

**THE PEOPLE'S DEMOCRATIC REPUBLIC OF ALGERIA
MINISTRY OF HIGHER EDUCATION AND SCIENTIFIC
RESEARCH**

**MENTOURI UNIVERSITY OF CONSTANTINE
FACULTY OF LETTERS AND FOREIGN LANGUAGES
DEPARTMENT OF ENGLISH**

**Meeting Students' Needs:
An Analysis of ESP Teaching at the
Department of Computer Science**

**DISSERTATION SUBMITTED IN PARTIAL
FULFILMENT OF THE REQUIREMENTS FOR
THE MAGISTER DEGREE IN APPLIED LINGUISTICS**

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Year 2008

Dedication

To my husband

To my children

who believe in me.

Dedication

*To the memory of my beloved
Father and Mother*

Acknowledgements

I would like to thank, first, Dr. Moumène Ahmed who accepted to supervise this work and who provided me with the necessary and keen criticism and advice to conduct this research.

I am indebted to Professor Saadi Hacène who has accepted to examine my dissertation of Magister and to preside the jury.

I am grateful to Professor Abderrahim Farida who has devoted her time and efforts to evaluate this research work.

I would like to thank particularly the Computer Science students and the language teachers who greatly helped me in completing the questionnaires.

My acknowledgements go also to all my friends and colleagues that supported me all along this difficult period of my career.

I would mention a special thank to Dr. Dakhmouche Meghlaoui for his help in the statistical design and analysis of this work.

certainly result in beneficial effects on the students' learning in this field of study.

Some tentative solutions to help improve ESP in the Computer Science Department are finally proposed.

List of Abbreviations

EAP: English for academic purposes

EFL: English as a foreign language

EGP: English for general purposes

ELT: English language teaching

EOP: English for occupational purposes

ESL: English as a second language

ESP: English for specific purposes

EST: English for science and technology

EVP: English for vocational purposes

GE: General English

NA: Needs analysis

PSA: Present situation analysis

SE: Specific English

TEFL: Teaching English as a foreign language

TSA: Target situation analysis

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Introduction

1. Aim of the Study

English for Specific Purposes (ESP) is considered as a trend of learning English as a second or foreign language with a strictly utilitarian aim. ESP emerged during the Second World War and has kept developing ever since. The determining role played by the USA during the period of its emergence not only influenced historical events but also exerted a strong pressure on international trade and business relationships. As a result, world science and technology transfer have also been conditioned by the mastery of English which is established now as the first international language.

The introduction of English in Algeria seems to correspond to the post Second World War period. At that time Algeria was still dominated by France and was one of its important colonies. As education was organised according to the political decisions and objectives imposed by France, the decision of teaching English was initiated by the French colonial authorities. Basically, English was mostly taught by French teachers who used the same teaching methods as practised in the French metropolis. The pupils attending secondary schools in Algeria were thus being familiarised with this new language which was being welcomed at that time.

After the independence, the situation of teaching foreign languages in Algeria tended to correspond to another reality. Not only was the teaching of English kept but other foreign languages were introduced as well. In time, and under the influence of various factors, the other foreign languages tended to gradually disappear and English remained, after French, the only foreign language taught.

In the late sixties, the Algerian authorities decided to build universities and to create different institutes and departments in arts, science and technology. From that time, English is omnipresent in any curriculum taught at university, and some departments require its use more than others. This is the case of the department of computer science where the specificity and the requirements of this particular discipline emphasise the importance of the English language.

These demands and requirements have resulted in the expansion of one aspect of English language teaching, namely the teaching of English for Specific Purposes (ESP). Within this approach, it is proposed that any ESP course should obey a strategy of predetermined objectives based on a needs analysis which aim is to identify what students are requiring the foreign language for; which in turn helps to specify as closely as possible what exactly it is that students have to learn in that language.

The present work aims at studying whether such an analysis of needs is present in the elaboration of the English programmes to fifth-year students at the Computer Science Department; and in the affirmative, how far such needs are taken into consideration in the teaching of that language.

2. Statement of the Problem

In the Department of Computer Science, University Mentouri Constantine, English language teachers who are not specialists in the field and who are not experienced at all carry out the teaching of English for specific purposes. The problem is that no predetermined objectives are defined in the teaching of English and students' needs are not taken into account at all. 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 specialising.

3. Hypothesis

If the teaching of English for specific purposes at the Department of Computer Science, University Mentouri at Constantine follows some strategies of predetermined objectives, the students' achievements would be enhanced.

4. Definition of the Terms of the Study

4.1 General Definition

Practitioners of English language teaching (ELT) see TEFL as standing for teaching English as a foreign language to non-native speakers in a non-native speaking environment (Kennedy and Bolitho, 1984).

In such a context of acquiring English as a foreign language, the learners want to use or are required to study English for specific purposes such as English for science and technology, English for business and so on (Kennedy and Bolitho, 1984: 4-5).

In this process of teaching English as a foreign language, the English language teacher is required to consider as objectively as possible why the learners need English (Kennedy and Bolitho, 1984: 2).

This objectivity is seen through an analysis of these needs identified as necessities, lacks and wants which can result in a strategy of predetermined objectives (Hutchinson and Waters, 1987).

The primary function of a needs analysis is to express and to determine the final objectives to which English language learning is put (Hutchinson and Waters, 1987). The other function of a needs analysis is to take into account the students' initial needs, including learning needs

and also to investigate students' strengths and weaknesses at the start of their language course (Richterich and Chancerel, 1987).

In order to make his or her analysis of needs accurate and efficient, the language teacher must consult three main sources of information: the language teachers, the students and the institution the students are from (Richterich and Chancerel, 1987).

4.2 Operational Definition

Once the English language teacher finds himself or herself involved in an ESP environment with students needing an ESP learning, he or she must determine by means of a needs analysis the English course to be taught, the content, the forms, the methodology of teaching and, finally, the set of communicative functions and abilities that should be achieved by the students (Kennedy and Bolitho, 1984).

5. Means of Research

To conduct this research, two questionnaires, one addressed to the language teachers who have taught at the department of computer science and another to a sample of fifth-year students, have been designed and used. In the process of the construction of these tools, informal interviews with the teaching staff and the department

administration, together with a pilot questionnaire addressed to computer science students and teachers, have been used.

6. Structure of the Dissertation

The dissertation develops in five chapters. The first two chapters review the literature on ESP and on needs analysis. The first chapter is devoted to a general definition of ESP and sums up the present situation of ESP in Algeria. The second chapter introduces, defines and explains needs analysis. The importance of taking into account the students' needs in the process of ESP teaching/learning is investigated.

The third and fourth chapters are devoted to the fieldwork proper. The third chapter deals with the questionnaire administered to the students and analyses the answers provided. The fourth chapter is concerned with the questionnaire administered to English language teachers and analyses the answers provided.

Finally, the fifth chapter analyses the findings and proposes some tentative solutions.

Part One: State of the Art

- **Chapter One: Definition of ESP**
- **Chapter Two: Needs and Needs
Analysis**

Chapter One

Definition of ESP

Introduction

A great change has occurred in the learning and teaching of languages. More and more, learners are interested in using languages because of some oriented purposes. Primarily, when a foreign language has been learnt or taught, it has been considered as a part of general educational objectives. To this effect, Hutchinson and Waters (1987: 6) write: "Previously the reasons for learning English (or any other language) had not been well defined. A knowledge of a foreign language has been regarded as a sign of a well-rounded education, but few had really questioned- why it was necessary."

Now, and as Strevens (1977: 145) states, learners want to use "Russian, specifically in order to read scientific papers on the aerodynamics of supersonic flight; German, specifically to act as an important agent for domestic electrical appliances; English, specifically to study textile engineering at Leeds University"; etc. There are so many examples of this specialisation in content and for different purposes that one cannot list them all.

This new tendency of learning a language is so popular that it attracts a large audience in whom we find different categories of learners, those who are seeking an academic level of attainment within a general school education and others who are pursuing a profession or career with all its implications.

ESP, or the acronym for "English for Specific Purposes" refers to an instinctive but strong movement which has spread over the world and is still continuing with more power and effects. It issued from the traditional current of TEFL/TESL and has progressively established itself as a separate new trend influencing the whole English Teaching/Learning process.

1.1 The History of ESP

The question that comes to mind as Robinson (1989: 399) states it is "How old is ESP?" Strevens (1977 cited in Robinson 1989: 399) suggests that "ESP goes back to the sixteenth century, with the production of specialised vocabularies and phrase books for diplomats, businessmen, and other travellers".

According to Strevens (ibid.), there were other cases of early SP-LT (special-purpose language teaching); SP-LT is commonly referred to as "specific purposes", not special, or LSP (Language for Specific

Purposes), such as the example of language courses for science students and in which either German, Russian, French or English was chosen. Those courses in reality had not any great influence on science students' assessment because they did not determine the success or failure in science subjects and the process of teaching/learning was mainly based on the principle of translation relying on the use of a dictionary.

The Second World War is the prelude of a radical change for the future of SP-LT. Particular historical events were the reason for creating a huge number of SP-LT programmes in the armed forces of the United States of America, Britain and some other nations. Those programmes were devised and adapted in order to fit a wide range of restricted aims or purposes which, in fact, had a close relationship with the needs and the requirements of the war. The courses were achieved under the form of intensive learning and were applied to the use of other languages such as German, Russian, Arabic, Turkish, Burmese, Thai, and Chinese (Stevens 1977: 151).

To explain and justify this particular use of the language of that moment, Stevens (1977: 151) takes the example of the use of the Japanese language. Among the Royal Air Force personnel there was a specialised training for learning Japanese "for the purpose of (a) listening, in the Burmese jungle, to Japanese fighter aircraft talking to

their ground control stations, (b) identifying their targets, and (c) using this information to alert RAF interceptor fighters." These very restricted aims, as Strevens shows, were put in practice during the war and were not taught in a general educational system. This example shows that this intensive training could not allow students of Japanese read and write the language. The requirements of that particular situation were met in listening and speaking only.

The end of the Second World War brought new perspectives of changes and, consequently, new developments concerning trade and business at an international level. It seems that the Second World War with its consequences has greatly influenced all the political, economic, scientific and cultural relations and policies all over the world. The early sixties saw a considerable change in the international activities and exchanges where two major forces - technology and commerce - dominated. To make those exchanges successful, there was an increasing demand which became an urgent necessity for learning and mastering languages for different purposes. More and more, and even nowadays, the aims for learning a language have been oriented towards necessity and efficiency.

For the practitioners of ESP, these perspectives are of greater importance and are extended at an international level. More precisely,

they influence the national development of countries in Asia, in Africa and in Latin America. The need for learning English is mainly and closely related to the purposes of internal communication, especially in English-speaking countries such as India, Nigeria, Kenya, Singapore, Fiji; of the transfer of science and technology as in Brazil, Chile, China, Morocco, the Middle East; and of international communication.

Gradually, English has emerged as being the first international language that is used for important and specific purposes of communication. The best example of international communication is illustrated by air traffic and particularly by the language of airways which is performed only in English. In reality, it must be acquired and used by pilots and air personnel without error. The language of the sea is also English and at international meetings and conferences, English is the necessary medium of communication if it is not the only one. International publications favour English, too. As Hutchinson and Waters (1987: 6) put it: "But as English became the accepted language of technology and commerce, it created a new generation of learners who knew specifically why they were learning a language - businessman and - women who wanted to sell their products, mechanics who had to read instruction manuals, doctors who needed to keep up with developments

in their field and a whole range of students whose course of study included textbooks and journals only available in English."

In the early seventies, the Oil Crises were another cause of rapid expansion of the ESP movement. Hutchinson and Waters (1987: 6) explain: "This development was accelerated by the Oil Crises of the early 1970's, which resulted in a massive flow of funds and Western expertise into the oil-rich countries. English suddenly became big business and commercial pressures began to exert an influence. Time and money constraints created a need for cost-effective courses with clearly defined goals."

1.2 Definition of ESP

When attempting to establish a suitable definition of ESP with its different constituents, Johns and Dudley-Evans (1993: 116) propose the general and revised definition provided by Stevens 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 attempts to describe ESP with its possible characteristics. He distinguishes "four absolute characteristics" from "two variable characteristics". The former correspond to the identified needs of the learner, the topics under study and the content to be taught, contrasting with "general English" and related to "syntax, lexis, discourse, semantics, etc., activities" (Johns and Dudley-Evans, 1993: 116), and finally discourse analysis. In fact, they are the necessary features to identify such a process as being ESP. But the latter characteristics ("two variable characteristics") 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 secondly, restricting teaching the skill or skills to be learned. Briefly saying, these characteristics can be considered as the necessary criteria for the fulfilment 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, 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 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 and 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 Stevens (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 determining for reading texts in science and technology. The precedingly mentioned approaches deal with written discourse, but a few researchers have thought about investigating both spoken and written discourse 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.

1.3 Research Issues and Controversies

Despite the fact that ESP has gained a particular status, specialists and researchers are aware of the considerable effort that must be made further for the future of ESP. First, when comparing between the theoretical work and the empirical development of ESP, it seems that

there is a gap which separates them. The main reason is that more emphasis has been put on applied linguistics (Barber, 1962), on courses and materials design (Swales 1971; Bates and Dudley-Evans 1976) then, consequently, theoretical work has lagged behind for a long time.

In addition, there are still controversies within ESP related to the content of ESP courses to be taught, the skills to be focused on, and finally, the kind of methodology to be developed. In the case of the ESP courses, the common-core approach or "wide angle approach" (Widdowson, 1983) is opposed to subject-specific or "narrow angle" which has its own advocates (Johns and Dudley-Evans 1980; Swales 1990) who consider that the common-core approach has shown its limits.

Methodology remains a crucial preoccupation. The question, then, is how and to what extent this methodology can be developed when it is related to ESP. Various teaching situations impose ways of using not only one methodology but also specialised methodologies. Thus, Johns and Dudley-Evans (1993: 123) state: "We believe that ESP requires methodologies that are specialized or unique. An English for academic purposes (EAP) class taught collaboratively by a language teacher and a subject-area lecturer..., sheltered and adjunct EAP classes ..., and special English classes for students in the work place ... require

considerably different approaches than those found in general English classes."

Furthermore, according to Anthony (1998), a conference held in Japan, more specifically the first Japan Conference on English for Specific Purposes which took place at Aizu University in Fukushima Prefecture in November 1997, permitted after a 'heated' debate, to clarify and to state in a perhaps definitive way the definition of ESP. This definition is so significant in that it is issued not only from a long period of controversies but also from the different debates all over the world which have helped the ESP movement to mature and to acquire the status it has today.

