various types of evaluation can be applied to ESP courses. Hence, ESP practitioners are required to evaluate and assess their courses; they need to evaluate their learners' achievements as well as their courses, and the teaching materials they use. They need to assess themselves, the teaching methods and approaches they follow, to check how much success it brought to their classes. Evaluation and assessment hold a crucial significance in ESP. In this vein, Dudley Evans *et al* (1998:17) write: *"It is important to follow up with students some time after the course in order to assess whether the learners have what they were not prepared for."*

They, even, go further to state that *"Evaluation through discussion and on-going needs analysis can thus be used to adapt the syllabus"(Ibid).*To be updated in terms of research evaluation and assessment will help the ESP practitioner better cope with the requirements of his/her learners' needs and that of the target situation.

As far as courses are concerned, teachers will revise and improve the course as they gain experience with the content and with the students who take the course. Once teachers have the background information they need, they should be ready to develop an outline of the course. Three components of the outline should be considered simultaneously: the content and objectives, how to make the content relevant and interesting to the students, and how they will assess their learning. Course objectives are the broad goals you have for students: what they should be able to accomplish by the end of the course. In addition, more specific objectives can be written for specific units or lessons.

Bloom's revised taxonomy is a framework that delineates six cognitive processes that increase in complexity, as seen in the following six questions about the intended learning outcomes. Teachers have to find out whether they want their learners to **remember** the material taught, to **understand** it (to translate, interpret, put into own words), to **apply** it (to use content to solve

problems), to **analyze** it (to break down material into parts, detect relationships), to **evaluate** it (for a particular purpose, be able to make judgments about the value of ideas, solutions, methods, etc.), to **create** something new from it. Teachers' targeted levels of the taxonomy should be easily detected in their course (and unit or lesson) objectives.

Davis (1993: 299-314) says that well-written objectives:

-Allow you to determine what you want your students to accomplish in your course by stating the intended outcomes of student learning,

-Guide you in selecting appropriate instructional methods, assignments, and materials,

- Clarify for students what you expect from them, and

-Help colleagues in your department who teach courses for which yours may be prerequisite

Concerning the syllabus, its design is also a personal choice. The purpose of the syllabus should drive the decision as to what content to include. Parkes & Harris (2002) identify three major purposes that a syllabus should serve. They are described as the following: syllabus as a *contract*, syllabus as a *permanent record*, and syllabus as a *learning tool*.

a) Syllabus as a contract makes clear what the rules are

- Sets forth what is expected to happen during the semester
- Delineates the responsibilities of students and of the instructor
- Describes appropriate procedures and course policies
- Content required for a syllabus to serve as a contract
    - Clear and accurate course calendar
    - Grading policies: components and weights
    - Attendance policy

  - Late assignment policy, policies on incompletes and revisions
  - Academic dishonesty and academic freedom policies
  - Accommodation of disabilities policy

b) Syllabus as a permanent record serves accountability and documentation functions:

- Contains information useful for evaluation of instructors, courses, and programs
- Documents what was covered in a course, at what level, and for what kind of credit (useful in course equivalency transfer situations, accreditation procedures, and articulation)
- Content required for a syllabus to be useful as a permanent record
  - Title and semester of course, department offering the course, credit hours earned, meeting time and place
  - Name, title, and rank of instructor(s)
  - Pre- or co-requisites
  - Required texts and other materials
  - Course objectives (linked to professional standards if appropriate)
  - Description of course content
  - Description of assessment procedures

c) Syllabus as a learning tool helps students become more effective learners in the course:

- Inform students of the instructor's beliefs about teaching, learning, and the content area
- Focuses on students and what they need to be effective learners
- Places the course in context (how it fits in the curriculum, how it relates to students' lives)
- Content required for a syllabus that serves as a learning tool for students
- Instructor's philosophy about the course content, teaching and learning
- Relevance and importance of the course to students

- Information on how to plan for the semester including self-management skills, guidance on time to spend outside of class, tips on how to do well on assessments, common misconceptions or mistakes, and specific study strategies
- Prerequisite courses or skills
- Availability of instructor(s) and teaching assistants
- Campus resources for assistance and offices that aid students with disabilities

A syllabus is often thought of as the document instructors assemble and distribute to students at the start of the semester. Whether it is intended or not, the quality of the syllabus is a fairly reliable indicator of the quality of teaching and learning that will take place in a course (Woolcock, 2003). Therefore, it behooves instructors to make the effort to construct a high-quality syllabus. The results of that effort can benefit the instructor as well as his/her students.

The process of developing a syllabus can be a reflective exercise, leading the instructor to carefully consider his or her philosophy of teaching, why the course is important, how the course fits in the discipline, as well as what topics will be covered, when assignments will be due, and so on (Eberly, Newton, & Wiggins, 2001; Grunert, 1997). This can be an enlightening experience that results in an improved course. In addition, by making sure expectations are clearly communicated, instructors can circumvent a whole host of student grievances and misunderstandings during the semester.

The syllabus is, thus, both a professional document and a personal document, one that reflects the instructor's feelings, attitudes, and beliefs about the subject matter, teaching, learning, and students, as well as setting out the "nuts and bolts" of the course. When so constructed, the syllabus can serve as a guide to the instructor as much as a guide to the class (Parkes & Harris, 2002).

A syllabus lets students know what the course is about, why the course is taught, where it is going, and what will be required for them to be successful in the course (Altman & Cashin, 2003). The well-designed syllabus provides a

solid beginning to the semester, sets the tone for the course, provides a conceptual framework for the course, serves as a "virtual handshake" between the instructor and students, and becomes a resource that is referred to over the course of the semester. It also shows students that you take teaching seriously (Davis, 1993). As far as the word "Design" is concerned, it is fair to point out, that it may be tested and evaluated.

1-7 Conclusion

This chapter has given an overview on the field of ESP. Definitions of ESP as well as its different types have been provided. We tried to show that the four language skills (listening, speaking, reading and writing) can be a requirement of the target situation in an ESP context. We then highlighted the necessity of course design and tried to shed light on the various roles of the ESP practitioner in motivating learners. Furthermore, the chapter showed the importance of needs analysis to determine the content of an ESP course. Accordingly, different methods are used to draw the profile of needs of learners which is the concern of the following chapter.

Chapter Two

Research Design and Procedures

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2.1. Introduction

This chapter describes the research design, approaches, and procedures. It will do so by giving the rationale behind using the case study. Then an overview of the quantitative and qualitative approaches is provided. A full description of the combination method will be followed, i.e., both qualitative and quantitative approaches used in this study to analyze the obtained data. To do so, a questionnaire, semi-structured interview and participant observation will be used as suitable tools for data collection and analysis to satisfy the information needs of the present study.

2.2 Description of the ESP Situation at Mustapha Stambouli University of Mascara

The Algerian Ministry of Higher Education and Scientific Research has put into practice the project of the creation of the ESP centers in Algeria in 1988. The objective was to enable the centers with the necessary pedagogical and material equipment to develop the scientific research in the field. Thus, the nearest ESP centre was settled in Oran a city which is nearly 95 km far from Mascara.

Nowadays, ESP lectures are offered at almost all the faculties of the University of Mustapha Stambouli at Mascara, namely the Technology faculty. However, Ourghi (2002) states that the absence of a linguistic awareness has resulted into low achievements of the Algerian students in EFL. The same could be said as far as the situation of ESP case is concerned.

2.2.1 Faculty of Technology

The LMD system at the faculty of technology is two years of common core, and then the third year for specialty, as demonstrated in the diagram below:

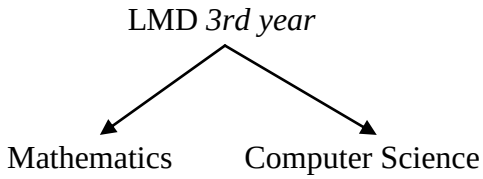

Diagram 2.1 LMD 3rd year Specializations in the Faculty of Technology

Our concern in this research is the master level. As far as the Master branches are concerned, they are represented as follows:

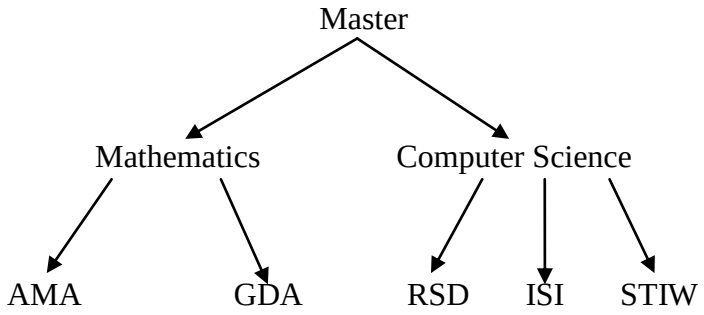

Diagram 2.2 LMD Master Specializations in the Faculty of Technology

We will focus on the Master in Computer Science in this study. Concerning the time allocated to the master students, it is shown in the table below:

Years	1st Year Master	2nd Year Master
Time allotted / per week	1h30	1h30

Table 2-1 Time Allotted for Teaching English in Computer Science.

The teaching of this module is divided into two semesters. The first one deals with: visions and impressions about Computer Science through texts and activities. Moreover, language structure is integrated in this field during the course.

In the second semester, these students have to do presentations. By then, they possess some English concepts about the field of Computer Science because learning English is important for scientific and computer purposes.

2.3 Research Design

This research was conducted using the case-study research design. The reason for choosing this type of research is that it focuses on understanding the phenomenon -in this case the ESP course in higher education- within its natural setting. In addition, it is the most common qualitative method used dealing with information systems (Myers, 2003).

In this vein, Creswell (1998: 61) defines case-study as *"an exploration of a « bounded system » of a case or multiple cases over time through detail, in depth data collection involving multiple resources of information rich in context"*.

For Creswell, a case-study is involved in an investigation in depth to have an internal insight of a certain phenomenon through time using data collection as a method to explore this case through different contextual information.

From another point of view, Y.Kumar (2006: 147) argues that: *"a case-study is a study in depth to explore all peculiarities of a case".* In other terms, case-study refers to the process of exploring in details the characteristics of a given case which differs from one situation to another as Kumar (2006: 147) cites that a case *"does not necessarily mean an individual"*, it might stand for an institution or a nation.

The discipline of information system is characterized by continuous, often revolutionary change. Due to the fact that researchers are regularly unable to provide guidance on how to supervise new systems at their introductory phase, they often rely on practitioners in promoting and/or evaluating such change, and find themselves investigating how those practitioners implemented and managed change, thus developing theories for it. This is why the case study can be implied to capture and formalize the knowledge of practitioners, develop theories from practice, and move on the testing stage (Benbasat et al.,

1987). Another reinforcing aspect for the use of the case study is that it relies on multiple sources of evidence and multiple data collection techniques.

A case-study, as defined by Yin (1994), Eisenhardt (1989), and others, has well-defined steps. However it is significant, at this level, to note down that it does not involve the use of a particular sort of evidence. Yin (1994) lists six most important sources of evidence: documents, archival records, interviews, direct observation, participant observation, and physical artifacts. Additionally, it can be accomplished using quantitative and/or qualitative methodologies. A frequent confusion is that case studies are solely the result of ethnographies or of participant observation (Yin, 1981).

This unique characteristic -the ability of the researcher to use observations of a single unit or topic, or contextual case, as the central point of a study, along with its plurality as a research method- has enabled researchers using the case study to go beyond the boundaries of the traditional research paradigms.

In spite of how it is used, for either theory building or theory testing, case study research is an essential research methodology for applied disciplines. It is a process of scholarly inquiry and exploration whose fundamental objective is to create new knowledge (Herling et al, 2000). It can also be considered as a research strategy aiming at examining an existing phenomenon and the associated contexts that are not clearly apparent. For example, experiments vary in that they focus on isolating the phenomenon from its context; histories as well vary in that they are limited to past phenomena.

These distinctions amongst types of evidence, data-collection technique, and research approach are believed to be significant in defining case study research. In the vein of all other forms of research, it must be concerned with issues such as methodological strictness, validity, and reliability. This is accomplished through the six elements below (Stake et al. 1981):

- Determine and define the research questions.
- Select the cases and determine data-gathering and analysis techniques.
- Prepare to collect data.
- Collect data in the field.
- Evaluate and analyze the data.
- Prepare the report.

All the above mentioned elements of case study justify its choice in this work. For example, it enables the researcher to have an in-depth vision of the use of various techniques as a means of content delivery for the ESP postgraduate students at the University of Mustapha Stambouli Mascara and the series of events related to it (the way those lectures were delivered and received by the audience). It also allows data crosscheck as many sources of evidence are used such as interviews, direct observation, participant observation, and physical artifacts. Even if the researcher has selected the case-study of computer science, she was obliged to select a sample to simplify the work as there exist many areas of specialization in the 'computer science' field of study.

2.4. Research approach

The present study opts for a combination of quantitative and qualitative methods regarded as a worthy method in improving understanding. In practice, both methods are frequently considered to be appropriate within a single investigation. It is up to the researcher to choose specific methodologies which will allow him/ her to obtain a somehow clear understanding of the topic. But before defining, giving the strengths, and justifying the use of this combination; it is appropriate to draw attention to the two approaches (qualitative and quantitative) in isolation.

2.4.1. Qualitative Approach

Qualitative approach is an approach for enquiries focusing on exploration and discovery rather than measurement or proof since it is concerned with understanding human behavior from the actor's own frame of reference Nunan (1992).

Merriam (1988) quoted in Nunan (1992:77) states that: *".....the qualitative case study can be defined as an intensive, holistic description and analysis of a single entity, phenomenon, or social unit"*. Thus, since it is concerned with analyzing questions addressing 'why?'. It needs a deep description and analysis of the studied phenomenon as it is valid, real, rich and deep data. Qualitative research uses a naturalistic approach [1] that seeks to understand phenomena in context-specific settings, such as real world setting where the researcher does not attempt to manipulate the phenomenon of interest (Patton, 2001: 39). This approach is roughly defined as *"any kind of research that produces findings not arrived at by means of statistical procedures or other means of quantification"* (Strauss and Corbin, 1990: 17). Instead, it is the kind of research that produces findings arrived at from real-world settings where the *"phenomenon of interest unfold naturally"* (Patton, 2001:39).

Unlike quantitative researchers who seek causal determination, prediction, and generalization of findings, qualitative researchers seek instead illumination, understanding, and extrapolation to similar situations (Hoepfl,

[1] 1-Naturalism commonly refers to the philosophical belief that only natural laws and forces (as opposed to supernatural ones) operate in the world and that nothing exists beyond the natural world. Followers of naturalism (naturalists) assert that natural laws are the rules that govern the structure and behavior of the natural world, that the universe is a mere product of these laws and that the goal of science is to discover and publish them systematically.

1997). In social sciences, researchers undertaking qualitative investigations are governed by a specific paradigm, i.e., the interpretive social sciences paradigm. With its emphasis on the relationship between socially-engendered concept formation and language, containing qualitative methodological approaches such as phenomenology, ethnography, and hermeneutics, interpretive paradigm is characterized by a belief in a socially constructed, subjectively-based reality, one that is influenced by culture and history. Nonetheless it still retains the ideals of researcher objectivity and researcher as passive collector and expert interpreter of data.

Gilbert (1993) notes that qualitative methodologies provide avenues that can lead to the discovery of deeper levels of meaning, i.e. recognition of the importance of the subjective, experiential 'life world' of human beings (Babbie, 1995; Blanche et al. 1999). Yet, research that makes use of a qualitative methodology will draw on data collection methods such as participant observation, interview and/or focus group (Jennings 2001). Due to the fact that it relies on the texts and discourses of participants and involves small numbers of participants in the research process as a result of the process of gathering in-depth information, it is considered as being subjective. (Gilbert, 1993; Walle, 1993; Gum, 1994)

In this study, the qualitative approach is expected to demonstrate the validity and reliability of claims obtained from the ESP postgraduate students participating in a series of Skype conferences with experts outside Algeria. It may also serve in demonstrating the generality of their feelings, impressions, and attitudes towards those sessions to meet their expectations. Perhaps one of the major limitations of qualitative research and evolution is the time required for data collection, analysis and interpretation. Indeed, the researcher has to spend a considerable amount of time in the research setting in order to examine holistically and aggregately the interaction, reactions and activities of subjects (Babbie, 1995). This is why making use of the quantitative approach may give

clear understanding of the topic under investigation, i.e., the use of ICT's in higher education.

2.4.2. Quantitative Approach:

Quantitative approach has been favored by fundamental sciences. It is also based on complex statistical analysis of large amounts of data which seeks for facts or causes of the phenomenon (Nunan, 1992). In addition to that, it is appropriate for analyzing questions about: What? Where? When? It can, also, be considered as reliable, hard and data replicable which assumes a stable reality. Grotjahn (1987) quoted in Nunan (1992:4) argues that:

> *"The quanlitative-quantitative distinction is an oversimplification and that, in analyzing actual research studies, it is necessary to take into consideration the method of data collection (whether the data have been collected experimentally or non- experimentally)."*

Thus, the mixture of these variables provides us with two pure research paradigms. The first one is the exploratory-interpretive one Grotjahn (1987), which utilizes a non experimental method, qualitative data, and provides an interpretive analysis of that data. The second - analytical-nomological paradigm (Grotjahn, 1987) - is one in which data are collected through an experiment, and quantitative data which are subjected to statistical analysis.

