DEMOCRATIC AND POPULAR REPUBLIC OF ALGERIA
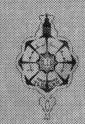
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Magister degree
in
Applied Linguistics and TEFL

Conducting a Needs Analysis for an ESP Course Design:

The Case of Fourth Year Students at the Department of Cellular

and Molecular Biology- University of Tlemcen

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Abstract:

One of the most important factors in an efficient education process is students' motivation; their wants and weaknesses in studying a particular subject are crucial and should be taken into consideration in the process of syllabus design.

This project discusses the importance of knowing learners' needs and matches their needs with curriculum, material and teachers' training. That is why, this research work presents the results of the needs analysis carried out at the Department of Biology in the academic year 2007-2008. The main objective of the research is to consider the lacks, wants and necessities of biology students in order to design an appropriate ESP course to improve ESP teaching and learning process.

Key Words: needs analysis, wants, lacks, ESP (English for Specific Purposes), syllabus design

Résumé :

La motivation constitue l'un des facteurs les plus importants dans le system éducatif. La motivation des étudiants en particulier, leurs désirs ainsi que leurs lacunes sont des aspects cruciaux pour entreprendre l'étude d'un sujet particulier. Ces derniers doivent être pris en considération dans l'élaboration d'un programme.
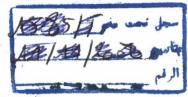
Ce travail de recherche met en évidence l'importance de connaître les besoins des apprenants afin d'établir un programme spécifique, une documentation appropriée ainsi que des stages pédagogiques. C'est dans ce contexte que cette recherche présente les résultats d'une analyse des besoins entrepris au Département de Biologie au cours de l'année 2007-2008. L'objectif de ce projet est de prendre en considération les facteurs spécifiques (les lacunes, les besoins et les nécessités) des étudiants en biologie afin de proposer un programme adapté concernant le module d'Anglais Scientifique (ESP) pour améliorer le processus d'enseignement et d'apprentissage de la langue au sein de ce département.

Mots clés : Analyse des besoins, désirs, lacunes, ESP (Anglais Scientifique), élaborer un programme.

ملخص

من أهم العوامل الأساسية والفعالة في ميدان التربية والتعليم,عامل الرغبة . فرغبة المتعلم واحتياجاته ونقاط ضعفه كلها ذات أهمية بالغة لتقويم أي موضوع تعليمي أو تربوي. لهذا يجب أخذها بعين الاعتبار عند إعداد برامج تعليمية جديدة. هذا البحث بحث على ضرورة معرفة احتياجات المتعلمين لربطها و البرامج المسطرة في إطار التعليم و كذا التربص الخاصة بالأساتذة. ومن ثم فان هذا البحث اعتمد تحليل نتائج احتياجات المتعلم على مستوى كلية العلوم- فرع البيولوجيا - أهم الأهداف المسطرة هي الأخذ بعين الاعتبار النقائص,الرغبات و الضروريات للدراسات البيولوجية لإعداد برنامج خاص لتحسين الأداء التربوي في إطار التعليم والتعلم للغة الانجليزية ذات التخصص علمي .

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Academic year: 2007-2008

To my dear parents
To Tewfik, my
husband
To my daughter,
Lilia
To my parents in Law
And To all my family

ACKNOWLEDGEMENTS

ABSTRACT

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Algerian English teachers are facing the difficult task of teaching the language required by students in scientific and literary disciplines. The present research work intends to describe the major issues encountered by fourth year students at the Department of Biology, at the University of Tlemcen. In this Department, the English courses are still a mixture of general English and (ESP); there is no prescribed syllabus. This leads to several difficulties in the teaching and learning processes.

Students and teachers at the Department of Biology are well aware of the fact that proficiency in English is crucial for the successful completion of their studies and future careers. Most study courses require students to read scientific texts in English and that the English language is of paramount importance for students' professional and academic daily needs. Thus, the aim of this study is to stress the importance of conducting a needs analysis in ESP courses and to present the steps that can be followed so as to develop a new and adequate ESP course. In such a course, and in order to determine the language skills, the students need to understand their own disciplines in the target language. Hereby, a needs analysis should stem from an already established design of a curriculum and syllabus. Arguably, this will, emphatically lead to a new outlook of ESP course designing and will provide teachers with new tools and a diversity of successful teaching techniques. Accordingly, students will level up their abilities in the domain and will score, hopefully, better results. The needs analysis conducted in this research among the fourth-year students in the Department of Biology, on the language skills reveals that translation, reading and listening skills are among their top priorities. This, is what almost the ESP teachers agree with.

The two first chapters of this research present the theoretical aspects of ESP; whereas, the two remaining ones deal with the field work where the data are analysed, interpreted, and findings are drawn. As an outcome to these findings, the researcher has proposed ways to overcome those difficulties so as to improve the status of ESP teaching in general and that related to Biology in particular.

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KEY TO ABBREVIATIONS

ESP: English for Specific Purposes

GE: General English

ELT: English Language Teaching

TEFL: Teaching English Foreign Language

EAP: English for Academic Purposes

EOP: English for Occupational Purposes

EVP: English for Vocational Purposes

VESL: Vocational English as a Second Language

EST: English for Science and Technology

EBE: English for Business and Economics

ESS: English for the Social Sciences

ESL: English as a Second Language

TENOR: Teaching English for No Obvious Reason

SPLT: Specific Purpose Language Teaching

GENERAL
INTRODUCTION

GENERAL INTRODUCTION

Individuals are not only speakers, but also receivers, consumers, readers and interpreters of language. The extent to which one knows and uses a foreign language may be crucial to one's existence, education, and career. As soon as the world entered the new millennium, the ability and the need to understand and communicate with others became increasingly important, at times even urgent. Today, an international exchange of ideas from environmental issues such as the thinning of the ozone layer and the warming of the planet, to medical topics such as genetic engineering, to political crises are essential. To meet these communication needs, more and more individuals have highly specific academic and professional reasons for seeking to improve their language skills: for these students, usually adults, courses that fall under the heading of English for Specific Purposes (ESP) holds particular appeal. ESP can help learners to become better professionals within their specific field of research or their own disciplines, which may reflect on their whole careers.

English for Specific Purposes is probably the most challenging branch in language teaching. Beginning in the early 1960s, ESP has grown to become one of the most prominent areas of EFL teaching today. Development in the field of EFL teaching during the last two decades has given birth to this new branch (ESP). Broadly speaking, the purpose of ESP is to increase and develop, in a short period of time, the linguistic potentialities of either tertiary students who need the language to acquire up-to-date knowledge in their specialities or adults who need the language for job related activities.

ESP is an approach to language teaching that builds on the central importance the notion of 'needs' as a starting point for the development of any kind of English instruction. Knowing the needs of students of the English language and preparing the curriculum of the course according to those needs is of a vital importance. What is worthy to note is that, the language skills needed by the medical students, for example, are different from those of the English language and literary students. This leads us to say that the ways the courses are designed and syllabi established differ greatly from discipline to discipline. Therefore, when teaching English, the curriculum of the language courses needs to address the students' needs.

Learning English appears to be essential for academic studies of graduate as well as post-graduate students that need to pursue the world's scientific and technological development. Realising the fact that keeping abreast of the latest scientific and technological developments require efficient access to up-to-date information mainly available in English. Many countries, among them Algeria, have given much importance to the learning of English in order to contribute to national and international scientific development and to achieve progress in different scientific fields. Strongly related to that, at the university level, graduate students are required to read and understand (listening / translation) written documents in English in relation to their different fields of study since they are expected to use recent articles and to attend different international conferences.

So, at the tertiary level, many institutions among them the Department of Biology, which is a part of the Faculty of Sciences at the University of Tlemcen and where English courses are introduced, many problems have emerged. The main

troubles that prevent the teaching of English, in this department, from being effective are due to the lack of training of ESP teachers which leads to severe shortage of teachers and to the absence of professional contact with subject specialists. Another acute problem is the non- existence of ESP courses that contribute to remedy students' weaknesses in learning the English language efficiently. Heterogeneity of the groups and badly scheduled lectures of English are also of major importance to take into account.

The experience of planning and designing an appropriate course that suits target ESP groups can be very challenging especially for new teachers. ESP teachers are often faced with various complexities and problems when they lack training and do not know how to design an effective course that will cover the specific language needs of their students. Moreover, many teachers do not pay attention to learners' interests, and thus ignore them as being an essential source of information. It is quite right that the Department of Biology teach English courses without properly considering the student needs .The question of needs is complex and one which ESP researchers have over simplified. Within the landscape of ESP in Algeria, many instances of its teaching and especially that of course design is often *ad-hoc* and needs to be entirely based on comprehensive needs analyses.

The present study attempt to answer few questions that may contribute to the design of an appropriate ESP course that matches the students' professional needs with the language learning needs. The objectives of the investigation can be expressed in the following research questions:

1) What are the students' language weaknesses?

2) What are the skills that biology students have to develop in order to operate effectively in the target situation?

3) Do the present teaching materials and time allotment ensure the practising of those skills?

4) Is the students' perception of needs similar to that of the teachers'?

These research questions have led the researcher to the following hypotheses:

1) The learners find difficulties in the four skills, mainly in the productive ones.

2) Effective language learning and teaching may be improved by evaluating the students' interests. The students can be a valuable source of help to course designers and teachers .Thus; needs analysis can be of crucial importance in the development of the learners' autonomy and interest in the language learning

3) The non-existence of ESP programme, the absence of ESP teachers training and the lack of time and materials inhibit the teaching of English for specific purposes.

4) Both teachers and learners think that reading and listening comprehension are widely needed in ESP courses.

The present research which is designed to consider the lacks, wants and necessities of Biology students. It is presented as follows: The first chapter provides a review of the literature of English for Specific Purposes (ESP) and the different

steps to take into account for designing an ESP course. The second chapter gives a detailed description of teaching/learning situation and the needs analysis that is carried out in order to identify target situation needs. In the third chapter, the analysis of the results obtained from the different research instruments used in this work; two questionnaires, one for the students and the other to the teachers as well as a semi-structured interview with the students. Finally, the fourth one is devoted to an attempt for designing some sample units in order to meet the students' interest and enhance their motivation. It also gives some suggestions to improve the ESP teaching and learning in general.

CHAPTER ONE:

English for Specific Purposes

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1.1 Introduction :

English for specific purposes (ESP), this relatively recent field in the area of teaching English as a foreign language (TEFL) has been spreading quickly from the 1950s onwards as a result of many incentives. Most important are: international trade and the increasing interest in Science and Technology throughout the world reaching the developing countries. This chapter will be devoted to the discussion of some definitions, to different types attributed to ESP and to a brief account on the historical development of ESP.

The new trend in education has put learner-centeredness in the forefront of the learning/teaching process, where the learners' needs and aims are essential elements in the ESP courses; thus, many scholars have tried to set up the most important foundations of ESP. That is why the last part of this chapter will emphasize the different concepts underlying this new approach in language teaching.

1.2 Definition of ESP

English for Specific Purposes (ESP) and General English (GE) are the two branches of English language teaching (ELT). General English and ESP share the same principles of language teaching, having effective and efficient learning as a main objective. Hutchinson and Waters (1987) have explained that the main difference between ESP and GE lies in the *awareness of a need*. ESP learners are

current or future specialists who need English for their specific area and who are aware of their need; they know what exactly they need English for, they know what the ESP course should offer them.[1]

1.2.1 From ELT to ESP:

There have been several major shifts in the development of ESP both in theory and practice. However, Hutchinson & Waters (1987) have tried to represent it in a form of a tree to show the successive stages from ELT to ESP in their famous "Tree of ELT". One should note that the analogy of a tree can help the reader to understand the relation between ELT and ESP.
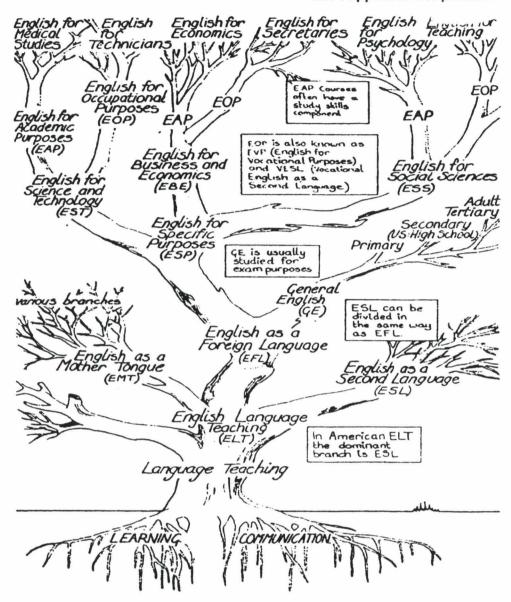
Figure1.1: the tree of ELT (Hutchinson & Waters 1987: 17)

In spite of the differences between ELT and ESP, the tree shows how ESP is related to the rest of ELT and it represents some of the common divisions that are made in ELT. The topmost branches of the tree show the level at which individual ESP courses occur. The branches just below this level indicate that these may conveniently be divided into two main types of ESP differentiated according to whether the learner requires English for academic study(EAP: English for Academic Purposes) or for work/ training (EOP/EVP/VESL: English for Occupational Purposes/ English for Vocational Purposes/ Vocational English as a Second Language). At the next level down it is possible to distinguish ESP courses by the general nature of the learners' specialism. Three large categories are usually identified here: EST (English for Science and Technology) which is the scope of the research, EBE (English for Business and Economics) and ESS (English for the Social Sciences). As we go down the tree, we can see that ESP is just one branch of EFL/ESL, which are the main branches of English Language Teaching in general. ELT, in turn is one variety of the main possible kinds of language teaching. Admittedly, there is more to a tree than is visible above ground: a tree cannot survive without roots. The roots which nourish the tree of ELT are *communication & learning.*

1.2.2 Scope of ESP:

One of the approaches to English language and learning is English for Specific Purposes (ESP) as opposed to what other call " Teaching English for No Obvious Reason"[2] (TENOR) (Abbot & Wingard, 1981:12). English for Specific Purposes (ESP) is known as a learner-centred approach to teaching English as a foreign or second language. It meets the needs of adult learners who need

to learn the English language for use in their specific fields, such as science, technology, medicine and academic learning.