In fact, it is Dudley-Evans in 1997 in Japan who sets out during one hour an extended definition in terms of 'absolute' and 'variable' characteristics. Basically, this definition is deeply influenced by Strevens's definition of 1988 but with some variations as what follows. Therefore, as 'absolute' characteristics, "ESP is defined to meet specific needs of the learners" (Anthony, 1998:122), first; "ESP makes use of underlying methodology and activities it serves" (Anthony, 1998), secondly; and "ESP is centred on the language appropriate to these activities in terms of grammar, lexis, register, study skills, discourse and genre" (Anthony, 1998), finally. The absolute characteristic "ESP is 'in

contrast with General English'" (Anthony, 1998), is removed for the simple reason that ESP is not absolutely seen as being concerned with a 'specific discipline'. Concerning the variable characteristics, Dudley-Evans has increased their number, stating as such: first, 'ESP may be related to or designed for specific disciplines' (Anthony, 1998); second, 'ESP may use, in specific teaching situations, a different methodology from that of General English' (Anthony, *ibid.*); third, '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' (Anthony, *ibid.*); fourth, 'ESP is likely to be designed for intermediate or advanced students' (Anthony, *ibid.*); finally, 'Most ESP courses assume some basic knowledge of the language systems' (Anthony, *ibid.*). In other words, this definition is seen as three 'absolute characteristics' and five 'variable characteristics' by comparison with the original version of Strevens as four 'absolute characteristics' and two 'variable characteristics'.

Conclusion

As a conclusion and with regard to the main points that have been previously mentioned, it is important to notice that ESP is a strong movement which has imposed its influence all over the world, but still there are many things to do for its future development. This perspective

of expansion presupposes that there must be a constant improvement of better or suitable programmes and courses, of effective teaching, of serious analysis and of more consistent theoretical work in varied disciplines and, particularly, in human sciences.

Chapter Two

Needs and Needs Analysis

Introduction

This chapter aims at defining and at emphasising the importance of students' needs and needs analysis in an English language teaching-learning case study. In the development of this chapter, we have attempted to summarise the most prominent contributions related with the theoretical aspects concerning needs and needs analysis.

2.1 Identifying the Learner's Needs

The concept of learners' needs is one of the essential criteria which is adopted and validated in ESP. Robinson (1991: 3), for instance, explains that 'an ESP course is based on a needs analysis, which aims to specify it is that students have to do through the medium of English.' Thus, the question is: what is meant by the word "needs"?

2.1.1 Definition of Terms

When attempting to define what the term "need" means, first of all, most specialists agree that this word can convey different meanings, and it is understood in different ways with regard to the fact that many participants are involved in devising the ESP courses, namely the institution which organises the language courses, the language teacher,

the learner/student, and in some cases the sponsor, the needs' analyst and the linguistic expert even when they are outsiders. According to Chambers (1980: 26), there is a wide variety of definitions supplied by the dictionary. In fact, this word seems to carry both ambiguity and imprecision. It is also a term which is perceived as desires; it can cover a wide range of necessities, wants and lacks of something: 'It is fairly obvious that the term "need" is both ambiguous and imprecise.'... 'This terminological inexactitude has permitted a profusion of related but not identical items being commonly referred to as "needs" (usually with some qualifying adjective), requirements, or objectives and being treated as if they were more or less identical.' (Chambers, 1980: 26) Nevertheless, the main question is how it should be possible both to fit and to match the different appreciations in order to carry out an analysis which normally implies scientific rigour. For that reason, Chambers (1980: 25) puts it: "The value of needs analysis may go unrealised unless ambiguity and lack of precision in the use of the term are cleared away. It is necessary first to remove superfluous terminology, and second to establish different levels of needs, allotting some kind of priority between them."

Then, in terms of analysis especially analysis related to needs, in EFL, it is not an easy task to determine the levels of needs. For example,

Robinson (1991: 8) quotes Brindley's statement in which he defines and distinguishes the objective and subjective needs of the learner:

The first of these terms...refers to needs which are derivable from different kinds of factual information about learners, their use of language in real-life communication situations as well as their current language proficiency and language difficulties. The second term refers to the cognitive and affective needs of the learner in the learning situation, derivable from information about affective and cognitive factors such as personality, confidence, attitudes, learner's wants and expectations with regard to the learning of English and their individual cognitive style and learning strategies.

Furthermore, Robinson provides her own definition of needs by distinguishing different categories of needs; the 'objective' versus the 'subjective' needs, the needs 'perceived' by the 'teachers/authorities' versus or opposed to the needs 'felt' by the 'students/learners', 'target' needs opposed to 'learning needs', this latter contrasting pair corresponding to 'goal-oriented' versus 'process-oriented.' (Robinson, *ibid.*)

It is also the case of Hutchinson and Waters (1987: 58) who see in needs three levels being defined as 'necessities', 'lacks' and 'wants' which are 'objective' or 'subjective'. Robinson (1991) as well as Hutchinson and Waters (1987) get along with the same view in that they introduce new

expressions, respectfully 'target situation' and 'target needs'. When these different terms are related together, they introduce new concepts and even define a method that is valuable in gathering information about students' needs. So, a 'target situation analysis' is, according to most specialists, an analysis which concentrates on the needs of the learner for achieving communicative requirements at the end of a language course; in other words, it is the competence of the learner for achieving real communicative activities.

The 'target needs' are the 'product' of a target situation analysis. Consequently, as Robinson (1991: 8) puts it: "A needs analysis which focuses on students' needs at the end of a language course can be called a target situation analysis or TSA" while Chambers (1980: 29) writes:

Thus needs analysis should be concerned primarily with the establishment of communicative needs and their realisations, resulting from an analysis of the communication in the target situation - what I will refer to from now on as target situation analysis (TSA) to identify this more restricted sense of needs analysis.

The history of ESP indicates that Munby is the first specialist who enounces the concept and principles of target situation analysis in 1978 in his noteworthy contribution entitled "Communicative Syllabus Design". This first model that he both formulates and presents is

identified as "Communication Needs Processor" or "CNP" and provides "a highly detailed set of procedures for discovering target situation needs..." According to Hutchinson and Waters (1987: 54) "the CNP consists of a range of questions about key communication variables (topic, participants, medium, etc.) which can be used to identify the target language needs of any group of learners."

All ESP practitioners have come to the same agreement that Munby's model is the opening of a new era in ESP research, particularly that which concerns needs analysis/course design relationship. This is illustrated by Coffey (1984: 7) who writes: "It telescopes two operations, needs analysis and course design, into one-and these must, obviously, be linked in the way that Munby showed." For Coleman (1988: 155), "Probably the most influential of all needs analysis procedures currently available is Munby's "communication needs processor".

Munby proposes an instrument which is supposed to enable the needs analyst to draw up an accurate profile of an individual language learner. The instrument then provides detailed lists of "language skills" and "sociosemantic functions" so that the needs analyst can identify those skills and functions which the learner is likely to need."

Nevertheless, Munby's model has been widely discussed and even criticised. After having been used and tested, it has appeared that Munby's model has shown many weaknesses. As an instance of it, Coleman (1988: 156) states: "Despite its apparent thoroughness, Munby's work has been attacked on several fronts." He quotes Brindley and Coffee and adds: "Brindley (1989) questions Munby's work on three counts: that learners' needs cannot necessarily be equated with target language behaviour, that the analysis excludes affective factors, and that the learners themselves are not involved in the investigation of their own needs. Coffey (1984) criticises the model for being over-complicated and static." In other words, it seems that Munby has neglected or not taken into account some variables which, according to him, are not a part of the needs analysis. He considers those variables, namely the participation of the learners in the needs analysis and the affective factors that are met in the learners as 'constraints'. About those 'constraints' defined by Robinson (1991: 41) as such, she states: "These variables, which Munby describes as "constraints upon the implementation of the syllabus specification", include such things as government attitude: the status of English, logistical and administrative matters, the students motivation and expectations, and methodological issues." The implications of such a criticism are seen in the modifications provided by Munby in 1984 in his contribution "Communicative Syllabus Design: Principles and

problems." This improvement appears in what follows: "Some constraints (type A), e.g. political factors affecting the target language and homogeneity of the learner group should be applied at the needs analysis stage. Others (type B), e.g. time available for the course, state of resources, styles and traditions of learning, should be applied at the content specification stage. I previously advocated leaving all constraints till after the specification of content but in practice we found that some constraints cannot wait" (Munby, 1984: 64).

2.1.2 Some Theoretical Issues and Considerations

With regard to what has been said, a target situation analysis aims at defining the ultimate needs and objectives of the learners at the end of a language course, but it also contributes to identify another step in the teaching/learning process. Thus, Robinson (1991: 9) suggests: "The information sought for TSA may relate to two different stages in the students' lives. Thus, the English course may be preparing the students for a further training course, which will be conducted through the medium of English after which the students will then take up jobs. The English requirements of the training course and of the later job may well be different, but both need to be considered."

Besides TSA, there is another type of analysis which may equally be conducted as being a 'PSA' or 'Present Situation Analysis'. Robinson

(1991: 9) shows that "A PSA seeks to establish what the students are like at the start of their language course, investigating their strengths and weaknesses." A PSA, by definition, investigates "short-term" and "medium-term" needs and is achieved by a course designer who has to consult different sources of information. Robinson considers that the PSA completes the TSA because the needs investigated in a PSA are not those "long-term" needs investigated in a TSA. The TSA objectives remain constant while those formulated in a PSA "are subject to change". They correspond more exactly to what Chambers (1980: 30) calls "intermediate objectives" whose changes, if necessary, are based on "pedagogic considerations" only.

2.2 Needs Analysis

2.2.1 Principles

It is widely agreed that among the distinguishing features which are criterial to ESP, the needs analysis is one of them: "Second, an ESP course is based on needs analysis..." (Robinson, 1991: 3). In Strevens's widely accepted definition, needs analysis is part of four absolute characteristics and is called "needs assessment" (Johns and Dudley-Evans, 1991: 116).

A needs analysis then aims at defining the needs of the learners as accurately as possible to specify the different uses of English for

pursuing academic or occupational purposes: "...which aims to specify as closely as possible what exactly it is that students have to do through the medium of English." (Robinson, 1991: 3). Or, as Johns and Dudley-Evans (1993: 116) put it: "...designed to meet specified needs of the learner."

Once being stated, it is important to explain the place that a needs analysis occupies in the whole process of ESP teaching and learning and the role it plays as an important means of investigation and data gathering. Strevens (1977) develops this principle, explaining that needs analysis finds its reason for being in the history of ESP, particularly in its development. ESP is said to be a "reaction against conventional foreign-language instruction" (1977: 145) and the last decades have seen the emergence of a new trend that concentrates especially on the learner and on his needs. Strevens (1977: 152) suggests further: "Within the context of this development, SP-LT can be seen as responding to the new educational requirement to study the learner, to analyse his needs and aims, to define his contribution to the learning/teaching situations...and to devise means of helping him to learn that which he wishes to learn, not just that which has been defined by some externally-imposed 'general' syllabus."

2.2.2 Methods

In order to gather the relevant information for a needs analysis, Robinson (1989: 396-398) suggests that two important factors must be taken into consideration and concern the learner and his learning environment. The first factor deals with the requirements and objectives that must be attained by the learner during the period of his training. The second concerns the aims and purposes after his training as for instance when the learner applies for a job or occupation, and the way he uses his experience of English for real communicative purposes required in such a job.

For needs analysis, Robinson (1991) sees three main sources of information as being necessary: the students, the language teaching institution including the administrators, and the student's employer. Richterich and Chancerel (1987 in Robinson 1991: 9) also propose the same three basic sources of information to investigate learners' needs: "They suggest that there are three basic sources of information: the students themselves, the language-teaching establishment, and the 'user-institution', for example the student's place of work." Yet, Robinson (1991: 11) sees two other sources that can be helpful such as the students' sponsors and past students. In reality, we have consulted only past students. This was achieved when a pilot questionnaire was

administered to the Computer Science teachers who provided the answers both as past students and as science teachers.

For Mackay (1978: 21) it is up to the language teacher who must be well informed about the situation to determine what should be the needs of the learner: "In order to design and teach effective courses, the teacher and planner must investigate the uses to which the language will be put." The main reason for such an argument is the fact that Mackay thinks that the learner can make mistakes in his choices and decisions: "The linguistically unsophisticated confuse and conflate skills, or simply do not distinguish them at all" (Mackay, 1978: 21).

To be successful in this task, the language teacher must gather the necessary information by conducting a double investigation. With that purpose in mind, he must prepare a careful questionnaire and a structured interview: "Hence, it is the responsibility of these language teachers involved in planning courses for given groups of learners for specific purposes, to determine accurately what these specific purposes are. Then the teacher is one step nearer being able to translate these needs into linguistic and pedagogic terms in order to produce and teach an effective course. There are basically two formal ways of gathering the necessary information: by a questionnaire to be completed by the learner or teacher, or by means of a structured interview."(Mackay, 1978: 21)

The questionnaire must be elaborated under certain conditions: "If a questionnaire is to be used, the teacher must determine what kind of information about what he requires and design questions to elicit this information." (Mackay, 1978: 21)

In order to avoid a waste of time and energy, Mackay (1978: 22) proposes to run a pilot questionnaire to test the appropriate number of questions and the suitable questions to be asked: "A pilot run with the first version of the questionnaire is a good idea. Even administered on a few, say five, individuals, it will indicate what questions have been poorly or ambiguously phrased and if any important information is missing."

For the structured interview, the formulation and design are similar to those of the questionnaire; and the objectives are the same as for the questionnaire: "A structured interview is similar in format construction and purpose to a questionnaire."(Mackay, 1978: 22). The difference appears in the fact that the gatherer of the information asks the questions directly to the interviewee and then records the answers. The structured interview has many advantages, for the questions are not left unanswered as it may happen when completing a questionnaire. Another advantage comes from the fact that the interviewer can explain, clarify and also direct the questions relieving any ambiguity or impreciseness, perhaps

"any misunderstanding which may crop up in the interpretation of the questions." Finally "and perhaps most advantageously, 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 the structured interview."(Seliger and Shohamy, 1989: 199-201). For both questionnaire and interview, the primary function is to take into consideration the opinions of those who answer the questions.

There is another procedure for seeking the information which can be relevant to a needs analysis. It is direct observation. It is particularly useful for collecting data and samples of written and spoken interaction with different sources, namely the students, the learner's institution, especially the place of work. Direct observation permits the reliability and accuracy of all the information that is gathered and checked.

The case study is another kind of observation. It concerns the study of a particular learner over a given period. Schmidt (1981: 200-207) uses the case study procedure on a single student "Yvonne a non-native speaker of English studying business administration in an American University." Schmidt (1981: 200-201) justifies this use of case study basing his argument on the experiment made with Yvonne:

The case study... is a unique tool for the curriculum developer in assessing the language needs of a non-native speaker in a particular setting. The advantages of this method over the others are the possibility of one in-depth study over a period of time, the opportunity to appeal to the student's intuitions about his or her difficulties and needs in more detail than in the oral interview or questionnaire, and the occasion for the curriculum developer to do direct observation of the student in the classroom and study situation to gain insight into the student's own methods of learning.