Consequently, this research work focuses on the two approaches to analyze data. As far as students' questionnaire and teachers' interview are concerned, both qualitative and quantitative methods are used to analyze data. Whereas classroom observation only the qualitative approach is used by the researcher to analyze what has been observed. The following diagram shows the methods of data collection which are used in this research:

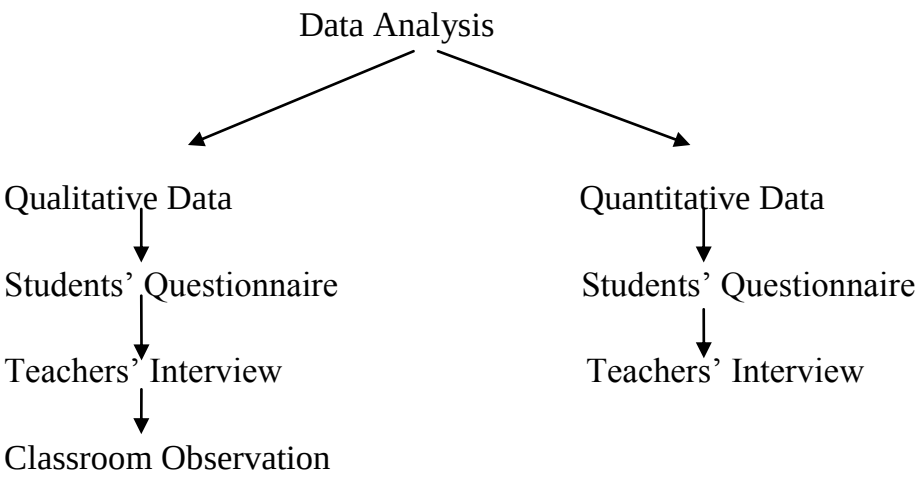

Figure 2-1 Methods of Data collection and Data Analysis used in this Research.

Unlike the qualitative approach, quantitative research is grounded in the positivist social sciences paradigm[2], which primarily reflects the scientific method of the nature sciences (Creswell, 1994; Jennings, 2001). According to Noonan (1994), researchers who adopt a more deductive approach use theory to guide the design of the study and the interpretation of the results. They are likely to abstract data from the participants into statistical representations rather than textual pictures of the phenomenon. This means that the entire research process is objectively constructed and the findings are usually representative of the population under investigation. Its main strengths are precision and control. Control is achieved through sampling and design, whereas precision is seen in the reliable quantitative measurement.

A further strength is experimentation which leads to statements about causation, since the systematic manipulation of one variable can be shown to have a direct causal outcome on another when other variables have been dropped out or controlled (Babbie, 1995; Blanch et al., 1999). Furthermore,

[2] This paradigm is primarily based on a number of values, including: a belief in an objective reality; knowledge of which is just gained from sense data that can be directly practiced and established between independent observers. Phenomena are areas under discussion to natural laws that humans realize in a logical manner.

hypotheses are tested through a deductive approach, and the use of quantitative data permits statistical analysis (Welman et al., 2001).

Despite all the above mentioned benefits of quantitative approach, one of the limitations reported by critics is that scientific quantitative approach denigrates human individuality and the ability to think (Walle, 1996; Massey, 2003). In the same line of thought, Gilbert (1993) argues that its mechanistic philosophy tends to reject several concepts related to freedom, choice, and moral responsibilities.

This leads to the point that a scientific approach cannot, in fact, be absolutely objective, since subjectivity is involved in the choice of a problem and in the interpretation of the results. The following table summarizes the common differences usually cited between the two approaches:

Qualitative Approach	Quantitative Approach
Inductive approach to conducting interviews	Deductive approach to taking physical counts
Sampling approach related to relative value of data sources	Sampling approach related to a predetermined statistical design
Observation recorded in representational form (images, narratives, notes)	Observations recorded as pre-classified categories or numbers
Open-form observation approach subject to contextual variables	Closed-form observational approach to meet already-established methodological criteria
Interpretation situation-driven, representing specific situations and difficult to generalize	Interpretation procedure-driven, deriving objective facts and easy to generalize

Table 2.2 comparison between qualitative and quantitative methods (Farrington and Nelson: 1997)

According to Coll & Chapman (2000:28):

> *"Some research questions will be readily answered using qualitative means, others quantitative, and some will be best addressed using a combination of the two. What is necessary is the appropriate research designs."*

In the same vein, Blaikie(1991), Easterby- Smith et al (1991); Creswell, (1994); Decrop, (1999); Bowen (2003); and Massey (2003) emphasize the following benefits of combining qualitative and quantitative methods:

- While the quantitative design strives to control for bias so that facts can be understood in an objective way, the qualitative approach strives to understand the perspective of the programmed stakeholders, looking to first- hand experience to provide meaningful data (Easterby-smith et al, 1991).

- The accumulation of facts and causes of behavior are addressed by the quantitative methodology, whereas the qualitative methodology addresses concerns with the changing and dynamic nature of reality (Bowen, 2003).

- Quantitative data are collected under controlled conditions in order to rule out the possibilities that variables other than one under study may account for the relationships identified, while qualitative data is collected within the context of its natural occurrence (Massey, 2003).

In the case of understanding the how the course is presented for ESP postgraduate students (the case under investigation in this work), combining both approaches will help the researcher to seek reliable and valid results so that data can be representative of a true and full picture of integrating ICT in tertiary education. In addition, some research questions raised in this study will be readily answered using qualitative means, others quantitative, and some will be best addressed using a combination of the two. Accordingly, this explains

the design of the research instruments which are used in this dissertation and the different procedures for data analysis.

2.5. Data Collection

Data collection is an essential component to conducting research. It is, generally, conceived as a complicated and hard task. This is why O'Leary (2004:150) remarks:

> *"Collecting reliable data is a hard task, and it is worth remembering that one method is not inherently better than another. This is why whatever data collection method to be used would depend upon the research goals, advantages, as to the disadvantages of each method."*

The principle collection categories include: participant observation, interviews and focus group (Dalton, Elias et al., 2001). In this study, two of the above mentioned techniques have been used: an interview (semi-structured) and participant observation. A detailed description of these instruments is provided bellow. This is preceded by highlighting the setting, hardware and procedure of the ICT use as well as the informants (sample population) involved in the study.

2.5.1. Setting

The present study has been conducted in the faculty of Technology in the section of Compuer Science at Mustapha Stambouli University of Mascara. The purpose behind this investigation is to describe the ESP course to enhance, enrich, and develop knowledge and language proficiency of those ESP postgraduate students. To make use of ICT's such as a Skype conference call; each user needs some form of Skype conferencing system and access to a suitable communication link. Those systems come in a variety of formats, i.e.

some are computer based, others are dedicated units, but all have a number of common features.

Being aware of the basic equipments required for Skype conference sessions, a room including a camera, microphone, a Skype conferencing component or Skype conferencing software, and a display were provided. These equipments are described in the following subsection.

2.5.2. Hardware

A computer system has two basic parts: hardware and software. The equipment associated with a computer system is the hardware. Computer hardware performs four crucial functions: input, processing, output, and storage. Computers are electronic device programmed to accept data (input), process them into useful information (output), and store them for future use (storage). The processing function is controlled by a number of commands (software); we will explore this later. The main hardware components are:

-Microphones: There are a number of microphones available for Skype conferencing calls. However the one used was Desktop microphone i.e. a flat which sits on the table and picks up the voices as the speakers engage in the Skype conferencing session.

-Monitor: in a Skype conferencing room, there are generally at least two monitors that reveal a view of the remote room and the originating room. It is better to have double hung monitors in the back to enable the teacher to see the far-end room.

-Whiteboard and Projectors: an interactive whiteboard attached with a projector helpful in enlarging the picture.

-Codec: coder/decoder - A part of software[3] that codes and compresses the extrovert and decodes and decompresses the incoming audio and video signals. This is what can be said about the hardware equipments used in those sessions. On the other hand, a frequent software was used i.e. Skype.

2.5.3. Procedure

Eighteen (18) ESP postgraduate students from a population of 60 students were observed while engaged in a series of Skype conferences (8 sessions).Those sessions were part of their curriculum. The purpose was to provide them with the opportunity to have links with experts in the field of ICT and ESP in geographically separated locations. The participants were all postgraduate students. No special criteria in terms of race, sex, and age range were applied.

The only motivation was to participate in an exceptional international distance learning experience. Most participants did not have the same experience before except 7 students who participated in the Skype program launched by the department under the supervision of Professor Michel Van Der Yeught and his staff 'Maison Interdisciplinaire Aix- en- Provence Marseille University (France)'. For the participants, the Skype conferences sessions represent a training to use ICT's in their future career as teachers or engineers.

2.6. Sampling

C.R.Kothar : (2004 :55) underlined the importance of using a sample when he wrote : *"The respondents selected should be as representative of the total population as possible in order to produce a miniature cross-section."*

[3] As important as hardware devices may be, they are useless without the instructions that control them. These instructions used to control hardware and accomplish tasks are called software.

The selected respondents constitute what is technically called a ‘’sample’’. This explains that a sample represents the whole in a minor way.

Kumar (2006:53) explains this in the following diagram:

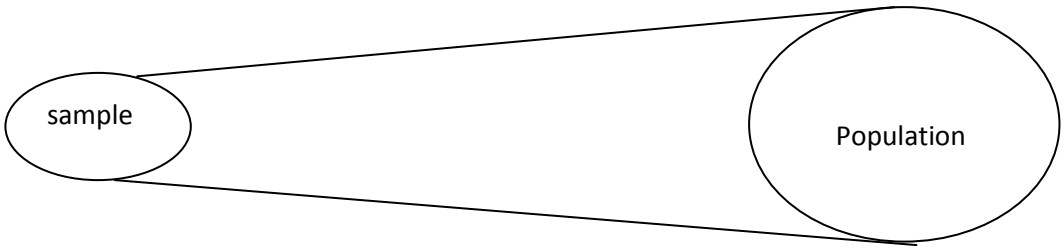

Figure 2.2 : The Sample Representation

Kumar illustrates the sample in this diagram as a minority that belongs to the majority which is the population. This minority can represent the majority through generalizing the findings obtained from the sample of the whole population. Kumar goes a step further when he illustrates a sampling cycle through which he explains the whole process of sampling :

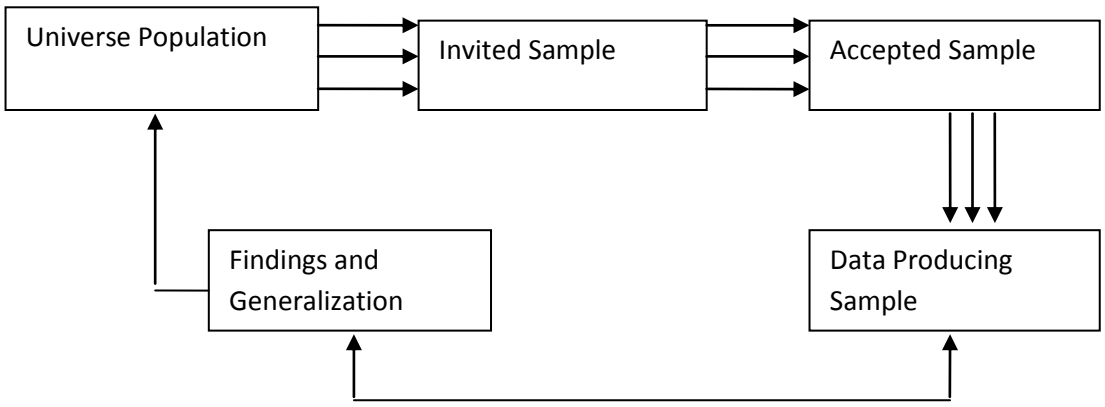

Figure 2.3: The Sample Cycle

The process of sampling is determined by five stages according to Kumar. These stages construct a cycle in which the researcher identifies the universe concerned which is his/her research scope. Then the researcher selects

a portion of the universe to which he/she has the ability to access. This portion is called 'Population'. After selecting the population, the investigator invites a 'sample' of this population to collaborate with him/her in accordance to the size and situation. At this point, the control is assumed by the respondents and not the researcher as they have the choice to accept the invitation or not. This process continues until the sufficient number for the study is completed.

After that, the study is presumed with the accepting sample through data gathering techniques. Through applying the methodology procedures, the researcher obtains his/her findings from the data producing sample which refers to the sample that actually cooperated with the researcher and already produced the data. It is from this data that the investigator interprets, analyzes, and produces the final results to draw the conclusion.

2.6.1. Learners' profile

The students engaged in the Skype conference sessions received a 'Licence' degree in Computer Science. Their learning career lasted for three years and prepares them to be future engineers through a variety of courses. After sitting for a competition test, the eighteen students passed successfully to the present two years learning program, i.e., one theoretical and the other for research work to prepare their master degree in this branch of Computer Science.

The aim of this postgraduate training is to develop theoretical and practical knowledge needed for students in an ESP context. This was done through a rich program comprising a variety of courses including: ICT and English for science and technology (EST) to give them the opportunity to differentiate between the social and technical branches when using English.

To do so, lectures concerning the acquisition of specialists' discourse as well as register and discourse analysis were scheduled. In addition, courses on Needs analysis, content and issues in ESP and course design were also dealt

with. Foreign language courses were added including French and Arabic for specific purposes for enlarging their knowledge.

Regarding the procedure of the above mentioned courses, each course had to be completed in twenty hours. After that the students were requested to present a research paper related to the topic. This was followed by an exam. After finishing all the above mentioned lectures, each student presented a research proposal which highlighted the general layout of the thesis he or she was to undertake for the fulfillment of the 'Master' degree in Computer Science.

2-6-2 Teacher's Profile

This research work involves sixteen teachers. Ten of them teach in the department of Mathematics and six teach in the department of Computer Science. These ones are distributed as follows: Three of them are in charge of teaching English for first and second year LMD students and three are in charge of teaching English for Master students for both sections, i.e., Mathematics and Computer Science.

Thus, the teachers who have been interviewed consisted of nine women and seven men; the aim was to draw a comparison between them to see whether they use the same techniques in language teaching and also to see whether they encounter the same difficulties in their respective career.

The teachers who teach in the department of Computer Science are as follows: two teachers hold a Magister degree in English for Specific Purposes. Thus, they are subject specialist. They have been teaching English for four years: they taught English in secondary school for twenty four years in technical stream. In addition to this, they have taught English in the faculty of Technology for four years. Moreover, they also teach students of first and second year Master Engineering as well as students of master in Computer Science and in Civil Engineering.

Since Master students of Computer Science have the English module during the whole year. This dissertation also involves four other teachers of English. The first one holds a master degree in English. He has been teaching English for three years in the Technology Faculty, whereas the three remaining teachers hold a 'licence' degree in English. They are language teachers. They have been teaching English for three years to students in the faculty of technology. One of them teaches also in secondary school.

2.7 Research Instruments

Data collection procedures were carefully selected due to the complexity of the situation under study. The information gathered aimed at providing evidence for the hypotheses put forward; identifying the various types of needs of the population under study, and eliciting the present situation lacks.

Based on a triangular approach, which requires multiple sources of data collection, the researcher built the study including the use of questionnaires for target students , an interview designed for teachers in charge of the ESP course, in addition to classroom observation. This was done to cross-check the validity of the results and to enable the researcher tackle the problem from different angles as Weir and Robert (1993:137) state:

> *"A combination of data sources is likely to be necessary in most evaluations because often no one source can describe adequately such a diversity to features as is found in educational settings, and because of the need for corroboration of findings by using data from these different sources, collected by different methods and by different people (i.e. 'triangulation')."*

'Triangulation' is, then, seen as a very effective procedure of gathering valid data, since a one-source-based investigation may be inadequate and, to some extent, may distort the researcher's view of the situation under investigation. In the same line of thought, in an ESP context, Hutchinson & Waters (1987: 58-59) assume that:

> *"There are a number of ways in which information can be gathered about needs. The most frequently used are: Questionnaires; Interviews; Observation… In view of the complexity of needs which we have seen, it is desirable to use more than one of these methods."*

In other words, due to the complexity of subjects' needs sought for by the researcher, the latter tried to adopt a triangular approach in which she is required to use multiple sources and instruments to gather information. For this purpose, the first instrument put into practice was the questionnaire.

2.7.1 Students' Questionnaires

Questionnaires are supposed to be one of the most common methods of data collection in foreign language research, as claimed by Richards (2005: 60):

> *"Questionnaires are one of the most common instruments used. They are relatively easy to prepare, they can be used with large numbers of subjects, and they obtain information that is relatively easy to tabulate and analyze."*

Thus, the questionnaire has been chosen as a research tool because it can be analyzed in a shorter period of time compared to interviews, and it allows a large sampling. In effect, the interview is time-consuming since each question is dealt with in isolation for each informant. In an attempt to define the questionnaire, Brown (2001: 6) reports that the questionnaire is: *"Any written instrument that present respondents with a series of questions or statements to which they are to react either by writing out their answers or selecting from*

among existing answers." In this study, a questionnaire was designed to elicit data from the informants to investigate the research questions and hypotheses.