ESP has had a relatively long time to mature and so one would expect the ESP community to have a clear idea about what ESP means. Some ESP scholars have described ESP as simply being the teaching of English for any purpose that could be specified. Others, however, were more precise, describing it as the teaching of English for vocational or professional purposes. Gramley (1991) is one of these scholars who have tried to identify briefly, the different aspects that characterise ESP; and he posits:

> **ESP is the use of English in a restricted set of social and thematic areas; chiefly for the unambiguous transfer of (technical) information; as the preferred language of international communication and for the needs of non-native users of English; it is a restriction of General English.**
> (Gramley, 1991:3)

Gramley has also drawn a sharp line of demarcation between 'English for Special Purposes' which has become 'English for Specific Purposes':

> **Special implies restricted language and specific focuses attention on the purposes of task in English. ESP is a selection of skills (reading, listening, writing, talking); a selection of text types and a selection of vocabulary and grammar.**
>
> (Gramley, 1991:6)

At the Japan Conference[3] in November (1997) on ESP, clear differences on how people interpreted the meaning of ESP could also be seen. At this conference, Dudley-Evans made clearer the meaning of ESP giving an extended definition of ESP in terms of *'absolute'* and *'variable'* characteristics, to use Strevens' terms (1988)[4]. His definition makes a distinction between four absolute and two variable characteristics. In terms of absolute characteristics, ESP is:

1) designed to meet specified needs of the learner,

2) related in content (i.e. in its themes and topics) to particular disciplines, occupations and activities,

3) centred on the language appropriate to those activities in syntax, lexis, discourse, semantics, etc., and analysis of this discourse, and

4) in contrast with General English.

(Strevens, 1988:2)

In terms of variable characteristics, ESP may be, but not necessarily,

1) restricted as to the language skills to be learned (e.g. reading only), and

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2) not taught according to any pre-ordained methodology.

(Strevens, 1988:2)

Anthony (1997) refers to the considerable recent debate on the meaning of ESP despite the fact that it is an approach which has been widely used over the last three decades. Dudley-Evans (1997) offers a modified definition for ESP. The revised definition Dudley-Evans and St. John (1998) propose, is the expansion of the definition proposed by Strevens (1988) in terms of absolute and variable characteristics. According to Dudley-Evans and St. John, and in terms of 'absolute' and 'variable' characteristics, ESP

1) is defined to meet specific needs of the learner,

2) makes use of the underlying methodology and activities of the discipline it serves, and

3) is centred on the language (grammar, lexis, and register), skills, discourse and genres appropriate to these activities.

On the other hand, in terms of the variable characteristics, ESP

1) may be related to or designed for specific disciplines,

2) may use, in specific teaching situations, a different methodology from that of general English,

(Quoted in Anthony, 1997:2)

3) is likely to be designed for adult learners, either at tertiary level institution or in a professional work situation, and could also be for learners at secondary school level,

4) is generally designed for intermediate or advanced students,

5) assume some basic knowledge of the language system, and

6) can be used with beginners.

(Quoted in Anthony, 1997:2)

A comparison of this definition with that of Strevens reveals that Dudley-Evans and St-John have removed the absolute characteristic that *'ESP is in contrast with General English'* (Johns and Dudley-Evans, 1991:298) and added more variable characteristics. They assert that ESP is not necessarily related to a specific discipline. Furthermore, ESP is likely to be used with adult learners although it could be used with young adults in a secondary school setting. The division of ESP into absolute and variable characteristics, in particular, is very helpful in resolving arguments about what is and is not ESP.

ESP should be seen simply as an *'approach*[5] to teaching, or what Dudley-Evans describes **"as an attitude of mind"** (1998:23). This similar conclusion to that made by Hutchinson and Waters who proposed a broader definition of ESP: **"ESP is an approach to language teaching in which all decisions as to content and method are based on the learner's reasons for learning."** (Hutchinson and Waters 1987:19). However, Anthony (1997) notes that, with this broad definition, it is not clear where General English courses end and ESP courses begin. Numerous

non-specialist ESL instructors use an ESP approach in that their syllabuses are based on analysis of learner needs and their own personal specialist knowledge of using English for real communication.

In general, *"special language"*[6] and *"specialized aim"*[7] are viewed as similar concepts although they are two entirely different notions. Perren (1974) noted that confusion arises over these two notions. On the other hand, Mackay and Mountford (1978) stated:

> **...the only practical way in which we can understand the notion of special language is as a restricted repertoire of words and expressions selected from the whole language because that restricted repertoire covers every requirement within a well-defined context, task or vocation...**
> (Mackay and Mountford, 1978:4)

What is more, a *"specialized aim"* refers to the purpose for which learners learn language, not the nature of the language they learn. Consequently, the focus of the word *"special"* in ESP is on the purpose for which learners learn and not on the specific jargon or registers they learn. As such, all instances of language learning might be considered ESP.

1.3 The Origin of ESP:

Hutchinson and Waters (1987) succinctly identified three key reasons they believe are common to the emergence of all ESP courses: 1) The demand of brave new world, 2) a revolution in linguistic and 3) the focus on the learner

They noted that two historical periods breathed life into ESP. First, the end of the Second World War brought with it an age of enormous and unprecedented expansion in scientific, technical and economic activity on an international scale; for various reasons, most notably the economic power of the United States in the post-war world, the role of international language fell to English. Second, the oil crisis of the early 1970s resulted in Western money and knowledge flowing into the oil-rich countries. The language of this knowledge became English. The general effect of all this development was to exert pressure on the language teaching profession to deliver the required goods. Whereas English had previously decided its own destiny, it has now become subject to the wishes, needs, and demands of people other than language teachers.

The second key reason that has had a tremendous impact on the emergence of ESP is a revolution in linguistics. Whereas traditional linguists set out to describe the features of language, revolutionary pioneers in linguistics began to focus on the ways in which language was used in real communication. Hutchinson and Waters (1987) point out that one significant discovery has been in the ways that spoken and written English vary. In other words, given the particular context in which English is used, the variant of English will change. This idea was taken one step further. If language in different situations varies, then tailoring language instruction to meet the needs of learners in specific contexts is also possible. Hence, in the late 1960s and the early 1970s there were many attempts to describe English for Science and Technology (EST).

The last reason which Hutchinson and Waters (1987) mention to have influenced the emergence of ESP has less to do with linguistics and everything to do with psychology. Rather than simply focusing on the method of language delivery, more attention was given to the ways in which learners acquire language and the differences in the ways language is acquired. Learners were seen to employ different learning strategies, use different skills, enter different learning schemata, and be motivated by different needs and interests. Therefore, focus on the learners' needs became equally paramount as the methods employed to disseminate linguistic knowledge. As such, designing specific courses to better meet individual needs has become a natural extension of "*learner-centred*" or "*learning-centred*" perspective on ESP.

ESP vs GE:

On the face of it, ESP differs from GE in the sense that the words and sentences learned, the subject matter discussed, all relate to a particular field or discipline-for example, a lawyer writing a brief, or a diplomat preparing a policy paper. ESP courses make use of vocabulary and tasks related to the field such as negotiating skills and effective techniques for oral presentations. The entire programme is designed to meet the specific professional or academic needs of the learner. A balance   to be created between educational theory and practical considerations.

A closer look at GE and ESP is, however, vital. General English (GE) is essentially the English language education in middle and secondary schools. Students are introduced to the sounds and symbols of English, as well as to the

lexical/grammatical/rhetorical elements that compose spoken and written discourse. It also focuses on applications in general situations: appropriate dialogue with restaurant staff, bank managers, postal clerks, telephone operators, English teachers, and party guests as well as lessons on how to read and/or write the English typically found in textbooks, newspaper and magazine articles, telephone directories, shopping catalogues, application form, personal letters, e-mail, and home pages. Supplementary information about appropriate gestures, cultural conventions, and cultural taboos are also normally included in a GE curriculum. Pedagogically, a solid understanding of basic GE should precede higher-level instruction in ESP if ESP programmes are to yield satisfactory results.

English for Specific Purposes (ESP), however, is research and instruction that builds on GE and is designed to prepare students or working adults for the English used in specific disciplines, vocations, or professions to accomplish specific purposes. ESP researchers have come to the conclusion that

> **ESP may not always focus on the language of one specific discipline or occupation, such as English for law or for physics. University instruction that introduces students to common features of academic discourse in the sciences or humanities, frequently called English for Academic Purposes (EAP), is equally ESP.**
> (Dudley-Evans, 1998:3)

Teachers nowadays, however, are much more aware of the importance of needs analysis, and published textbooks have improved dramatically allowing the teachers to select materials that closely match the goals of the learner. Perhaps, this demonstrates the influence that the ESP approach has had on English teaching in general.

1.5 Types of ESP:

David Carter (1983) identifies three principle types of ESP from which are derived different other types: 1) English as a restricted language, 2) English for Academic and Occupational Purposes and 3) English with specific topics.

1.5.1 English as a Restricted Language:

The language used by air traffic controllers or by waiters are examples of English as a restricted language. Mackay and Mountford (1978) clearly illustrate the difference between restricted language and language as follows:

> **...the language of international air-traffic control could be regarded as 'special', in the sense that the repertoire required by the controller is strictly limited and can be accurately determined situationally, as might be the linguistic needs of dining-room waiters or air-hostess. However, such restricted repertoires are not languages, just as a tourist phrase book is not grammar, knowing a restricted 'language' would not allow the speaker to communicate effectively in novel situation, or in context outside the vocational environment.**
> (Mackay and Mountford, 1978:4-5)

1.5. 2 English for Academic and Occupational Purposes:

The second type of ESP identified by Carter (1983) is English for Academic and Occupational Purposes (EAOP). It is divided into English for Science and Technology (EST); English for Business and Economics (EBE); English for Social Studies (ESS). Each of these subject areas is further sub-divided into two branches; English for Academic Purposes (EAP), an example for EAP for the EST branch is ' English for Medical Studies' and English for Occupational Purposes (EOP), an example of EOP for the EST branch is 'English for Technicians'

1.5.3 English with Specific Topics:

The third and last type of ESP identified by Carter is English with specific topics. Carter notes that it is only here where emphasis shifts from purpose to topic. This type of ESP is solely concerned with anticipated future. For example, scientists requiring English for postgraduate reading studies, attending conferences or working in foreign institutions.

However, Gatehouse (2001) in his article: <u>Key Issues in English for Specific Purposes (ESP) Curriculum Development</u>; argues that:

> **...this is not a separate type of ESP courses or programs that focus on institutional language. This institutional language has been determined based on the interpretation of results from needs analysis of authentic language used in target workplace settings.**
> (Gatehouse, 2001:5)

1.6 Five concepts underlying ESP:

Five conceptions function as what might be called the foundations, essential features or basic principles of ESP. Swales (1990) uses the term 'enduring conceptions' to refer to them. As originally formulated, these five conceptions are:1) Authenticity, 2) Research-base, 3) Language/text, 4) Need and 5) Learning/methodology.

According to Coffey (1984), the main consideration in ESP is that of authenticity. It includes authentic texts, and authentic tasks. Swales (1990), in explaining what is meant by the research-base of ESP, reviews the ESP literature and observes a trend towards papers that rely on some kind of data-base (textual or otherwise). In addition, Strevens (1977) alludes to the importance of the "*specific language*" of ESP; that is, only those items of vocabulary, patterns of grammar, and functions of language which are required by the learner's purposes are included in ESP. Strevens also alludes to the importance of learner needs in discussions of ESP. Finally, ESP draws on the methodology or learning theories which are appropriate to the learning/teaching situation. In other words, specific purpose language teaching (SPLT) is not itself a methodology. According to Strevens (1977), this characteristic of ESP makes the materials both more relevant and more interesting to the student due to the varied and ingenious exploitation of the opportunities provided by ESP settings.

These five conceptions all have dual and potentially conflicting origins in both the real world (the 'target situation' of the ESP) and in ESP pedagogy. It is therefore crucial to discuss each of them in an attempt to survey the development and

directions of ESP as it has evolved. Such a survey will identify five major approaches to ESP, each of which has focused on one of the major conceptions and thus contributed to the concept of ESP itself. However, it is also evident that as each approach to ESP has it evolved; its particular enduring conception has also evolved, bringing ESP practiononers towards their current thinking in each of the five areas.

The earliest concept to emerge from the development of ESP was that of authenticity. The first generation of ESP materials that appeared in the mid-1960s took skills as their principal means of selection, arguing that ESP teachers would need to establish the skills priorities of students in order to develop appropriate ESP teaching materials. Authenticity has gained so much significance that even today; most ESP programmes focus on developing communicative competence[8] in specific fields, such as aviation, business, technology, etc. Some course prepare student for various academic programs. Others prepare student for work in fields such as law, medicine, engineering, tourism or graphic design. Many courses now focus on the Internet. Still, there is a gap between students' real life needs and what a common ESP course book can suggest. One inherent flaw of this short-sighted view of authenticity is that very often, instead of conducting interviews with specialists in the field, analyzing the language that is required in the profession or even conducting students' needs analysis, many ESP teachers become dependent only on the published textbooks available.

Later skills-based approaches to ESP have enlarged the conception of authenticity in two principal ways. First, authenticity of text is both broadened to include texts other than written texts and narrowed to differentiate between the

different types of text generated by each skill. Reading, for example, could be sub-divided into reading report, reading technical journals, reading instruction manuals, etc. Secondly, the conception of authenticity has been enlarged to embrace authenticity of task. In effect, this means designing tasks requiring students to process texts as they would in the real world. In other words, as ESP learners would be required in the target situation (Morrow, 1980).

Halliday, et.al (1964) were the first scholars, who pointed to the importance of, and the need for, a research-based for ESP, set out in one of the earliest discussions of ESP. This was a call for a programme of research into ESP registers which was taken up by several early ESP material writers, such as Herbert (1965) or Ewer and Latorre (1969), who analyzed large corpora of specialist texts in order to establish the statistical contours of different registers. The principal limitation of this approach was not its research-base but its conception of text as register, restricting the analysis to the word and sentence levels as register was invariably defined in these terms.

ESP is driven by the specific learning needs of the language learner. The first step for ESP is research to identify the specific learning needs of students, for these will inform the decisions made about ESP programmes. Before beginning a needs analysis, however, one must first answer the following crucial question: "Will the students use English at university or in their jobs after graduation?" If the answer is no, then ESP is not a reasonable option for the university's English language programme. The university will have to justify its existence and improve the programme via other means. If the answer is yes, however, then ESP is probably the most intelligent option for the university curriculum. ESP needs analysis lays a solid

foundation for a stable ESP programme. ESP also begins with some basic questions to survey what will be needed. W ill students use English at university or in their jobs after graduation? In what situation? For what purposes? What language skills will be required (listening, speaking, reading, and writing)? What are the significant characteristics of the language in these situations (lexicon, grammar, spoken scripts, written texts, other characteristics)? What extra linguistic knowledge of academia, specific disciplines, specific vocations, or specific professions is required for successful English usage in these areas?

Needs analysis was firmly established in the mid-1970s as course designers came to see learners' purpose rather than specialist language and the driving force behind ESP. Early instruments, notably Munby's (1978) model, established needs by investigating the target situation for which learners were being prepared. However, this model has been widely criticized for two apparently conflicting reasons: Its over-fullness in design, and what it fails to take into account (that is, socio-political considerations, logistical considerations, administrative considerations, psycho-pedagogic, and methodological considerations).

To counter the shortcomings of target-situation needs analysis, various forms of pedagogical needs have been identified to give more information about the learner and the educational environment. These forms of needs analysis should be seen as complementing target- situation needs analysis and each other, rather than being alternatives. They include deficiency analysis, strategy analysis, and means analysis.