Coleman (1988: 157) also accounts for a case study for a needs analysis based on Munby's model, but in a large organisation: "The context in which the case study was performed was Hasanuddin University, a large state university in Indonesia. A British Council-ODA Key English Language Teaching (KELT) Project was set up in the university in 1980, and it was felt that a needs analysis would enable the British participants in the project and the university authorities jointly to determine the direction which the project should take." Nevertheless, the case study, despite its advantages, is time-consuming, and its results cannot be generalised.

Tests may also be a suitable source of information. Generally, the tests are given to the students before starting any ESP course, thus revealing their levels of ability and their possible deficiencies.

Another method consists in collecting authentic data to practise needs analysis. It deals with real-life activities of the learners and all the necessary materials used for them, ranging from books, articles of journals to the recording of lectures and the examination of authentic printed material of the learner's field.

Finally, it is possible to carry out the "participatory needs analysis" (Robinson, 1991: 14) not only by making the students answer the questionnaires, but also by asking them participate actively. They can take part in a discussion on their needs and make their own recommendations.

Conclusion

A needs analysis is a useful tool to investigate learners' needs, but as Chambers (1980) attempts to show in his successful article, it is not an easy task. The first step in such an analysis is the attitude to adopt towards the terminology which is implied when needs are associated to an analysis which should be, scientifically speaking, objective and accurate. The term "needs" is sometimes seen as necessities, wants, desires, and lacks. Therefore, to overcome this aspect of difficulty, Chambers proposes to see in needs "priorities" which are established by needs analysis as the first essential step. These priorities will determine

in reality the ultimate objectives to be fulfilled and the form, the ways
and the functions to which the English language will be put.

Part Two: The Experiment

- **Chapter Three: Analysis of Students'
Questionnaire**
- **Chapter Four: Analysis of Teachers'
Questionnaire**

Chapter Three

Analysis of Students' Questionnaire

Introduction

Among the students of the Computer Science Department, a group of 36 fifth-year students have been selected at random to answer a questionnaire that has been designed in order to investigate fifteen points.

Two main reasons have influenced the decision of selecting such a category of students. Firstly, they are mature enough to make an evaluation about their level of achievement in English. The fifth-year indicates that they are nearly at the end of their studies. To that effect Robinson (1989: 398) states: "...the students are normally adults, albeit young adults, rather than school children." While Kennedy and Bolitho (1984: 14) write: "In fact, many ESP learners are adults." Secondly, those students are concerned with the needs analysis that is presently conducted, and it is felt that their opinions must be taken into great consideration. In fact, they constitute one of the reliable sources of information. As Chambers (1980: 26) put it: "Richterich and Chancerel (1987) authoritatively suggest three separate sources of information: the student, the student's employer and the teaching organisation".

Taking into consideration, the opinions expressed by the students can reveal that they certainly have specific aims in mind. Thus, Robinson (1989: 398) adds: "Given that ESP students normally have such specific aims, an important element of ESP course design is the analysis of needs: finding out first what it is that students on a particular course need English for."

Before dealing in details with the fifteen questions that constitute the questionnaire addressed to the computer science students, it is essential to emphasise the fact that a certain number of students either have partly answered the questionnaire or have left parts of questions unanswered. Robinson (1991: 12) mentions this alternative in the use of the questionnaire: "the disadvantage is that not many people will bother to fill it and return it."

One can deduce with regard to the results which have been recorded that those students either have felt embarrassed to answer because of some particular points arisen for discussion or simply because they have not understood the questions. Nevertheless, whenever it is the case, the real percentage of respondents in this situation will be enounced for each question separately at it comes. Finally, the tabulations of the results

have been operated only on the respondents who have completed the questionnaire.

3.1 Analysis of the Questions

Question 1. Do you consider English important for your studies?

- Yes
- No

This question has been devised in order to know the importance of English for this kind of learners. As Kennedy and Bolitho (1984: 6) point out: "Much of the demand for ESP has come from scientists and technologists who need to learn English for a number of purposes connected with their specialisms." On the other hand, this question suggests that it is possible to get a full appreciation of the motivation of the students related to English learning. According to Kennedy and Bolitho (1984: 15), this motivation corresponds to the highest level of motivation that can be met in ESP students: "'Level One', the highest level, when English is required to obtain a degree or a desirable job or to get promotion." Roe (1977 cited in Kennedy and Bolitho, 1984: 15) write, this motivation is defined as "instrumental motivation (where English is seen as a means to achieving some practical or professional purpose)..."

Importance of English	N	%
Yes	35	97.2
No	1	2.8

Table 3.1: Importance of English

Table 3.1 indicates that 97.2% of respondents have answered "Yes" while 2.8% have answered "No". Since a large proportion of fifth-year students have answered "Yes", one can conclude that English is very important for their studies, and so their motivation remains higher.

Undoubtedly, this motivation has to be taken into account in terms of specified needs expressed by the students. Kennedy and Bolitho (1984: 14) assume that: "If it is possible to find out a student's motivation for learning English and match the content of the course to this motivation, the chances of successful language learning are increased.

Question 2. Do you have any professional activity in addition to studying?

- Yes
- No

The question aims at identifying the learner put in his social environment. It is important to know whether the social environment affects his perception of the need for English. Robinson (1989: 404) mentions in her article Richterich and Chancerel's approach to needs analysis and writes: "Richterich and Chancerel's work takes more

account of the human factor"...and emphasises the importance in any language course of its context in society."

Additional activities	N	%
Yes	10	27.2
No	26	72.8

Table 3.2: Additional activities

For the second question, 72.8% of respondents have answered "No" while 27.8% have answered "Yes". So, 72.8% of students are just pursuing their studies while 27.8% both study and work.

Question 3. If yes, what is it?

- a. part-time teaching at university.
- b. teaching in secondary school.
- c. working in a national institution.
- d. working in a private company.
- e. others (please specify).

The third question is only addressed to the respondents who answered "Yes" in the second question. It attempts at defining the nature of some additional activities pursued by the students.

Options	N	%
Part-time teaching at university	5	50
Teaching in secondary school	0	0
Working in a national institution	1	10
Working in a private company	2	20
Others	2	20

Table 3.3. Nature of Additional Activities

The third table illustrates the results obtained at question 3. "Part-time teaching at university" option has got 50% of choices made by the students; "working in a private company" and "other activities" have received 20%; "working in a national institution" only 10% and "teaching in a secondary school" 0% of choices. The highest percentage shows that 5 out of 10 students favour part-time teaching at university. It is interesting to see also that 20% of students work in their own company.

Question 4: Do you use any English in your job?

- Yes
- No

The fourth question which is addressed only to the respondents who answered "Yes" to the second question tries to investigate further needs among the various EOP (English for Occupational Purposes) if any. Kennedy and Bolitho (1984: 4) state that: "EOP is taught in a situation in which learners need to use English as part of their work or profession."

Use of English in additional activities	N	%
Yes	14	41.2
No	20	58.8

Table 3.4: Use of English in additional activities

In the fourth table, the results are somehow in contradiction with the question because only 10 students are supposed to give their opinion

about their use of English in additional activities. It may be that the form of the question has created misunderstanding, and, unfortunately, the results are not those expected.

Paying a close attention to a number of questions previously mentioned, one can notice that the second question, the third and the fourth ones are correlated together. The three questions have been stated in order to identify the student in his social environment.

It should have been interesting to know whether there is a present need and use of English for those who pursue occupational activities and to identify the requirements of the language imposed to a large extent by the society around.

Question 5: What is/are the skill(s) you have most concentrated on? (Please, classify in order of importance, giving 1 to the most important to 4 to the least important)

- a. listening
- b. speaking
- c. reading
- d. writing

The fifth question has focused on the skills, and one has to evaluate the emphasis allotted to each skill on the basis of needs expressed by the students themselves during the period of their studies. The question suggests that it could be one or more skills that are needed.

To that effect, Robinson (1989: 402) states: "Moving towards language, the analyst needs to know which of the four language skills are made use of, ...".

Options	Rank 1	Rank 2	Rank 3	Rank 4
Listening	9 34.6%	5 19.2%	6 23.1%	6 23.1%
Speaking	11 42.3%	4 15.4%	5 19.2%	6 23.1%
Reading	6 23.1%	14 53.8%	4 15.4%	2 7.7%
Writing	0 0%	3 11.5%	11 42.3%	12 46.2%

Table 3.5.1: Emphasis on the Skills

Reading the above table, it is seen in the first rank that the speaking skill is laid more emphasis on (42.3%), followed by the listening and reading skills (respectively 34.6% and 23.1%) while no emphasis (0%) is laid on the writing skill.

In her work, Clark (1977: 152) assumes that the sums of the ranks are a convenient tool for a comparison between some options submitted to an ordered classification. This comparison is based on the following principle: the option with the least sum of the ranks is the most important and so forth.

Options	Sum of the ranks
Listening	61
Speaking	58
Reading	56
Writing	87

Table 3.5.2: Sum of the Ranks

Table 3.5.2 is a tabulation of all the sums of the ranks, and it is interesting to notice a significant change where the respondents have stated three skills as being the first priorities, respectively "Reading", "Speaking" and "Listening". The writing skill is the least favoured.

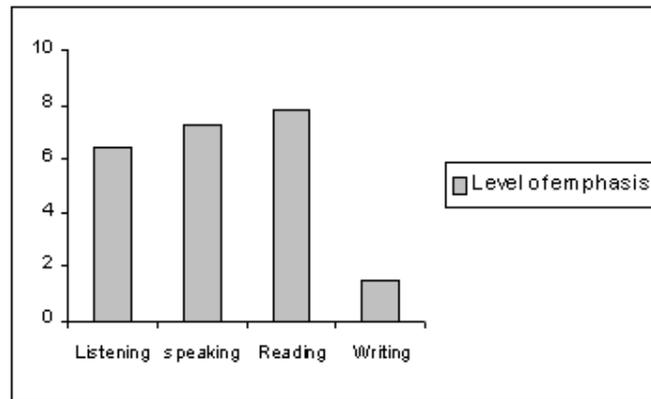


Figure 3.1: Emphasis on the Skills

Figure 3.1, mentioned above, is another clear representation of the emphasis of the skills and summarises the results that have been recorded. Hence, it is clear that there has been much demand on three skills (Reading, Speaking and Listening) while the writing skill has been neglected.

Question 6: What is/are the skill(s) you feel more confident to use now? (Please classify in order of importance, giving 1 to the most important to 4 to the least important)

- a. listening
- b. speaking
- c. reading
- d. writing

The sixth question has insisted on the four skills but in terms of an evaluation at the end of three years of compulsory English. According to needs analysts, the four skills constitute an important part in the TSA (Target Situation Analysis). For instance, Robinson (1989: 402), relying on Chambers' work (1980), writes: "An important consideration is the degree of proficiency expected in the target situation."

Options	Rank1	Rank2	Rank3	Rank4
Listening	6 24%	6 24%	7 28%	6 24%
Speaking	8 32%	4 16%	9 36%	4 16%
Reading	8 32%	6 24%	6 24%	5 20%
Writing	3 12%	9 36%	3 12%	10 40%

Table 3.6.1: Confidence in Use of the Skills

Table 3.6.1 has permitted to record interesting results about the confidence in the use of the four skills expressed by the students. By considering only the number of times the different skills have been classified at the first rank, it appears that the reading and speaking skills have shown the same highest percentage (32%). They are followed by the listening skill in the second place (24%) and finally by the writing skill in the third but last position (12%).

Again, the same principle of the sums of the ranks can be applied producing the table 6.2 as follows:

Options	Sum of the ranks
Listening	63
Speaking	59
Reading	58
Writing	70

Table 3.6.2: Sum of the Ranks

Table 3.6.2 shows a noticeable change in the classification of the four skills where reading is placed first just followed by speaking in the second place. The listening skill is classified third while the writing skill occupies always the last position. Obviously, this indicates that the students have developed a particular confidence in three skills namely reading, speaking and listening; but this is not the case for the writing skill.

Another clear representation of the sums of the ranks is seen in figure 3.2 below:

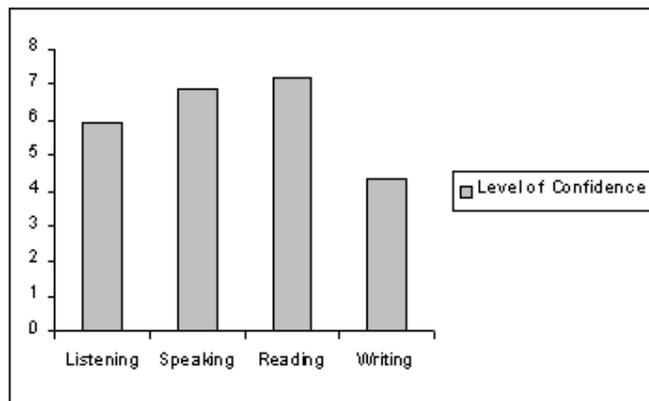


Figure 3.2: Confidence in the Use of the Skills

A correlation can be drawn between the fifth and sixth questions showing some similarities in the results. In terms of needs of the skills, the students have concentrated much more efforts on and developed a confidence in reading, speaking and listening rather than in writing. One can justify this difference by the fact that there has been much demand on these skills.

Question7: Would you say that, at the present time, your level in English is:

- a. very low ?
- b. low ?
- c. good ?
- d. very good ?

The seventh question is seen as a means to assess the students' level in English at the present time with regard to the language learning that has been achieved during their studies in a successful or an unsuccessful way. In this question, the students have been asked to make an evaluation about their own level because their personal opinion is worth considering.

The aspect of level which is questioned here involves the linguistic skills and abilities acquired by the students in agreement with their needs of the language in their specific field. Thus, Robinson (1989: 396) puts: "Many students all over the world are studying technical or academic

subjects wholly or partly through the medium of English: their command of the English language must be such that they can reach a satisfactory level in their specialist subject studies."

Options	N	%
a	0	0
b	23	63.9
c	13	36.1
d	0	0

Table 3.7: Students' Evaluation about their Level in English

Table 3.7 sums up the results recorded in the seventh question. Respectively, 63.9% of the respondents have selected the option "b" while 36.1% have preferred the option "c"; "a" and "d" options have reached the least score (0%). This evaluation is significant because it is achieved at the end of the compulsory English syllabus (three years). If such results are seen, this may indicate that a great number of students are still facing lacks in English even at the end of their studies.

Question 8: If you still find difficulties in using English, what are the aspects of English you find most difficult? (Please, classify by order of difficulty giving 1 to the most difficult, 2 to the second most difficult down to 5 for the least difficult.)