The questionnaire is conducted with the computers master students. Some of them facing difficulties to understand, to write or to answer to immediate situations in a time of the challenging globalization where conferences are hold between universities of the world thanks to the objectives of the LMD. Yet, others seem to have a good mastery of English; therefore, most of scientific articles that are not written in English would have little or no chance of being accepted or published. Moreover, according to (Wright, 1998: 2; Kramina, 2000: 40), the key activities of doing research are:

- *Attending lectures, seminars and conferences;*

- *Reading professional journals, books, etc.*

- *Participating in projects;*

- *Preparing written work (essays, applications, letters, e-mails, reports, papers, and so.*

- *Presenting research papers.*

Yet, there is no need to remember the hegemony of English language in all domains of research and science. This questionnaire was given to 17 students and involves 15 questions.

2.7.1.1 Aims of the Questionnaire:

The researcher used this method because students can express themselves freely through the questions. In addition to this, it can give a definite assessment about students' language and skills use as well as difficulties. In the same vein, Jordan (1997:33) states that: *"surveys of students' language and skills use as well as difficulties can be also taken under list of questions given directly to the students"*. This explains to what extent the

questionnaire helps the researcher to collect data about language skills and learners' difficulties.

He adds that:

> *"The questionnaire has been established the most common method, through which they can express themselves since it involves the students' awareness of their language use and areas of difficulties as it can be also conducted to teachers of the target language. In other words; it helps us to draw a profile of the learners' needs, lacks, wants, learning styles and strategies."*

Thus, through this method the sample population can express themselves freely in terms of their difficulties and language use as it is a step to draw the profile of learners. Furthermore, the researcher used two types of questions. The first type is the closed questions and it consists of questions where the respondent has to choose among different propositions. According to Mucchielli (1975), closed questions are useful because they:

-Enable the investigator to classify the respondents into one category or another. Thus, it facilitates the analysis of the questionnaire.

-Make it possible for the respondent to give a simple answer by crossing the appropriate box.

Thus, these types of questions are used in this research to identify the needs of English in Physics. They are also used to classify the students' difficulties through different aspects which facilitate the analysis of these questions.

Whereas the second type of questions are the open questions. They can be explained as questions which do not involve propositions. It gives the respondent the opportunity to express freely his opinion. For Mucchielli (1975), open questions present two advantages:

-Allowing the treatment of any topic and get useful data.

-Allowing the respondent to express his opinion as well as suggestions freely.

Consequently, this type of questions is also used in this research to let students express their expectations, wants and difficulties of the target language. They can also suggest some strategies that can help them to develop the four skills in the classroom.

2.7.1.2 Description of the Questionnaire:

Students' questionnaire includes seventeen different questions (see appendix A). These questions are described as follows:

- Questions 1, 2 and 3 are about learners' profile. The aim of these questions is to describe the students of Computer Science in terms of: their baccalaureate stream, the period of learning English before, and the reasons behind choosing this field.
- Questions 4 to 7 deal with learners' attitudes towards English. These questions aim at identifying opinions about the importance of English in this area of research according to these learners.
- Question 8 is about learners' level in English. It aims at identifying the English level of Computer science students.
- Questions 9, 10, and 11 deal with learners' Difficulties in English. They aim at determining the difficulties of learners when learning English in their field.
- Question 12 is about mastering the English language. This question aims at describing how much learners master the English language in their field.
- Question 13 is about learners' motivation. It aims at analyzing learners' opinions towards motivation in the classroom.
- Question 14 is about learners' expectations. It aims at identifying what learners expect from the teacher to push them to speak.

- Finally, questions 15 is about learner' suggestions. Here the students give different strategies and suggestion which can help them to develop their ability in the classroom as well as to face their weaknesses in the different skills.

In Foreign language research, it is acknowledged that the questionnaire is widely used to gather data; however, it does not seem to be sufficient for the research reliability. Thus, another method was used in this study to cross-check the findings achieved.

2.7.2 Teachers' Interview:

The interview is the best tool in order to gather informative data, for each question is dealt with in isolation with each informant; thus, the investigator is sure that no question will be left without answering. Moreover, the researcher may give further explanations about the questions, though this method is time consuming and doesn't allow for a large sampling. Richard (2001:61) asserts that: "*Interviews allow for a more in depth exploration of issues than is possible with a questionnaire, though they take longer to administer and are only feasible for smaller groups."*

When conducting research in education, the interview is considered as a useful tool of data collection. It provides a more in-depth exploration of issues, as put by Duff (2008: 134): *"Interviews are one of the richest sources of data in a case study and usually the most important type of data to be collected. Interviews provide the researcher with information from a variety of perspectives."*

In the same line of thought, Yin (1994) highlights the crucial importance of using interviews specially when conducting a case study research which is concerned with human behaviors; those behaviors, he says, should be seen through the eyes of the interviewees. It is explained as follows:

> *"… interviews are an essential source of case study evidence because most case studies are about human affairs. These human affairs should be reported and interpreted through the eyes of specific interviewees, and well-informed respondents can provide important insights into a situation."*
>
> (Yin, 1994: 20)

2.7.2.1 Aims of Teachers' Interview:

The researcher has used this instrument because it reveals considerable information about: students' difficulties in the four skills as well as attitudes, expectations or suggestions (Jordan 1997). It includes predetermined questions by the researcher. This can help the researcher organize the questions in order not to forget any detail to ask for it. Mackay quoted in Jordan (1978) favors this method of gathering information, and highlighted its advantages:

-Since it is a semi structured interview, none of the questions is left unanswered.

-It can clarify any misunderstanding which may crop in the interpretation of the questions.

-The most advantageously one is that the gatherer can follow up any avenue of interest which arises during the question and answer session but which had not been foreseen during the designing of structured interview.

So, this instrument helps the researcher to state all the questions without forgetting any detail in conducting the interview as well as in the interpretation of these questions. Furthermore, it does not take too much time as it can be analyzed easier and facilitates this process.

In the present study, a type of a semi-structured interview has been adopted. In this type, the same sort of questions is asked as in the structured interview, but the style is rather more flexible and conversational. The interview process is not disturbed by some extra questions; instead, the

researcher asks for explanations or clarifications, and makes remarks, depending on the responses of the interviewee. It is worth mentioning that while interviewing the informants, the interviewer tried to be as objective and neutral as possible in order not to influence the subject's views and deviate the interview to get valid and truthful data.

Accordingly, a semi-structured interview was administered to ESP teachers in charge of the ESP course in the Department of Computer Science (see appendix B). At this level, it should be said that at first, the investigator addressed the interview to the ESP teachers at the end of the third term of the academic year 2013-2014.

ESP teachers' interview was designed to elicit some useful information about the different practices of ESP teaching in the Department of Computer Science, in terms of syllabus, teaching materials, and course content, attempting at the same time to have an idea about their students' proficiency level in the language, their attitudes and motivation, and their perceived needs and difficulties. The investigator also tried to get teachers' views on how to design and conduct the ESP course and check their opinions and suggestions to improve the teaching situation.

2.7.2.2 Description of Teachers' Interview:

The investigator has used a semi structured interview with the following questions:

- Questions 1, 2, 3, 4, 5 and 6 aimed at collecting information about the informants such as their qualification, their experience in teaching English and ESP in particular, whether they received any training in teaching ESP, and if they found training beneficial and if teachers who work all day long obtain as good results as the those who works a few hours.

- Questions 7 and 8 were devoted to the practice of ESP teaching in the Department of Computer Science focusing on the conditions in which the teachers in question work, attempting to know about the weekly teaching time and the number of students in each group.
- As for questions 9, 10, 11, 12, they were concerned with the students, their attitudes towards learning with ICT's, their motivation towards the course, their learning through CBA .and whether teachers feel to assist and guide the learners through this approach.
- On the other, questions 13, 14, 15, 16 and 17 were asked by the investigator to focus on the ESP teacher and the course. The teachers were asked questions about the syllabus and materials they work with and about the various problems encountered when teaching ESP.
- Question 18 is conducted with the teachers to denote if there is a kind of collaboration with subject specialists in order to prepare their English course.
- Question 19 focused on teachers' suggestions to improve that situation.

2.7.3 Classroom Observation

This type of research method deals with teachers and learners classroom practices. Regarded by researchers as an important component in any scientific investigation, observation is a procedure which allows the investigator to know many things about the area under study, to see the world of the subject group in its natural environment, and contributes to collect truthful information.

According to Yin (1994) observation in case studies is the sole tool that permits to see things as they occur naturally in their context, and to have an accurate picture of the situation, especially when we aim to get information about the interaction of individuals. He (1994: 22) claims:

> *"Observations are another important source of information in case studies. This is especially true in case studies involving classrooms or schools, because the interaction of individuals cannot be understood without observation."*

As the researcher's aim from directly observing the subject group is to know more about the students' attitudes and proficiency level and its progress during the ESP course, in addition to see the interactions that take place between the different participants, classroom observation was then a very appropriate means to collect this type of data as supported by Van Lier (1988):

> *"Many case studies in applied linguistics include the systematic, focused observation of case participants in their natural contexts (classrooms, homes, community centers, workplaces), especially if one of the objectives of the study is to examine people's linguistic performance or integration in naturally occurring social situations."*
>
> (Van Lier, 1988, quoted in Duff, 2008: 138)

In this sense, it should be mentioned that throughout the different approaches to language research, various labels and types of classroom observation are proposed, such as the terms 'direct observation' and 'naturalistic observation' which are used interchangeably by researchers. In effect, 'direct observation' or 'naturalistic observation'; as their name implies; involve observing directly organisms in their natural settings.

The purpose of this meeting was also to make it clear for the instructor that classroom observation is used for formative and investigative, not summative purposes, and is in no case a judgment of the instructor's teaching techniques; styles, abilities, and knowledge. Rather, it is a developmental process in which the observer's role is entirely one of constructive observation designed to support the teaching of ESP.

2.7.3.1 Aims of Classroom Observation:

This method is used in order to observe the students' difficulties in the speaking skill and which type of skills teachers focus on when teaching English for these learners (Jordan1997). Furthermore, through this instrument the researcher can also observe the oral communication techniques used by the teacher to help his/her learners to use the English language.

Classroom observation allows the researcher to observe teacher-learner interaction in different forms of activities, through which there is some interaction between teacher and learner. Thus, this means that there is an oral communication because there are questions asked by teachers which need response.

2.7.3.2 Description of the classroom observation

This method of collecting data is used in this research work in order to be in direct contact with the situation. Through this instrument the researcher observes the attitudes of learners towards English as well as the status of the speaking skill and course design. It determines the classroom interaction in terms of the use of English during the course and language activities to enhance them to speak in the classroom. It can reveal also the difficulties encountered by both teachers and learners during the course.

The classroom we have observed consists of 18 students among whom 08 boys and 10 girls; The ESP course is offered in the Department of Computer Science once a week every Thursday and lasts one hour and a half from 13H.00 to 14H.30. The course begun in November 2013 and ended in June 2014, it is therefore programmed for four (02) semesters.

2.7.3.3 Length of Observation

Since one cannot get a full impression of the teaching/learning practices from a single lecture and in order to get a broad overview of the situation under study, it was important for the researcher to attend various class sessions.

To collect the required data, the researcher attended different class sessions, and tried to be as invisible as possible to avoid disturbing. The observation was carried out through note taking. It lasted for approximately two months where the investigator attended six (06) sessions in December- January and six (06) other sessions during the months of March-April 2014. The investigator chose the review to be of such time frame for better examining the pedagogy being used, students' attitudes, motivation, and proficiency level and its progress during the course.

2.8 Categorization of Research:

This research work is a study about Implementing an ESP course to Computer Science students taking as a case-study, Master students. Thus, it falls under the category of case study research.

2.8.1 Case Study Research:

According to Jordan (1997), case study is a way of obtaining in-depth information and insights. Case study is defined in various ways. Adelman, Jenkins and Kemmis (1976) quoted in Nunan (1992:74) state that:

> *"A case study should not be equated with observational studies as this would rule out historical case studies, that case studies are not simply pre-experimental, and that case study is not a term for a standard methodological package."*

Thus, case study is not only an observational study or pre-experimental, but it is rather a product of methodology. On the other hand, Adelman et all (1976).quoted in Nunan (1992:75) suggest that:

> *"Case study research may be initiated in one of two ways. In the first of these, an issue or hypothesis is proposed, and an instance drawn from that class and studied. In the second, a case is selected and studied in its own right (rather than an example of class)."*

Thus, this type of research focuses on a hypothesis that is proposed or a studied phenomenon in a specific context as: *"…it tries to illuminate a decision or set of decisions: why they were taken, how they were implemented, and with what result"* (Schramm, 1971 quoted in Yin, 1984:23). It means that this type of research deals with a determined phenomenon at a precise point in time.

In the same vein, Yin (1984:23) quoted in Nunan (1992:76) argues that:

> *"A case study is an empirical inquiry that investigates a contemporary phenomenon within its real-life context; when the boundaries between phenomenon and context of evidence are not clearly evident; and which multiple sources of evidence are used."*

Thus, this explains that through case study research, there is a phenomenon studied in a real-life context. For example: this research work deals with implementing an ESP course in the field of Computer science. Moreover, a case study deals with observing a development of a fixed situation or spontaneous speech of one subject. It can be characterized by three aspects which are: naturalistic, process oriented and ungeneralizable, as it is stated by Larsen-Freeman and Long (1991:11-12) quoted in Nunan (1992:76):

> *"A longitudinal approach typically involves observing the development of linguistic performance, usually the spontaneous speech of one subject, when the speech data are collected at periodic intervals over a span of time…The longitudinal approach could easily be characterized by at least three of the qualitative paradigm attributes: naturalistic (use of spontaneous speech),*

process oriented (it takes place over time) and ungeneralizable (very few subjects).”

Hence, we can say that a case study is an attempt to provide a portrait of what is going on in a particular setting. According to Denny (1978) quoted in Nunan (1992:77), it must go beyond the description as it must encapsulate a point of view.

2.9 Conclusion

This chapter is an attempt to describe the methods used in collecting data that draws a profile of needs of computer science students in the department of Computer Science, in the faculty of Technology. It involves sixteen students from both sections out of ninety two during the academic year 2010-2011. Thus, it provides a description about the teaching of English in this field. On the other hand, it describes the different methods which are used in this research in order to collect data about the process of the ESP course in this field. Accordingly, the following chapter deals with the analysis of data collected from the different instruments to confirm the hypotheses which are given in this research work and to identify the needs of these learners.

Chapter Three

Data Analysis and Interpretation

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3-1 Introduction

This chapter deals with data collection, analysis, and interpretation. Different instruments for data collection are used. First, a questionnaire is administered to Master students of Computer Science. Second, a structured interview is conducted with teachers. Finally, a classroom observation of different sessions is performed. Consequently, both qualitative and quantitative methods are used to analyze data. In the end the discussion of the results is presented and commented on.

3-2 Analysis of Students' Questionnaire:

In order to draw the profile of learners' needs of Master students of Computer Science, in the department of Computer Sciences, the faculty of Technology in the English module, in general, and ESP in particular, a questionnaire was administered to ESP students to know their point of view about ESP learning. Eighteen students aged between 20 and 36 were involved.

3-2-1 Results of Students' Questionnaire

Eighteen (18) ESP postgraduate students, who study ESP, have been asked to fill in the questionnaire. Below are their answers to the different questions.

1. Your baccalaureate stream is:

Stream	Number	%
Scientific	09	50%
Mathematics	09	50%

Table 3.1: Learners' baccalaureate stream

The table shows that 09 students have got a scientific baccalaureate degree whereas 09 others have got a mathematics baccalaureate degree. This means

that all of them come from technical streams where their exposure to English is very slim.

2. How long have you been studying English?

All of them responded that they had been studying English for 8 years. This shows they have the same number of years of experience with English which means they should have the same basics to start ESP course.

3. Why do you think ESP courses are important in your field?

Students	Reasons for taking ESP courses
07	For Job
05	Communication
04	Knowledge and travel
02	Learn the language

Table 3.2: Reasons for taking ESP courses

Seven students answered that it was necessary to know ESP in order to work in the business field; five students said to get in touch with others; four said to have more information and to travel abroad; and two said to improve their English.

ESP learning reinforces general English, it allows one to understand the specific language.

4. Do you think your English will improve in the future?

Yes it will	No it will not
17	01

Table 3.3: English Enhancement

Seventeen students out of eighteen said 'Yes' it will be different, except one who said 'No' and he explained that this would never happen as it is difficult to understand all the words in a text. This might reflect students' motivation and predisposition to learn. The majority believes that doing ESP courses will probably develop one's English. It will be different, more specific and richer.

5. How did you find group activities in the classroom?

For group activities	Against group activities
16	02

Table 3.4: Group Activities

Sixteen learners find group activities very interesting explaining that within groups, there is help, sharing of ideas, understanding and students feel comfortable; the two learners who find them not interesting, argued that it is boring and not helpful at all since learners disturb each other.