Deficiency analysis, gives us information about what the learners' needs are, i.e. which of their target-situation needs they lack or feel they lack. **"Deficiency**

analysis takes into account lacks and wants, as well as objective needs of the learners."(Allwright,1982:96)

- **Strategy analysis,** seeks to establish how the learners wish to learn rather than what they need to learn. By investigating learners' preferred learning styles and strategies, strategy analysis provides a picture of the learner's conception of learning.

- **Means analysis,** on the other hand, investigates precisely those considerations that Munby (1978) excluded. These relate to the educational environment in which the ESP course is to take place. (Swales, 1989)

The attention to strategy analysis has given rise to a new generation of ESP materials which are founded as much on conceptions of learning as on conceptions of language or conceptions of needs. The concern in ESP was no longer with language use-although this would help to define the course objectives. The concern was rather with language learning. It was no longer simply assumed that describing and exemplifying what people do with language would enable someone to learn it. A truly valid approach to ESP would be based on an understanding of the processes of language learning. Hutchinson and Waters (1987) called this approach *"the learning-centred approach"* and stressed the importance of a lively, interesting and relevant teaching/learning style in ESP materials.

1.7 The ESP courses and their aims:

Before mentioning the aims of ESP course, it is necessary to understand what the ESP courses are. ESP courses may be intensive or extensive. Extensive courses may be full-or part-time over several months. Courses are provided by private language schools and by universities and colleges. Whereas, intensive courses are one-day or one-week courses, for example, on negotiating for business English students about to study at.

The ESP course is goal-oriented on that has more specific outcomes at its end. Consequently, the first step (and perhaps the most important feature) of an ESP course is *"research"* to identify learners' purposes for studying English, and to identify their specific needs. This step is of paramount importance, for it will affect or guide all subsequent ones in an ESP course design. Robinson notes

> **We may say that ESP course is purposeful and is aimed at the successful performance of occupational or educational role. It is based on a rigorous analysis of students' needs and should be "tailor-made".**
> (Robinson 1980:13)

The aims of ESP courses are to prepare learners in accordance with the specific skills and vocabulary needed in their own fields. Therefore, the foundation of all ESP courses is related to the simple question of why the learner needs to learn a language, not least English.

According to Mohan (1986), in such content-based language courses the aim is not to think the target language only as a medium of learning across the curriculum. The language the students use is drawn from authentic materials closely related to their own disciplines, so the goal of such courses is to integrate not only language learning (the four skills) but also content learning (scientific texts). Students following ESP courses become proficient in English in their own fields as the focus is on the exchange of important information, and the language use is purposeful.

1.7.1 Characteristics of an ESP Course:

Gatehouse in her famous article "the Key Issues in English for Specific Purposes Curriculum Development"[9] (2001) describes briefly the different features belonging to an ESP course. These characteristics are defined by Carter (1983); he states that there are three features common to ESP course: 1) authentic material, 2) purpose-related orientation, and 3) self-direction

1.7.1.1 Authentic Material:

Dudley-Evans (1997) claim that ESP should be offered at an intermediate or advanced level, use of authentic learning materials is entirely feasible. Closer examination of ESP materials will follow; suffice it to say at this juncture that use of authentic content materials, modified or unmodified in form, are indeed a feature of ESP, particularly in self-directed study and research tasks. For Language Preparation for Employment in the Health Sciences, the case study undergone by Gatehouse:

> ...a large component of the student
> evaluation was based on an independent
> study assignment in which the learners were
> required to investigate and present an area
> of interest. The students were encouraged
> to conduct research using a variety of
> different resources, including the Internet.
> (Gatehouse, 2001:5)

1.7.1.2 Purpose-related orientation:

It refers to the simulation of communicative tasks required of the target setting. Carter (1983) cites student simulation of conference, involving the preparation of papers, reading, note taking, and writing. At the Department of Biology, students are asked to prepare a presentation on their scientific research or to participate in conference. The students have presented all final products at the end of the year.

1.7.1.3   Self-direction:

It is a characteristic of ESP courses in that the: *"... point of including self-direction...is that ESP is concerned with turning learners into users"* (Cater, 1983: 134). In order for self-direction to occur, the learners must have a certain degree of freedom to decide when, what, and how they will study. He also adds that there must be a systematic attempt by teachers to teach the learners how to learn by teaching them about learning strategies.

1.8 ESP Course Design:

Essential to course design are the analysis of students' needs and the tailoring of the design to fit those needs. Any syllabus type and methodology may be employed, but given the frequent shortage of the study time and need for immediate use, a task-based and communicative approach may seem most appropriate.

This means in practice that much of the work done by ESP teachers is concerned with designing appropriate courses for various groups of learners. Whereas, course design plays a relatively minor part in the life of the general English teacher courses here usually being determined either by tradition, choice of textbook or ministerial decree. While the ESP teacher, course design is often a substantial and important part of the workload. Designing a course is fundamentally a matter of asking questions in order to provide a reasoned basis for the subsequent processes of syllabus design materials writing, classroom teaching and evaluation.

For Hutchinson and Waters (1987), to design an ESP course, three main headings should be taken into consideration: Language description, theories of learning and needs analysis. They emphasize, however, that although for clarity, it is necessary to look for the three factors separately; it is their interdependence in the course design process which is of the greatest importance. The following diagram represents the relationship between the three headings:
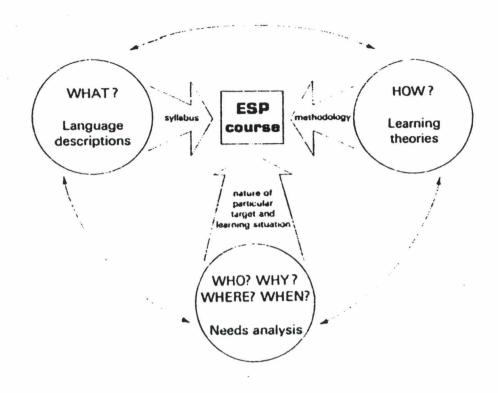
Figure1.2: Factors affecting ESP course design (Hutchinson & Waters 1987:22)

The language description refers to ways of analysing and describing languages whereas learning theory provides the theoretical basis for the methodology, by helping us to understand how people learn. The first one (language description) belongs to the area as 'structural', 'functional', 'notional' and the second one (learning theories) to 'behaviourist', 'cognitive', 'affective'.

The ESP teacher needs to recognize that the various approaches are different ways of looking at the same thing. All communication has a structural level, a functional level and a discoursal level. They are not mutually exclusive but complementary, and each way has its place in the ESP course. It is probable that

there are cognitive, affective and behaviourist aspects to learning and each can be a resource to the ESP practitioner. For example, one may choose a behaviourist approach to the teaching of pronunciation. Having considered these two main theoretical bases of course design, the teachers should now look to the practical aspect that is often characterised as the distinguishing features of ESP-needs analysis: what are the necessities, lacks and wants of the learners.

1.8.1: Needs Analysis:

An essential component of ESP as an enterprise is the analysis of potential or actual needs. In general terms, needs analysis (also called needs assessment) refers to the activities involved in gathering information that will serve as the basis for developing a curriculum that will meet the learning needs of a particular group of students. In the case of language programmes, those needs will be language related. Once identified, needs can be stated in terms of goals and objectives which, in turn can serve as the basis for developing tests, materials, teaching activities, and evaluation strategies, as well as for revaluating the precision and accuracy of the original needs assessment. Thus needs assessment is an integral part of systematic curriculum building. For example, when a curriculum is being developed from scratch for a completely new language programme, the best place to start is with needs assessment. Thus, application of needs assessment will create a sound foundation for further discussion of the curriculum.

Needs analysis, in the formal and technical sense, is relatively new in language teaching circles. However, needs analysis has been conducted informally for years by teachers who wanted to assess what language points their students

needed to learn. Indeed, the various activities usually called "*approaches*" are different expressions of this desire to figure out what students need to learn. Information sources for such informal needs assessments might include scores on an overall language proficiency test, facts gathered from a background questionnaire that asks where and for how long students have had previous language training, or impressions gleaned from teacher and student interview about the students' cognitive and linguistic abilities. In more formal terms, needs assessment is defined by Richards *et al.* (1985) as

> **The process of determining the needs for which a learner or a group of learners requires a language and arranging the needs according to priorities. Needs assessment makes use of both subjective and objective information (e.g., data from tests, questionnaire, interviews, observation).**
>
> (Richards *et al.*, 1985: 189)

The needs described in this definition are those of the learners involved and it is their language requirements that are to be delineated and sequenced on the basis of both subjective and objective information. In another definition of needs assessment, Stufflebeam *et al.* (1985) point out that it is **"*The process of determining the things that are necessary or useful for the fulfilment of defensible purpose."*** (Stufflebeam *et al.*, 1985:16).This definition is attractive because it implies that the needs that are isolated must be defensible and form a unified and justifiable purpose.

Pratt (1980) states that **"*needs assessment refers to an array of procedures for identifying and validating needs, and establishing priorities***

among them." (Pratt, 1980: 79). The key phrases that make this definition different from the others are *"array of procedures"* and *"validating needs."* The first phrase indicates that a variety of information gathering tools should be used. The second implies that needs are not absolute, that is, once they are identified, they continually need to be examined for validity to ensure that they remain real needs for the students concerned. The definition proposed by Brown (1995) is a combination of the best features of the last three definitions, as well as to include elements that have either been left out or glossed over in the other definitions. Like needs analysis itself, this definition can never be considered as perfect, a finished product; it is a working definition designed to facilitate the process of needs assessment as part of language curriculum design. Here, the term needs analysis will refer to:

Thus, ESP is an approach to language learning based on learners' needs. Its foundation lies in the question: 'why does this learner need to learn a foreign language?' The teacher and planner must investigate the uses to which the language will be put, to determine accurately what these specific purposes are to produce and teach an effective course, as Mc Donough writes that *"the idea of analysing the language needs of the learner as a basic for course development has become almost synonymous with ESP"*(Mc Donough, 1984:29).

Needs analysis can be seen as crucial to an ESP course, especially when the course is of limited duration. The designer of an ESP course has to decide exactly how specific the language needs of the students are. For scientific English course, for example, potentially all the structural patterns of English need to be taught, using

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scientific terms rather than everyday vocabulary. One main purpose of conducting a needs analysis is, according to Gardner and Winslow (1983:76):

> **...to produce information which when acted upon, makes courses better adapted to students' needs and part of object of formal needs identification is to back up one's proposals with quantitative evidence of their importance...in many cases, concrete evidence of particular needs, such as these surveys , could be directly used as part of the course validation/ approval procedure.**

When it is refer to needs analysis, the meaning is relevance to learners' needs, a set of objectives that are appropriate to specific learners. If one defines the need, one defines the content of the course. So, the analysis of the learners' needs by distinguishing target needs and learning needs. Target needs are what the learner needs to do in target situation and learning needs are what the learner needs to do in order to learn. In target needs, Hutchinson and Waters have distinguished necessities,

	OBJECTIVE (i.e. as perceived by course designers)	SUBJECTIVE (i.e. as perceived by learners)
NECESSITIES	The English needed for success in Agricultural or Veterinary Studies	To reluctantly cope with a 'second-best' situation
LACKS	(presumably) areas of English needed for agricultural or Veterinary Studies	Means of doing Medical Studies
WANTS	To succeed in Agricultural or Veterinary Studies	To undertake Medical Studies

Table1.1: Necessities, lacks and wants (Hutchinson & Waters, 1987:58)

Necessities are what the learner has to know in order to function effectively in the target situation; but identifying necessities alone is not enough, you have to know what your particular learners already know and decide from there what your necessities will be. One target situation might be that your learners need to read specialized texts and you should identify how well/badly they do so already in order to define the target proficiency of the learners. The gap between the two can be referred as the learners' lacks. The learners' wishes and views have to be taken into consideration too. If the learner's desire is to practice oral English or other specific language skills, the teachers have to include items in their syllabus.

1.8.2 The role of an ESP teacher:

Dudley Evans (1997) describes the true ESP teacher or ESP practitioner as needing to perform five different roles. 1) teacher, 2) collaborator, 3) course designer and material provider, 4) researcher and 5) evaluator.

The first role as *'teacher'* is synonymous with that of the 'General English' teacher. It is in the performing of the other four roles that differences between the two emerge. In order to meet the specific needs of the learners and adopt the methodology and activities of the target discipline, the ESP teacher must first work closely with field specialists. When team teaching is not a possibility, the second role as *'collaborator'* emerges, the ESP teacher must collaborate more closely with the learners, who will generally be more familiar with the specialized content of materials than the teacher him or herself.

Both 'General English' teacher and ESP teacher are often required *'to design courses and provide material'*. One of the main controversies in the field of ESP is

how specific those materials should be. Unfortunately, with the exception of textbooks designed for major fields that tend to use topics from multiple disciplines, making much of the material redundant and perhaps even confusing the learner as to what is appropriate in the target field. Many ESP teachers are therefore left with no alternative than to develop original materials. It is here that the ESP teachers' role as 'researcher' is especially important, with result leading directly to appropriate materials for the classroom. The final role as 'evaluator' is perhaps the role that ESP researchers have neglected most to date. As John et al. (1991) describe, there have been few empirical studies that the effectiveness of ESP course. For example, the only evaluation of the non-compulsory course reported by Hall (1986) is that despite carrying no credits, **"students continue to attend despite rival pressures of heavy programme of credit courses."** (Hall et al. 1986:158). On the other hand, recent works such as that of Jenkins et al. (1993), suggests an increasing interest in this area of research.

The question is often posed as to whether ESP teachers are different from other teachers of EFL or ESL. A possible answer is that they need to be more flexible and more confident. Robinson (1991) expressed the same idea; for her, the key quality required for being a good ESP teacher is flexibility; it would enable a teacher of General English to become an ESP teacher at reasonably short. As Mc Donough clearly explained it: **"Quite often ESP teachers do not only teach but are also involved in collecting initial data, conducting needs analysis and designing courses"** (McDonough, 1984:127). As each of these activities requires 'particular capabilities' (Robinson, 1991:80), the ESP teacher has to possess a great competence and hold a number of personal qualities such as

"enthusiasm, the ability to develop and administer a course work-rate, rapport, and a knowledge of the student' world" (Williams, 1981; quoted in Robinson, 1991:80).

1.8.3 Evaluating the Course:

Course evaluation is the last, but not the least important stage in ESP course design. Teachers should evaluate their courses to improve and promote their effectiveness. Evaluation can be done in two different ways: implicitly and explicitly. Implicit evaluation takes place during the semester, when learners, by their grades, participation, and motivation, gives clues to the teacher on how their learning is going on. Explicit evaluation may take place at the end of the course or after student experience it. Using questionnaires, surveys, talks, etc. teachers ask the students to express their attitude towards the subject matter, instructional methods, activities, and teachers' role and so on. Evaluation of the course is an informative step for the teacher. He should be open-minded in hearing and implementing learners' comments. Course evaluation, on the other hand, makes it possible to know whether or not the objectives are being met or whether or not the course is doing what it was designed for. However, there is no clear-cut distinction between both forms of evaluation since evaluation of learners produces not only learners' performance but also whether the course has been effective or not; which provides feedback for the ESP course. (Hutchinson and Waters, 1987).