- a. grammatical structures related to general English?
- b. lexical items related to general English?
- c. grammatical structures related to scientific and technical English?
- d. scientific words and expressions written in English?
- e. lexical items related to Computer Science?

In the eighth question, the students are asked to make an evaluation about the present state of their attainments of the linguistic code of English. The five main options which appear in the question have been proposed on the basis of informal interviews and discussions with the students. To that effect, Robinson (1991: 23) states that: "The nature of the relationship between context or domain and the learning and use of the language is clearly vital to ESP and highly worth investigating."

On a sample of 36 students, only 25 have answered this question. This problem has been previously mentioned being one of the disadvantages of the questionnaire. This may be due to the form of certain questions engendering either a lack of comprehension or perhaps an unwillingness to answer them. Perhaps it may be that their difficulties are of another type which has not been identified yet.

The results are summarised in table 8.1 where each cell indicates the score and the percentage of the corresponding rank in the choice operated by the students. Thus, for example, the option "Grammatical structures related to general English" has been selected 4 times (16%) in the third rank (rank3).

Options	Rank 1	Rank 2	Rank 3	Rank 4	Rank 5
a	4 16%	4 16%	4 16%	6 24%	7 28%
b	4 16%	3 12%	5 20%	7 28%	6 24%
c	5 20%	4 16%	5 20%	7 28%	4 16%
d	7 28%	11 44%	4 16%	2 8%	1 4%
e	6 24%	2 8%	7 28%	3 12%	7 28%

Table 3.8.1: Evaluation of the Students in their Present State of English

Reading the results, one can consider only the scores or percentages of the classification of the different options at the first rank. Thus, the first column (rank1) emphasises the different aspects of difficulty met by the students. The main difficulty is met in "Scientific words and expressions written in English"; the second most difficult aspect concerns the "Lexical items related to Computer Science" and the third most difficult deals with the "Grammatical structures related to scientific and technical English". The first two options, namely "Grammatical structures related to general English" and "Lexical items related to general English", appear to be causing less problems to the students. Obviously, there is a clear gap in the aspects of the language that can cause most problems to the students. Thus, moving from general to specific English seem to be causing most problems perhaps indicating a poor command of the language related to the subject-specific content.

It is possible to use another statistical method -the sum of the ranks- to analyse the results that are listed in table 3.8.1. It consists in calculating the sum of the ranks of each option; that is, the weighted sum of each row. This procedure has produced table 3.8.2 as follows:

Options	SR
Grammatical structures related to general English	83
Lexical items related to general English	83
Grammatical structures related to scientific and technical English	76
Scientific words and expressions written in English	54
Lexical items related to Computer Science	78

Table 3.8.2: Sum of the Ranks (SR)

The most difficult option corresponds to the least sum of ranks and the least difficult option corresponds to the greatest sum of ranks.

Table 3.8.2 shows that the most difficult aspect of English according to the students is the "Scientific words and expressions written in English". "Grammatical structures related to scientific and technical English" is the second most difficult aspect of English. At the third level "The lexical items related to computer science" option appears. Finally, "Grammatical structures related to general English" and "Lexical items related to general English" are considered by the students as being aspects of English causing less problems.

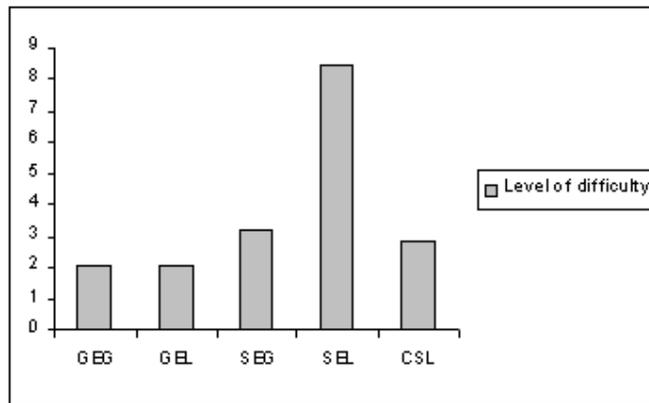


Figure 3.3: Different Aspects of English

- GEG: General English Grammar
- GEL: General English Lexis
- SEG: Scientific English Grammar
- SEL: Scientific English Lexis
- CSL: Computer Science Lexis

Figure 3.3, presented above, visualises clearly the aspects of difficulties encountered by the students in their use of English. Robinson (1989: 398) summarises best our observation for this particular question: "...the majority of ESP students are not beginners. They have typically done several years of an EGP course at school, and perhaps not very successfully. The ESP course provides a chance to revise and improve their knowledge of English - from a new viewpoint."

Question 9: How would you describe your attitude towards English language learning at the beginning of your studies:

- a. favourable?
- b. unfavourable?

The ninth question has been added in order to make an appreciation of the attitude of the students towards English learning at the beginning of their studies. Kennedy and Bolitho (1984: 16) mention that: "Attitude to an ESP course may be influenced by a student's previous learning of English."

Options	N	%
a	28	77.8
b	8	22.2

Table 3.9: Student's Attitude towards English Learning

According to the results recorded in table 3.9, 77.8% of the respondents have expressed a favourable attitude towards English learning while 22.2% have not. Considering what has been stated by Kennedy and Bolitho quoted above, one may deduce that there could be alternative ways to justify the attitude of the students in terms of needs. For instance, those who have expressed a positive attitude towards English learning might have acquired a valuable experience in their previous English learning. They may also feel a further need for learning English because of the specificity of their subject discipline. According to Kennedy and Bolitho (1984: 135), " A learner is bound to approach an ESP course with heightened expectations."

If this is not the case for the other 22.2% who have showed a negative attitude, it may be explained by an unsuccessful previous English

learning or perhaps by the feeling that English learning is not an absolute necessity.

Question 10: Do you find the number of hours provided for English learning:

- a. too much?
- b. sufficient?
- c. just reasonable?
- d. not sufficient?

The tenth question has focused on the students' perception of learning needs related to the period of time in which this learning has taken place. Most needs analysts, in fact, consider that time is an essential factor which must be taken into account when conducting an ESP course. Robinson (1989: 398) expresses this fact in: "...ESP courses are normally constrained by a shortage of time."

Thus, in the question, four options have been proposed in order to obtain a valuable appreciation concerning this main point.

Options	N	%
a	1	2.8
b	5	13.9
c	14	38.9
d	16	44.4

Table 3.10: Students' Opinion about English Learning Period

Table 3.10 summarises the results that have been obtained for the four options. The distribution starts from the least percentage for the first option up to the highest percentage for the last option. This increase in the percentage is seen as such: 2.8% for the first rank, 13.9% for the second rank, 38.9% for the third rank and finally 44.4% for the fourth one. It indicates clearly that a large proportion of the sample think that the number of hours provided for English learning is not sufficient if not, just reasonable.

Question 11: At the present time, do you use books/documentation in your own field printed in English?

- Yes
- No

Options	N	%
Yes	21	58.3
No	15	41.7

Table 3.11: Use of Scientific Books Written in English

On the basis of the results shown in table 3.11, we notice that 58.3% of the respondents have answered "yes" whereas 41.7% have answered "no". The difference between the percentages seems to indicate that a majority of students use specific documentation written in English. In fact, reading documentation in English is seen a source "providing access to technology and science" (Kennedy and Bolitho, 1984: 11).

Question 12: If yes, what percentage of books or documentation printed in English do you approximately use?

- a. 25%
- b. 50%
- c. 75%
- d. 100%

Options	N	%
a	17	77.3
b	4	18.2
c	1	4.5
d	0	0

Table 3.12: Percentage of Use of Books Written in English

The results recorded on table 3.12, show that 77.3% of the students have taken the option "a", while 18.2% have preferred the option "b", for the option "c" the percentage of students is 4.5. But the last option has been left (0%). The highest percentage appears in the option "a", which expresses a use of specific books written in English but in a very reduced amount.

Question 13: Do your Computer Science teachers encourage you to use specific documentation written in English?

- Yes
- No

Options	N	%
Yes	23	65.7
No	12	34.3

Table 3.13: Use of Scientific Documentation Written in English

Concerning the use of this specific documentation written in English, we notice that the option "yes" has received 65.7% of answers when the option "no" has received 34.3%. In the specific field of the students, the use of books written in English can have some advantages, among them understanding and transferring science and technology advances.

Question 14: If yes, what are the objectives of the use of this specific documentation?

- a. to develop your knowledge in relation with the whole programme of Computer Science.
- b. to write summaries/essays according to Computer Science teacher's instructions (for a TP for instance).
- c. to prepare Computer Science examinations.
- d. to write a 'mémoire'/dissertation submitted to a board of examiners at the end of the fifth year.
- e. others (please specify).

Options	N	%
a	18	52.9
b	6	17.6
c	4	11.9
d	6	17.6
e	0	0

Table 3.14: Final Objectives

The results that have been summed up in table 3.14 state that 52.9% of the students use specific texts written in English to develop their own

knowledge of specific subject; the options "b" and "d" are equal in ratio, i.e., 17.6%; the option "c" has received 11.9% and the option "e" 0%. Among the objectives that have been listed, it is the one of knowledge transfer through reading which interests most students. Then consulting books written in English for writing summaries or even a 'mémoire' constitutes a valuable but difficult enterprise for a fifth-year student. Kennedy and Bolitho (1984: 71) put: "EAP groups at any level are certain to need reference or library skills. They will need to know how to use the catalogues in a library, how to look up topics in an index, how to get the best out of a bibliography, how to use dictionaries, encyclopaedias and other works of reference. A student may be given a project or assignment in his special subject. He may well have available a list of recommended reading, some of which may be appropriate for his project". In reality, what is written and submitted to evaluation may determine success or failure. Furthermore, Kennedy and Bolitho (1984: 70) assume that: "It is important to define a reader's purpose in coming to a text as this will dictate the skills and strategies to be adopted by the reader and the level of comprehension he is operating at". The option "e" has been proposed as the last instance to encourage the students end the list of the items. Unfortunately, nothing has been added to enlarge our comprehension of some final objectives.

Question 15: At the end of your studies, and in relation with your acquired knowledge of English, you have become able to:

a. listen to lectures in English.

- Yes
- No

b. speak English fluently.

- Yes
- No

c. read general English easily.

- Yes
- No

d. read scientific English easily.

- Yes
- No

e. write English correctly.

- Yes
- No

f. listen to conferences/talks presented by experts in English.

- Yes
- No

f. exchange views with foreign experts in formal and informal situations.

- Yes
- No

h. write reports on Computer Science in English.

- Yes
- No

i. find a job where English is required.

- Yes
- No

j. conduct further research.

- Yes
- No

Options	Number of "Yes"	Number of "No"
a	12 71.43%	8 28.57%
b	12 42.86%	16 57.14%
c	19 67.86%	9 32.14%
d	17 60.71%	11 39.29%
e	16 57.14%	12 42.86%
f	8 28.57%	20 71.43%
g	10 35.71%	18 64.29%
h	13 46.43%	15 53.57%
i	21 75%	7 25%
j	10 35.71%	18 64.29%

Table 3.15: Level of achievement reached

Table 3.15 can be read on the principle of the highest percentage summed up for the yes-answers. It is noticed that 75% is obtained for option "i"; 71.43% for option "a"; 67.86% for option "c"; 60.71% for

both options "d"; 57.14% for option "e"; 46.43% for option "a"; 42.86% for option "b"; 35.71% for options "g" and "j"; and, finally, 28.57% for option "f".

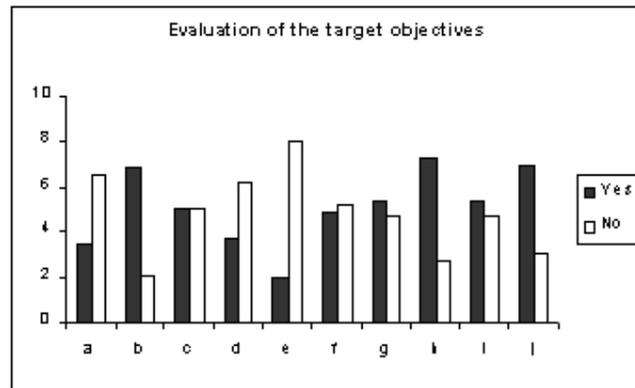


Figure 3.4: Abilities in the Use of English

- a: Listening to lectures presented in English
- b: Speaking English fluently
- c: Read general English easily
- d: Read scientific English easily
- e: Write English correctly
- f: Listen to conferences/talks presented by experts in English
- g: Exchange views with foreign experts in formal and informal situations
- h: Write reports on Computer Science using documentation printed in English.
- i: Find a job where English is required
- j: Conduct further research

The results expressed in figure 3.4 illustrate in a clear way the answers provided about the different abilities expected from the students at the end of their studies. Thus, options "b", "g", "f" and "j" indicate that

some of the necessary abilities in performing either general or scientific English are not even partially developed. Furthermore, option "h" indicates a potential lack for students interested in further research (in post-graduate studies, for instance). Perhaps, the only positive aspect is seen in option "i" because it seems that finding a job where English is required cannot be a difficult task for most students. As a conclusion, this question has been resourceful in terms of target needs as enounced by Hutchinson and Waters (1987: 55-62). The results of this particular question would reinforce our opinion about seeking what is the best for the student's interest in a process where the learner is the centre, where "Everything starts from him and everything goes back to him" (Robinson, 1989: 4).

3.2 Correlations

Paying a close attention to the content of the questions, a certain number of them have revealed that they are related together. For example, for the identification of the student, the second question is correlated with the third one. Both aim at gathering information about the social environment of the student.

Another correlation can be seen between the first, the ninth and the tenth questions such as defining the motivation and the attitudes of the students towards English learning. According to Kennedy and Bolitho

(1984: 14): "If it is possible to find out a student's motivation for learning English and match the content of the course with this motivation, the chances of successful language learning are increased."

Another relationship is seen between the sixth, the seventh and the eighth questions in which the student is asked to make a self-evaluation related to English learning. This self-evaluation can be a source of valuable information about the learning needs of the students related to the intermediate objectives and their present state.

Next, the eleventh, the twelfth and the thirteenth questions seem to share common points because they investigate the policy of the institution the student comes from. To that effect, Chambers (1980: 26) states: "Likewise, the employer may be able to specify needs at some gross level, but is a non-expert in analysing communicative events and determining such things as priorities."

Finally, the fourteenth and the fifteenth questions are related together because they indicate some of the ultimate objectives of such an ESP situation in comparison with the real degree of students' attainments. Hutchinson and Waters (1987: 55-62) have largely discussed this aspect. Both questions can be seen as a way to sum up the learning needs and the target objectives of the students, more specifically, how these latter

may match language functions, subject matter and their communicative competence and objectives. Indeed, it is not an easy task to set up a needs analysis and to handle it because of its complexity.