Group activities will certainly engender positive results: competition, helping each other, sharing opinions, practicing the four skills, i.e., listening to each other, reading each others' ideas, speaking and listening to each other. However, group activities can be summarized in the weaker learners who seem to be marginal and lost within the group, even the brilliant ones complain of having to do the whole work. The Ministry of Education implemented this approach without thinking of its results. It would have been better if teachers had been prepared in advance for that.

How did you find working in pairs in class?

Interesting	Boring
15	03

Table 3.5: Working in Pairs

Fifteen learners find working in pairs of a great interest as learners help each other in a relaxing atmosphere, and have the opportunity to show their real level; three learners find them boring explaining it is a waste of time.

Learners' relationship will be stronger since they get to know each other at the beginning, then, will discover each other later by getting accustomed to working hand in hand as one family. Yet, while implementing such an approach teachers should have been prepared first; here also, it is the teacher's role to assist learners and make sure all the members of the group participate and do the work.

6. Did you like discussing and correcting errors with your peers?

Yes	No
13	05

Table 3.6: Working with Peers

Thirteen students replied 'Yes'; according to them, it will lead to finding a solution; five replied 'No' as they think it is frustrating, without forgetting that some students may not accept to be corrected, which may create conflict among friends.

Discussing errors could be beneficial as students learn from their mistakes and could succeed later; however, for some, it is humiliating. They feel ashamed and frustrated once shown their mistakes. In such a case, it is the teacher's role to encourage them not to pay much attention to mistakes and even if they are mistaken, he has to explain to them that it is logical to make mistakes, and this is human and part of the learning process and one cannot succeed unless he has witnessed a set of failures.

7. Did you find the passages and exercises within your level reach?

Yes	Higher	Lower	Sometimes
15	01	01	01

Table 3.7: Students' Impressions on Learning Material

Fifteen students said 'Yes', they find the passages within their level, i.e., acceptable and understood; one student thinks they are at a low level; one finds them at a high level; and one finds them in between: sometimes easy to understand and sometimes difficult. It is the duty of the teacher to grade his activities: from easy to less easy to difficult. He has also to be tactful in case of difficulties and be able to make it easy for learners to grasp.

8. Did you find the passages used for comprehension relevant to your area of study?

Yes	No
18	00

Table 3.8: Learning Material Relevance

All students answered 'Yes' that passages are relevant to their area of study. That shows the relevance of the selected texts by the teachers.

Of course, a teacher should come with texts relevant to the learners' field this is what is meant by 'Needs Analysis'; this could be achieved through discussion and negotiation between the teacher and the learners.

9. What were the least satisfactory sessions of the courses?

Fourteen students declared they didn't like 'speaking and listening' and find them tiring; one said he didn't like 'reading' because it is so tiring; one likes 'reading 'since it enriches his culture; one prefers 'speaking' as it makes him

feel better , one learner suggests that learners should have good relationships and teachers should be more understanding.

Generally, learners prefer 'speaking': just let them speak and they will come with astonishing ideas, and the famous analogy to follow is, ' stop teaching, let them learn'. Once learners feel free, they will be more motivated and autonomous; mainly if encouraged to take risks, they could go further and explore more. However, the other skills should not be neglected: here also, it is the teacher's role to find a way to attract students and make them enjoy that. He could, for example, use pictures, games, audio, etc.

10. Did you rely too much on the teacher's help or were you autonomous?

Yes	No
15	03

Table 3.9: Autonomous Learning

Fifteen students answered 'No' they preferred to be autonomous and think to find out solutions by relying on themselves; three answered 'yes' they need the teacher's help but only in case of difficulties, and not all the time.

With the new approaches to teaching such as CBA and the use of ICTs, learners tend to be more autonomous and they enjoy that; only a number of lazy students carry on relying on the teacher's help. Teachers should encourage learners to rely on themselves, and on each other by asking, searching, being curious, and by understanding and guessing from context not relying too much on dictionaries or the teacher, who is still always present to guide, help, direct, etc.

11. Do you feel your English has improved?

Yes	No	Somehow
12	05	01

Table 3.10: English Proficiency

Twelve students said "Yes" it has, compared to the previous years; five said "No" it is the same; one said he sometimes feels it is not as he expected.

Of course, through the years, one's English can improve since one is in a continuous learning process and discovering new elements. For example, one's English while he was 12 years old, is not like when he is 18 years old. This question is in fact different from number 4 in the way that it verifies students' feelings towards past experience with learning English.

12. In your opinion which strategies can help you develop the 4 skills?

Fourteen students said they should be attentive in class; three said they preferred to be autonomous and think to understand by themselves by relying on themselves; one said he needs the teacher's help as he finds difficulties.

In autonomous learning, the learner takes responsibility for his/her own learning, set goals, choose language learning strategies, monitor progress, and evaluate his/her successful acquisition. Therefore, the teacher should encouraging independency in learning by displaying full approval and encouragement towards learners becoming more responsible of their learning. He should providing learners opportunities to practice independent learning, and help learners to perceive the language as a system, and develop their learning strategies so that they can practice their independence.

13. As learners what do you expect from your teacher in the English course to motivate you to use English?

All of them claimed that they need freedom to talk and to be far from being commanded and teacher being centered.

Of course teachers can share knowledge they already posses about the language in order to make students more aware of what to anticipate from language learning, but they need to no longer be the only source of information; they should let learners free and only guide them.

14. Suggest some methods to develop your ability in using English in the classroom?

The boys claimed it would be preferable to work hand in hand with girls to avoid being embarrassed.

When letting both sexes working together, there will be challenge and competition, and no humiliation will be felt if boys are outperformed by girls since girls are known to be better in languages than boys.

3.3 Teachers' Interview

This research work involves sixteen teachers. Ten of them teach in the department of Mathematics and six teach in the department of Computer Science. These ones are distributed as follows: Some of them are in charge of teaching English for first and second year LMD students and some are in charge of teaching English for Master students for both sections, i.e., Mathematics and Computer Science.

The teachers who have been interviewed consisted of nine women and seven men; the aim was to draw a comparison between them to see whether they use the same techniques in language teaching and also to see whether they encounter the same difficulties in their respective career.

3.3.1 Results of Teachers' Interview

The table below illustrates the questioned teachers.

Number of teachers	Gender
9	Women
7	Men

Table 3.11 : Teacher respondents and gender

Question 1: What degree do you hold?

license	magister	doctorate
08	06	02

Table 3.12 : Teachers' Level

Two teachers have a doctorate degree; six have a magister; and the remaining teachers have a licence. This shows that the majority of teachers are under-graduate and are less qualified then the others to teach ESP at university level.

Question 2: what is your status in relation to English language?

Subject specialist	language teacher
01	15

Table 3.13 Teachers' Status

Only one teacher is subject specialist whereas the rest are language teachers. This reflects the current situation in most of the departments, where ESP is taught by teachers who have received no instruction or training to teach English for specific disciplines.

Question 3: How long have you been teaching English?

5 up to 10 years	More than10 years
01	15

Table 3.14 : Teachers' Experience

Nearly all teachers answered that they had an experience of more than 10 years explaining that an experienced teacher has more techniques that he/she had acquired from his/her experience and that he/she is therefore more able to make students learn better. The one who had more than 5 years experience explained that even a new teacher in the domain can make students learn if he/she uses the right techniques.

It is logical that an experienced teacher has more tools and strategies to use in his teaching; his/her several years of experience make him/her know how to deal with each category of learners; however, he/she may also meet the same problems as a non-experienced teacher, i.e., he/she may obtain as bad results as the inexperienced one.

Question 4: Have you received any training in teaching ESP?

Only the subject specialist has been trained in ESP. The other teachers might find difficult to plan their ESP course content on learners' needs analysis which is a requirement before embarking in teaching English for any specific discipline.

Question 5: Do you believe training teachers can be of a great help?

Yes	No
15	1

Table 3.15: Importance of Training Teachers

The majority who answered 'Yes' argued that training teachers would be of a great help : training was held for two years some years ago, but it did not last for long. When training teachers, they could acquire more help, advice, and learn new techniques. Those who answered 'No' argued that training does not necessarily help as the 'know-how' (savoir faire) is innate: you do not need to be taught the 'know-how'. Of course, training is necessary. It can assist teachers and make them ready for facing their long journey in teaching, which is far from being easy.

- Question 6: Does a teacher who works all day long obtain as good results as the one who works few hours?

Yes	No
3	13

Table 3.16: Teachers' Teaching Load

The few teachers who answered 'Yes' said that when we believe in something, we will get it. The majority who said 'No' explained that a teacher who works more than 8 hours a day, finds himself exhausted and won't get good results.

A teacher who works all day long is exhausted. He may do well during the 1st and 2nd lectures but from then on, he is parrot-like and may commit mistakes; once home, he will not even be able to prepare tomorrow's lecture effectively.

- Question 7: How much time is allotted to the teaching of ESP module?

All teachers responded that the time allotted to the teaching of ESP was 1H30 per week. This is not too much, but quite enough for a carefully planned lesson.

- Question 8: Are the groups crowded with students?

According to the teachers, some groups are crowded (45 students) and others are not (24 students) depending on the specialty of the master.

Question 9: Do you think students work better through the use of ICT (Information Computer Technology)?

Yes	No
11	5

Table 3.17: Importance of ICT Implementation in Language Learning

Most teachers said 'Yes' arguing that it will attract them and motivate them since it is something new to them, and generally any human is curious to discover what is hidden behind something he is not familiar with. It is fascinating: our learners jump with pleasure when announcing to them they have a computer session where they are going to use CD's or the web; provided that it is under the teacher's control.

Question 10: Do you think students are prepared for the real life through learning with CBA (Competency - Based Approach)?

Yes	No
11	5

Table 3.18: Importance of CBA implementation in language learning

The majority of teachers said 'Yes' and explained that with CBA, learners tend to form groups; at the beginning they start knowing each other, then they become as one family and share the work. When integrated in groups, students learn a lot, for example sharing the work, explaining to each other, advising,

listening, speaking, agreeing/disagreeing points of views, in addition to the competition held among various groups, this will lead to more motivation and better work. The result is that once being outside, they will practice all this voluntarily or involuntarily. The other five teachers who said 'No' claim that what students learn in class is something and what they meet outside is another. For them, CBA is a waste of time, and some learners don't know what it means: the Ministry of Education implemented it without thinking about the results.

- Question 11: Do you feel your role is to assist learners and let them work independently?

Yes	No
13	3

Table 3.19: Teachers' Role in CBA

Most teachers said 'Yes' and claimed that it has become learner-centered since learners do most of the work, teachers only guide and help them when necessary. Those who said 'No' complained that even when students work in groups, the teacher is still here to explain, help, guide, correct, turn around, check, so that he gets tired more and more. The teacher automatically lets students learn and guides them; it's time for teachers to stop being the master, stop speaking a lot and let the learners speak.

- Question 12: Have you noticed that learners enjoy learning through CBA?

Yes	No
12	4

Table 3.20: CBA Influence on Learners

Most teachers answered 'Yes' saying that learners feel free and express their opinions. Those who answered 'No' argued that the good students are always complaining about doing most of the work, in addition to getting tired by explaining to the weak students, correcting them, waiting for them to catch up with the rest, etc. The weak students admit that they are lost within the group mainly in front of the excellent learners. Within any student, there is a 'hidden artist', and when given the opportunity to speak up their minds they can surprise teachers, so teachers are advised to trust their students and they will discover that learners have capacities, even the weak ones.

- Question 13: Do you allow your students to be free and accept their mistakes?

Yes	No
12	4

Table 3.21: Mistakes as Part of the Learning Process

A great number answered 'Yes' telling what is important is 'communication' whatever mistakes they make. Furthermore, they will learn from their mistakes. The only 4 who answered 'No' stated that a student is supposed to learn effectively. If he carries on making mistakes, it will be a habit; they will not be able to get rid of them.

It is obvious we are dealing with the 'communicative approach' and once interrupting them, they feel frustrated and avoid speaking; so letting them free to express themselves makes them enjoy learning. In the end, a teacher could correct his student in a friendly way.

- Question 14: Can failure lead to success?

Yes	No
13	3

Table 3.22: Learners' Failure and Success

The majority of teachers said 'Yes' since according to them, while failing, it would be a lesson and the students will be more ready to succeed and never repeat the same mistake. A small number said 'No' maintaining the idea that it would be stuck in their mind and so difficult to forget about it as it would be a barrier: they would give up and never trust themselves. Failure leads to success. Many scientists became well-known after having witnessed a pretty considerable number of failures. One example is that of Albert Einstein who was described by his teacher as an average student.

- Question 15: What can a teacher do to motivate his students? Please tick in the right column.

helpful	harsh
13	3

Table 3.23: Teachers' Tasks to Motivate Learners

Most teachers except three believe that a teacher should be helpful, and he/she has to involve students by being flexible and inclusively engaging them. The other three, on the other hand, believe that a teacher must be harsh and authoritative, by being very strict with everyone and to call for silence in class.

To motivate students is an 'Art '. The 'know-how' to attract students is not the tact of all teachers; only those who love their work and do it with satisfaction are able to do so. This so-called teacher as motivator is the one who varies his teaching through (games, songs, video films, documentaries, listening to / watching native or non-native speakers and so on). By doing as such he will avoid boredom and monotony.

Question 16: Have you designed a syllabus to use in your teaching?

All of them replied 'No'. The only subject specialist claimed, too, that he tried to design one but he will need help. He wishes to meet with colleagues and work together. He added that they met twice but each one seemed to be in a hurry, that is why he felt discouraged and did not have the envy to carry on designing the syllabus.

Question 17: While dealing with authentic materials (specialized subjects) what aspects do you implement to facilitate the task for learners?

Use new technologies	Pictures/articles/ examples	Give time to guess	Discuss and negotiate	Help/ Guide
5	4	2	3	2

Table 3.24: Dealing with Authentic Materials

-Five teachers argued that while dealing with authentic materials, to facilitate the task for learners, the teacher has to use new technologies such as CDs, tapes, computers, etc.

-Four teachers explained that the teacher has to use pictures, articles and examples.

-Two teachers said they could give time to learners to guess (ex: vocabulary).

-Three teachers claim that the teacher may discuss topics and activities and negotiate with them.

- Two teachers added that he can simply help and guide learners to facilitate learning.

The use of new technologies would be of a great help in addition to pictures, examples, discussion, and negotiation; without forgetting to give them time to

think and guess the meaning from context. Learners need to think and find the answer by themselves; otherwise, it wouldn't be learner-centered.

18. What problems did you encounter while teaching ESP?

All of them said that learners do not have the basics of English language that may allow them to speak and write. This, according to them, is due to the weak instruction they had before university.

19. Is there a kind of collaboration with subject specialists in order to prepare your English course?

All of the respondents claimed that there is no collaboration between them and that after each session each one leaves.

20. Can you give suggestions to improve that situation?

They argued that they needed help, and to work hand in hand by collaborating all together.

3-4 Analysis of Classroom Observation

The eighteen students engaged in the Skype conference sessions received a "Licence" degree in Computer Science. They sat for a competition test, and passed successfully to the Master where they are supposed to study for two years learning to get their Master degree in this branch of Computer Science.

The aim of this postgraduate training is to develop theoretical and practical knowledge needed for students in an ESP context. This was done through a rich program comprising a variety of courses including ICT's to give them the opportunity to differentiate between the social and technical branches when using English.

To do so, lectures concerning the acquisition of specialists' discourse as well as register and discourse analysis were scheduled. In addition, courses on needs analysis, content, and issues in ESP and course design were also dealt

with. Foreign language courses were added including French and Arabic for specific purposes for enlarging their knowledge.

While observing learners during several sessions, with Skype used as an ICT tool, the teacher tried to make them in touch with Professor Michel Van from Marseille Aix de Provence (France). The Professor talked to them and the students listened.

The purpose of this observation is to explore the effectiveness of Skype as a teaching tool for increasing academic achievement for ESP students in an online course through interactions with their instructor, i.e., to determine if Skype (one of the ICT tools being used in our class) could be an effective tool for instructors to provide their students for the acquisition of English language skills. It is known that only few studies have explored the perceptions of teachers and students about the impact of Skype on students' achievement in online asynchronous learning environment.

The impact of interactions between teachers and students using Skype on the acquisition of English language skills of ESP students was the purpose behind classroom observation to deal with the third research question and check if the measures taken by the Computer Science Department help improve ESP teaching. Although this study did not measure students' language skills, it explored teachers and students' perceptions of how Skype interactions had an impact on their linguistic skills.

Classroom observation is a qualitative research approach to our study. Because of the nature of our research which is a case study, a qualitative data collection method was used and the information were obtained via observation results and semi-structured interviews (apart of the students' questionnaire which despite its quantitative nature was used to elucidate the quality of the learner). Data was analyzed using the descriptive analysis method. Findings obtained indicated many critical factors (not the focus of this research) can

affect our class. Among these factors are technical tribulations, the setting, the time management and the number of participants.

3-4-1 Results of Classroom Observation

As a measure taken by the Computer Science Department to improve ESP teaching, students were introduced to online education, through a Skype-based class where the instructor invited Professor Michel Van from Marseille Aix de Provence (France) to talk. It is well known that learners, in this virtual environment, encounter serious challenges that prevent them from completing their courses successfully.