1.8.4 Issues in ESP Course Design:

The work that has been done in the field of ESP has generally followed the assumption that if a group of English language learners' needs can be accurately

specified, then this identification can be used to determine the content of a language programme that will meet these needs (Munby, 1978). Such interpretations were common in the 1970s and 1980s when needs analysis in ESP contexts was widespread in language teaching (Nunan and Strevens, 1988). Then, such procedures were used as the initial process for the specification of behavioural objectives which then explored different syllabus elements such as functions, notions and lexis in a more detailed manner (Nunan, 1988). To this day, this assumption is generally adhered to by most ESP practitioners when they design or mount a wide variety of ESP courses such as 'English for civil servants; for policemen; for insurance staff; for medical students; for legal staff; for nurses; for human resource personnel etc.'

ESP researchers have demonstrated that once learners' specialized needs and special language registers are identified; relevant teaching materials can be used to teach the course more effectively. When Language for Specific Purposes (LSP) became widespread, more determined efforts were made to design comprehensive LSP syllabus that focused on learners' needs. But this approach did not find its remarkable influence and position in LSP until Munby's (1978) approach to needs analysis was introduced. Despite numerous criticisms, many researchers still see the value of using Munby's Communicative Needs Processor as they view it as being contributory in many developmental ways (Jordan, 1997; Phan, 2005).

Needs analysis is neither unique to language teaching nor within language training but it is often seen as being *"the cornerstone of ESP and leads to a very focused course"* (Dudley-Evans & St. John, 1998: 122). Although there are various

ways of interpreting 'needs', the concept of 'learner needs' is often interpreted in two ways:

1)   As what the learner *wants* to do with the language (*goal-oriented* definition of needs) which relates to terminal objectives or the end of learning; and

2)   what the learner *needs* to do to actually acquire the language (a *process-oriented* definition) which relates to transitional/means of learning.

. In view of these concerns, Dudley-Evans (1998) discuss criteria for ESP course design and put forward useful steps for ESP teachers and course designers to consider. They list these concerns surrounding course design in the form of the following questions:

- Should the course be *intensive* or *extensive*?

- Should the learners' performance be *assessed* or *non-assessed*?

- Should the course deal with *immediate needs* or with *delayed needs*?

- Should the role of the teacher be that of the *provider* of knowledge and activities, or should it be as *facilitator* of activities arising from learners' expressed wants?

- Should the course have a *broad* focus or *narrow* focus?

- Should the course be *pre-study* or *pre-experience* or *run parallel* with the study or experience?

- Should the materials be *common-core* or *specific* to learners' study or work?

- Should the group taking the course be *homogenous* or should it be *heterogeneous*?

- Should the course design be *worked out by the language teacher* after consultation with the learners and the institution, or should it be *subject to a process of negotiation* with the learners?

(Dudley-Evans and St. John (1998: 145)

By asking these questions prior to planning course design, the ESP teacher can be better prepared, more so if the teacher has to balance out some of these parameters which are linked to institutional and learner expectations (Dudley-Evans and St. John, ibid). In most instances, the content of any ESP course should only be determined by a comprehensive needs analysis as this first step is seen as being absolutely crucial if ESP practitioners wish to design a course that will maximally benefit their learners (Wright, 2001). In the literature of needs analysis, some of the following aspects are often recommended by experts:

- Placement testing (administering tests designed to assess general English ability and ability to perform adequately in work contexts – this might help determine the starting level of courses in the ESP course)

- Linguistics needs analysis (to identify skill development, linguistic structures, lexical items, language functions and levels of formality)

- Learning needs analysis (identify learners' attitudes towards different kinds of methodology, learning tasks and activities); and

- Learner perceptions analysis (discover learners' perceptions of themselves and others as part of their company culture, and their relationships with people from other company cultures)

(Quoted in Wright, 2001: 4)

In analyzing course design issues in any teaching and learning context, it is generally an accepted fact that the process of matching aim and method is not simply a mechanistic one of finding out what is the aim and then finding an appropriate method to achieve it. With reference to course design matters, an inescapable fact of most needs analysis is the amount of vast information collected and of deciding what may or may not prove to be relevant clues towards resolution of 'hunches' which may or may not be discarded (Alasuutari, 1998). Hence, ESP researchers need to realize that the accumulation of information about their prospective learners' communicative events is a trial and error period and needs to be considered before some of it is discarded as it forms part of the continuous dialectic by which aims and methods, hunches and observations are fine tuned to suit the specific ESP teaching and learning environment.

1.7 Conclusion:

While not fundamentally different from teaching General English as a foreign language, ESP has often provided the opportunity to test out and develop innovations prior to their more general use. The use of needs analysis, task-based learning, the use of authentic materials, genre analysis, the teaching of language and content combined represent the core of an ESP course programme.

The present chapter has shown that the learner is the centre of interest in ESP. It is for that reason that ESP is a learner-centred approach. This chapter has also tried to draw a clear distinction between General English teaching and ESP teaching since the development of ESP has both encouraged and has been to a great extent helped by the parallel urge to introduce, elaborate concepts, notions, functions and communicative purposes.

In sum, the five conceptions of ESP that have been described in this chapter have had a big-lasting effect, although there have clearly been points at which they have taken new direction as they have evolved. While those conceptions have now reached a maturity which serves ESP well, there continue to be tensions arising from their application to practical materials design. Thus, the second part of the chapter is to define what an ESP course is as well as the conception of the idea of learner participation in the selection and production of course materials. The purpose of the next chapter will be to consider some of the major issues facing both ESP teachers and students in the Department of Biology at the University of Tlemcen and the methodology used for data collection to describe students' needs.

CHAPTER TWO

NEEDS ANALYSIS

(Data Collection)

2-1-Introduction
2-2-Description of the Current Teaching/Learning Situation
    2-2-1-Teaching Context
        2-2-1-1-Teaching Load
        2-2-1-2-Class Size
        2-2-1-3-Teacher
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        2-2-1-5- Teaching Materials
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2-5- Conclusion

CHAPTER TWO: NEEDS ANALYSIS (Data Collection)

2.1 Introduction:

It is has been rightly cited that student's motivation is one of the most important factors in an effective education process. Admittedly, the students' wants and lacks in studying a particular subject are crucial and should be taken into consideration in the process of syllabus design. When teachers intend to develop teaching materials and revalue themselves, it is helpful to collect data from the learners and see what their needs are. Thus, needs analysis is a useful tool to understand students' needs and to help the implementation of educational policies (Munby 1978, Richterich & Chancerel 1980, Van Els 1984)

So, the aim of this chapter is to describe how a needs analysis is conducted with the 4th year students in the Department of Biology at the University of Tlemcen. The first part will emphasize the teaching/learning situation in this department, sustaining it with some theoretical aspects for data collection which are necessary to carry out a needs analysis. The second part will describe all the research tools (questionnaire and interview of the students as well as teachers' questionnaire) used in this work.

2.2 Description of the Current Teaching/Learning Situation:

There is certainly no field where the supremacy of English is more obvious than in the area of science and technology. The most viable pattern for effective English language teaching lies in the overall implementation of specialized programmes for scientific students at tertiary level. To exemplify this situation, much emphasis will be put on describing and reviewing the situation of ESP courses (teaching and learning) in the Institute of Biology, the case of the 4th year students which reflects (the researcher's) personal experience in this field.

2.2.1 Teaching Context:

Teaching is a creative activity designed to foster students' learning, their ability and desire to undertake scholarly work, and their personal development and creativity. Teaching draws upon the professional and disciplinary expertise of staff and is continually revitalised by research, scholarship, consultancy or professional practice. It also includes the design, implementation and evaluation of curriculum materials for all modes of delivery. Therefore, some different major aspects of teaching are taken into consideration to describe totally the English language teaching delivered to biology students:

2.2.1.1 Teaching Load:

One important feature in the teaching context is that of time. The teacher needs to use this time efficiently. Thus the question of time needs to be seriously taken into consideration, since, the timing that is set for the English module, in this department is not sufficient to obtain the appropriate objectives. At the University

level, the time devoted to the English course differs from one department to another. For instance, in the Faculty of Sciences, Department of Biology, the English module is introduced officially within the curriculum during the three years of study where only one and half to two hours per week are devoted to this module. The following tables illustrate the timing allocated to the teaching of English. The first one is to show the English programme in different departments; the second one is dedicated to the Department of Biology.

Departments	Time allotted to the teaching of English/ per week			
	1st year	2nd year	3rd year	4th year
Biology	1h30	----------	1h30	1h30
Physics	------	--------	------------	1h30
Economics	2h	2h	2h	2h
Chemistry	---------	---------	------------	1h30
Mathematics	----------	--------	----------	1h30

Table 2.1: Time allocated to the teaching of English in different departments of Tlemcen University

Department of Biology	Time allocated to the teaching of English				
Long cycle	1st year	2nd year	3rd year	4th year	6th year
	1h30	-----------	1h30	1h30	---------
Short cycle	1h30	--------	------------	------------	---------
LMD	Licence			Master	Doctorate
	1h30	1h30	1h30	2h00	

Table 2.2: Time allocated to the teaching of English in the department of biology

2.2.1.2 Class Size:

A much more commonly discussed variable than time is the constraint of teacher- student ratios that it is much more difficult for teachers to bear while dealing with language classes. This happens in the department of biology where teachers of English are confronted to more than 150 students in the first year and around 80 to 100 in the fourth year. This is due to the great number of specialities where the module of English is taught altogether at the same time.

2.2.1.3 The Teacher:

There are many higher educational institutions that train EFL teachers in Algeria, and which award degrees in EFL teaching and translation following four years of study. EFL curricula; however, do not cover the methodology of ESP teaching at the tertiary level. Thus, a typical ESP teacher is a General English teacher who is employed to teach an ESP course. The majority of teachers are not ESP specialists; most of them have been trained in the department of foreign languages. They are part-time teachers and paid hourly.

2.2.1.4 Course Objectives:

The different objectives are set by the administration on the basis of a ministerial decree[10]. At the end of the year, biology students are supposed to be able to read and translate scientific articles in English as a first step. They also emphasise the way to prepare 'International communications'[11] in their field of research as a second step. In the last step, they should also be able to attend and participate in different national and international conferences. Fourth year students who are about to finish their studies, are obliged to prepare a "mémoire" to obtain their "Licence degree". But to fulfil this research, they should rely on different up- to- date articles mainly written in English either published in scientific magazines or retrieved from the Internet.

2.2.1.5 Teaching Materials:

Concerning the teaching materials, which are the aim of the present work, there is no specific syllabus in the Department of Biology; the teaching materials

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selected by the teachers are either courses from General English textbooks or some scientific articles chosen from the scratch and scientific textbooks available in French within the library shelves. Teachers also prepare numerous additional materials such as exercises containing specific language problems that have arisen with particular groups of students.

2.2.2 Learning Context:

In the same way that words are given meaning by the text surrounding them, the context in which students learn is important in providing meaning and deepening understanding of the concept, procedure, information or skill that they are required to learn. Providing an environment which facilitates enriches and helps students to bridge the gap between the seemingly classroom- isolated learning and its practical application outside the formal educational environment, poses a challenge for most teachers. An important part of this challenge is coming to grip with the complexity of the learning context of the students. All what concerns the learners are also of major importance to describe in order to understand the different aspects in relation with the students under study.

2.2.2.1 Learners Level:

Most students have a similar linguistic background since they have learnt English in the middle and the secondary schools in the scientific stream. In this field, pupils consider English as facultative (or additional) not as a necessary subject matter so, most of them are not aware about the importance of the English language in the scientific field. As a result, students have on the whole low intermediate level in English; most of them can read and understand basic English. There are some

exceptions where some students' level goes beyond the mentioned level. At the secondary level, most teachers give importance to the skills that are necessary for the "*Baccalaureate*" exam. Thus, the students' previous knowledge of English has mainly been that of grammatical rules; plus the fact that they always make reference to Arabic or French to express themselves

2.2.2.2 Content of the Course:

At the beginning of the year, some revision exercises are given, to evaluate their previous knowledge in English (1st and 3rd years of studies) in order to set objectives for the different levels. Thus, the sessions are divided in several units. As a first step, the unit consists of different biological texts in particular and scientific ones in general, followed by different exercises of reading comprehension to explain the difficult words and the technical ones. As a second step, the lecture will emphasize on three specific goals: the first one on the reading skill, pronunciation, spelling and translation. The texts are dictated, and then the correction of spelling is done altogether by using the dictionary. At a final step of the unit, the corrected texts are translated into the French language (by using Arabic too when necessary).

Though the above steps foster the advance of students, the objectives are not always achieved because of the lack of time.

2.2.2.3 Learners Testing:

"Testing is part of evaluation, though it is often equated with it of it" (Robinson 1991:65). The aim of such process is to evaluate the students' level as well as their different lacks in the English module. It is also an important step, to

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demonstrate the learners' performance and see whether the course has been effective or not.

In the Department of Biology, the English module is officially included in the programme. Two or three examinations plus a tutorial mark are given at the end of each semester to assess the students who are supposed to have acquired some basic rules in English, the proper terminology in Biology as well as the ability to read and use general and specialized materials.

The content of the exam includes a complete scientific text or with blanks to asses their level in English. Some questions about the text, and scientific terms are also included. An important part of the exam is also devoted to translation. The content of the tutorial is also considered as important step to evaluate the learners' competence in reading and writing skills. It consists of reading an article in their field of research and to translate it from English in French.

2.3 The Importance of Needs Analysis:

So how does one go about designing and setting up English- for- Specific Purposes programme? As has been suggested by many researchers in this area, it would be wiser to follow the steps that appear in Diagram 2.1, keeping in mind that the process is a cyclical one where periodic feedback from all parties involved (coordinators, teachers, students, administrators, etc.) will continually influence course design, materials, evaluation techniques and ultimately scoring.