Conclusion

The analysis of the students' questionnaire has helped us to discover lacks and wants perceived by the students, especially in the answers provided for the fourteenth and the fifteenth questions. It let us think that not only the intermediate objectives but also the final objectives have not completely been attained.

Chapter Four

Analysis of Teachers' Questionnaire

Introduction

A questionnaire has been administered to a sample of ten English language teachers who have taught at the Computer Science Department. A certain number of items that have been proposed are expected to enhance, from the teacher's point of view, the appraisal of the students' needs analysis that we intend to conduct. This has resulted in twenty questions as what follows:

4.1 Analysis of the Questions

Question 1: Which degree do you have?

- a. Licence of English.
- b. Magister (Specify the specialism).
- c. Others (Please specify).

Degree held	N	%
Licence of English	4	40
Magister (Applied Linguistics)	3	30
Magister (Civilisation)	1	10
Magister (Literature)	0	0
Magister (Education)	0	0
Magister (Translation)	1	10
Master	1	10

Table 4.1: Degree held

The first table indicates that 40% of the teachers have got a licence of English, while 50% have a degree of magister with different specialisms and 10% have a master. Hutchinson and Waters (1987: 160) state that: "Many teachers who have trained for General English or for the teaching of Literature may suddenly find themselves having to teach with texts whose content they know little or nothing about."

Question 2: What is your status as a teacher?

- a. fully-fledged (permanent).
- b. part-time (vacataire).

Status of the teachers	N	%
Permanent	8	80
Vacataire	2	20

Table 4.2: Status of the teachers

According to table 4.2, a large proportion of teachers are permanent (80%) while the others (20%) are part-time teachers.

Question 3: Do you have another activity, occupation or job such as:

- a. teaching in a secondary school?
- b. teaching in a private institution?
- c. working in a company? (specify the job)
- d. others? (please specify)

Options	N	%
a	0	0
b	0	0
c	0	0
d	0	0

Table 4.3: Additional Activities

Table 4.3 shows that no teacher in the sample has another activity apart from university teaching.

Question 4: a. Have you taught in some other departments?

- Yes
- No

b. If yes, please specify:

Academic year (From... to)	Department

Options	N	%
Yes	9	90
No	1	10

Table 4.4.1: Teaching in other departments

Table 4.4.1 indicates that 90% of the language teachers have taught in other departments while 10% have not. According to Hutchinson and Waters (1987: 162), this situation may be justified as: "They would prefer to be teaching Literature or Social English in the comfortable environs of ELT, but have been obliged by economic pressure to emigrate."

Options	N	%
Yes	7	78
No	3	22

Table 4.4.2: Mobility of the Language Teachers

Table 4.4.2 illustrates the answers formulated by the teachers in terms of mobility. Among the teachers that have taught in other departments, 78% have known a great mobility while 22% have not.

Question 5: Have you had any specific training in the teaching of English as a foreign or second language?

- Yes
- No

Options	N	%
Yes	5	50
No	5	50

Table 4.5: Specific Training in TEFL/TESL

In table 4.5, 50% of the respondents have answered "yes" while the other 50% have answered "no". The conclusion is that half of the teachers have received a specific training in TEFL/TESL. Thus, Hutchinson and Waters (1987: 160) state that: "ESP teachers need to arm themselves with a sound knowledge of both theoretical and practical developments in ELT in order to be able to make the range of decisions they are called upon to make".

Question 6: Please note below your timetable for the teaching of English.

	8h-9h30	9h30-11h	11h-12h30	12h30-14h	14h-15h30	15h30-17h	Sum
Sat	1	1			1		3
Sun			1	2	1	1	5
Mon		1	1	1			3
Tues		1	2	2	1		6
Wed			1	2	3	2	8
Thurs	3	2		1			6
Sum	4	5	5	8	6	3	31

Table 4.6: Contingency Table between Sessions and Periods

The table presented above sums up the number of sessions of English in one day (see the last column on the right) on one hand and the number of sessions of English in each part of the day (morning, lunchtime, afternoon) on the other hand (see the last line of the table). The highest numbers that have been recorded represent the less favourable positions devoted to English teaching in terms of periods of time and days of the week. Kennedy and Bolitho (1984: 12) put that: "In the latter situation, the need may not be so obvious and the study of English may have to compete, in terms of time and commitment. This can happen in cases where the decision to have an English programme at tertiary level is taken by administrators because it is regarded as essential for achievement in, say, chemistry or physics."

Question 7: Do you teach:

- a. second-year students?
- b. third-year students?
- c. fourth-year students?

Number of levels taught together	N	%
One level	6	60
Two levels	2	20
Three levels	2	20

Table 4.7: Number of levels taught together

The results that have been obtained can be read as follows: 60% of the teachers have taught one level in one year, i.e., one out of the three options mentioned above; 20% of the teachers have taught two levels at the same time, that is, two out of the three options previously mentioned and, finally, 20% of the teachers have met the three levels altogether. 60% of teachers have only met one level in teaching English whereas 40% have dealt with more than one level.

Question 8: Is students' attendance to the English classes compulsory?

- Yes
- No

Options	N	%
Yes	7	77.8
No	2	22.2

Table 4.8: Students' Attendance

In table 4.8, the Yes-option by contrast with the No-option has been largely selected to a certain extent (77.8%). Most teachers think that the students' attendance to the English language sessions is compulsory.

Question 9: Do the English classes take place under the form of:

- a. cours?
- b. TP?
- c. TD?
- d. Cours/TD?

English Classes Forms	N	%
Cours	2	20
TP	0	0
TD	2	20
Cours/TD	6	60

Table 4.9: English Classes Forms

In table 4.9 four options have been proposed as being four instances of the form that the English classes can take. So, according to 60% of the respondents the English classes could be 'cours/TD' while for 20% they could be just a 'cours' or for other 20% they are just 'TD'. The option "b" has been kept away. By 'cours/TD' is meant a lesson followed by varied activities such as grammar exercises, reading a text aloud, etc.

Question 10: In the course of your present teaching, do you teach more often:

- a. general English?
- b. English related to literature and civilisation?
- c. English related to science and technology in general?
- d. English more specifically related to computer science?

Options	N	%
a	2	15.4
b	0	0
c	4	30.8
d	7	53.8

Table 4.10: Kind of English Taught

The tenth question proposes four possible options of the kind of English actually taught and table 4.10 summarises the results that have been recorded. The option "a" is the least chosen (15.4%) while the percentage increases slightly for the option "c" (30.8%). The option "d" has got the highest percentage (53.8%). One can notice that the option "b" has been kept away (0%). Among the teachers questioned, about half of them teach English more specifically related to computer science but this possibility may not be the only one. It could be paired with teaching English related to science and technology or with teaching general English. As there can be other possibilities or choices as for instance teaching general English paired with English related to science and technology. The ultimate choice should be teaching only general English.

This question aims at identifying the kinds of English taught, that is, general and/or specific English related to common-core and/or subject-specific content. Hutchinson and Waters (1987: 162) put that: "The teachers' competence is an essential ingredient in the teaching-learning process and must therefore, be able to influence such matters as the

choice of texts." About the role of texts, Hutchinson and Waters (1987: 162) specify that: "Texts, in other words, should not be selected as texts, but as elements in a learning process."

Question 11: In the course of your present teaching, do you tend to concentrate more specifically on:

- a. general grammatical notions?
- b. grammatical structures related to science?
- c. lexical items related to general English?
- d. lexical items related to scientific English?
- e. lexical items related to computer science?

Frequency of use	N	%
a	5	22.7
b	5	22.7
c	1	4.6
d	5	22.7
e	6	27.3

Table 4.11: Frequency of use

According to the results recorded in table 4.11, the same percentage (22.7%) is met three times for the options "a", "b" and "d". The option "e" has received the highest percentage (27.3%) while the option "c" has received the least one (4.6%). This leads us to deduce that in their teaching the language teachers have focused on lexical items related to computer science first. Some of them have insisted on general and specific grammatical notions and on lexical items related to scientific

English. Thus, in their teaching, the language teachers have concentrated on the linguistic code of English forms from the common-core to the subject-specific content. To this effect, Hutchinson and Waters (1987: 165) put: "In terms of language content, there is little reason why, say, a Biology text should be more useful to a biologist than, say, a Physics text. There is not grammatical structure, function or discourse structure that can be identified specifically with Biology or any particular subject. Such things are the product of the communicative situation (lecture, conversation, experiment, instructions, etc.) and the level (engineer, technician, manager, mechanic, university etc.)" On the lexical items emphasised during English teaching, Hutchinson and Waters (1987: 166) quoting Inman (1978), for example, found that in an extensive corpus of scientific and technical writing, technical vocabulary accounted for 9% of the total lexis. Furthermore, this technical vocabulary was used far less frequently than the non-technical. These technical terms are also likely to pose the least problems for learners: they are often internationally used or can be worked out from a knowledge of subject matter and common word roots."

Question 12: In the course of your present teaching, do you use:

- a. textbooks related to general English?
- b. textbooks related to scientific English?
- c. textbooks specifically related to computer science?

- d. documentation used by the students in their own field of study?
- e. materials you prepare yourself (texts, exercises, etc.)?
- f. materials brought to the English class by the students themselves?

Options	N	%
a	1	5.5
b	4	22.2
c	6	33.6
d	2	11
e	4	22.2
f	1	5.5

Table 4.12: Kinds of Material Used for Teaching

In table 4.12, the option "c" has recorded the highest percentage (33.6%), followed by the options "b" and "e" with the same result (22.2%); the option "d" has received a percentage of 11% and the least percentage (5.5%) is seen for the options "a" and "f". Consequently, 33.6% of the teachers use textbooks specifically related to computer science, while 22.2% use textbooks related to scientific English. It is also seen that 22.2% of teachers prepare their own material. A few teachers rely on the documentation used by the students themselves; that is, authentic texts that are met in the student's specialism. Few teachers use textbooks related to general English or documentation provided by the students in the English class. To put it in other words, most language teachers use materials that are related to general and specific subject and

that are related to common-core and subject specific content as well. Among the requirements of the ESP teacher, Kennedy and Bolitho (1984: 138) indicate that: "From the plethora of published materials now available, he might be expected to select and adapt learning materials for a class. He must be thoroughly familiar with a wide range of ESP materials, both courses and supplementary materials." But when this not always the case for the ESP teacher, "He might find no materials suitable or adaptable to the needs of a particular class and, consequently, will have to select and exploit suitable texts, and to write suitable exercises."

Question 13: In the course of your present teaching, which of the following skills do you tend to lay more emphasis on: (please classify in order of emphasis, going from 1 for the most important to 4 for the least important)

- a. listening
- b. speaking
- c. reading
- d. writing

Ranks of option "a"	N	%
1	3	30
2	3	30
3	3	30
4	1	10

Table 4.13.1: Listening Skill in Order of Emphasis

Considering table 4.13.1, it is noticed that for option "a", the first, the second and the third ranks have received the same percentage (30%); whereas the fourth rank has got only a limited percentage (10%). It seems that more emphasis is laid on the listening skill.

Ranks of option "b"	N	%
1	1	10
2	2	20
3	2	20
4	5	50

Table 4.13.2: Speaking Skill in Order of Emphasis

The emphasis of the speaking skill is represented in table 4.13.2 as follows: the least percentage (10%) is obtained for the first, while an equal percentage (20%) is seen at the second and the third ranks. The fourth rank has registered the highest percentage (50%). It is obvious that the speaking skill is not given so much emphasis in the present teaching.

Ranks of option "c"	N	%
1	4	40
2	4	40
3	1	10
4	1	10

Table 4.13.3: Reading Skill in Order of Emphasis

Table 4.13.3 illustrates the results gathered for option "c", indicating that the reading skill appears in the first and second ranks with the same percentage (40%) while in the last two ranks reach the same least

percentage (10%). The highest percentage obtained in the two first ranks seems to express a valuable effort in emphasising the reading skill.

Ranks of option "d"	N	%
1	2	20
2	3	30
3	3	30
4	2	20

Table 4.13.4: Writing Skill in Order of Emphasis

The emphasis of the writing skill is represented in table 4.13.4 as such: an equal percentage (20%) is seen for the first and the fourth ranks on one hand, while it increases to 30% for the second and the third ranks. It is obvious that the writing skill is not an absolute priority; nevertheless, it is likely to be included in the present teaching.

Options	Sum of the ranks
a	22
b	31
c	19
d	25

Table 4.13.5: Sum of the Ranks of each Option

A comparison between the four skills has been achieved on the basis of the sums of the ranks allotted to each option. The second column in table 4.13.5 represents the total number of ranks obtained by each option. Hence, one can notice that the classification of these sums in an increasing order has produced "c", "a", "d" and "b", that is reading, listening, writing and speaking. Finally, this classification of the four

skills summarises the emphasis given to each skill by the teachers in the English classes. About the skills Kennedy, and Bolitho (1984: 69) show that: "In any case, the skills are seldom practised in total isolation; a lesson focused on reading may involve any or all of the other skills. Then, Kennedy and Bolitho (1984: 69-70) provide one example of the use of the skills and state:

A sample teaching unit might consist of:

- (a) priming of the reading topic by discussion;
- (b) reading of the text with a task clearly defined;
- (c) a transfer exercise with the relevant information extracted from the text and written up in note or tabular form;
- (d) discussion of individual/groups results; and final version written up in full, rather than note, form.

In this sequence of activities, although the main point of the activity is (b), the optional activities (a), (c), (d) and (e) can be introduced to provide an input and an output to the reading skill. This will provide practice in the other skills and also provide for a variety of different interactions between teacher, individual students and groups.

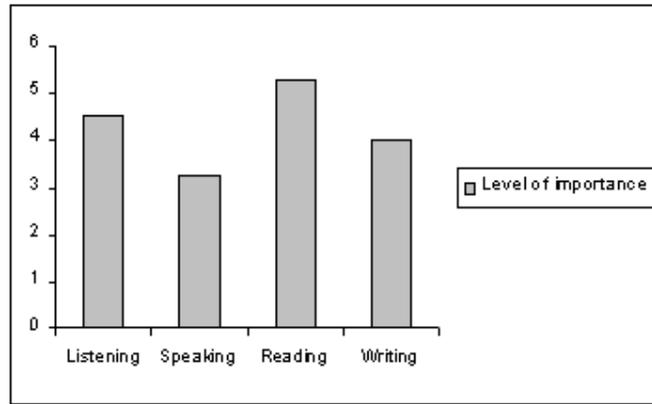


Figure 4.1: Emphasis in Teaching the Skills

Figure 4.1 completes table 4.13.5 in that it represents the comparison of the four skills in terms of emphasis. It appears that the reading and listening skills have been emphasised more often than the writing and speaking skills in the English sessions.