The first challenge of these was students' struggle to adapt to a computer-based training in a virtual classroom where the learning experience is entirely different from traditional classroom and face to face instructor training. This makes some students simply do not find a virtual classroom as engaging as a traditional one. This was the case in our classroom, where the lack of in-person communication and the lack of face-to-face engagement with the professor and other students became problematic for students who were struggling to understand the course material, and seemed to be lost as they could not grasp what the professor was talking about mainly when it came to answer the course exercises.

What was apparent during our observation is that only four students were likely to follow the instructions and participated during the course. Even though from time to time, the teacher tried to explain what the professor said, the students still did not manage to do the activities. He, then, tried to divide them in groups and asked them to work together. Despite of this, it was noticed that only those four students who were actively engaged in their participation, did all the work by themselves and the rest of the students were just listening.

While observing our 18 students studying through Skype, it was noticed that only a few of them could follow while the rest of them were not. We

thought that they had difficulties in understanding the Professor behind the screen or are not motivated enough to follow.

As for motivation, students were very motivated because all of them sent the teacher messages in advance to meet for lectures, so we can deduce that all students had personal decisions and internal drives that push them to learn. During three months student were able to express themselves confidently. Students also suggested to avoid courses dealing with love, friendships, etc; an element which is found among the principles of what is called self-directed learning i.e., they are aware of what they want to do, and want to know only things that they are interested in.

As for the difficulty in understanding the instructor, and by checking what was wrong, through asking those learners why they could not follow, we discovered that the problem was mainly technical as some had their headphones broken and others did not have them plugged in the sockets. We therefore suggested checking all elements before starting any course.

Learning through Skype requires first and foremost accessibility and hinges upon three key elements; agents, hardware, and software i.e. internet, broadband connection, teacher and learners, computer, head phones, a microphone, and a course. These elements may have a strong influence on the presentation of the course.

3.5 Discussion of the Results

The three research questions put forwards at the beginning were dealt with after data collection, classification, and interpretation. By looking at the students' questionnaire and teachers' interview results, and the first question: *do language teacher's experience / inexperience have any influence on success and failure in language learning?* we notice that experience / inexperience have an impact on both success and failure in language learning. Though, both

experienced and novice teachers encounter difficulties during their respective careers, more experienced teachers deal with the better. Still, the teacher who has gained a great deal of experience during several years and doesn't use it appropriately, is at the same level of a novice teacher; an experienced teacher is supposed to have fewer difficulties than a non experienced one, but if the former does not use the effective techniques, his inexperience will prime over his practice.

Second, and by looking at the next question: *is there a correlation between failure in language learning and the teacher's lack of in-service training?* we can say that nowadays learners tend to be less motivated in language learning; as a result, more students obtain bad grades and fail. This is evident in the baccalaureate results where the majority of the candidates obtain grades below the average in foreign languages. This can be linked with teachers' qualification. From this, an in-service training held for several times during the year can be of a great help not only to assist teachers but to avoid failure. This can allow teachers to meet with other teachers and exchange / share both ideas and methods. In addition they can be trained and learn new methods and techniques that will improve their personal teaching and make them succeed in their career.

Finally, the third question: *are the measures taken by the Computer Science Department to reach success in ESP teaching efficient?* demonstrated that the department of Computer Science takes measures in the teaching of ESP to reach success, which seem to be efficient: it uses the modern methods including CBA, ICT (pair/group work, learners' autonomy, learning situations, audio visual aids such as tapes and CDs with interviews and songs, video films, computers, …) and all that attracts learners and strengthens their desire and motivation to learn. The best example for our study is the use of Skype which is a means to venture out beyond the walls of the classroom into new territories. In spite of this endeavor it is still not enough with regards to the limitations of the distance education.

3.6 Limitations of the Study

The first limitation is that this study by being a qualitative case study is not generalizable. To control for this limitation it should include rich descriptors of the setting, participants, methods, instruments, and procedures to accurately capture the true voices and experiences of the participants whether students or teachers.

A second limitation of this study was the selection process. Participants in this study did not have to meet selection criteria as the 18 students we selected were the only available ones

The third limitation of this study was the small number of participants. Only eighteen students were used, so the data might have been very limited. To control for this limitation, of students' questionnaire, instructor interviews, and observation of the Skype sessions were used to triangulate data.

The last limitation is disconnection and audio problems. The bandwidth can, as well, create unstable connections and Skype can potentially be blocked in some educational institutions. Other significant problems related to hardware includes – i.e., sound (in our case microphone), and speed and connectivity issues.

3.7 Conclusion

In this research, data collection is based on triangulation. Therefore, this chapter has dealt with the analysis of the students' questionnaires, teachers' interview, and Skype sessions observation. The teachers have been questioned to draw a comparison among teachers and to see whether they encounter the same difficulties in teaching. The Master students of Computer Science were questioned and observed, as well, to check their level in English, their needs and anticipation, and their learning difficulties. Then the description of the results has been discussed and commented on. Next, the design of an appropriate teaching syllabus will be proposed taking into consideration that adult learners want their learning to be relevant.

Chapter Four

Recommendations and Suggestions

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4.1 Introduction

This chapter will deal with recommendations and suggestions. Therefore, there is no better way than to focus on designing an appropriate syllabus by taking in consideration motivation, self-directed learning, use of ICT's and Collaboration between Language Teachers and Subject –Specialists. Learners need to be self-directed to better improve their learning. This can be done through incorporating visual literacy such as maps, diagrams, tables, graphs, charts in a curriculum which would be a challenge. From reading maps to decoding icons to using concept webs, visual Literacy is critical to success in today's world. In addition to that, motivating learners to use creative thinking skills to put together sentences using unfamiliar vocabulary words is complicated. As for language teachers working together with subject-specialists, collaboration would be the answer. They can consult each other, and discuss and decide about what is suitable for learners.

4.2 Syllabus Design

Every language course ought to be designed taking three points into consideration: "Who'', ''How" and "What" to teach. If a textbook has been intended for a different age and occupation group as far as students are concerned, it may result in a pedagogical failure. Therefore, the first step of every syllabus design should be needs analysis, i.e., a set of techniques and procedures used to obtain information about learners, situations and purposes for which they want to learn the language.

4.2.1- Defining a Syllabus

First of all, courses and syllabuses are generally perceived to be two different things: a 'course' might mean a real series of lessons for instance the particular course delivered last year to a group of students and to be repeated again this year, while a 'syllabus' can be something rather more abstract, with

fewer details of the blow by blow conduct of individual lessons. Thus we might quite properly write rather different courses, with different materials, but based on the same syllabus.

There has been confusion in terms of definition and use concerning the terms 'syllabus, syllabus design and curriculum'. Stern (1983) sees the field of curriculum studies as a part of the discipline of educational studies. In its broadest sense, it refers to the study of goals, content, implementation and evaluation of an educational system. In its restricted sense, it refers to a course of study or the content of a course or program. It is in this narrow sense of curriculum that the term 'syllabus' is employed. According to Stern, 'syllabus design' is one phase in a system of interrelated curriculum development activities.

Shaw (1975:6) brings out a distinction between 'curriculum' and 'syllabus'. He states that:

> *"The curriculum includes the goals, objectives, content, processes, resources, and means of evaluation of all the learning experiences planned for pupils both in and out of the school and community, through classroom instruction and related programmes"*

and defines 'syllabus' as *"a statement of the plan for any part of the curriculum, excluding the element of curriculum evaluation itself."* (Shaw, 1975:6)

Allen (1984) defines 'curriculum' as *"a very general concept, involving consideration of philosophical, social and administrative factors which contribute to the planning of an educational programme"* and 'Syllabus' as *"that subpart of a curriculum concerned with the specification of what units are taught."*

Strevens (1977:25), too, says that a syllabus is partly an administrative instrument, partly a-day-to-day guide to teacher, partly a statement of what is to be taught and how, sometimes partly a statement of an approach – *"the syllabus embodies that part of the language which is to be taught, broken down into items, or otherwise processed for teaching purposes."* For Wilkins (1981:83) syllabuses are specifications of the content of language teaching which have been submitted to some degree of structuring or ordering with the aim of making teaching and learning a more effective process.

Hutchinson and Waters (1987:2), on the other hand, state that:

> *"ESP like any form of language teaching is primarily concerned with learning. But it is in our view that in its development up to now, ESP has paid scant attention to the question of how people learn, focusing instead on the question of what people learn."*

It has, in other words, been language centered in its approach. The figure below summarizes the whole process of ESP course design:

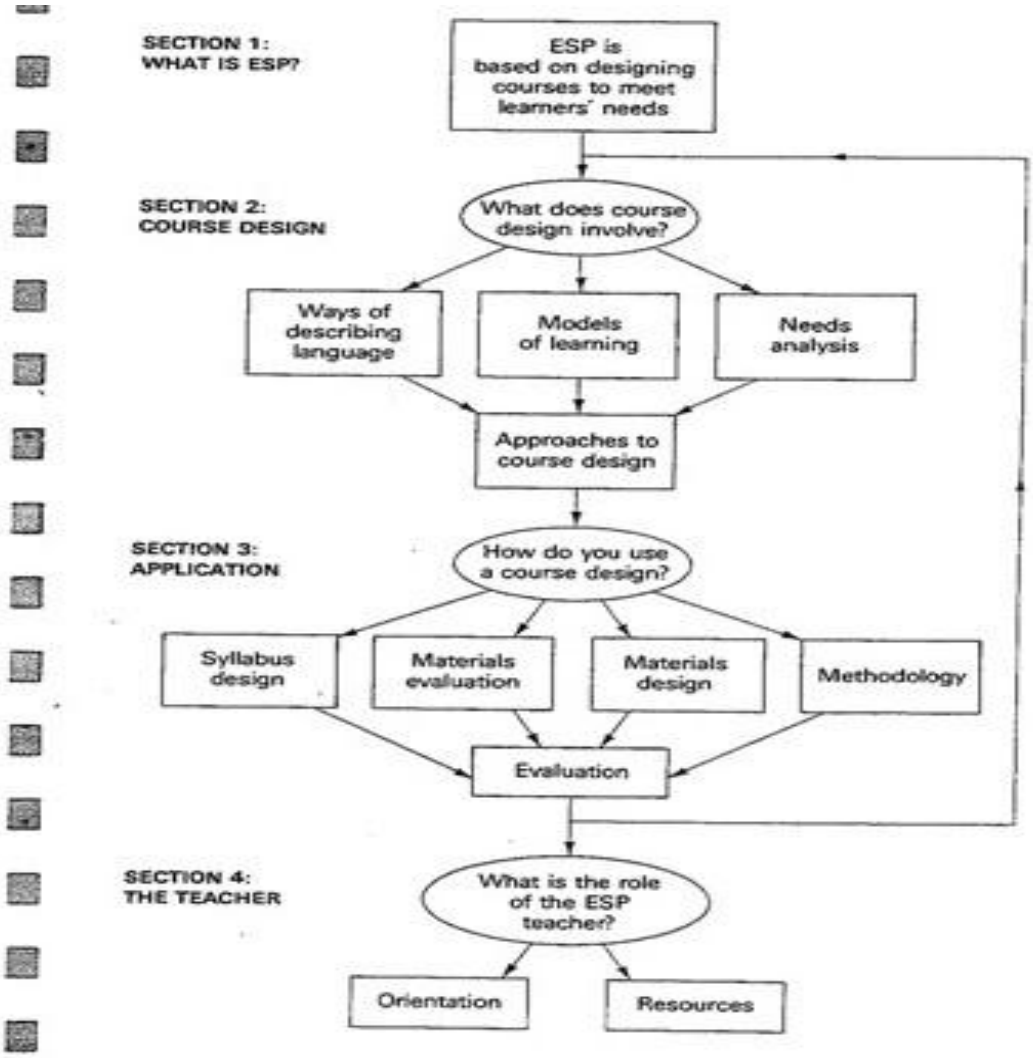

Figure 4.1: Hutchinson and Waters (1987: 3) outline of 'A Learning-centered approach to ESP'

From the above figure, we deduce that there is a necessity to take into account learners 'needs while dealing with Course Design and Syllabus Design. We have, then, to focus on what the course design involves (selecting ways to describe the language, setting modals of language and analyzing needs) , and how to use syllabus design, materials evaluation, materials design and methodology to pave the way to evaluation. Finally, we should consider highlighting the roles of the ESP teacher in terms of orientation and resources.

In ESP, a variety of roles are afforded to teachers. This has been outlined and explained by Hutchinson and Waters (1987), Anthony (1997), Dudley-Evans and Jo St John (1998), Gatehouse (2001), Fiorito (2005) and others. However, before discussing these roles and responsibilities, it should be said that the first and the foremost key factor to success is *motivation*. If teachers themselves are not motivated, or unable to create or speed motivation in their classes, the rest of roles would not be completed, and so the teaching / learning processes would be dull. Additionally, having an eye bird-view on those roles which ESP teacher should fulfill, show that they are all over-shadowed under the umbrella of the single term motivation. Setting goals beforehand, and selecting or producing materials, for instance, are motivating in their turns for learners.

When we talk about motivation we do, in fact, refer to the interpersonal contact between teachers and learners within the classroom. Erwin (2004:5) stated that teacher-student relationship could really exist when two conditions are met: 1) the teacher has the knowledge and desire to impart information skills to his students, and 2) the students are interested in learning knowledge and skills that are being offered. From these two points, we have to consider that teachers 'motivation has momentous bearings on students' *"motivational disposition and more generally on their learning achievement"* (Dornyei, 2005:115).

4.2.2 Syllabus Design Requirements

Webb (1976) sees that a syllabus design is the organization of the selected contents into an ordered and practical sequence for teaching purposes. For him the selection criteria are: progress from known to unknown matter, appropriate size of teaching units, a proper variety of activity, teachability, and creating a sense of purpose for the student.

Garcia (1976) provides more comprehensive criteria to be taken into consideration when designing a syllabus. He believes that, particulars

concerning the social forces, the habits and the motives of the student population, the relation of student characteristics to what are considered universal concepts in language learning processes, contemporary insights into the nature of the language, and how it should be taught to non-native speakers and for what realistic purposes, must guide curricular decisions.

Designing a syllabus is a complex process. According to Halim (1976:6-27), the language course designer has to pay serious consideration to all the relevant variables which are grouped into two categories:

1- Linguistic variables including the linguistic relations between the language to be taught and the one (s) which students use in their daily activities.

2- Non-linguistic variables ranging from policy to social, cultural, technological and administrative variables.

To summarize, syllabus design involves a logical sequence of three main stages:

i) Needs analysis

Needs analysis is the basis of ESP and leads to a much focused course. Practitioners must check for relevant articles, looking for ESP teaching materials, contact colleagues who might have experience, and read materials about the subject. They need to know what to ask, not to waste students 'time, be more professional and know how to analyze the data. Whenever this data is collected, it is essential to know what will happen to the information derived from it. They need to know exactly what they are trying to find out and what they will do with the answers before starting (Berwick, 1989).

Needs are described as *"objective and subjective"* (Brindley, 1989: 65), *"perceived and felt"* (Brindley, 1989:55). *"Objective and perceived needs"* are seen as derived by outsiders from facts, from what is known and can be verified, whereas *"subjective and felt needs"* are derived from insiders and

correspond to affective factors, that is to say "to be able to follow instructions accurately" is an objective perceived need. "To feel confident" is a subjective / felt need.

Needs are also described as target situation, goal-oriented and learning, process-oriented and product oriented (Brindley,1989); in addition, there are necessities, wants and lacks (Hutchinson and Waters, 1967): product –oriented needs derive from the goal or target situation and process-oriented derive from the learning situation. Both correspond to a target situation analysis (TSA) and a learning situation analysis (LSA); a third one is what learners already know, a present situation analysis (PSA) from which we can deduce their lacks. Thus, a TSA includes objective, perceived and product-oriented needs, an LSA includes subjective, felt and process-oriented needs; a PSA includes strengths and weaknesses.

By analyzing the language needs of a group of learners, we should be able to identify the notions and functions that are necessary to teach. They enable us, as well, to distinguish between various types of learners and to produce a syllabus specific to their needs. However, this comes true if this group of learners has the same needs; unfortunately, most students may not have similar purposes for learning the language. It could be for fun, for talking to people, or to pass an exam.

ii) Content specification

After determining the language needs of learners, the next step is to decide on the content of the syllabus. Content can be specified through a series of checklists that deal with communicative functions, discourse skills, and study skills. Candlin (1984) believes that content is drawn from 'some content-bank' which is based on some stated objectives which are in turn derived from the needs assessment of learners. That is to see learners' language and their needs then to select these needs to be as appropriate subject matter.