NEEDS ANALYSIS

↓

SYLLABUS AND COURSE DESIGN

↓

METHODOLOGY AND MATERIALS

↓

ASSESSMENT, EVALUATION AND FEEDBACK

Diagram 2.1: Recommended steps for setting up and implementing an ESP programme (adapted from Jordan 1997:57)

At the very top of the diagram, one notices that *needs analysis* is a crucial starting point for designing a programme of this type and as indicated in the stick drawing in diagram 2.2 (borrowed from Jordan 1997:40); a needs analysis can be a complex operation indeed, which may involve the collection of data about students (concerning their language proficiency, expectations, and other factors), the subject being studied, the language teachers' qualifications and learning facilities.
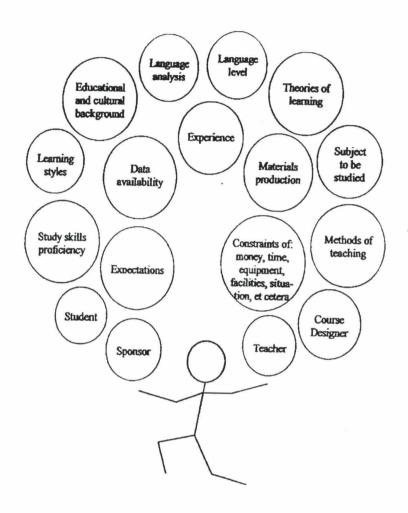
Figure 2.1: The needs Analysis Juggler (Jordan 1997: 40)

In general terms a needs analysis is a systematic exploration of the way things are and the way they should be (Stout, 1995). However, so far as language is concerned, *needs analysis* is the process of identifying the students' reasons for studying a language. It refers to procedure for identifying general and specific language needs of students so that appropriate goals, objectives, and content in course can be developed (Hutchinson and Waters, 1987). Richterich (1984) claims that the purpose of a needs analysis is to provide the means by which to obtain a wider range of input into the content, design and implementation of a language

programme by incorporating people such as learners, teachers, administrators and employees in the planning process. Therefore, a needs analysis helps to identify general or specific language needs which can be addressed in developing goals, objectives, and content for an existing programme. It is frequently used to provide data which can serve as the basis for reviewing and evaluating a programme.

Richards (1990), maintains that needs analysis may simply focus on a specific language needs, such as the special kind of reading comprehension training that students need in order to study engineering, biology, or veterinary medicine. Such an analysis concentrates on what the learners' current levels of proficiency are and on what the learners will have to use the language for in their career. The main goal of this kind of specific needs analysis is to find the language skills and the language proficiency that learners will need on graduating and, therefore, to seek the ways and means to adequately equip learners with the needed skills. It is this kind of needs analysis that chiefly concerns ESP courses (Richards, 1990)

On the other hand, Robert and Mitchel (2002) state that in human resource development they mostly decide very fast. For them, it sometimes implements a solution, but not always the correct intervention. But they think very carefully about making a decision on process changes and in capital and operating expenditures. So, they need to do the same thing for human resource development. In short, conducting a needs analysis and preparing the English language courses according to the needs of the students, obviously, show that researchers are making wise investments in language teaching.

2.4 Deficiency Analysis:

Deficiency analysis is one of different sorts of needs analysis (see 1.6). Deficiency analysis is a definition of a particular need of the students. So, we analyse the learner's needs by distinguishing target needs. This analysis is what the learner has to do in the target situation and it tackles three aspects of the learners: necessities, lacks and wants.

2.4.1 Aim of Deficiency Analysis:
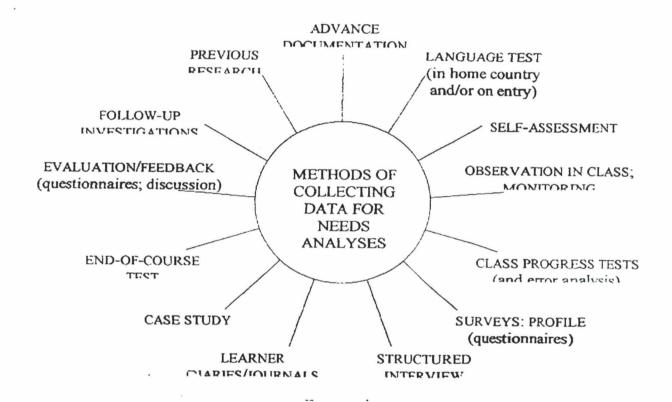
The aim of the deficiency analysis carried out at the middle of the year 2007-2008 is to provide answers to the following questions:

1) What are the students' language weaknesses?

2) What are the skills that biology students have to develop in order to operate effectively in the target situation?

3) Do the present materials and time ensure the practicing of these skills?

4) Is the students' perception of needs similar to that of the teachers?

The present research has also an instrumental purpose that is to identify learners' needs in order to develop appropriate teaching materials and teaching methods that match the professional needs with the language learning needs.

2.4.2 Methods of Collecting Data:

Needs analysis does, inevitably, involve data collection. Methods of collecting data for these various types of analyses are numerous indeed, and some are indicated in this diagram:

ADVANCE
DOCUMENTATION

PREVIOUS
RESEARCH

LANGUAGE TEST
(in home country
and/or on entry)

FOLLOW-UP
INVESTIGATIONS

SELF-ASSESSMENT

EVALUATION/FEEDBACK
(questionnaires; discussion)

METHODS OF
COLLECTING
DATA FOR
NEEDS
ANALYSES

OBSERVATION IN CLASS;
MONITORING

END-OF-COURSE
TEST

CLASS PROGRESS TESTS
(and error analysis)

CASE STUDY

SURVEYS: PROFILE
(questionnaires)

LEARNER
DIARIES/JOURNALS

STRUCTURED
INTERVIEW

Diagram2.2: **Methods of collecting data for needs analysis (Jordan 1997:39)**

In order to obtain answers to the above questions, the researcher has carried out a deficiency analysis. Such an analysis is listed among the most common and useful approaches for analysing needs by many ESP experts (e.g. Jordan,1997:39; see diagram2.2). It highlights three main points: the necessities and wants of the

learners as well as their lacks in the four skills. It also enables a teacher to determine the target skills. The results will allow teachers to design an effective ESP course.

Among the methods described in the diagram 2.2, advance documentation, previous research were chosen to fulfil the theoretical aspect of the research, whereas , language test, semi-structured interview and surveys profile (questionnaire) were chosen to carry out the practical aspect of it . This action research is based on three research tools: a questionnaire and a -structured interview for the students (see appendix I and II) and a questionnaire for the teachers.

The current research is planned to study the needs of learners learning English as a foreign language. Students of biology at the university of Tlemcen will be given a questionnaire and a short interview by the researcher in order to understand their linguistic needs, objectives, resources available and some of the psychological factors which may affect their learning.

2.4.3 The Respondents:

The sample population of study in this research is fourth year students in the Department of Cellular and Molecular Biology (BMC), Faculty of Sciences. The learners are of both sexes, aged between twenty and twenty five years old. The sample is also divided into three fields; microbiology, animal physiology and C.Q.A (Controle Qualité et Analyse/ Quality Control and Analysis).

2.4.4 Pilot Study:

A pilot study has been done by choosing five graduate students in the Department to complete a questionnaire and have an interview (a structured interview) with the researcher. The aim of the pilot study is to try out the questionnaire, to find out whether it is in appropriate length, whether the questions are understandable, whether the wordings are appropriate. During the interview, data are also collected for formulating questions in the main study. After the pilot study, a final questionnaire has been designed (Appendix I) and administered to the students.

2.4.5 Students' Questionnaire:

One hundred and nine copies of the questionnaire were sent out in class, in order to avoid disturbance of normal lesson. Students were asked to fill the questionnaire at home and bring it back the next day. The total number of students is 109, eventually eighty four (84) questionnaires were returned with a response of 77.06%. As students of biology use the French language as a medium of instruction and with the fact that they also have a poor level in English, the questions were written in French to help the respondents answer and understand the questions more easily.

2.4.5.1 Description of the Questionnaire

This questionnaire consists of both close and open questions. Open questions are those that permit to the students to answer the questions with more freedom and to express their opinions, whereas, the close questions are those for which

people have the choice between a number of possibilities and yes/no questions. The items on which it is decided to concentrate are:

1) Information about the learners.

2) Language being learnt and used

3) Factors which may affect their learning attitude and motivation, study habits and weaknesses in English

4) Duration and status of the English courses

5) Evaluation of the English course and the teaching methods

6) Needs, necessities and wants in studying English

7) Proposals to improve the English course

At the end of the questionnaire the respondents were asked whether they would like to take part in a short interview by putting their name down.

Item 1: From question one to five. It seeks general information about the students' sex, age, speciality and year of study in order to obtain information about themselves.

Item 2: From question six to eight which respectively ask for the medium of instruction, the language with which the students are familiar and the

amount of years during which the students have been studying English.

Item 3: From question nine to eleven. These questions lead the students to give their opinion about English, their difficulties and weaknesses in learning English and the areas in which they encounter more problems.

Item 4: From question twelve to fifteen. It seeks information about their level in English the ease with which the students read English, the frequency of their reading as well as the content of their reading.

Item 5: From question sixteen to twenty four. It includes information about the importance of the English course in that department and its duration. It describes their attitudes and motivation towards the English course, it also evaluates the teaching methods and to state if these methods match their needs.

Item 6: From question twenty five to twenty eight. It tries to find out the general as

well as the specific needs of the students for English. Thus it aims at

collecting information concerning their needs to use the English language

in their field of study. The students are also asked to identify what

language skill they think most important, they have been asked to rank

the skills, such as reading, writing, speaking, listening in terms of

importance and whether they find the English course relevant to their

actual needs and wants or not.

Item 7: From question twenty nine to thirty five. It leads the students to choose

and give their opinions about the possibilities available to improve the

English course. It includes the level and the type of teacher they would like to

have. It also encourages the students to discuss the organisation of the

English course and to offer an alternative for improvement.

2.4.6 The ~ · Structured Interview:

One of the most commonly used methods for obtaining qualitative information is the interview. There are different types of interviews, which depend on the sort of information that we are trying to obtain. Thus, the second phase of the research is to conduct a semi-structured interview. It focuses on the list of key themes or questions (see Appendix III) that the interviewer wants the respondent to address. The semi-structured interview does allow for the respondent to add new information but they should attempt to keep to the key themes. The interview adds depth and richness to the information obtained previously.

About 109 students (which are the total population of the 4th year) were given the questionnaire and about 25 were selected for a short interview. Subjects for the interview are selected randomly from those who showed a positive response towards having an interview. This latter, lasted for about half an hour and notes were taken for each response. A sample questionnaire and interview is attached in Appendix I and III. Follow-up interview

2.4.6.1 Description of the .-Structured Interview:

Nine questions in the interview are about the reasons for learning English attitudes and motivation towards English and students' learning habits. It also tackles the main needs and weaknesses of the learners in the English module and what they want to do to improve their learning situation. (Appendix III).

2.4.7 The Teachers' Questionnaire:

The questionnaire was administered to ten ESP teachers (see table 3.29). All the teachers are from the Department of Biology except one who teaches the module of English in the Department of Sociology. The aim of this questionnaire is to identify the gaps between the teachers' views of their students' language needs and the students' views of their own needs. (Appendix IV)

2.4.7.1 Description of the Questionnaire:

The questionnaire contains closed and open questions. It includes 18 questions which are organised as follows:

Item 1: From question one to five. It seeks to identify teachers' professional

background. They deal with information about teachers' qualification, their

field of study and whether they have had any training in ESP. They are also

asked to give their views about ESP teaching (represented by options b) in

Contrast with their experience with EGP teacher (represented by option c).

Item 2: From question six to seven. It gathers information about the teachers

opinions about the time allocated to the English module (in ESP course).

Item 3: From question eight to nine. It investigates the teachers' views concerning

their students' motivation. They are first asked implicitly about the students'

motivation derived from teachers' reports about students' attendance,

whether it is regular, average or irregular. Then, teachers are asked overtly

about such a motivation

Item 4: From question ten to thirteen. It investigates the methods and the teaching

materials used by the teachers and the selection criteria. One question is

designed to seek whether any syllabus or programme is provided by the

administration or not.

Item 5: From question fourteen to sixteen. It aims at determining the lacks and the

needs of the students according to their own experience.

Item 6: From question seventeen to nineteen. One aims at collecting teachers' view

about their experience as an ESP teacher. At the end the teachers are invited

to make suggestions conducive to an ostensible improvement of the ESP teaching situation.

2.5 Conclusion:

ESP course design and implementation requires very special attention and flexibility because of various factors. ESP is goal-directed. One is likely to have students enrolled in ESP courses who like to use English for work purposes or for their academic studies, to use Gardner's term (1985) *'instrumental motivation'* ,not because they are particularly interested in the language, per se, to use Gardner's term once again *'integrative motivation'*. ESP courses must be based on a needs analysis, which differs each time depending on the set of circumstances. Furthermore, one may have a group of students from a variety of disciplines; this fact requires special planning in terms of the syllabus, in-class activities and homework assignments.

Hence, ESP researchers need to realize that with the analysis of teaching and learning context and conducting a needs analysis, it is considered as a vast amount of information collected for implementing appropriate ESP courses to suit learners' needs and it can also be considered as fine tuned to suit the specific ESP teaching and learning environment.

CHAPTER THREE

Needs Analysis: ANALYSIS and INTERPRETATION

CHAPTER THREE: Needs Analysis
ANALYSIS and INTERPRETATION

3.1 Introduction

When teachers intend to develop teaching materials, it is helpful to understand learners' needs and get data from the learners. It is necessary to know what learners' objectives are, what they are expecting from the course, and the characteristics of their learning habits. Based on this conception, learners' needs need to be analyzed and based on consideration of these needs, learning objectives can be selected and precisely defined, so that administrators of the university and teachers can use the results as a basis to construct a specific syllabus in order to suit the learners the best.

In this chapter, the result analysis of the different tools used in this research are first analysed quantitatively and then qualitatively. At the end of the chapter a brief comparison is described between the results obtained form students and teachers' questionnaires in order to show the correlation between them.

3.2 Students' Questionnaire Results:
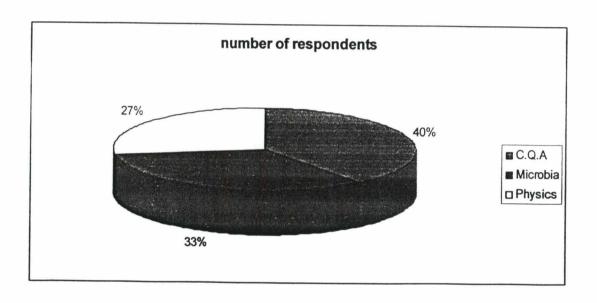
As is typical of the results section of any research report, this section of needs analysis will serve as a technical presentation and explanation of the statistical results. The quantitative results include descriptive statistics including means, minimum values, maximum values, and percentages. All the results are first

presented in a form of tables then within graphs. These results will be discussed in more depth and interpreted in the Discussion section (see 2.2.3).