Question 14:

- a. In the course of your present teaching, do you sometimes use translation from one language to another?
 - Yes
 - No
- b. If yes, specify in order of frequency of use the other language(s) besides English.

Options	N	%
Yes	7	70
No	3	30

Table 4.14.1: Frequency of Use of Translation

Table 4.14.1 summarises the frequency of the use of the translation method in English teaching. Then, we notice that the translation method is practised in 70% of the time.

Options	N	%
Only French	1	14.28
French/Arabic	5	71.44
Not specified	1	14.28

Table 4.14.2: Frequency of Use of other Languages in Translation

According to the answers expressed, table 4.14.2 is an illustration of the results. So, it indicates that there is much more frequency of using both French and Arabic in translation from English (71.44%) while option "Only French" is the least favoured (14.28%). The last option or "not specified" does not add anything new. Hence, in the English classes, much more translation is achieved in Arabic and in French. Note that one teacher out of the seven that answered "Yes" did not specify the language used in translation. About some methods of English teaching, Kennedy and Bolitho (1984: 59) put: "Many of the techniques traditionally used in ELT work can be exploited in ESP vocabulary teaching especially at the early stages when both subject and linguistic content are at an elementary level." Among these methods, they mention translation: "...translation may be preferred if the teacher is competent in the student's language as well as English."

Question 15: When you translate English into another language, what are the aspects you tend to concentrate on:

- a. grammatical structures/notions?
- b. lexical items?
- c. others? (Please specify)

Options	N	%
a	0	0
b	3	37.5
c	5	62.5

Table 4.15: Translation Emphasis is put on

The results in table 4.15 are oriented towards the options "b" and "c" which have respectively received 37.5% and 62.5% of the answers. The option "a" has been left (0%). The option "c" identified as being "written discourse and idiomatic expressions" seems to puzzle students' comprehension and obliges the language teachers to adopt the translation method. On the other hand, a certain number of teachers practise the translation of lexical items. The choice of such a question is justified in what Mackay and Mountford (1978: 12-13) state:

The assumed disadvantages of using the student's (L1) as a teaching aid in English Language teaching are constantly being pointed out. It is argued that it interferes with the processes of achieving fluency in English and encourages a continued dependency upon the L1 as the mediator between the mental encoding or decoding of messages and the target language. However it is true that where the role of

English is that of auxiliary to specialist studies, particularly in tertiary education and in an EFL situation, the information the student gains from reading English texts is required to be at his disposal in his L1 only. That is, although the information presented to him is in English, when he is required to recall or produce it, he does so in his mother tongue.

They, then, add (Mackay and Mountford, 1978: 13): “Hence 'translation' of particular kind can be a useful pedagogic tool in an EST programme.”

Question 16: Are you given any programme that you use to implement your courses?

- Yes
- No

Options	N	%
Yes	2	20
No	8	80

Table 4.16: Existence of Programmes

In table 4.16, 20% of the respondents have ticked the yes-answer and those who have ticked the no-answer represent 80%. Thus, the great majority of the teachers do not use any programmes of English subject that are proposed or imposed by the institution the student comes from. Kennedy and Bolitho (1984: 11) write that: "ESP programmes are often the indirect result of political decisions made at governmental level about the role of English within the country in which the learner is

studying. These decisions may restrict or widen the role, and hence the use, of English within the community."

Question 17: Do you meet teachers of the computer science department to discuss and comment your courses and their content according to the whole programme of speciality?

- Yes
- No

Options	N	%
Yes	0	0
No	10	100

Table 4.17: Co-operation between Language and Science Subject Teachers

In this table, all the respondents have answered "no". The yes-option has been completely avoided. Consequently, there is no co-operation at all between the language teachers and the subject science teachers either to discuss or to comment the language courses in agreement with the whole programme of speciality. Kennedy and Bolitho (1984: 13) put: "A further aspect concerns the role of the subject teachers, since any decision to use an ESP approach relating to a specific subject will inevitably demand some degree of co-operation between language teachers and subject specialists."

Question 18: Would you say that the institution you teach in encourages English teaching/learning?

- Yes
- No

Options	N	%
Yes	6	60
No	4	40

Table 4.18: Policy of the Computer Science Department

The results of table 4.18 indicate that 60% of the respondents have ticked the yes-answer, but 40% have preferred the other option. The majority of the language teachers have felt the interest for English of the institution that the student comes from. Thus, Robinson (1991: 4) explains the role of the institution by the following: "In some cases, there is no absolute need for students to gain proficiency in English in order to cope with their work or study; they will manage well enough (or even very well) in their own language. However, there may be an institutional (or even national) requirement to study English, usually because of the known role of English as an international language of communication, trade and research."

Question 19: Your experience of English language teaching at the computer science department has:

a. changed your opinion about the other departments.

- Yes
- No

b. enabled you to acquire a knowledge of computer science.

- Yes
- No

Options	N	%
Yes	4	66.7
No	2	33.3

Table 4.19.1: Attitude of Language Teachers towards the other departments

The results of table 4.19.1 summarise the answers of the respondents about the option "a". Thus, for the yes-option, the percentage recorded is 66.7% and for the no-option 33.3%. It might be clear that the great number of the language teachers have adopted a different attitude after teaching at the computer science department.

Options	N	%
Yes	6	85.7
No	1	14.3

Table 4.19.2: Acquisition of Knowledge in Computer Science

In table 4.19.2, 85.7% of the respondents questioned have answered positively and 14.3% have answered negatively. It seems that a great number of language teachers have had a positive experience in teaching at the computer science department because they have dealt with a different kind of knowledge and a specialism they are not used to. The nineteenth question has been felt necessary to investigate some of the requirements needed from the ESP practitioner. To that effect, Hutchinson and Waters (1987: 163) claim that:

ESP teachers do not need to learn specialist subject knowledge. They require three things only:

- i) a positive attitude towards the ESP content;
- ii) a knowledge of the fundamental principles of the subject area;
- iii) an awareness of how much they probably know.

Question 20: Classify, according to the degree of importance (1 for the most important down to 4 for the least important), the reasons that make the fact that your work as an English teacher does not correspond to the level of achievement expected mostly because:

- a. you are not permanent at the department of computer science.
- b. you do not have any particular experience in English related to computer science.
- c. you do not really understand the needs of the students imposed by the specific field (i.e. computer science).
- d. there is not any collaboration between the language teacher and the teachers of specific field.

Ranks of Option "a"	N	%
1	2	22.22
2	5	55.56
3	1	11.11
4	1	11.11

Table 4.20.1: Permanency of the Language Teachers

Table 4.20.1 summarises in terms of percentages the ranks proposed by the teachers for the option "a". Hence, it is noticed that option 'a' has been ranged most of the time in the second rank (55.56%) and less frequently in the first (22.22%), the third (11.11%) and the fourth (11.11%) ranks.

Ranks of Option "b"	N	%
1	3	33.34
2	1	11.11
3	2	22.21
4	3	33.34

Table 4.20.2: Experience Related to ESP

As seen for table 4.20.1, the same procedure is applied in table 4.20.2, which considers the ranks of the option "b" proposed by the teachers in terms of percentages. The first and the fourth ranks have scored the same result (33.34%). The third rank has registered 22.21% but the second rank has been the least selected (11.11%).

Ranks of Option "c"	N	%
1	1	11.11
2	1	11.11
3	4	44.45
4	3	33.33

Table 4.20.3: Understanding the Specific Needs of the Students

The evaluation of option "c" is converted in the above table into percentages such as 11.11% for the first and the second ranks, 44.45% for the third rank while the fourth one has scored 33.33%.

Ranks of Option "d"	N	%
1	4	44.45
2	3	33.33
3	2	22.22
4	0	0

Table 4.20.4:
Collaboration between Language Teachers and Subject Specialists

In table 4.20.4, the ranks of option "d" have received the following percentages: 44.45% for the first, 33.33% for the second rank and 22.22% for the third, while the fourth rank has not been selected at all.

Options	Sum of the Ranks
a	19
b	23
c	27
d	16

Table 4.20.5: Sum of the Ranks of each Option

A graphic representation is a very convenient way to visualise the results of table 4.20.5

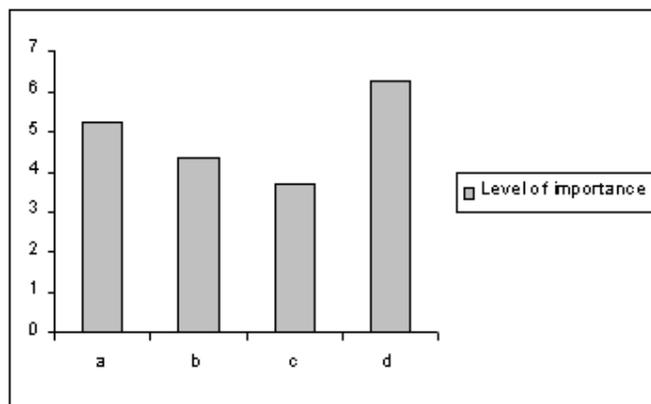


Figure 4.2: Reasons of Unsuccessful Achievement in English Teaching

This final question has dealt with some of the features that distinguish the role of the ESP teacher from that of the General English teacher.

Therefore, four main points or options have kept our attention. The results produced in table 4.20.5 summarise the sums of the ranks of each of the four options. As it has been seen before, the sums of the ranks have been calculated in order to compare between the four reasons listed in question 20, especially the degree of importance allotted to each one. Thus, according to table 20.5, option "d" or "no collaboration between the language teachers and the subject-specific specialists" is the first reason which makes the fact that the work of the English language teacher does not correspond to the level of achievement expected. Then, option "a" or "no permanency of the language teacher in the computer science department" is the second main reason of this situation of no expected achievement. The third reason or "no particular experience in ESP" is put the third position and, finally, option "c" or "not understanding the specific needs of the students" is coming in the last or fourth position of importance. Hence, figure 4.2 illustrates subsequently this reality.

4.2 Correlations

The interpretation of each question separately has permitted to find out that many questions can be linked together forming groups related to specific items or points for discussion.

A first correlation is seen between the questions 1, 2, 4 and 5. It aims at identifying the profile of the language teacher; that is, the kind an ESP teacher is required to be. Robinson (1991: 79) quoting Strevens states: "Who is the ESP teacher? Almost always he or she is a teacher of General English who has unexpectedly found himself/herself required to teach students with special needs."

Another correlation can be seen between questions 6 and 7 as to question the influence of certain factors, namely the timetable, the quantity of instruction, and if possible, the size of the classes and the homogeneity of the groups. Hutchinson and Waters (1987: 13) emphasise this main point in writing: "The size of classes, the degree of homogeneity within classes with respect to abilities and subject discipline, and the quantity of instruction must all be taken into account. The quantity of instruction refers to the number of hours given to English and whether the time available is to be spread out over a period of time or used intensively as in one-month pre-study course."

A third correlation has been noticed between the eighth and the ninth questions which investigate the form that the English classes can take. It is noticed that the presence of the students is felt absolutely necessary because the English classes are devised as "cours/TD".

Next, the tenth question is correlated with the eleventh because they both aim at finding out the kind of syllabus which is taught with regard to the subject and content. To this effect, Robinson (1991: 21) quoting Sager *et al.* puts: "Sager *et al.*'s work suggests that what is important for the ESP researcher is the content of the students' specialist disciplines: the knowledge and the conceptual networks are involved."

Then, three questions namely questions 13,14 and 15 have been needed to question the validity of the kind of methodology that has been applied in English teaching/learning at the computer science department. Every question has put emphasis on one of the different approaches such as the skill-based approach, the translation method, vocabulary teaching, etc. Robinson (1991: 46), states that: "Widdowson accuses ESP practitioners of leaving 'considerations of appropriate methodology entirely out of account'."

Conclusion

The analysis of the English language teachers' questionnaire has permitted to highlight the difficulties encountered by those teachers in their work. Among these difficulties, one of them has particularly kept our attention; that is the increasing number of students every year. This factor negatively influences the work of the language teachers and

affects their efficiency. Undoubtedly, the results of the language teachers' questionnaire pinpoint some areas in urgent need for solution.

Part Three: A Proposal of Tentative Solutions

- **Chapter Five: Interpretation of the Findings
of the Experiment**
- **General Conclusion**

Chapter Five

Interpretation of the Findings of the Experiment

Introduction

After the analyses achieved on both questionnaires, our primary objective in chapter five is to provide an objective interpretation of the findings issued from the experiment.

5.1 Weaknesses of the Teaching/Learning Process

At the beginning of our work, we have stated the importance of an effective teaching/learning process in an ESP course. Unfortunately, the experiment which has been achieved has proved that this process carries in itself many weaknesses due to many factors which are expanded further.

5.1.1 Lacks in the Language Teacher's Profile

After the tabulations have been commented in details, it seems appropriate to interpret and to compare the findings. It is seen that a certain number of problems has emerged throughout the different appreciations enounced by our samples of computer science students and language teachers. These problems seem to be causing dissatisfaction and perhaps frustration. In fact, the results have reinforced most of our

hypotheses concerning such a case of ESP teaching/learning; that is, many aspects in this ESP process have not been taken into great consideration.

The profile of the ESP teacher encountered has been one of the main causes of dissatisfaction among the computer science students. It may be due to the fact that, since 1980, there have been a few cases of language teachers who have spent an acceptable and sufficient period of time at the computer science department. Besides, most teachers have known a significant mobility from one department to another; that is to say, one or two years stay in each department. In fact, this mobility is not perceived as a positive factor because one academic year corresponds to a specific stage in the whole period of studies, which in the situation we are interested in, corresponds to a curriculum of five years. Therefore, from the point of view of needs analysis, of syllabus design and of the time allotted to language teaching, one has to question the validity of the efforts made to identify the students' needs and the kind and content of syllabus applied in that given time. If this teacher leaves the department at the end of the year, he or she is not in a good position to evaluate the results of his or her work. As a result, the principle of continuity and of achievement has no reason for being.

Furthermore, many language teachers are proposed different groups of learners at the same time without any attention to pedagogic considerations; that is the experience of the teacher in meeting different levels with their specific needs and objectives. In reality, this distribution of groups is made according to the number of hours that each teacher has to cover. It is also a matter of personal choice that has no relation with the demands or the requirements of the students. Significantly, we should question the fact that, for instance, a part-time teacher or a freshly graduated teacher with little experience in either ELT or in ESP is allowed to teach second-year and fourth-year students simultaneously but independently. Pedagogically speaking, the number of difficulties is increased as the number of levels is chosen.