Brumfit (1984) has put a useful general analysis to specify content, he thinks of three types of analysis. The first is that of the linguist, that is, formal analysis of phonology, syntax, morphology, and this presumes inductive or deductive learning. The second type is interactional analysis of various kinds, such as situational and functional categories, and this presumes that discourse is learnt to interact and to communicate. The third type of analysis is an analysis of what is talked or written about, and it presumes that interesting and motivating content is necessary.

iii) Syllabus organization

Having decided on what to teach, the next step is to decide on an appropriate strategy. The objective of organizing a syllabus is to promote learning, and not just to describe language. Therefore, the content should be organized to facilitate teaching and learning. The unit of organization should suit the purpose of learning. The syllabus should be based on a gradual move from the more general to the more particular. The material can be organized so that the direction is from the particular to the general which is the inductive process. The syllabus organization could be in such a way that the material starts with the learner's home life, moves on to the classroom situation then moves out of the school into the post office, railway station, grocery shop, and so on.

The syllabus sequence may have to start with what is more "familiar'' to learners before moving on to the "unfamiliar". A syllabus may also represent views of the conditions offered by the specific classroom situation. Wilkins (1981) feels that stages should be carried out according to simplicity, regularity, frequency and contrastive difficulty. *Simplicity* has to be based on intuition. *Regularity* requires that the most productive linguistic structures should be taught before those of low productivity. *Frequency* involves referring to a later stage the learning of forms that are rarely used. *Contrastive difficulty* involves finding out ways to facilitate language for learners.

Brumfit (1981) pointed that content matter should be organized with priority for teaching purposes. He distinguishes two criteria for organization: 'intrinsic' or 'extrinsic'. The former will depend on the extent to which items in the syllabus are elements of a system. If they are, it will be possible to present the system in a structured way whereas the latter refers to all criteria for sequencing not derived from language itself. These criteria representing motivational grounds may be established by the introduction of a story line, or by including information thought to be attractive to students.

Gibbons (1984) argues that neither linguistic analysis nor psycholinguistic research has shown that valid intrinsic criteria are important beyond the beginning level. In practice, syllabus organization is determined by extrinsic considerations especially learners 'needs and pedagogical factors.

4.3 ESP Syllabus for Computer Science Master Students

By taking into account the above views, we have proposed a syllabus, hoping to give a helping hand to Computer Science Master students. The points below are some examples taken from the syllabus we have designed recently and which contains more activities and suggestions. It is a syllabus that integrates teacher-directed content-based instruction and student-centered task-based instruction. The aim is to create a more authentic learning setting applying various interactive techniques in the four learning skills focusing on students' needs after negotiation with them. The following points are some of the suggestions that have been proposed:

Reading: the aim is to improve learners' reading proficiency. Students participate in the reading- selection process. A good technique is a group discussion in which the chairs are arranged in a close circle. Students respond to each other. The teacher's role is to ask questions and record what is said.

Since the learners in this group are engineers and most of them are planning to settle down in Dubai, the teacher may, for example ask:

- "what problems do you think you will have in Dubai?"

Learners state their fears and begin to invest in the course and a sense of community begins. The teacher gathers information for choosing reading selections. The next question is:

- "what do you want to read about Dubai?"

The teacher records again what is said. From the list of students' interests, the teacher selects appropriate readings. The activities that follow were developed and used in teaching reading and discussion courses to HHIC students.

Question formation is proposed: the aim is to develop student comprehension and student investment. After students have finished reading, they write questions about the text. Thus, their comprehension is improved and they also make an investment by choosing the kind of questions.

Teacher encourages learners to write not only *Yes/ No* or *Wh* questions but questions that ask to increase the respondent's investment such as: *"Do you agree with this article? Why?/ would this system be possible in Algeria? Explain"*. Then the class is divided into pairs or small groups and student A asks his question to student B who responds. Next, student B becomes the questioner. They refer to the text if there is disagreement. By asking questions, learners' motivation increases since they are seeking real information.

Writing: this skill is related to "Reading". The aim is to make learners produce a piece of writing. For example, if learners have already read a text, an article, a letter or an interview, the teacher encourages learners to write about a topic that necessitates personal investment. The following ideas have been suggested:

1-After reading a letter to " Dear Agony Aunt", students are asked to write a letter describing a personal problem then in the next session, they are asked to exchange their piece of work with their fellow friends and to provide a letter of advice.

2-After reading an interview, such as "Interviewing an actor", students are asked to prepare questions to ask a fellow friend.

3- For comparison, students are asked to write about "How an Algerian firm is run" and another day, they write about "an English firm" they have read or heard about.

After the readings have been reproduced, students read and discuss them. They discuss solutions with letters, and with interviews they ask for further clarification and with comparisons they may disagree with each other in comparing the two firms (the Algerian and the English one).

Speaking: fluency can be considered as the first device the ESP teacher needs, to develop among his students. For this end, fluency according to Graham (2004) should include the ability to:

- Use language spontaneously;

- Listen and comprehend spontaneously;

- Respond spontaneously;

- Compensate for any lack in any of the above;

The aim is to make learners express themselves freely, and help them see first they have developed their capacities to say what they want to mean then to invent new meanings. The teacher can illustrate a picture about a story to be dealt with later. Students observe the picture then in small groups, they start speaking/ telling about it. It will be challenging when one student disagrees with one another.

The teacher can also present the student with a problem to solve since problem solving is an important feature in business etc. In small groups, learners discuss possible solutions which they present to the class for comparison. The teacher is a facilitator and encourages students to be active in language practice. Many authors among them Robinson share the view that Authenticity is a key concept in ESP courses **(**Kennedy et al 1984, Robinson 1991, Dudley-Evans et al 1998, Basturkmen 2006).

Dudley-Evans et al (1998:28) move a step forward where they define authenticity as follow:

> *"Authenticity lies in the nature of the between the reader (or hearer) and the text. Part of the process of needs analysis is finding out exactly how learners use different sources so that activities in the ESP class can reflect what happens in real life."*

Listening: the aim is to make learners develop their listening skill and try to guess vocabulary meaning through context. The teacher reads or tells a story twice. Then asks a couple of general questions which provide their listening with a purpose. At first, learners may not grasp all the words and the story meaning but when the teacher reads several times and uses gestures and facial expressions , this helps to facilitate comprehension for learners. They grasp the whole meaning and are ready to discuss it later. If the problem of comprehension still persists, learners ask each other questions. To learn from each other, is a technique that should be encouraged by the teacher.

All in all, the teacher can vary his teaching, at ESP level:

- In "Speaking" students discuss graphs, business letters and respond to them.

- In the "Writing" process, students interpret graphs and explain them. They write business letters such as "ordering a credit for a firm or filling application forms / CVs.

- In “Listening” the teacher provides students with tapes to listen to business men dealing with each other.

- In “Reading” learners read about business in certain firms: how a firm is composed and how it is run.

All the points above are followed by consolidation activities to make learners practice and explore more the business field. Through practice, they would also improve their grammar, vocabulary, etc. As mentioned in the introduction, our syllabus will take in consideration: students’ motivation, self-directed learning, use of ICT’s and Collaboration between Language Teachers and Subject – Specialists.

4.3.1 Motivating Students

Motivating learners is an art. The teacher has to motivate and help learner overcome the feeling of fear and shyness because of possible mistakes. The learner has to learn a language independently without waiting for the teacher’s instructions. He has to be active in class, share his ideas by expressing himself in a language. While teaching English for specific purposes, all language teaching must be designed for the specific learning and language use purposes of identified groups of students. In this case, grammar or phonetics are not required but are integrated into the process of teaching.

Some of what teachers can do to keep interest alive in their classes ,will be in the upcoming discussion of roles of ESP teacher. Before so doing, it is better to have a look on motivation as such, because it is amongst the important individual variables that significantly affects language learning success and progress.

4-3-1-1 Definition of Motivation

Motivation is viewed as the reason that stimulates and spurs someone to do something. People often enjoy doing something they like and they are good

at, and not enjoy things they detest or are bad at. In learning, motivation is regarded as the learners' enthusiasm, attitude, and willingness to acquire a second language.

The thriving area of motivation inspires a lot of educational psychologists who offered copious definitions to this term. Woolfolk (2004:350) defined motivation as *"an internal state that arouses, directs, and maintains behaviour"*. All of us understand how one feels when he / she is motivated. What energizes and directs our behavior could be *"drives, needs, fears, goals, social pressure, self-confidence ,interests, curiosity ,beliefs ,values and more"* (ibid.:351). The same definition seemingly offered by Feldman (1997) when he wrote that motivation is a factor that directs and energizes behavior.

For Jordan, Carlike ,and Stack (2008:154), the word motivation comes from the Latin "*movere"* which means "*to move"*. They see that motivation refers to "*the set of factors that ' move' people so that they respond".* Richards and Schmidt (2002:343) put it as "*the driving force in any situation that leads to action".* Generally, they and other psychologists distinguished between four types of motivation.

4-3-1-2 Types of Motivation

The most commonly known types are:

4-3-1-2-1 Intrinsic Motivation

It is the internal motives by which people "*participate in an activity for their amusement, not for the reward they will get* ". (Feldman, op.cit.:280). Richards and Schmidt (2002:343) described it as *"enjoyment of language learning itself".* Another definition was given by (Deci & Ryan 1985; Reeve, 1996; Ryan & Deci, 2000, cited in Woolfolk, op.cit.:351) who explained that intrinsic motivation is *"the natural tendency to seek out and conquer challenges as we pursue personal interests and exercise capabilities".*

From the presented definitions, we could say that intrinsic motivation after all comes from needs, drives, curiosity within students themselves, i.e., their inherent inner interest.

4-3-1-2-2 Extrinsic Motivation

It is driven by external factors as "*parental pressure, societal expectations, or academic requirements"* (Richards & Schmidt, 2002:343).In this type , language is not learnt for itself, but for other outside forces. It relies heavily on "*incentives (positive reinforcement) or punishment (negative reinforcement)"* (Erwin, op.cit,:6). Hence, compared to the first type, this one is characterized by a tangible reward.

4-3-2-2-3 Instrumental Motivation

It speaks for itself. It is defined as the desire to learn and use language as an instrument (a means) to reach certain goals, for example, having a job, reading foreign newspapers, or passing exams. Instrumental motivation mirrors learners' determination and zeal to satisfy some useful purposes. It is therefore oriented to more practical concerns.

4-3-1-2-4 Integrative Motivation

This type is characterised by the willingness to be like a valued member of the language community (Richards & Schmidt, 2002). Integrative motivation imparts learners' desire to identify themselves through particular socio-cultural features of the language being learnt, i.e., within this kind, learners aim at language in order to communicate with people of other communities (cultures).For instance, those who live in foreign countries hope to be integrated in these societies. That is, their learning language is moved by integrative reasons.

The prime objective to deal with motivation and its types is to emphasize the positive role of ESP teachers in boosting their learners'

motivation, fostering their learning, and getting in their world. The matter is not so facile; however, it would be possible. Petty (2009:44) wrote:

> *"Motivation is regarded by experienced and inexperienced teachers alike as a prerequisite for effective learning, and the greatest challenge that many teachers face is to make their students want to learn. If students do not want to learn, their learning efficiency will be so low that they may learn virtually nothing. If you know how to motivate students, you can hugely increase their learning rate."*

Thus, motivating learners is a key element in teaching: when learners are attracted, they tend to get involved in the course. This will pave the way to getting better grasp and results, whereas, if they are not interested, both their learning path and grades may be low.

Motivation plays a vital role in education especially in foreign language learning. It is the will and the desire to work towards a goal and to reach an objective: *"The effort, want (desire) and affect associated with learning a second language"* (Gardner, 1981:147). That is to say when someone wants to learn a language, he/she should make efforts to reach his purpose not keep on wishing without practice so the two elements (effort and want) are necessary to learn a language.

> *"A state of cognitive and emotional arousal which leads to a conscious decision to act, and which gives rise to a period of sustained intellectual and /or physical effort in order to attain a previously set goal or goals."*
>
> (William and Burdner,1997: 120).

Teachers were also told about the various types of motivation such as: "integrative, instrumental, extrinsic, intrinsic, global/ situational / task motivation". In addition, they were informed by the theories of motivation among them: "behavioral, cognitive, psychoanalytic, social cognitive and humanistic theories."The last theory, concerning "humanistic theory", seemed

to have attracted more the teachers who were eager to know more about it through their questions; we tried to explain that the most known theorist in this area is Abraham Maslow (1954) who focused on the study of human motivation. He identified a hierarchy of five needs: psychological, safety, affiliative, esteem, and self-actualization needs. Basically lower level needs restrict upper one until they are satisfied, as a hungry learner will focus on food rather than learning.

Below, is the figure concerning Maslow's Hierarchy of Needs Chart:

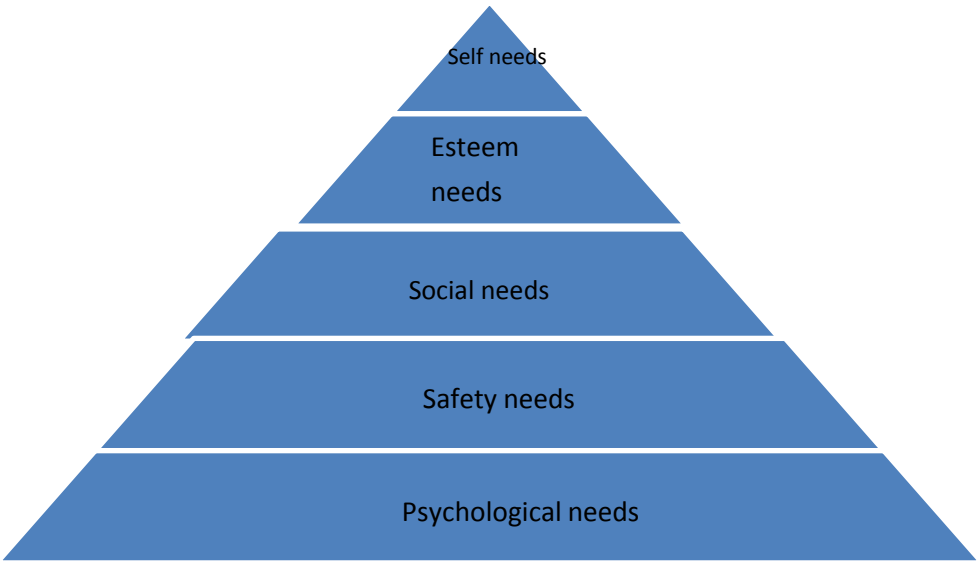

Figure 4.2: Maslow's Hierarchy of Needs Chart

In order to increase learners 'motivation, the teacher should take the above needs into account. To conclude this part, teachers were reminded that learners' motivation is greatly affected by overlapping factors, internal one such as: teacher, method, success, attitude, curiosity, and confidence and external factors for example: parents, peer, feedback and learning environment.

The teacher can provide both intrinsic and extrinsic motivation, depending on his personality, character and his nature, therefore the way he treats his students and his students treat him. He would not be a good teacher unless he could

know about teaching and learning in general and has a successful strategy that would make his students alerted and motivated all the time. This could be achieved through:

- Varying topics and tasks (a wide range of different types of topics that interest learners mainly those learners whose interest is only grades, by doing so, the teacher will encourage both instrumental and integrative motivation).

- Introducing games (games are an important part of the teacher's equipment). They provide challenge, and learners will practice vocabulary, grammar, etc., and their motivation is increased.

- Entertainment which creates pleasant atmosphere that can be teacher produced (jokes- stories- anecdotes- songs) or recorded movies, video clips, TV documentaries, etc. This will make the class lively to cut off the routine of every day class and will make learners familiar with the topic under discussion.

- Role play that requires students to imagine a situation and can enhance their motivation although some students may find such activities intimidating at first.

-Visual aids such as video films that offer a refreshing change of routine in the classroom. The learner is affected by the socio-cultural environment in which the film is set. Thus the selection of the film should be very careful by taking students' interest into account.

- Songs that can create an existing learning atmosphere in the classroom, incorporating both reading and listening skills; they are enjoyable when students see a teacher entering the class with a tape recorder or a lap top in his hand. They are rapidly very motivated to learn. Besides, songs stick in students 'memories for a long time.

- Personalization, proverbs, idioms: Learners are more likely to be interested in tasks or topics that have to do with them, their own point of view, experiences, suggestions.

In brief, we could sum it up by focusing on the idea that since learners are affected by the teacher, his behavior and personality, motivating them could be a challenging task, but if the teacher takes into account the above activities, he may get a lively class with motivated students who bear in mind that English has a vital role to play in their lives.

We also explained to the teachers that while giving priority to group / pair work and letting students learn independently, this will make them express their opinions, have the right to choose materials and say what they enjoy doing. This is the case of "needs analysis". Before starting to teach, teachers were advised to have a talk with learners and ask them about their needs. This would allow teachers to plan their lessons and design a curriculum accordingly. Of course, this does not mean neglecting the school's curriculum designed by the Ministry of Education, but expanding it and enriching it through students' suggestions. Students should be allowed and encouraged to talk about their native culture in English.

This will serve four purposes:

-It will give learners a feeling of pride

-It will demonstrate that the language they are learning is a tool of communication allowing them to express emotions and facts, values and beliefs.

- It will be an experience since their culture is part of their personality and life.

- It may eliminate the feeling of "living in a no-man's land" for students who move away from their native language community and feel not accepted by the host country.