Item 1: From question one to five

Number of students		Number of respondents	
C.Q.A	46	C.Q.A	33
Microbio	36	Microbio	28
Physics	27	Physics	23
Total	109	Total	84

<u>Table 3.1</u>: Number of respondents

number of respondents

27%

40%

33%
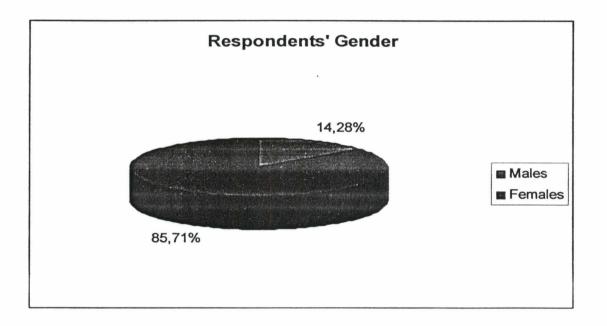
- C.Q.A
- Microbia
- Physics

<u>Pie chart 3.1</u> : Number of respondents

Respondents' gender	Males	Females
84	12	72

Table 3.2 : Respondents' gender

Respondents' Gender

14,28%

85,71%

■ Males
■ Females

Pie chart 3.2: Respondents' gender
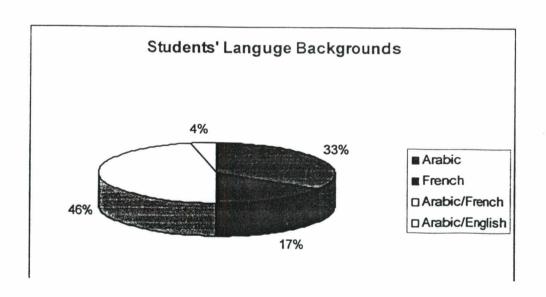
The respondents are fourth year students in the Department of Biology; they are between twenty and twenty -five years old. The total number of the students in the three fields are 109 (Table 3.2) but only 84 students have answered the questionnaire (77, 06 %). Most of the respondents are female (85, 71%) and only (14, 28%) are male.

Item 2: From question six to eight

Language they usually practice			
Arabic	French	Arabic/French	Arabic/English
28	14	39	3

Table 3.3: Students Language Backgrounds
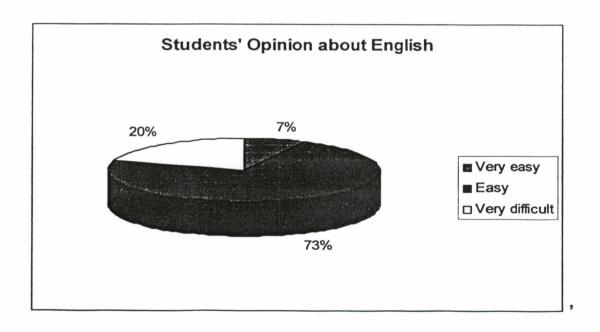
Pie Chart 3.3: Students' Language Backgrounds

In the Department of Biology, the language that is used as medium of instruction by all the students is French. Concerning the language they usually use, a mixture of Arabic and French in the first position with (46%), Arabic in second position with (33%), then French with (17%) and at the last position a mixture between Arabic/English with (4%). The number of years of their English studies varies between six to ten years.

Item 3: From question nine to eleven

What do you think about English language?		
Very easy	Easy	Very difficult
6	61	17

Table 3.4: Students' opinion about the English language

Students' Opinion about English

20%   7%

73%

Very easy
Easy
Very difficult
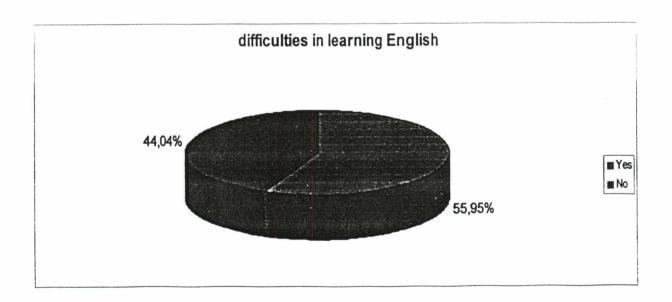
Pie Chart 3.4:Students' Opinion about English

It concerns the level of difficulty for the learners to study the English language. The majority of the students (73%) think that English is an easy language and few of them (20%) answer that English is a difficult language. Only (7%) think that it is a very easy language.

Do you have any difficulties in learning English?	
Yes	No
47	37
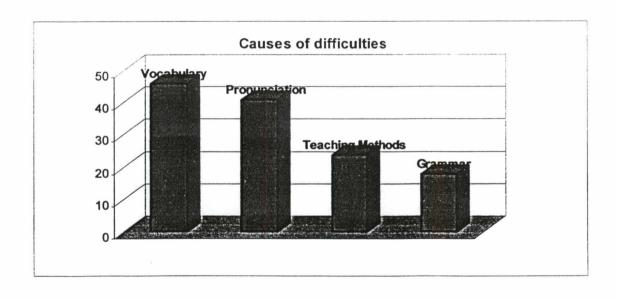
Table 3.5: Difficulties in learning English

Pie chart 3.5: Difficulties in learning English

Are your difficulties due to			
Vocabulary	Grammar	Pronunciation	Teaching Method
46	18	41	24

Table 3.6: Causes of difficulties in learning English
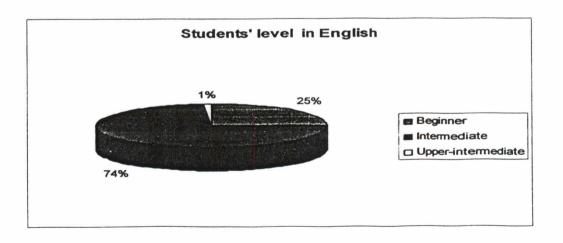
Bar Graph3.1: Causes of difficulties in learning English

Approximately, more than half of the respondents (55,95%) have difficulties in learning English while (44,04%) answered that they do not find any difficulties in learning English, these results are contradictory with the fact that they consider English as an easy language(see Pie Chart 3.4), so it elicits that students' difficulties are due to other factors rather on the language itself. The areas of difficulties are clearly set in the multiple-choice question eleven, in other words, their lacks in studying English (Pie chart 3.6). It seems that the students find difficulties in all the areas but more emphasis is put on vocabulary and pronunciation with (42%) and (36%), respectively. At the second level, method of teaching and grammar with (14%) and (8%), respectively.
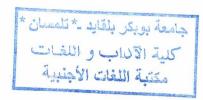
Item 4: From question twelve to fifteen

What is your level in English?		
Beginner	Intermediate	Upper-intermediate
20	63	1

Table 3.7: Students' level in English
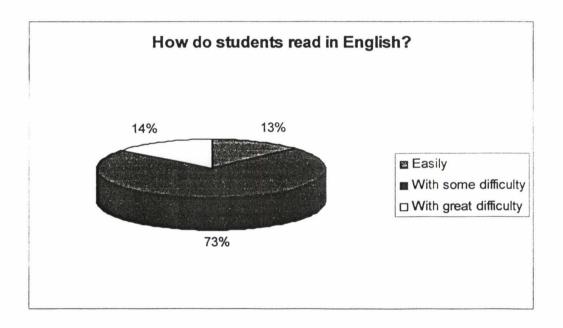
Pie chart 3.6: Students' level in English

How do you read in English?		
Easily	With some difficulty	With great difficulty
11	61	12
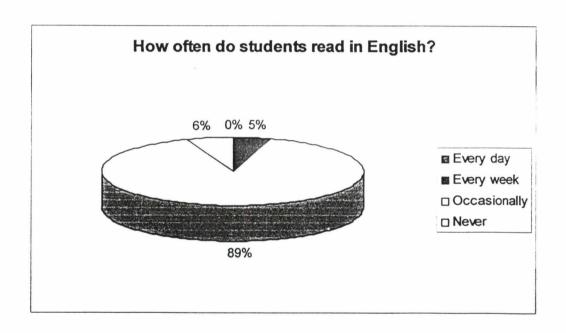
Table 3.8: How students read in English

Pie chart 3.7: How students read in English

How often do you read in English?			
Every day	Every week	Occasionally	Never
0	4	75	5
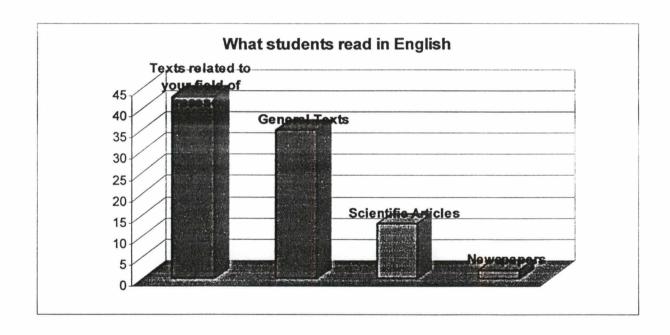
Table 3.9: Frequency in English reading

How often do students read in English?

6% 0% 5%

- ▣ Every day
- ▣ Every week
- ☐ Occasionally
- ☐ Never

89%

Pie chart 3.8: Frequency in English reading

What do you read in English?			
General texts	Texts related to my studies	Newspapers	Scientific articles
3 5	43	2	13

Table3.10: What students read in English

Bar Graph3.2: What students read in English

This part of research that includes item 3 and item 4, shows the students' self assessment (Pie chart3.7) which clarify that the great majority of the learners (74%) think that they have an intermediate level in English and (25%) consider themselves as beginners in spite of their years of study in English (6 to 10 years) and only (1%) think that they have a high level in English. Concerning questions thirteen and fourteen, most of the students (89%) read English occasionally and (73%) with some
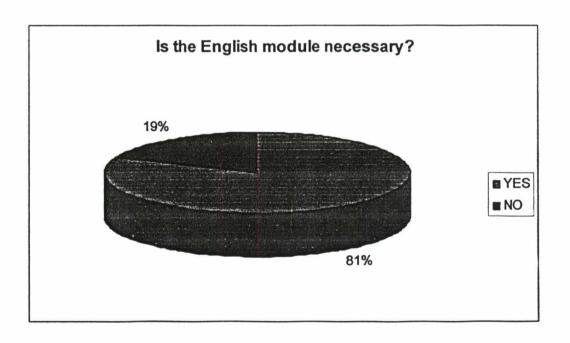
difficulties. The answer to the multiple-choice question fifteen, it seems that students' preferences is divided between texts related to their fields of research and general texts with (46%) and (38%),respectively.

Item 6: From question sixteen to twenty four

Part one

Do you find the English module necessary?	
Yes	No
69	15
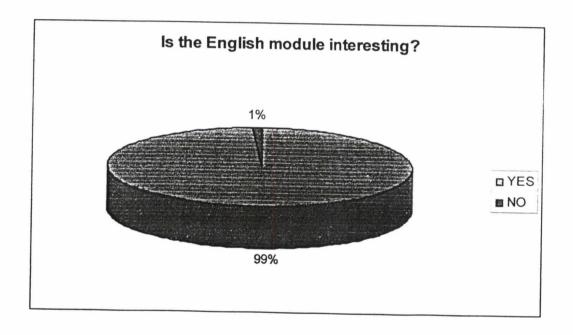
Table3.11: The importance of the English module

Is the English module necessary?

19%

81%

■ YES
■ NO

Pie chart 3.9: The importance of the English module

Is the English course interesting?	
Yes	No
83	1
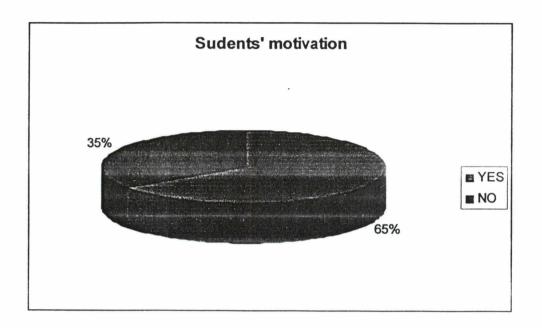
Table3.12: The interest of the English module

Pie chart 3.10: The interest of the English module

Are you motivated to learn English?	
Yes	No
55	29
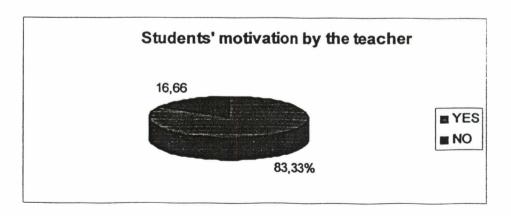
Table3.13: The motivation of the learners

Sudents' motivation

35%

65%

■ YES
■ NO

Pie chart 3.11 : Students' motivation

If no, does the teacher motivate you?	
Yes	No
70	14
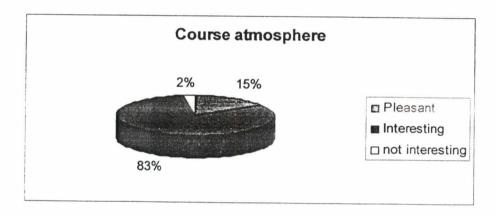
Table3.14: Students' motivation by the teacher

Students' motivation by the teacher

16,66

83,33%

■ YES
■ NO

Pie chart 3.12: Students' motivation by the teacher

How do you find the course atmosphere?		
Pleasant	Interesting	Not interesting
13	69	2

Table3.15: Course atmosphere

Course atmosphere

2%   15%

83%

☑ Pleasant
■ Interesting
☐ not interesting
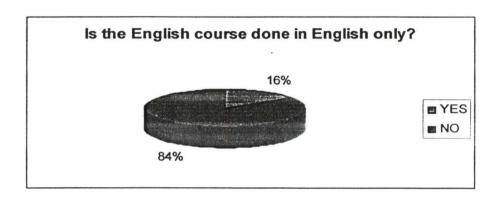
Pie chart 3.13 : Course atmosphere

For the question "is the English module necessary?" In other words, is it an important module in their curriculum? The great majority (81%) think that the English module is very important in their field of research and most of students agree with the fact that English is very interesting (99%).This leads us to the conclusion that students are really motivated (65%).

Part two:

Is the English course done in English only?	
Yes	No
14	70
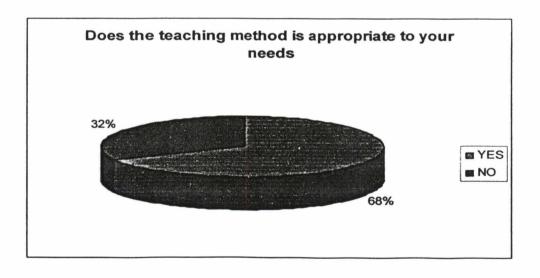
Table3.16: The language use within the course

Pie chart 3.14: The language use within the course

Is the teaching method appropriate to your needs?	
Yes	No
64	30
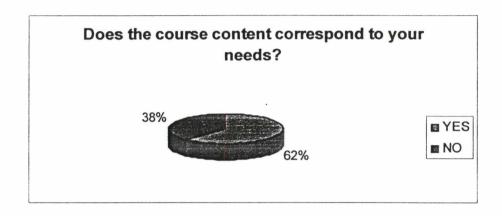
Table 3.17: Does the method correspond to your needs

Pie chart 3.15: Is the teaching method appropriate to your needs

Does the content of the course correspond to your needs?	
Yes	**No**
53	31

Table3.18: Does the content correspond to your needs

Does the course content correspond to your needs?

38%

62%

YES
NO
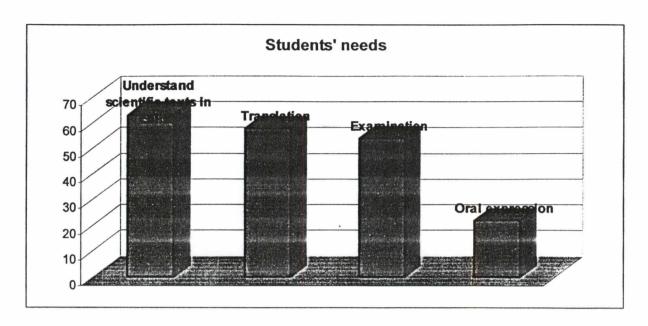
Pie chart 3.16: Does the content of the course correspond to your needs

When asked in question twenty-three and twenty-four, whether the teaching methods and the content of the course help them to acquire the necessary level to meet their needs, fifty three students answered positively to the question (62%) and only thirty two (38%) answered negatively with the fact that the English course is not totally delivered in English.