Given such a situation, it seems appropriate to reconsider the definition provided by Dudley-Evans (1988) concerning the true kind of ESP practitioner being capable of achieving five different but important roles. According to Anthony (1998) who quotes Dudley-Evans (1988) himself inspired by Swales (1988) "the true ESP teacher or ESP practitioner" is supposed "to perform different roles. These are (1) Teacher, (2) Collaborator, (3) Course designer and materials provider, (4) Researcher and (5) Evaluator". To a certain extent, the language teachers met at the computer science department have been

simultaneously teachers, course designers and perhaps materials providers, but neither collaborators, researchers, nor evaluators. These three last roles have not been assumed because of the mobility of the teachers and because of some other factors such as a lack in ESP training and an insufficient experience in ELT. In other words, they have been assigned roles for which they are not totally prepared.

5.1.2 The Negative Attitude of the Institution towards the ESP Subject

A second significant problem has emerged from the direct implication of the institution the students come from. It has been noticed that this institution itself has not been able on the one hand to specify to the language teacher the kind and content of programme to be taught, and the final objectives for which this English language learning is put. Consequently, most language teachers have been left acting in the way they thought appropriate even if in some cases they were mistaken.

On the other hand, this institution has not been successful in providing the minimum of acceptable conditions in order to help the language teachers in their tasks. This attitude is reflected in the way the language sessions are planned and included in the timetable. Therefore, both language teachers and computer science students complain about the least importance devoted to the language sessions by comparison with

the other subjects of the computer science curriculum. This has been a main cause of dissatisfaction and less motivation among language teachers and computer science students. Be it said by the way that most students have stated that the number of sessions devoted to English learning is not just sufficient to help them improve their level.

5.1.3 Pedagogic Considerations

Another difficulty has arisen from the use of the four skills and from which of them to lay more emphasis on. It seems that both sources, namely the language teachers and the computer science students do not share the same opinion about the priority of the skills. For instance, the language teachers give much more priority to listening and writing whereas the students prefer to give priority to speaking and reading (see figure 5.1).

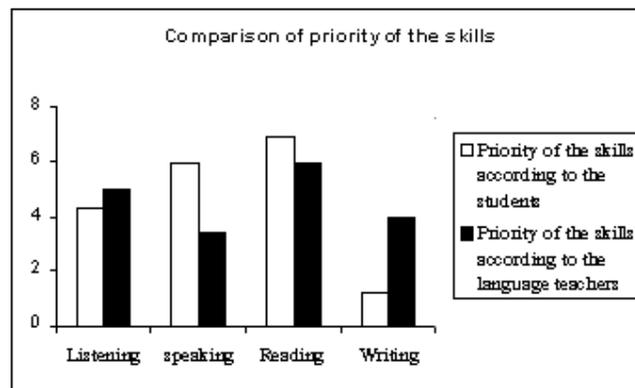


Figure 5.1: Comparison of priority of the skills

Finally, when a general evaluation is established after comparing between the needs of the computer science students and the target

objectives, the results emphasise the fact that since the needs have not been accurately stated, the ultimate objectives attained are indeed not the ones to be expected either partially or fully by the students. This situation may produce deficiencies and perhaps a feeling of frustration among the students, especially if they are convinced of the utility of English for academic or for occupational purposes (see figure 5.2).

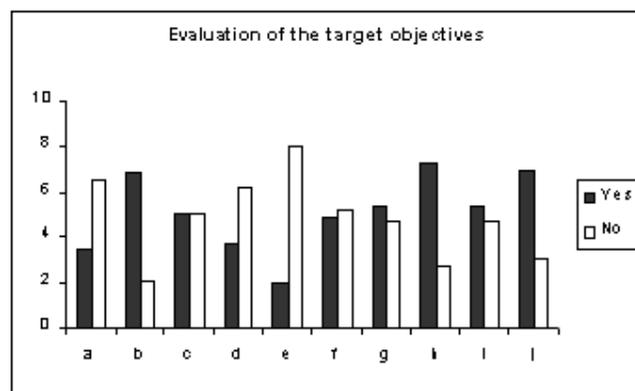


Figure 5.2: Evaluation of the target objectives

Conclusion

To sum up, our investigation emphasises the existence of two main aspects that have led to a critical situation. The first aspect is that the participants concerned do not really contribute to an enterprise which is worth spending time, energy and means. In the second aspect and throughout our investigation, it is obvious that there is no consistent and thorough needs analysis carried out either at the beginning or even in the middle of the ESP teaching-learning process.

5.2 Suggestions for Improvement

Introduction

After we have stated the interpretation of the findings of the experiment, obviously it is necessary to propose some tentative solutions or suggestions for improvement.

5.2.1 The Prerequisites of an Efficient ESP Practitioner

Our work cannot be valid unless some suggestions are proposed as tentative solutions. Therefore, our main preoccupation is oriented towards the English teacher who undoubtedly plays a determining role in the process. This is why, according to our own experience, it seems appropriate to adopt a critical and positive attitude by considering a set of specified criteria imposed upon the language teachers by their own institution when they intend to implicate in an ESP enterprise. These criteria, in fact, should be considered as prerequisites so that the language teachers should be successful in their tasks. Not only an acceptable experience in EFL is needed but also a sufficient training in ESP is required as well. Adapting from general to specific English should be understood and accepted by most language teachers when they move to peripheral departments and scientific subjects. Fortunately enough, nowadays, the English language department is paying more and more attention to this aspect and in the present curriculum of EFL which

is taught, an ESP subject is included. Consequently, future teachers can find in it a good opportunity to complete their knowledge.

Second, the principle of team-teaching and collaboration between language and computer science teachers should be put in practice and emphasised during the ESP process because it can have a positive influence on both parts. The method of team-teaching can be helpful to the language teachers who generally know little or nothing about subject-matter and who can release their difficulties or ignorance by referring to the scientific competence of computer science teachers on one side. On another side, subject specialists can ask language teachers to solve language problems of their students especially when they use scientific documentation and authentic texts written in English. Both parts, of course, have to establish their exclusive roles and responsibilities in an atmosphere of mutual understanding and confidence. Hutchinson and Waters (1987: 165) explain the importance of this kind of relationship in:

ESP teachers might, for example, find themselves having to work in close cooperation with sponsors or subject specialists who are responsible for the learners' work or study experience outside the ESP classroom. This is not always an easy relationship: suspicion of motives is common. The effectiveness of the relationship depends greatly on how it is handled by both parties, but, since it is usually the

ESP teachers who have enlisted the help of the subject specialist it is their main responsibility to ensure that potential problems are anticipated and avoided, and that a harmonious working arrangement is created. One of the keys to success in this area is for ESP teachers to establish clear guidelines about their and the specialist's separate and joint roles and responsibilities.

Third, language teachers should be aware of their roles as evaluators and researchers because it is in this case that the principle of continuation and improvement can have a full meaning. If they are acting as evaluators and researchers, they will surely investigate objectively the validity of their language teaching, of the methodology to be used, of syllabus and of materials design and content.

The language teachers should also be dynamic enough to negotiate means with the institution the students come from and to manage to benefit from the technology and equipment when available to reinforce their teaching. If this is not possible, they must be able to develop an attitude of flexibility and of adaptability to any inevitable conditions of the environment. Such a suggestion is emphasised by Hutchinson and Waters (1987: 163) who state it as follows:

The ESP teacher may also have to negotiate in a more physical sense. Cramped classrooms, often in inconvenient locations, badly ventilated or heated, with a

great deal of outside noise, are only too common. Equally, the teaching may take place in workshops or on the factory "shop floor" (as in, e.g. EOP), or on the premises of businesses and other concerns, often without such basic classroom "apparatus" as a blackboard. The role ESP teachers are called on to play here is obviously one of adaptability and flexibility. They need to be prepared to accept such conditions as to some extent inevitable, to strive to improvise while also patiently campaigning for improvements with the sponsors.

It should be focused that in both questionnaires, neither diagnosis nor reference has been made about the use of audio-visual aids on purpose. This is merely due to the fact that after many informal interviews, we have been confirmed that language teachers have avoided this teaching method mainly because it is impossible to manage sessions of that kind with overcrowded classrooms. But we still believe that these means can have a positive effect on the computer science students in many aspects of English learning. Then, thanks to the emergence of the Internet, today, many good opportunities are offered to both language teachers and computer science students as to exploit them and to acquire a valuable experience if well-planned cyber-spaces are created at university.

Last but not least, the language teachers ought to be open-minded by having permanent discussions with the science students because they are clever and resourceful with their comments and suggestions about a

language learning which they are highly expecting wants from. By making the science students participate in the elaboration of this teaching, the language teachers can express their willingness in a project where both parts are fully concerned and in which they can find a mutual agreement. Hutchinson and Waters (1987: 163) emphasise this positive attitude by stating: "One final point to note is that, as with learner needs, teacher knowledge is not a static commodity. Many ESP teachers are surprised at how much knowledge of the subject matter they 'pick up' by teaching the materials or talking to students." It can result in: "...If there is to be meaningful communication in the classroom, it is essential that there is a common fund of knowledge and interest".

5.2.2 Change in the Status of English Teaching

Introduction

It is widely agreed that the English language is an international language for communication and for other purposes such as science and technology transfer. The Department of Computer Science is concerned by these new development and change. This perspective suggests that more attention should be paid to the status of English teaching.

5.2.2.1 The Role of the Institution

For an efficient English teaching/learning, the institution the students study in can positively influence it by proposing a set of instructions or

recommendations about what should be done. If this is not always possible, at least it should help the language teacher by providing the access to facilities and by offering a certain number of conditions (timetable, number and size of classrooms). In other words, its contribution infers the goals pursued by both language teachers and students in their activities.

5.2.2.2 The Role of the ESP Teacher

In order to allow the English language gain the specific status it has today, the ESP teacher must be aware of his or her own role in the teaching-learning process. This is why he or she should participate actively in the main decisions, namely the ones where his or her opinion is determining.

5.2.2.3 Student's Environment Constraints

In the case of the computer science student, the environmental aspect of his life should be taken into account as for instance his socio-cultural background which interferes in his studies. In fact, it is difficult to make the computer science student aware of the utilitarian role of the English language in an environment which privileges other languages rather than English. Furthermore, for political or ideological reasons, the practice of foreign languages is sometimes a difficult task. Again, this problem has to be seriously taken into consideration.

Conclusion

If our comments and suggestions are seriously taken into account, they may help improve ESP teaching/learning at the Department of Computer Science.

General Conclusion

Taking into account the main concepts of needs analysis, we have relied on the different contributions developed by specialists such as Munby (1978), Chambers (1980), Kennedy and Bolitho (1984), Hutchinson and Waters (1987), Richterich and Chancerel (1987) and Robinson (1989, 1991). In our experiment, we have focused on Present Situation Analysis (PSA) (Chambers, 1980; Richterich and Chancerel, 1987) and on Target Situation Analysis (TSA) (Munby, 1978) as tools of investigation. We have put in practice these fundamental methods in the study of students' needs in ESP at the Department of Computer Science.

It is vital to indicate the position that each kind of participants occupies in the process of English teaching/learning in such a case study. First, if we consider the students, we can see that they express an urging demand of English with varied forms. For these students, learning English is strictly for a utilitarian objective. In addition, the fifth-year Computer Science students are the suitable example of students who have experienced the whole process of English training with all its positive and negative implications. They are aware enough to formulate and to justify this demand of English. We can notice that dissatisfaction has been expressed by most of these students.

The science teachers also participate in this dynamic process by the fact that they propose authentic texts written in English to the students. They often ask them to write reports based on this documentation but in another language, generally French, which are submitted to an academic evaluation. Hence, they rely on the English language teacher to help the students develop and master this ability of reading and even writing in English.

Most science teachers and students think that the language teacher understands the field of Computer Science and that he or she can provide the specific scientific terminology sometimes using translation from English into Arabic or French and vice-versa.

From the point of view of team-teaching or of collaboration between science and language teachers, some of science teachers are reluctant to share common interest with English language teachers to help them in their tasks. In addition, as they had previously been past students in Computer Science, they consider the subject of English as a waste of time. Unless they feel its necessity after graduate studies when dealing with further research or for any occupational objectives, their attitude does not change.

If the institution itself is questioned about the validity of adding learning English which is the language of computer science but also the language of international scientific communication as well, they undoubtedly state that English is absolutely necessary. But in practice, we can notice that it is the contrary. When paying attention to the timetable paired with the weekdays which is planned for the different subjects of the curriculum, we perceive that the subject of English occupies the less privileged place. Furthermore, the programmes of the science subjects are devised by the Ministry of Higher Education and Research. In the case of the English subject, there is no programme. As a result, this situation represents a real problem of programme content to the English language teacher who generally cannot predict this kind of difficulty. Furthermore, the institution considers that the English language teacher can solve this problem. Finally, in the Department of Computer Science, only the science subjects are taken into account while the importance of the English subject is ignored: it has no effect on the success or on the failure of the student.

The progressive increase in the flow of students in the Department of Computer Science involved an overload in the groups, which constitutes an anachronistic situation in a class of language training.

When dealing with the language teacher, we have noticed that he or she belongs to one of both categories: either he or she is a teacher freshly graduated in general English or he or she is a teacher who has probably taught general English but is not fully aware of the ESP concepts. This aspect is important enough because it states the situation of the language teacher and more specifically the profile required for achieving such a function. Between a new teacher of general English and an English language teacher with a limited experience of ESP, we may deduce that it is difficult to reach a valuable level of attainment. The way that the language teachers are chosen to be sent to the Department of Computer Science to teach ESP does not obey any specified criteria.

When the language teacher is pursuing his or her activities, he or she realises progressively the difficulty of his or her role. Specialists in ESP have provided suitable definitions of the profile of an ESP teacher. When we want to check these definitions in our case study, we can see that the profile of the language teachers sent to the Computer Science Department does not always obey the features of such definitions. For instance, much more demand is expected from the language teacher who must express the different roles assumed by the “true ESP teacher or ESP practitioner”, that is, being a ‘teacher’, a ‘collaborator’, a ‘course

designer and materials provider', a 'researcher' and finally an 'evaluator' altogether (Dudley-Evans, 1997).

Finally, our analysis of the English teaching problems at the Department of the Computer Science has brought more questions than answers. We think that more thorough and consistent studies are necessary to overcome the difficulties of the English language teaching to the scientists.

Appendices

Appendix I: Pilot Questionnaire

1. English Language Proficiency

Q₁. Give a mark from 0 to 10 to evaluate your present level in English by comparison with the level you wish to have in:

- Reading

0	1	2	3	4	5	6	7	8	9	10

- Writing

0	1	2	3	4	5	6	7	8	9	10

- Listening

0	1	2	3	4	5	6	7	8	9	10

- Speaking

0	1	2	3	4	5	6	7	8	9	10

Q₂. Have you tried to improve your level by your own means, outside the programmes which are applied in your department?

Yes	No
-----	----

Q₃. Without this autodidact activity, what should have been your answer to the first question?