Teachers were also told to bear in mind that the personality of each learner determines his capacity; language and thought influence each other, that is to say thoughts are organized, structured and expressed through the help of language.

The behavior of each learner depends on:

1/ Innate factors such as aptitude, personality and his learning rate, i.e., (some students understand easily, and others with difficulty).

2/ External factors such as motivation and stimuli i.e. (family, ethnic, groups).

3/ The learner's ability to integrate learning with previous knowledge.

The next point is that a teacher is a human being therefore, he needs breaks for relaxing to be prepared for the next day work. If he works all day long, he will spend the rest of the time tired instead of preparing his tomorrow's courses. The case of the teachers here is an example of the teachers who would be eager to give more if only the burdens were less heavy; i.e. if they had fewer teaching hours the results and the situation would improve.

Thus, Computer Science teachers were advised to vary their teaching through appropriate selected methods and approaches. They try to motivate learners and increase their interest by using modern tools in a relaxing atmosphere that makes the classroom both challenging and enjoyable.

4.3.2 Self- Directed Learning

Self-directed learning is a continuous engagement in acquiring knowledge. It is one of the critical challenges in supporting lifelong learning. It creates new challenging requirements for learning technologies. Becoming self-directed involves managing oneself and seeking ways to improve one's capacity. This kind of learning is effective because it makes students more willing, and more motivated to learn.

Autonomy is known as the independence of the learners from the teacher's control and authority. It is then the student's ability to learn by his own relying on his efforts, skills and capacities. This idea was introduced in the field of second language pedagogy in 1950's by Henry Holec:

> *"The ability to take charge of one's own learning, i.e. the learner is expected to be included or involved in the learning process, and to participate in it effectively, by operating and using his, the learner, own competencies and efforts, especially the exploitation of one's own mental faculties."*
>
> (quoted in Arnold Jane.1999:142)

In the frequently used expression 'autonomous learning', 'autonomous' necessarily assumes a different meaning. "*To obviate any ambiguity it is preferable to replace this expression by 'self-directed learning'* "(Holec 1981: 6). Holec further claims that autonomization of learning implies two conditions, "

> *(. . .) firstly, the learner must have the ability to take charge of his learning, i.e. he must know how to make the decisions which involves (and) secondly, there must be a learning structure in which (. . .) the learner has the possibility for exercising his ability to take charge."*
>
> (Holec 1981: 6)

There is a third condition, namely the learner's willingness to take charge, which Holec prefers to include in the ability to take charge because 'in an actual learning context, desire cannot be put into effect without ability, and experience shows that ability cannot be acquired without desire' (Holec, 1981). Thus, as one of the characteristics of ESP courses, is: turning learners into users Carver (1983). This is done mainly for the sake of promoting an autonomous learning as cited before.

Scientists have been seeking ways to increase students 'motivation in learning: there is no better way than integrating New Technologies in the educational system.

4.3.3 Including ICT's

The use of visual aids helps learners recognize essential ideas and locate this latter in specific contexts. In this vein, Bongolan et al (2005:02) writes: *"visuals make both the language and the content more accessible to students."*

In this vein, the best way to improve approaches to language learning / teaching is to use new technologies: the fast development of new media technologies (such as VCD, DVD, DTV, MP5, PlayStations, Visual Presenter, PowerPoint, Internet and Intranet) has begun to usher in new approaches to classroom management. The teachers have to learn to adapt themselves to this new revolution in media technologies with reference to the designing and teaching of cultural studies course.

We need to present our students with different kinds of information. The list below shows some possible sources of information which can be used as materials for teaching. By using a combination of visual, audio and tactile materials (Video, CDs,TV, Readings, Internet, Stories, Students own information, Songs, Newspapers, Interviews, Jokes, Anecdotes, Souvenirs, Photographs, Surveys, Illustrations), we are also likely to succeed in addressing the different learning styles of our students.

The use of multimedia will not only increase learners' motivation but will make them learners centered since they are going to learn in a self-directed way. Using ICT's (Multimedia) in the classroom provides students with a useful interactive means of self-study and self-evaluation. Planning and successfully implementing self-directed learning with technology is likely to produce motivation. Thus, learners are eager to learn and are autonomous. Multimedia can be a powerful tool for adult education. When used effectively

it can captivate an audience, tug emotions, maintain attention, and contextualize scenario-based learning. But creating and producing quality content also has a number of drawbacks in terms of cost, learning curves, and copyright laws. Integrating multimedia into curricula can have a tremendous impact on the learning process.

Students enjoy learning through multimedia systems, computers and even multimedia laboratories if available. So, while using ICT (Information Communication Technology), the teacher should take advantage from this opportunity to teach and encourage participants to become autonomous learners.

Thus, they have a modern, well equipped classroom where they can use VCRs, cable TV and computers equipped with CD-ROM, e-mail and Internet access. The teacher can make learners spend considerable amount of time working on listening comprehension with videos and cable TV, practicing writing, grammar and pronunciation exercises with the computers.

A teacher can also use songs in his teaching: in song dictation, the purpose is to sharpen students' listening ability in learning the pronunciation for example of shortened verb forms such as ' I'm, I've, it's' in words like 'free, receive'. In song reading, the aim is to develop the students' ability to comprehend the literal meaning of the song and at the same time analyze the hidden message. Classroom activities that are structured so that computers encourage collaboration build on learners' desire to communicate and share their understanding. It takes planning and intervention to build successful cooperative groups with or without computers, but groups that use computers as teamwork tools have a better start toward collaborative work.

From the use of ICT, it is obvious that a computer is a useful tool that motivates students to learn and become independent learners. CD-ROMS may provide considerable input. Computers provide access to authentic materials and communication around the world through the internet, this may encourage

language acquisition. Videos, pictures and sound stimulate sight and hearing. As a result, the benefits are better perceived when teachers use this multimedia than when they read about them. The worst advantage does not come from using ICT but from not trying to incorporate them into the programs. The media have assisted self-access learning to grow faster than the traditional classroom methods.

This technological literacy imparts a very important set of vocational skills that will serve students well in the working world. English should be presented in authentic contexts to make learners acquainted with functions that they will need to perform in their fields of specialty. Information from the Internet is more dynamic than the printed word. Teachers who understand the medium will use its currency and authenticity to their advantage.

The increase number of the aforementioned tools has permeated everyday life (Culling ford C. and Haq.N, 2009). People became more interested in these technological tools. Thus, every person could possess a computer, a laptop and mobile phone including the internet and other free programs such as Skype.

4.3.3.1 Skype

It is *"a free computer program, where telephonic calls are made via the internet"* (Sheppard, 2006:3). *"It joins the power of email, telephony, telegrams, and letters providing a way for text, data, voice and even video communication"* (Loren, and Abdulezer.S and Dammond.H, 2007:1). "*This way of communication has pushed specialists to think about new ways of learning so as to give the opportunity to different types of people to attend courses such as old people, people with a disability, employees who have family ties, instructors wanting further training, etc."*(Keegan.D cited in Dib 2016)

While observing Computer Science learners studying through Skype, it was noticed that only a few of them could follow while the rest of the students was not. We concluded that they had difficulties in understanding the Professor behind the screen, but we realized that some had their headphones damaged so they could not hear. Others did not have their plugs well fixed in the socket. We therefore suggested checking all elements before starting any course.

Learning through Skype requires hinges upon three key elements; agents, hardware, and software i.e. internet, broadband connection, teacher and learners, computer, head phones, a microphone, and a course. These elements may affect strongly the presentation of the course (White, cited in Dib 2016). For students to succeed Temperton states that the students who succeeded in their study were the students who had accessibility .i.e. they had networks in place to back up their study where the net works derive from family or friends, work colleagues, other students or their tutors (Simpson, cited in Dib 2016).

The use of technology had also an impact on teaching strategies. Before the emergence of technology the focus of teaching methods was upon pedagogy. However the advent of technology has pushed teachers to move from pedagogy to andragogy; the art and science that help students to learn (Wang, cited in Dib 2016).

Unlike pedagogy which focuses on the instructor, andragogy puts its emphasis on the learner and not the teacher and hinges upon six principles; self-directed learning, prior experience of the learner, motivation to learn ,the learner's need to know, readiness to learn, orientation to learning and problem solving. These principles can work well in case of distance (Lawrence, in Dib 2016) where the teacher is a facilitator and his role consists in taking part with participants in the learning process and eases the task for them to learn (Lamy and Hampel cited in Dib 2016).

The teacher also does not intervene except in case he has a reaction to what students said in their discussion, because his opinion will be taken as the

ideal way of thinking (Johnson, cited in Dib 2016). The six principles can be felt in the theory of motivation of cognitive school where motivation focuses first and foremost on the personal decision, that is, internal forces push the learner to learn. According to Ausubel there are six drives for motivation curiosity to know about the other part of the topic which can be referred to as exploration, the desire to manipulate things in the environment to make change, the desire for making activity, the desire to be pushed by the environment, people, thought , ideas, and feelings known as stimulation, the desire to know which embraces processing of obtained results due to exploration, manipulation, activity, and stimulation so as to be used for testing, comparison, and problem solving (Brown, cited in Dib 2016). Learners, once motivated:

> *"their will towards participation in communication appeared very high which indicates that they were stripped from anxiety and were very motivated. They also succeeded in expressing themselves fluently during a short period of time and had a big awareness toward the subjects that should be learned and others that should not."*
>
> (Dib, 2016:4)

In this vein, we felt it necessary to give a helping hand by advising the teachers to rely first upon Skype where the 18 adult students of Master Computer Science are parts of the research. We suggested that the screen in Skype shows windows, where each window displays the instructor clearly. This will facilitate understanding through facial expressions. As for the webcam, it should be checked to see whether it can work because of the speed of the broadband connection. The teaching strategy adopted in this work is a combination of pedagogy and andragogy, where pedagogy consists of warming up, presentation of the course and exercises, while andragogy relies on communication that allows learners to express themselves freely.

Once dealing with pedagogy to transmit codified and written knowledge, students seem to have a great deal of confidence despite the inability to retrieve information related to the text in the right moment, thus the students' volition related to the participation in communication appears very high which proves that they do not have anxiety in terms of communication, and interaction between students and the teacher was of a great help, therefore students are very satisfied. (Adapted from Dib, 2016)

4.3.3.2 Videos/ CD's / Cassettes

A teacher can present a film through a DVD or CD for students to watch and follow it with a class discussion. A conversation can be heard and students will be asked to fill in the gaps. Jokes are part of the learning process, through which, the four skills are likely to be involved. Jokes in the domain of Computer Science such as addiction to computers, ruling a company through computers with no workers at all, what may happen? ……etc. Thus, one student can write a joke, read it to his fellow friends who will be listening then the whole class will discuss its meaning or its morale so that the speaking process will take place in this phase.

4.3.4 Collaboration between Language Teachers and Subject –Specialists

In the market of education, content-based language teaching and English for Specific Purposes are widely adopted. Thus, these developments call for collaboration between language teachers and colleagues in the subject-area disciplines. It will not only allow them to work hand in hand and consult each other but it will enhance the quality of teaching also. This is what we call 'Interdisciplinarity'. It involves the combining of two or more academic disciplines into one activity. It is about creating something new.

Interdisciplinarity involves students and teachers connecting and integrating thoughts, professions, or technologies. Generally speaking, it remains rare and costly; however, the attraction of team teaching remains. Bath

(1990) claims that for real change to take place in schools, teachers have to start helping, observing and talking with each other. Cross-disciplinary team teaching is a way to reduce the isolation of teachers since they are going to support one another (Austin and Baldwin, 1991).

Collaborating or cooperating with the learners can be carried out by sharing responsibilities from both parts; that of the ESP teacher and that of the learners too. This latter may help learners take full responsibility for their learning by being autonomous learners. The Master Computer Science students used to be taught communication in their classrooms, "Writing" was a process that they required in their courses, in lab and project reports, where mathematical and graphical representation are fundamental modes of engineering communication.

Moreover, these students were taught about the methods, modes of reasoning, that are embodied in disciplinary writing. They did not teach them writing using grammar and mechanics. They taught students how to read images taken by scanning electron microscopes, how to conduct experiments that vary processing conditions to manipulate material behavior, and how to interpret the resulting relationships. By abstracting themselves from "writing," they divorced knowledge from the epistemological frameworks that underpinned that knowledge and the discursive practices by which it is constructed. Thus, they preferred a neat division between language and content.

Interdisciplinary framework can mediate issues surrounding trust among content and language collaborators. To collaborate language and disciplinary experts should be placed institutionally: the language expert should be implanted in a disciplinary department, to maximize interaction with discipline specialists, or placed in a service unit or centre, or perhaps a combination of both (Baynham, 2010). From this perspective, our teachers were inspired by the idea of collaboration and decided to start teaming up toward an interdisciplinary way to teach.

Thus, we investigated the type of interdisciplinary team teaching that is used in the class of first year Master Computer Science students to see whether there exists a combination of the study of academic content-area with foreign language study. The team teaching consisted of eight teachers specialists (content area) all of them males and two female language teachers working together extensively: they plan lessons and teach together in the same classroom.

Courses including Maths, Computer science, etc. are taught in Arabic and English by discipline and language specialists (English). The aim is to provide learners with instruction in content concepts and language. Thus the emphasis is on the simultaneous learning of both language and content, i.e. to make learners communicate and write in their specific domain using correct English.

This study focuses on partnership issues in team teaching by asking team teachers to express their point of views on what they do, the reasons for doing that, and whether they feel it is effective. Data were gathered from interviews conducted with teachers in pairs. The length of each interview was approximately 25 minutes. We analyzed the transcripts of the interviews to uncover common themes. The themes that emerged related to the roles of teachers in team-taught courses, communication between teaching partners, and opinions about the effectiveness of interdisciplinary team teaching in the faculty of Technology setting.

We elicited reflections on partnership in team teaching from the interviews. Thus, we have compiled data on team teaching from the faculty members. In the following part, we present a model based on data gathered from these ten practicing team teachers. This model is a representation of the process of team teaching experienced by the ten interviewees. It went through 3 stages: 1/ Starting a partnership and committing to its continuation, 2/ Making partnership work, 3/ Realizing its effectiveness.

-Stage 1: Starting a partnership and committing to its continuation:

a) A team teaching starts with an agreement between partners. They have reasons for moving forward with a partnership. From our interviewees 'point of view a team teaching starts with an agreement between partners. Factors such as personality and individual teaching style play an important role in agreeing a partnership. According to them, partnership cannot work if the two personalities are incompatible in relationships. Moreover, flexible persons cannot be put with tight persons since flexible persons want to do things, change them, and create others. Choosing partners is also important. Experience is a key factor also, for example, some teachers were still novice in teaching, and they found it frightening to go to the classroom. In Wallace's (1991) "Craft model", the experienced teacher, as an expert in the craft, guides the inexperienced teacher.

b) Concerning the commitment, our interviewees revealed that the relationship between language and content and the partners' role influence the commitment. For e.g. there may exist a role distinction concerning language/content in planning but allowing this distinction to be less prominent in the classroom. How can this happen? = a partner selects the content and another says if it works or not as far as the language learning aspects of it and vice versa. Also, if the language teacher maintains that this is his area and does not allow the other to cross this boundary and the content teacher maintains the same idea, here things will serve the students since the language teacher tries to find activities matching content work. However, if there is no matching between beliefs about language and content effective partnership will be difficult to achieve. If, on the contrary, the partners share understanding of language and content roles in planning they will manage to make a stronger commitment to the partnership.

-Team teaching involves planning courses, negotiating and explaining goals.

Stage2: Making a partnership work

Pairing and commitment stages will pave the way to promote effective team teaching. In this stage, the partners find ways to meet challenges assess benefits and evaluate the costs of ineffective partnerships. Our interviewers revealed that it is hard to decide what material you want to get across to the students and how you are going to do it. Thus, in case of problems, teachers have to communicate to solve it.

Another aspect to make a good partnership is "friendship" i.e. to be better partners is to be friends, in addition to colleagues. Working together, negotiating, planning before class to decide what to get across using whatever way, phone or emails to check each other's work to make sure the language used is not too difficult, the concepts are got across clearly. To discuss also what was not efficient and try to improve it. If there are problems between partners, when it does not work, it's painful. Teachers explained that in their 'Interdisciplinary language-content' they had benefits and drawbacks. They emphasized that working with partners takes a lot of time i.e. not only in planning, teaching and evaluating a course, but also the extra effort needed to keep good collaborative relations; thus, 'time' was considered as a disadvantage.

Stage3: Realizing effective partnership

In this stage, teachers expressed their comments to illustrate that 'Collaboration' through team teaching benefits students. This can be summarized as follows:

-Two teachers means two people giving individual attention to students.

-It is very effective since each teacher is coming from a different perspective.

-Language teachers are also teaching content at the same time and the content teachers are teaching is language, this makes both of them better teachers in the end. This final stage will evaluate the process that team teachers engaged in and decide whether or not to continue a partnership.