Item 7: From question twenty five to twenty eight

Students' needs			
Understand scientific texts in English	**Oral expression**	**Translation**	**Examination**
63	22	58	54
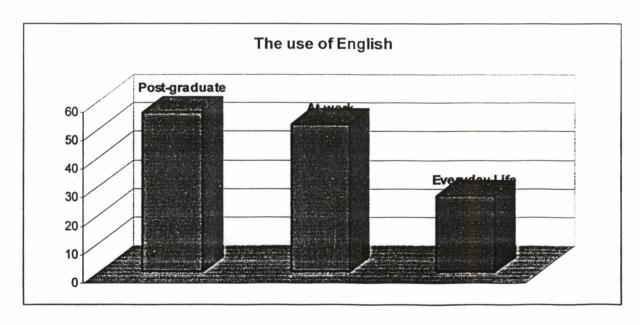
Table 3.19: Students' needs

Students' needs

Understand scientific texts in

Translation

Examination

Oral expression

Bar graph 3.3 : Students' needs

The use of English		
Postgraduate studies	Everyday life	At work
56	27	52

Table3.20: The use of English

The use of English

Post-graduate

At work

Everyday Life
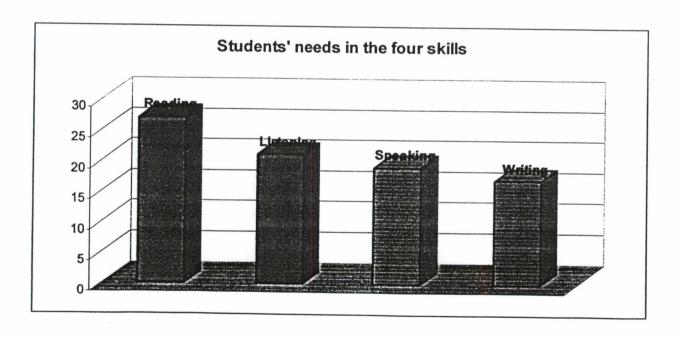
Bar graph 3.4: The use of English

The results to multiple-choice questions twenty-five and twenty-six clearly demonstrate that the students need English for a short term goal since the students of Biology study English to understand scientific texts for their theses or research papers (39,28%) and also for translation and examination marks with (26,16%) and (25%), respectively. The table 3.20 demonstrates that students also need English for long term goal since they are fully aware about the importance of the English language for their post-graduate studies (45, 85%) or for their future career (30,09%).

What are your needs in the four skills?			
Listening	Reading	Speaking	Writing
21	27	19	17
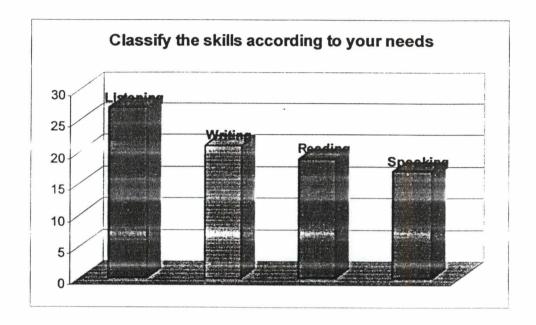
Table 3.21: Students' needs in the four skills

Bar graph3.5: Students' needs in the four skills

Classify the skills according to your needs			
Listening	Reading	Speaking	Writing
30	16	16	22

Table 3.22: Students' needs in the four skills
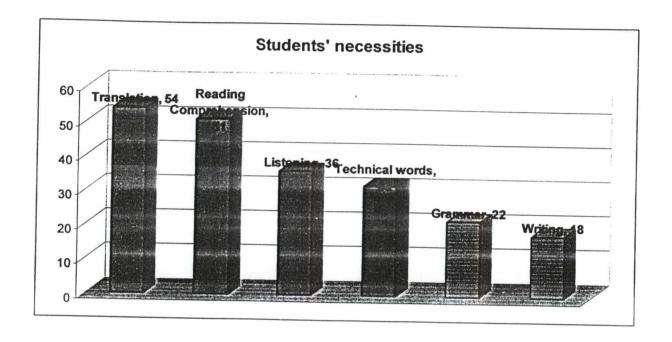
Bar graph 3.6: Students' classification of the four skills

Concerning question twenty seven which emphasizes on the students' needs in the four skills, the respondents consider reading and listening skills as the most necessary ones to include in their courses with (32,14%) and (25%), respectively. And, when they were asked to classify the skills according to their needs, they have put the listening skill in the first position, writing skill in the second one, then reading and speaking in the last position.

What are your necessities?					
Reading comprehension	Technical words	Grammar	Writing	Listening	Translation
51	32	22	18	36	54
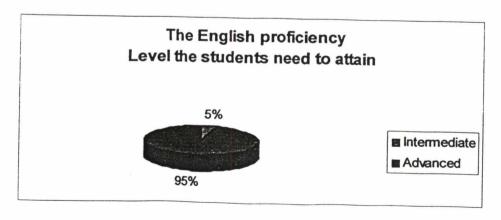
Table 3.23 : Students' necessities

Bar graph 3.7 : Students' necessities

What level do you hope to attain in English at the end of the course?	
Intermediate	Advanced
4	80

Table 3.24: The English level they hope to achieve
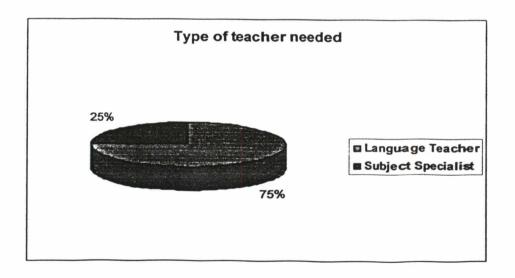
Pie chart 3.17: The English level they hope to achieve

Question twenty-eight which is a detailed one, aims at having the students' opinion about the specific aspect of English which is necessary to include within the course. The results of this question reveal that they need to include all the aspects of the language with much emphasis on translation and reading comprehension. Students' necessities go also to the oral aspect of the language as well as the understanding of the technical terms. Grammar and writing are also other aspects of the English language that the learners want to develop. Thus, the answer to the question twenty-nine supports the last idea since it denotes that students show great expectancy of the English course because the majority (95%) hope to reach the advanced level at the end of the course.

Item 8: From question thirty to thirty five

What type of teacher do you need ?	
Language teacher	Subject specialist
64	20
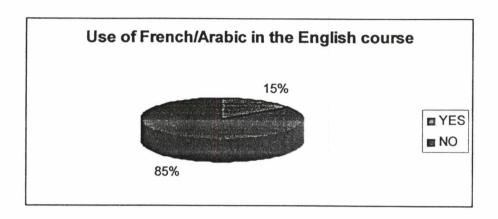
Table 3.25: Type of teacher student needs

Type of teacher needed

25%

□ Language Teacher
■ Subject Specialist

75%

Pie chart3.18: Type of teacher student needs

Are you against the use of Arabic or French in the English course?	
Yes	No
13	71
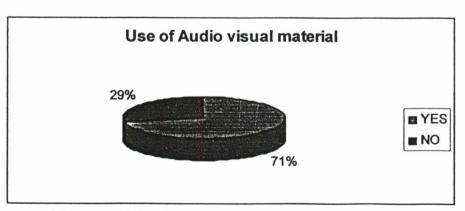
Table 3.26: The use of Arabic and French in the English course

Use of French/Arabic in the English course

15%

85%

- YES
- NO

Pie chart 3.19: The use of Arabic and French in the English course

The use of Audio visual material	
Yes	No
60	24
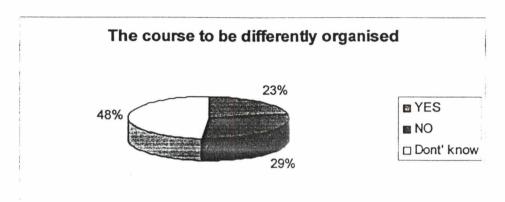
Table 3.27: The use of Audio visual material

Use of Audio visual material

29%

71%

- YES
- NO

Pie chart 3.20: The use of Audio visual material

Do you want to organize the course differently?		
Yes	**No**	**Dont' know**
19	23	39

Table 3.28: The course to be differently organised

Pie chart 3.21: The course to be differently organised

This last item includes question thirty, it reveals that students need to have a language teacher (75%), rather than a subject specialist (25%). For the question thirty one, the students prefer to use both Arabic and French during the course with (85%) due to their difficulties in learning English (see Pie chart 3.5). The majority answered that they were in favour of using audio-visual aids in question thirty two with (71%). Concerning the question, if the course should be organized differently, the answer shows that students are unable to give a definite opinion, since (48%) of them do not know if the course needs a change or not and for the rest of the students, they are divided between yes/no answer with (23%) and (29%), respectively.

3.3 Students' Interview Results:

A total of 25 students were selected for the interview. Only 20 students were present to answer to the following questions:

Q1. What do you think about the English module?

As far as students' attitude towards the English module is concerned, most of them (10) consider it as very important in their curriculum since they are aware about the role of English in their studies. Five of them have said that it is easy to score good marks without even attending classes, and the last five students are not able to follow the course properly because they have a very low level of proficiency in English(see table3.7). Due to these factors, many students do not attend English classes regularly.

Q2. What is the main purpose of learning English?

Ten students have reported that they learn English for their post-graduate studies and final exams. Five of them are interested in the English module because it provides much more chance in finding a job. Five have said that they want to speak English in order to be able to communicate with other students via the internet, for example.

Q3. Do you think that the module of English can help you achieve this purpose? Why and why not?

The majority of the respondents have given an affirmative answer, but they have mentioned that they have two main obstacles that hinder their learning process.

The first one is time, because one hour and half per week is not sufficient to reach the necessary level. The second one is to have the adequate teaching materials and they have given the example of including audio-visual materials for the oral expression activities.

Q4. Do you think that English is necessary in your field of study and why?

Eighteen students have given a positive answer and they give the following reasons: The importance of the English language in scientific stream since every up-date research is published in English. They also consider English as key for scientific development. For the others, they were completely demotivated and this was due to their poor level of English and they prefer to stick to Arabic or French.

Q5. What are the major situations that you use English in your field of study?

The great majority (16) focus on the importance of understanding scientific articles and to be able to translate them effectively for further research and to pass their exams at the end of the semester. For the others, The English courses are just an obligatory module introduced by the administration.

Q6. What are your lacks in learning English?

All the students have answered that all of them find some difficulties in learning English at different levels (i.e the four skills) and they have explained that this is due to their previous learning backgrounds; at the secondary school, all students were in a scientific stream class, and thus, they considered English as non important. They have also mentioned that they don't have the opportunity to practise English outside the course, and they still rely on French and Arabic in their writing. They have also noted that reading comprehension is the simplest skill but with one exception, the lack of vocabulary.

Q7. What, according to you, are the most necessary skills in English?

Students' answers are divided in two; the first part gives priority to listening and reading to attend international conferences and to be able to read scientific articles. However, the second part considers speaking and writing as the most necessary skills in order to speak fluently and to write correctly in English for communicating via the internet

Q8. What do you think the teacher's role is in your learning?

A Teacher should be a facilitator, a friend with whom students can communicate, and a helper who can take into consideration their levels as well as their needs. Respondents also think that teachers should be able to explain the points clearly, and should be flexible in a way that can arouse students' interests.

Q9. According to you, what are your main needs?

Reading scientific articles, understanding technical words and translation are the most necessary aspects the students of Biology need to develop. Listening and speaking are also two skills which the students want to improve.

Q10. What are your suggestions to improve the module of English?

The students have proposed to give more consideration to the English module because of the role it plays in scientific fields. They also emphasize on the fact that they need more time to achieve the desired objectives. Students also wish to have audio-visual materials included in their English courses.

3.3.1 Discussion and Implications:

The results analysis of the needs analysis has helped to define fourth-year students' lacks and wants for studying English at the department of biology, their satisfaction and dissatisfaction areas in the educational process and their suggestions for the improvement of the process which could be of great help in a syllabus design. Therefore, the results of students' questionnaire and interview have helped us to reach to the following insights:

The results have demonstrated participants' high motivation to study English, their desire to have a longer English language course at the university, awareness of the importance of the English language for their future career. Although with various reasons behind, an unsatisfactory previous learning experience and a total neglect of English in scientific streams, some of them find the learning of English language difficult and require a long time to grasp it which demotivates them somehow.

The results have also shown a new tendency in the participants' desires. Although they want to study General English, which is usually regarded as the most favoured by the students, the awareness of the importance of ESP and the need to study it are also unquestionable. Hence, the participants see English as a tool of interpersonal communication as well as of academic and professional purposes. In other words, students expect the English course to cover all their needs.

The distribution of the answers for the multiple-choice questions about what the participants would like to learn during the English language course was relatively clear. As is seen in the bar graphs 3.3 and 3.4, the participants have mentioned the following skills as their immediate language needs:

- Reading texts related to their field of research (reading skill)

- Defining technical terms (translation)

- Attending seminars and listening to lectures (listening skill)

This implies that the students need to master the four skills but in terms of immediate needs, they emphasize mainly on reading references in their field of study as well as terminology linked to biology. Listening and attending international conferences is considered as a second step for them. It has also been concluded that it is easy for a student to pass in Technical English without even acquiring the important language skills such as listening and speaking.

The ranking of the four basic skills indicate that listening and writing are regarded as important objectives. Despite the fact that speaking is ranked the lowest in terms of need, the students consider that the English programme should have

more emphasis on the speaking skill, even though it is the least used skill in their studies.

The most interesting and valuable part for the Biology Department staff, which can also be applied in other "Instituts Périphériques" are the participants' suggestions as the improvement of English language course. The students' wants concerning the practicalities of the teaching process organisation are not fully satisfied. The main important suggestions are the lack of time which inhibits the advance of students and also the introduction of new teaching materials like audio-visual aids. The teachers also must be specialized in English as the student is called upon to learn first and he/she must also possess some basic knowledge of biology to help the student use his knowledge of English in his field of study.

The research gives background information on the learners, their learning weaknesses and expectations. This kind of information is important for new teachers as well as for experienced ones to use them for curriculum development

3.4 Teachers' Questionnaire Results:

The teachers' questionnaire results were also interpreted as those of the students, a quantitative analysis of the results as well as a qualitative one describe the following facts:

Item 1: From question one to five

Respondants'gender	N°	Option	N°	Speciality	N°
Male	04	Licence	07	Linguistics	02
Female	06	Magister	03	ESP	00
Total	10	Doctorate	00	Literature	00
/	/	/	/	Civilisation	01

Table 3.29: Teachers' profiles

Table 3.29 shows that three teachers hold a 'Magister' degree. That is to say, they have carried out postgraduate studies in a specific English-related discipline and became specialised in that field; two of them are specialised in applied linguistics and one teacher in civilisation. Only two teachers have only a 'Licence' which means that they have a general English degree.