- Reading

0	1	2	3	4	5	6	7	8	9	10

- Writing

0	1	2	3	4	5	6	7	8	9	10

- Listening

0	1	2	3	4	5	6	7	8	9	10

- Speaking

0	1	2	3	4	5	6	7	8	9	10

Q₄. According to you, the fact of being able to speak and to listen to English is:

- less important
- rather important
- more important

than reading and writing?

Q₅. Do you think that English language teaching in your discipline should be more specific?

Yes	No
-----	----

Q₆. Should English language teaching be more quantitative?

Yes	No
-----	----

Q₇. Should English language teaching be more qualitative?

Yes	No
-----	----

Q₈. Do you consider that the period of English teaching in the whole curriculum must be lengthened?

Yes	No
-----	----

Q₉. According to you, should we increase the number of hours per week?

Yes No

Q₁₀. If a quantitative improvement of English language teaching must be achieved only after affecting the other subjects, do you always wish to do it?

Yes No

Q₁₁. Is your present level in English responsible for a waste of time?

Yes No

Q₁₂. Do you estimate that your present level in English limits the benefit you can take from scientific meetings?

Yes No

Q₁₃. Do you wish to be trained again in English?

Yes No

Q₁₄. When being a student, have you felt the need for a better learning in English?

Yes No

Q₁₅. Do you feel the need for writing mail and/or publications in English?

Yes No

Q₁₆. Do you think you will have to write mail and/or publications in English in the future?

Yes	No
-----	----

Q₁₇. Give a mark from 0 to 10 to evaluate the quantity of your writings in English by comparison with the quantity expected.

2. As Attender

Q₁₈. Do you attend meetings and/or seminars where English is the language mainly used?

Yes	No
-----	----

Q₁₉. Do you expect to attend such meetings/seminars in the future?

Yes	No
-----	----

Q₂₀. Give a mark from 0 to 10 to evaluate the frequency of your participation by comparison with the frequency wished to be reached.

3. As Communicant

Q₂₁. Do you attend meetings and/or seminars where English is the only medium used?

Yes	No
-----	----

Q₂₂. Do you expect to attend such meetings/seminars in the future?

Yes	No
-----	----

Q₂₃. Give a mark from 0 to 10 to evaluate your present participation by the comparison with the frequency wished to be reached.

4. Written Documents

Q₂₄. In your own field what is the real percentage of documents written in English that you estimate?

	%
--	---

Q₂₅. Among the written documents that you consult for your work, what is the percentage of those written in English?

	%
--	---

Q₂₆. Can you predict that the percentage of books written in English among those that are available for your work:

- will increase?

Yes	No
-----	----

If Yes, in what proportion?

	%
--	---

- will decrease?

Yes	No
-----	----

If Yes, in what proportion?

	%
--	---

- will stay constant?

Yes	No
-----	----

5. Audio-Visual Documents

Q₂₇. Do you use audio-visual documents printed in English in your work?

Yes	No
-----	----

Q₂₈. Do you think you will use audio-visual documents in the future?

Yes	No
-----	----

Q₂₉. Give a mark from 0 to 10 to evaluate the present use of audio-visual documents by comparison with the required use:

--

6. Materials and Means used

Q₃₀. Give a mark from 0 to 10 to express the consequences of a lack of means for getting an acceptable level:

(a) Documents and books concerning English used in your own field:

0	1	2	3	4	5	6	7	8	9	10

(b) The use of a language laboratory:

0	1	2	3	4	5	6	7	8	9	10

7. Institution's Policy

Q₃₁. Do you consider that English language learning must be obligatory in your department?

Yes	No
-----	----

Q₃₂. Is the evaluation of the students' level in English sufficiently rigorous?

Yes	No
-----	----

Q₃₃. Should the real evaluation of this subject-matter in the whole evaluation of the students be modified or increased?

Yes	No
-----	----

8. Programmes

Q₃₄. Is there any programme of English language learning imposed by the Ministry of Higher Education in your department?

Yes	No
-----	----

Q₃₅. Do you think that every English language teacher must prepare his/her own programme in your department?

Yes	No
-----	----

Q₃₆. Is it necessary to prepare a programme in accordance with the content of the programmes of the other subjects which are taught in your department?

Yes	No
-----	----

9. The Language Teacher's Profile

Q₃₇. Put in decreasing order, according to the importance, the reasons which make the fact that the work of the English language teacher does not correspond to the level of achievement expected.

(a) He/She is not permanent at the department.

(b) He/She has not a particular experience in specific English related to your own field of speciality.

(c) There is not any collaboration the between English language teacher and the other teachers of specific field.

(d) He/She does not really understand the needs imposed by your discipline.

10. Preferences

Q₃₈. Class in decreasing order, according to the degree of importance, the influence on the success of English learning of the factors below (using numbers from 1 to 4):

- Teacher's profile
- Materials and means used
- Programmes
- Institution's policies

11. Occupational Achievement

Q₃₉. For those among your students that are expecting to achieve other professions rather than teaching computer science at university, do you think that criteria concerning English learning are the same?

Yes No

Appendix II: Questionnaire Administered to English Language Teachers

Q₁. Which degree do you have:

a. a licence of English?

b. a magister of English?
(Indicate the specialism)

c. others?
(Please specify)

Q₂. What is your status as a teacher:

a. fully-fledged?
(Permanent)

b. part-time?
(Vacataire)

Q₃. Do you have another activity, occupation, job, such as:

a. teaching in a secondary school?

b. teaching in a private institution?

c. working in a company?
(Specify)....

d. others?
(Specify).....

Q₄. 1. Have you taught in some other departments?

- Yes

- No

2. If yes, please specify:

Academic year (From...to)	Department

Q₅. Have you had any specific training in the teaching of English as a foreign or second language?

- Yes

- No

Q₆. Please note below your timetable for the teaching of English.

	8h-9h30	9h30-11h	11h-12h30	12h30-14h	14h-15h30	15h30-17h
Sat						
Sun						
Mon						
Tues						
Wed						
Thurs						

Q₇. Do you teach:

a. second-year students?

b. third-year students?

c. fourth-year students?

(Tick one or more boxes)

Q₈. Is students' attendance to the English classes compulsory?

- Yes

- No

Q₉. Do the English classes take place under the form of:

a. cours?

b. TP?

c. TD?

d. cours/TD?

Q₁₀. In the course of your present teaching, do you teach more often:

a. general English?

b. English related to literature and civilisation?

c. English related to science and technology in general?

d. English more specifically related to computer science?

(Tick one or more boxes)

Q₁₁. In the course of your present teaching, do you tend to concentrate

more specifically on:

- a. general grammatical notions?
 - b. grammatical structures related to science?
 - c. lexical items related to general English?
 - d. lexical items related to scientific English?
 - e. lexical items related to computer science?
- (Tick one or more boxes)

Q₁₂. In the course of your present teaching, do you use:

- a. textbooks related to general English?
 - b. textbooks related to scientific English?
 - c. textbooks specifically related to computer science?
 - d. documentation used by students in their own field of study?
 - e. materials you prepare yourself (texts, exercises)?
 - f. materials brought to the English class by the students themselves?
- (Tick one or more boxes)

Q₁₃. In the course of your present teaching, which of the following skills do you tend to lay more emphasis on: (Please classify in order of emphasis, going from 1 for the most important to 4 for the least important)

- a. listening?
- b. speaking?
- c. reading?
- d. writing?

Q₁₄.1. In the course of your present teaching, do you sometimes use translation from one language to another?

- Yes
- No

2. If yes, specify in order of frequency of use the other language(s) besides English:

.....
.....
.....

Q₁₅. When you translate English into another language, what are the aspects you tend to concentrate on?

- a. grammatical structures/notions?
 - b. lexical items?
 - c. others?
- (Specify).....

(Tick one or more boxes)

Q₁₆. Are you given any programme that you use to implement your courses?

- Yes
- No

Q₁₇. Do you meet teachers of the computer science institute to discuss and comment your courses and their content according to the whole programme of speciality?

- Yes
- No

Q₁₈. Would you say that the institution you teach in encourages English teaching/learning?

- Yes
- No

Q₁₉. Your experience in English language teaching at the computer science department has:

a. changed your opinion about the other departments.

- Yes
- No

b. enabled you to acquire a knowledge of computer science.

- Yes
- No

Q₂₀. Classify, according to the degree of importance (1 for the most important down to 4 for the least important), the reasons which make the fact that your work as an English language teacher does not correspond to the level of achievement expected mostly because:

- a. You are not permanent at the department of computer science.
 - b. You do not have any particular experience in English related to computer science.
 - c. You do not really understand the needs of the students imposed by the specific field.
 - d. There is not any collaboration between the language teacher and the teachers of specific field.
- (Tick one or more boxes)

Appendix III: Questionnaire Administered to Computer Science Students

Q₁. Do you consider English important for your studies?

- Yes

- No

Q₂. Do you have another professional activity in addition to studying?

- Yes

- No

Q₃. If yes, what is it?

a. part-time
teaching at
university.

b. teaching in
secondary
school.

c. working in a
national
institution.

d. working in a
private
company.

e. others
(Please specify)

.....

Q₄. Do you use any English in your job?

- Yes

- No

Q₅. What is/are the skill(s) you have most concentrated on? (Please, classify in order of importance, giving 1 for the most important to 4 for the least important)

a. listening

b. speaking

c. reading

d. writing

Q₆. What is/are the skill(s) you feel more confident to use now? (Please, classify in order of importance, giving 1 for the most important to 4 for the least important)

a. listening

b. speaking

c. reading

d. writing

Q₇. Would you say that, at the present time, your level in English is:

a. very low?

b. low?

c. good?

d. very good?

Q₈. If you still find difficulties in using English, what are the aspects of English you find most difficult? (Please, classify by order of difficulty giving 1 to the most difficult, 2 to the second most difficult down to 5 for the least difficult)

a. grammatical structures related to general English.

b. lexical items related to general English.

c. grammatical structures related to scientific and technical English.

d. scientific words and expressions written in English.

e. lexical items related to computer science.

Q₉. How would you describe your attitude towards English language learning at the beginning of your studies:

a. favourable?

b. unfavourable?

Q₁₀. Do you find the number of hours provided for English learning:

a. too much?

b. sufficient?

c. just reasonable?

d. not sufficient?

Q₁. At the present time, do you use books/documentation in your own field printed in English?

- Yes

- No

Q₂. If yes, what percentage of books or materials printed in English do you approximately use?

a. 25%

b. 50%

c. 75%

d. 100%

Q₃. Do your computer science teachers encourage you to use specific documentation written in English?

- Yes

- No

Q₄. If yes, what are the objectives of the use of this specific documentation?

a. to develop your knowledge in relation with the whole programme of computer science.

b. to write summaries/essays according to computer science teachers' instructions (for a TP for instance).

c. to prepare computer science examinations.

d. to write a "mémoire" or a
dissertation submitted to a
board of examiners at the end of the fifth year.

e. others (Please specify)
.....
(Tick one or more boxes)

Q₁₅. At the end of your studies, and in relation with your acquired knowledge of English, you have become able to:

a. listen to lectures presented in English.

- Yes

- No

b. speak English fluently.

- Yes

- No

c. read general English easily.

- Yes

- No

d. read scientific English easily.

- Yes

- No

e. write English correctly.

- Yes

- No

f. listen to conferences/talks presented by experts in English.

- Yes

- No

g. exchange views with foreign experts in formal and informal situations.

- Yes

- No

h. write reports on computer science using documentation printed in English.

- Yes

- No

i. find a job where English is required.

- Yes

- No

j. conduct further research.

- Yes

- No

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Résumé

Ce travail a été réalisé dans le but de montrer le rôle et la nécessité d'une analyse des besoins en langue étrangère, notamment l'anglais, des étudiants en ingénierat au département d'informatique de l'Université Mentouri de Constantine.

L'analyse des besoins a fait ressortir tout son impact sur le processus d'enseignement et d'apprentissage de la langue anglaise. De plus, elle a permis de mettre à nu des problèmes, des insuffisances, et des carences. En effet, au cours d'une longue période d'enseignement de la langue anglaise au sein du département d'informatique, il nous est apparu que cet enseignement était superficiel, inconsistant et inefficace. Par ailleurs, cet enseignement n'obéit à aucune stratégie d'objectifs déterminés.

En se basant sur deux questionnaires, notamment l'un adressé aux enseignants d'anglais qui ont assuré des cours au sein du département d'informatique et un second qui a été soumis à un échantillon d'étudiants de cinquième année d'ingénierat, il nous a été possible d'identifier et de comprendre les raisons d'une telle situation. De ce fait, il nous a paru logique et nécessaire de proposer des solutions à même d'aider à améliorer et à optimiser un processus d'enseignement d'ESP, et de permettre à ce dernier d'atteindre utilement et efficacement ses objectifs.

ملخص

موضوع هذه الرسالة يتمحور حول دراسة و تحليل متطلبات و حاجيات طلبة السنوات النهائية لقسم الإعلام الآلي بجامعة منتوري قسنطينة .

هذه المساهمة تبين أن تحليل هذه المتطلبات لا تأثر فقط على تدريس اللغة الإنجليزية لأهداف خاصة و ممارستها بل أيضا تنطرق إلى كشف بعض من المشاكل و النقائص.

لقد إتضح أن تدريس اللغة الإنجليزية في هذا القسم خلال السنوات الماضية كان سطحي و غير فعال لأنه لم يكن يخضع لأية منهجية محكمة للوصول إلى الأهداف المراد إليها .

إعتمدنا في المرحلة التطبيقية على إستعمال إستبيانين الأول موجه إلى الأساتذة المدرسين للغة الإنجليزية في قسم الإعلام الآلي و الثاني إلى طلبة السنوات النهائية من نفس القسم .

فقد إتضح لنا من خلال فرز النتائج و تحليلها أنه من الممكن تحديد و فهم أسباب عدم التمكن من تدريس اللغة الإنجليزية بصفة فعالة و هادفة .

في النهاية و على أساس نتائج هذه الدراسة فإننا نقترح بعض الحلول التي، و في نظرنا، قد تساهم في تحسين منهج تدريس اللغة الإنجليزية لأغراض علمية خاصة .

Abstract

This research is concerned with the teaching of English as a foreign language. It aims at identifying the fifth-year students' needs in English for Specific Purposes at the Department of Computer Science, Mentouri University, Constantine.

The long period spent in teaching graduate and post-graduate students in the Department of Computer Science has led us to wonder whether English teaching in this department obeys any strategy of predetermined objectives.

Two questionnaires were administered: one addressed to language teachers who have taught at the Computer Science Department and the other to the fifth-year students. They have helped identify the situation that prevails in the teaching of English at the Computer Science Department, mainly emphasising the absence of predetermined objectives.

This research work attempts to show that the application of some strategies of predetermined objectives would enhance better the students achievements in learning English for specific purposes. The tools of research used here corroborate our main hypothesis and indicate that the straightforward determination of the objectives of teaching would