For collaboration to succeed, it should occur not only among teachers but among students also. Among teachers we suggest that teachers should know partners before selecting any team mates. They can meet to discuss and ask each other what they are doing in their courses and how they feel about their learners, and they can exchange visits in their respective classrooms. Among students, on the other hand, the literature suggests sharing knowledge between teachers and students. Unlike the traditional classrooms where the teacher is the source of information, in collaborative classrooms teachers build upon the knowledge, person experiences, language strategies that students bring to the learning situation. It, also, suggests sharing authority among teachers and students. In collaborative classrooms teachers invite students to set specific goals within the framework of what is being taught, they encourage students to assess what they learn, to listen to diverse opinions and treat each other respectfully and engage in open dialogues.

Teachers will always have more roles to perform. They are mediators. Mediated learning will help learners connect new information to their experiences. Teachers as mediators, maximize the ability to take responsibility for learning, spend more time with groups. Teachers are facilitators, too. For situations where language and specialist content are mixed, some macro- and micro-tasks may be proposed to students to facilitate the acquisition of such complex language objects

In Listening, the teachers use laboratories which are equipped with headphones. Students can listen to conversations followed by various activities, or listen to authentic texts followed by comprehension questions. In Reading, teachers use videos focusing on scientific discourse in English, such as cause and effect, hypothesizing, definition, description and classification. The aim is to develop reading skills for understanding research published in the students' field of study.

In Grammar, though it is said that ESP is not concerned with Grammar, it necessary to pay some attention to it in case students have difficulties. while teaching the tenses/conditional if for example, teachers could do that in the content-based domain by providing students with graphs or pie charts to practice. Lso, while teaching formation of questions (wh & Yes/No), they can do that through role play where students interact to each other.

In vocabulary: while practicing the activity of graphs, they are using vocabulary related to their domain. Varying topics and tasks (a wide range of different types of topics that interest learners mainly those learners whose interest is only grades, by doing so, the teacher will encourage both instrumental and integrative motivation).

The teachers should be flexible in case one student showed less or no interest in the activities. The teacher should find the tact and responds rapidly by trying to motivate him. They have also to be ready to take risks in their teaching, for example, a topic chosen by learners and about which the teacher has no information, he accepts it and negotiates together. These two elements ‘’ Flexibility and willingness to take risks ’’ are the two key elements to success in ESP teaching.

Teachers can add material according to learners’ needs. The teachers choose what is suitable for their learners and adapt it according to the situation. They use technology materials as a source of language and learning support to motivate and stimulate learners such as the use of audio cassettes (interviews), video cassettes, and transparencies.

Teachers should observe the learners’ situations of using the skills and make research to find more and better to reach the learners’ needs. Learner-centered means giving priority to group / pair work and letting students learn independently, this will make them express their opinions, have the right to choose materials and say what they enjoy doing. This is the case of “needs analysis”.

The students seemed to make a list of interests: -They wanted figures, graphs, numbers; scientific vocabulary, writing reports and letters-They suggested using ICT'S such as data show, tapes, pictures. Thus, we noticed that students were aware that using visuals in the learning program enhances student comprehension, retention and application. Images as well as videos or films can be used as useful tools in order to promote the development of learners' visual skills in combination with learning abstract legal concepts in a foreign language. Role play (e.g. an attorney-client discussion) also helps learners imagine themselves in specific contexts.

The use and interpretation of visual images helps learners to understand the relationship between the images and their meanings. From a theoretical perspective, imagery is a critical issue in terms of memory structures and processes (Shepard & Cooper, 1982). The concept of visual literacy can be defined as *"the ability to 'read,' interpret and understand information presented in pictorial or graphic images"* (Wileman 1993: 114 in Stokes 2001: 12). Using images in the form of cartoons not only requires some historic-legal background thereby stimulating the learner's intellect, but also helps him to remember the concept, especially as he works from the principle of moving from the known to the unknown.

Through collaboration with subject experts from the various departments of the university, teachers ask for information and are advised. They test students to find out whether they are following or not, i.e., to see how much they have acquired from the course, they also evaluate the course design and teaching materials to see what learners have or have not grasped.

All in all, this chapter shed light on some features so as to give a helping hand to Computer Science teachers. It was thus suggested that to be successful, they should design a syllabus which is not only negotiated between language and content teachers but through discussion with the students so that teachers

can know which activities to include. Teachers can think of progress and feedback.

Needs analysis is the basis of ESP and leads to a much focused course. Practitioners must check for relevant articles, looking for ESP teaching materials, contacting colleagues who might have experience and collaboration between language and content based teachers. After determining the language needs of learners, the next step is to decide on the content of the syllabus. Content can be specified through a series of checklists that deal with discourse skills, study skills and communicative functions,. Having decided on what to teach, the next step is to decide on an appropriate strategy. The objective of organizing a syllabus is both to describe language and to improve learning . Therefore, the content should be organized to facilitate teaching and learning.

Some recommendations were provided such as motivating learners mainly through ICT's including Skype, Video tapes, CD's and cassettes then using self-directed learning as a strategy to allow learners to work by their own. To reach success in ESP teaching through an interdisciplinary way, teachers should follow some requirements such as to perform most of the key roles of the ESP practitioner in their teaching to motivate learners. We also focused on the fact that collaboration is a key element for teacher development since it enhances the quality of teaching. Furthermore, both types of teachers can not only benefit from each other but facilitate learning and make of the classroom an enjoyable place to learn.

4.4 Conclusion

In this chapter a design of an appropriate teaching syllabus has been proposed taking into consideration the need to find the means to develop a taxonomy of language teaching techniques so that experience and research could combine various techniques for given objectives , types of learners, and specified learning situations. To conclude, we would say that there is no best method of teaching languages that overcomes all problems. There must be a local interest in syllabus design to provide appropriate teaching programs.

General Conclusion

It is known that there is no best method of teaching but what a teacher can do with a method matters more. One important part of the method a teacher selects is syllabus design to provide an appropriate teaching program. Designing a syllabus was the main objective behind this research. Our target was computer science master students from the department of Computer Science at Mascara University. The department of Computer Science deals with languages such as French but focuses on English by providing courses in specific English.

On one hand, teachers team up with each other trying to work together in order to exchange information and ideas, and on the other hand, they try to focus on two aspects : 1) the communication skill courses that focus more on preparing students for the communication tasks that they will have to carry out in work situations or at university such as communicating technical and business information effectively (oral, audio visual and graphics), and 2) the use of authentic texts for reading, listening, and writing including technical and business information and adapting materials such as a written business proposal for boardroom presentations, writing memos and letters, chairing meetings and interviews.

A description of the courses taught in this department was given. Then, there was an evaluation of the ESP course through observation, teachers' interviews and students' questionnaires. After data analysis, results were discussed in order to design an appropriate teaching syllabus. This teaching syllabus was designed taking into consideration students' needs. Needs analysis conducted before the course does help most of the time to solve the problems of syllabus design. The list of their needs includes:

- Figures, graphs, numbers; financial / business vocabulary, writing reports and letters.

- Use of computers, in addition to video and CDs with movies, and dialogues.

- Topics including management, finance, Business skills including presentations, negotiations, meetings, socializing, telephoning, and writing reports.

- Tasks that are motivating and activities learners need to do by using the language to achieve lexis including idioms, expressions, and vocabulary. Functions including agreeing / disagreeing, giving explanations, asking for opinions, are on the list, too.

-Authentic texts in both written and spoken forms.

-Grammar with word order, if clauses, verb tenses; for example: to describe graphs, students need to use the past simple or the present perfect.

-Intercultural skills, i.e., awareness of different cultures.

To satisfy these needs, a syllabus that could serve both teachers and learners would be the one including the basic features of structure, vocabulary and pronunciation useful for communication skills and business activities with consolidation exercises and back up material. This syllabus needs to be reviewed and updated regularly, and teachers need to assess students since assessment is essential for the development and success of the course.

It was noticed is that the department of Computer Science faces difficulties in English language teaching mainly with the first and second levels. It is only at level three that these difficulties start decreasing. Then at the level of ESP, the students are supposed to have acquired an acceptable level of English language, but difficulties still remain as a barrier mainly that it is no longer the learning of general English, but of ESP.

This failure in language learning is attributed, among other reasons to the teachers' lack of in-service training i.e., in-service training was beneficial for teachers who learned a lot from them especially the pedagogy of how to impart a language. Consequently, if the department of Computer Science adopt and adapt this 'in-service training' it would be of a great help to avoid or at least decrease failure. Experts either from abroad or from the country could train teachers or assist them by providing them with efficient courses, techniques, advice, and use of the modern technologies.

The teachers who had the opportunity to be trained some years ago, were also advised to take into consideration the points below while preparing their lessons and gathering the appropriate materials:

- Age: are learners children who can imitate easily or are they adults who prefer learning through games, songs?

- Ability: are there differences among the students? How to use the bright students' abilities and how to help the weaker ones?

- Needs: Why are they learning English? (to get a job, to conduct a business, to travel? etc)

- Native language: are there similarities in sounds, structure and vocabulary with English?

- Previous language experience: have they studied any other foreign language?

Teachers learnt also that one element is essential in the learning process: it is the teacher's role. The teacher has been called the "facilitator" or the "mediator". Wherever he can be found with his learners, he transmits to them his knowledge of English, but more specially his interest in them as human beings, his desire for them to learn.

A successful teacher is the one who knows how to deal with learners glued on chairs for six or seven hours a day; the one who is convinced that all students can learn, who plans his lessons carefully taking into account learners' needs and desires, who evaluates students 'progress periodically, the one who stops and takes a while to judge himself, his attitude, his choice of choosing materials, who makes efforts to attract and motivate his learners by praising them, by maintaining warm and friendly relations with students, and who uses audio-visual aids.

While dealing with approaches, teachers were reminded of the existence of various approaches in teaching. Whatever approach a teacher may use, depends on learners' age and interests, on the length and aims of the course. Some teachers prefer to start by having students listen to and dramatize a conversation. Others prefer to start by helping students read a narrative paragraph. Some start by presenting the new structure in authentic utterances which are later used in conversations. Some start by telling famous stories or jokes.

Still, ESP teachers need training to learn about modern methods of teaching and how improve their own level. The present thesis was, then, an attempt to implement an ESP course for Computer Science students. It took as a case-study the English language teachers and students from the department of Computer Science, at the University of Mascara.

The three research questions put forwards at the beginning were dealt with accordingly. Through the first question: *do language teacher's experience / inexperience have any influence on success and failure in language learning?* We realized that experience / inexperience have an impact on both success and failure in language learning: both experienced and novice teachers encounter difficulties during their respective careers. That is to say, the teacher who has gained a great deal of experience during several years and doesn't use it appropriately, is at the same level of a novice teacher; an experienced teacher is supposed to have fewer difficulties than a non experienced one, but if the

former does not use the effective techniques, he will remain inexperienced as the novice teacher.

The second question: *is there a correlation between failure in language learning and the teacher's lack of in-service training?* revealed that nowadays learners tend to be less motivated in language learning; as a result, more students obtain bad grades and fail. This is evident in the baccalaureate results where the majority of the candidates obtain grades below the average in foreign languages. From this, an in-service training held for several times during the year can be of a great help not only to assist teachers but to avoid failure. This can allow teachers to meet with other teachers and exchange / share both ideas and methods. In addition they can be trained and learn new methods and techniques that will improve their personal teaching and make them succeed in their career.

The third question: *are the measures taken by the Computer Science Department to reach success in ESP teaching efficient?* demonstrated that the department of Computer Science takes measures in the teaching of ESP to reach success, which seem to be efficient: it uses the modern methods including CBA, ICT (pair/group work, learners' autonomy, learning situations, audio visual aids such as tapes and CDs with interviews and songs, video films, computers, …) and all that attracts learners and strengthens their desire and motivation to learn. The ESP teachers of computer science department work all day long and each one has got several groups in charge; they complained about the lack of time for breaks or lunch; they often spend the whole day having one course after the other. If the school employed more teachers, they would share the work among them, the burden would be lighter and the situation would improve.

Finally, this contribution has been intended to report what happened during the observation of the courses in Computer Science department, and it was really a great experience to live and witness all the staff (mainly teachers)

do their best to teach English for Specific Purposes to their students. Through this investigation, the researcher has tried to examine certain issues related to ESP teaching and admits that a lot needs to be said and done in further research.

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APPENDICES

Appendix A : Students' questionnaire

Please fill in the following questionnaire

(Students)

Institution: …… / Level: ……..

****

1. Your baccalaureate stream is : Please tick (√)

Option	N	%
Scientific ?		
Mathematics ?		

2. How long have you been studying English ?
   …….

3. Why do you think ESP courses are important in your field ?

Yes / No	Reasons for taking ESP courses

4. Do you think your English will improve in the future?

…….

5. How did you find group activities in the classroom?

……..

6. How did you find working in pairs in class?

……

7. Did you like discussing and correcting errors with your peers?

……

8. Did you find the passages and exercises within your level?

……

9. Did you find the passages used for comprehension relevant to your area of study?

…….

10. What were the least satisfactory sessions of the courses? Suggest some improvements.

……..

11. Did you rely too much on the teacher's help or were you autonomous?

……..

12. Do you feel your English has improved?

…….

13)-In your opinion which strategies can help you develop the 4 skills?

…….

……..

.....

14)- As learners what do you expect from your teacher in the English course to motivate you to use English?

……
……
……

15)-Suggest some methods to develop your ability in using English in the classroom?

……
……

*** Thank you very much for your help***

Appendix B : Teachers' interview

Please reply to the following questions of the interview

(Teachers)

School / Institution : …….. / Years of experience : …….

1. What degree do you hold ?

license	Magister	doctorate

2. Is your status in the English language ……..?

Subject specialist	language teacher

3. How long have you been teaching English?
   …….

4. Have you received any training in teaching ESP?
   …….

5.Do you believe the training of teachers can be of a great help to reach success in language teaching ?

yes	No

6. Does a teacher who works all day long obtain as good results as the one who works a few hours only ?

yes	No

7. How much time is allocated to the teaching of ESP module?

…….

8. Are the groups crowded with students?

yes	No

9. Do you think students work better through ICT (Information Communication Technology)?

yes	No

10.In your opinion are students prepared for the real life through learning with CBA (Competency-Based Approach) ?

yes	No

11. Do you feel your role is to assist and guide the learners through this approach ?

yes	No

12. Do you notice that learners enjoy learning through CBA ?

yes	No

13. Do you allow your students to be free to speak and accept their mistakes ?

yes	No

14. Can students' failure lead to success ?

yes	No

15. Have you designed a syllabus to use in your teaching?

yes	No

16. While dealing with authentic materials (specialized subjects) what aspects do you implement to facilitate the task for learners ?

……
……..

17. what problems do you encounter while teaching ESP?

……

……

18. Is there a kind of collaboration with subject specialists in order to prepare your English course?

……
……

19. Can you give suggestions to improve that situation?

……
……

*** Thank you very much for your help***

Summary

The aim of this research work is to investigate the status of English for Specific Purposes course in the department of Computer Science at Mascara University. In order to answer the research questions and to confirm the research hypotheses, this research work focuses on three research instruments for data collection which are: students' questionnaire, teachers' interview, and classroom observation. Both qualitative and quantitative methods for data analysis will be used in this research work to analyze these data. The results will shed light on the idea that teachers of English need training to improve their own levels and to learn modern methods of teaching. Therefore, an ESP course for Computer Science students is proposed, in the end, for implementation.

Key words: ESP Course, Computer Science, Syllabus Design, ICTs

Résumé

Le but de ce travail de recherche est d'étudier le statut de l'anglais à des fins spécifiques dans le département d'informatique de l'Université de Mascara. Afin de répondre aux questions de recherche et de confirmer les hypothèses de recherche, ce travail se base sur trois instruments de recherche pour la collecte de données: le questionnaire des étudiants, l'interview des enseignants et l'observation en classe. Des méthodes qualitatives et quantitatives pour l'analyse des données ont été utilisées pour le traitement des données. Les résultats mettront en lumière l'idée que les professeurs d'anglais ont besoin d'une formation pour améliorer leurs propres niveaux et apprendre les méthodes modernes d'enseignement. Par conséquent, un cours ESP pour les étudiants en informatique est proposé, à la fin, pour la mise en œuvre.

Mots-clés: Cours ESP, Informatique, Conception de Syllabus, TIC

ملخص

الهدف من هذا البحث هو التحقق من حالة اللغة الإنجليزية لأغراض خاصة في قسم علوم الكمبيوتر في جامعة معسكر . للإجابة على أسئلة البحث ولتأكيد فرضيات البحث، يركز هذا العمل على ثلاثة أدوات بحث لجمع البيانات وهي :استبيان الطلاب ومقابلة المعلمين وملاحظة القسم .سيتم استخدام كل من الأساليب النوعية والكمية لتحليل البيانات في هذا البحث لتحليل هذه البيانات .وستسلط النتائج الضوء على فكرة أن مدرسي اللغة الإنجليزية بحاجة إلى تدريب لتحسين مستواهم اللغوي وتعلم طرق التدريس الحديثة .لذلك، يتم اقتراح دورة اللغة الإنجليزية لأغراض خاصة لطلاب علوم الكمبيوتر.

الكلمات المفتاحية :دورة اللغة الإنجليزية لأغراض خاصة ، علوم الحاسب ، تصميم المنهج ، تكنولوجيا المعلومات والاتصالات