Apart from the teachers who have never taught at the English Department, only two of them have a minimum experience between four and six years of teaching at the English Department, but all the respondents have at least one year experience as an ESP teacher and a maximum of ten years with the fact that they have never been trained officially in ESP.

Item 2: From question six to seven.
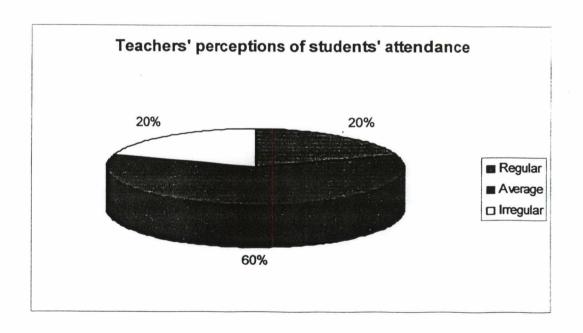
The answer to question about ESP module timing clearly demonstrates that not all teachers are satisfied with the time allocated to the module of English . In the

answer of question seven, they suggest the amount of teaching time needed and the

reason behind this. (see 3.4.1)

Item 3: From question eight to nine

How would you describe your students' attendance (in ESP course)?		
Regular	**Average**	**Irregular**
02	06	02
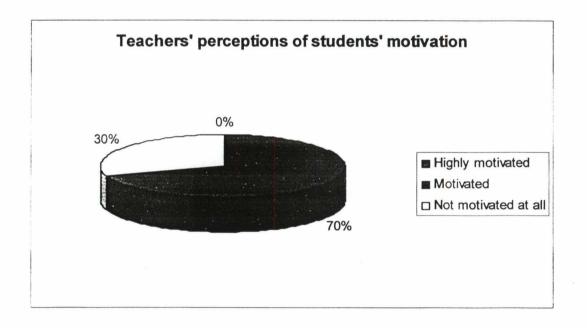
Table 3.31: Teachers' perceptions of students' attendance

Pie chart 3.22: Teachers' perceptions of students' attendance

How would you describe your ESP' students in the course?		
Highly motivated	**Motivated**	**Not motivated at all**
00	07	03

Table3.32: Teachers' perception of students' motivation

Teachers' perceptions of students' motivation

0%

30%

70%

- Highly motivated
- Motivated
- Not motivated at all

Pie chart 3.23 : Teachers' perceptions of students' motivation

Attendance has been described to reflect learners' motivation since the great majority of the teachers (70 %) described students' attendance as average and the rest (30%) as regular (see table 3.32).

Item 4: From question ten to thirteen
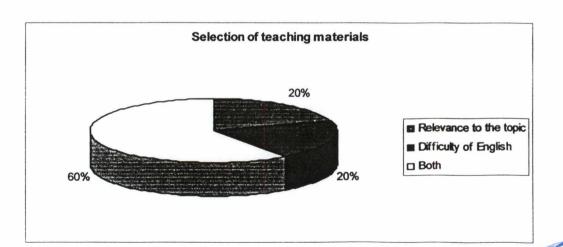
Are there any objectives and syllabus provided by the administration for the module of English you are teaching (in an ESP department)?			
Objectives		**Syllabus**	
Yes	**No**	**Yes**	**No**
04	06	00	10

Table 3.33: Objective and Syllabus Existence

The table 3.33 has confirmed the fact that the administration staff does not provide any syllabus for the English module. But in a very few departments, teachers are provided with a list of objectives set by The Ministry of Higher Education and Scientific Research.

On which ground do you select your teaching materials?		
Relevance to the topic	**Difficulty of English**	**Both**
02	02	06
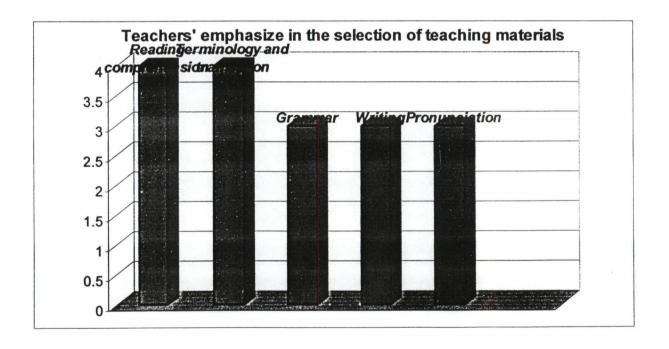
Table 3.34: Selection of Teaching Materials

Pie chart 3.24: Selection of Teaching Materials

What do you focus most on in your teaching?					
Grammar	Speaking	Writing	Reading Comprehension	Pronunciation	Terminology and translation
10	O2	05	10	03	08

Table3.35: Teachers' emphasize in the selection of teaching materials

Bar graph3.9: Teachers' emphasize in the selection of teaching materials

Concerning multiple-choice questions, on which bases the ESP teachers select their teaching materials? The majority have selected the third option (both) with 60%, which means that ESP teachers are always confronted to the absence of

the official syllabus, so they are free to elaborate their own courses on two specific students' needs.

The first one is according to the students' level of difficulty in English and the second one is related to their field of study (see table 3.34). Therefore, table 3.35, shows an agreement among teachers on the fact that they mainly emphasize their courses on reading comprehension, translation, grammar rather than on writing, speaking and pronunciation which are considered as a second step within an ESP course.

Item 5: From question fourteen to seventeen

Did you conduct a formal 'needs analysis' at the beginning of the course (in ESP course)?	
Yes	**No**
00	10

Table 3.36 : Practice of formal Needs Analysis

Did you conduct an informal 'needs analysis' at the beginning of the course (in ESP course)?	
Yes	**No**
07	03
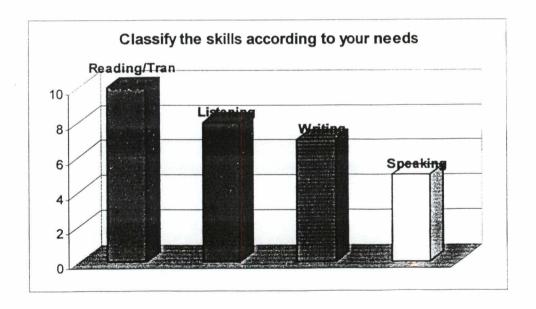
Table 3.37 : Practice of informal Needs Analysis

What are the students' lacks in the four skills?			
listening	reading	speaking	writing
10	10	10	10

Table 3.38: Students' lacks in the four skills

How do you classify the four skills(and sub-skills) according to their needs?			
1st position	2nd position	3rd position	4th position
Reading/ Translation	Listening	Writing	Speaking

Table 3.38 : Classification of the four skills according to the students' needs

Bar graph 3.10: Classification of the four skills according to the students'

needs

Table 3.39 demonstrates a general agreement among the teachers on the fact

that they have never conducted a needs analysis but, some of them are used to

conduct an informal one at the beginning of the accademic year. Concerning students' lacks, all the respondents share the same point of view that the learners find problems in learning the four skills. The teachers were also asked to classify the four skills according to their perception of learners needs. The results show that teachers consider reading and translation as the first priority, listening comes into the second position, writing and speaking as the two last ones.

Item 6: From question eighteen to nineteen

Do you enjoy your experience as an ESP teacher?		
Yes	No	Yes/No
00	00	10

Table 3.39: Teachers Motivation

Table 3.39 shows that all the teachers give an ambiguous answer since they feel motivated as teachesr but unfortunately they feel demotivated as human beings. In the last question, teachers give some suggestions to improve the learning and teaching situation.

3.4.1 Discussion and Implications:

The teachers' questionnaire has brought to light a number of elements that would help to draw a picture of the present ESP teaching situation. Some of the respondents in this questionnaire have a 'Magister' degree, such results imply that they are highly qualified, or at least specialised in one field or another in EFL. The teachers are neither specialised in ESP nor have they had any special training in

ESP but the majority have acquired a long experience as ESP teachers since they all have started their career as EFL teachers in an ESP Department (Biology and Sociology, Agronomy and Forestry). Thus, those teachers assume the fact that they are more accustomed in the practice of ESP teaching.

All ESP teachers consider that the amount of time assigned to the module of English they teach is not sufficient and wish it would be increased so as to allow more practice of English and to be able to reach the desired objectives in relation to students' needs and to give more consideration to the productive skills.

Teachers' perception of their students' motivation during the lectures is overall quite positive. This positive opinion is expressed in relation with their students' attendance since the majority of the teachers state that attendance varies between "regular" to "average". They also agree that students are motivated in the class and this is due to the fact that students nowadays are more and more aware of the essential role that the English language plays in their every day life as well as in their academic and professional career.

As for the syllabus and objectives of the English module in the two Departments, the absence of a teaching syllabus is pointed out by all teachers but with one exception that the objectives of courses are well set by an official decree from the Ministry of Higher Education and Scientific Research[11]. These objectives[12] are now given to each teacher responsible for the English module at the beginning of the year. As it was stated by all the teachers, no one has conducted a formal needs analysis but some of them have tried to identify their students' needs by using mainly group discussions or a language test, a kind of informal needs analysis at the

beginning of the year as a method of needs analysis. By this method, the ESP teachers organise their courses in relation with students' weaknesses in English as well as the needs in their field of research.

The motivation of the teachers is also an important aspect to take into consideration since the majority of the respondents agree with the fact that they enjoy their experience as ESP teachers since they have stated that it is very interesting and fruitful. The teachers, on the other hand, feel stressed and helpless whenever they have a lesson. Their self-esteem as professionals and as human beings are diminished and most of the time they quit the job, since it is a part-time one and financially not so motivating. These are some of the problems why the ESP teachers are often not taken seriously by those in authority.

The suggestions proposed by the teachers to improve the ESP teaching are as follows: they consider that a well-defined syllabus, specific objectives, a detailed programme as well as adequate pedagogical materials and supports have to be provided for teachers. More consideration should be given to English as a tool for scientific research and development . They also point out to the necessity of integrating an ESP teacher training to better understand the nature of their work. The newly recruited ESP teacher, who has not been trained for this job, is at a loss when constantly reminded of the requirements to teach ESP and not General English, when having to decide whether to use commercially published articles or to provide one from the scratch, when choosing between authentic materials and other subjects. Teachers are free to choose their own material which sometimes do not fit learners' needs.

3.5 Comparing Students and Teachers' views:

It would appear from the above findings that there was some consistency of response between students and English teachers. Both groups perceived a number of skills and sub-skills as important while rating the students' abilities in these areas lower than other areas. Hence, some observations and comments may be derived from the information obtained through both questionnaires.

First of all, both teachers and students express their dissatisfaction with the amount of time allocated to the English module as being not enough to reach their objectives as well as their needs. They also support the idea of having English as a long term mandatory subject because this need can be accounted for by their understanding of the role of English as a medium of international communication in the 21st century. Students' motivation is perceived to be positive both by students and teachers. Concerning students' weaknesses, both groups agree on the fact that they have difficulties due to several reasons: fossilized learning habits from the local education system, students lack the chance to use English outside the classroom, students tend to think in their mother tongue and they are still writing English using a lot of French sentence patterns, and they lack the ability to learn independently (autonomous learning). Teachers also state that students are afraid of making mistakes in front of their peers which does not allow them to take part into the course effectively. Students find it hard to write concisely and confidently in English. Therefore, they need to improve their level in the four skills. For their immediate needs, more focus should be put on reading and translating scientific articles as well

as listening activities while as a second step they need more time to develop the productive skills.

The questionnaire and interview with both students and teachers also identified other problems that constrained the students learning of English, such as, difficulty in obtaining information from the speaker (i.e. including audio-visual materials), and weak vocabulary development (for example, in technical English).

In the light of the findings of this study, it is necessary to conclude that priority should be placed on the four broad areas: (1) improving reading and listening skills for international publication and conferences, (2) introducing translation activities to promote the fifth skill in teaching ESP[13], (3) building vocabulary especially within students' specific disciplines, (4) building confidence by including collaborative teaching with subject specialists, and (5) raising students' motivation in language learning. (6)It is essential to continue to provide students with practice and training as well as teachers in the area of ESP to overcome all their problems.

3.6 Conclusion:

The needs analysis project gives background information on the learners which can be of paramount importance and can help teachers to identify the learning weaknesses, and their expectations. This research has also revealed that students have definite opinions about their abilities in the various language skills, and they are able to assess their importance for their academic study, future profession, and social life. The data help to contextualize how teaching and learning should take place and to develop new teaching materials according to learners' needs in terms of appropriateness and effectiveness.

Needs analysis does give valuable information for teachers and linguists to understand the learners' needs and attitudes towards the target language. As mentioned above the questionnaires and the interview have tried to elicit the linguistic needs, objectives, their available resources, and some of the psychological factors. The results of the analysis are helpful in understanding the characteristics of the learners and helpful for policy makers, curriculum planners, material designers, language teachers, teacher trainers and those who are interested in the field of ESP.

CHAPTER FOUR

SUGGESTIONS AND

RECOMMENDATIONS

CHAPTER FOUR: SUGGESTIONS AND RECOMMENDATIONS

4.1 Introduction:

Making decisions on what to teach and how to teach with such a large number of mixed-ability students is a real challenge for any teacher. However, the degree of difficulty to succeed is increasingly more complex when teachers deal with foreign language learners and even more with ESP. As Hemingway notes in 1986 that teachers face a range of problems such as (1) how to plan a lesson to meet the different needs of all the students; (2) how to give all the students equal attention, preventing the more advanced learners from feeling bored and less able feeling lost or left out; and (3) how to work through a given syllabus or textbook.

However, the learners should be aware of the thorny situation which prevails at the level of their department and therefore, should be told about the importance of communication between learner and teacher and vice versa. Thus, the learner may also contribute and help the teacher in decision-making. Hence, this chapter will strike to provide some suggestions and solutions in order to solve some problems described previously.

This chapter is divided in three parts; the purpose of the first one is to propose a framework for developing a new ESP course and show the role of needs analysis in ESP courses. The second part provides some sample units based on the needs analysis results by integrating the use of a variety of authentic materials with the four

language skills of reading, writing, speaking, and listening. The last part includes some practical suggestions to enhance the ESP teaching and learning situation.

4.2 A Framework for Developing a New ESP Course:

In evaluating an ESP programme and determining the language needs of the students, needs analysis is not the first and last thing to do. There are other steps as well. As seen in **diagram 4.1**, there are six steps in developing a new ESP course. **Step 1** is to conduct the needs assessment. Needs assessment can reveal two types of information. The first one gives information about their current level on ESP and the second one elicits information on what to achieve in ESP in the future work domain. This kind of analysis is really crucial in ESP courses, as may language problems emerge as a result of teachers not playing attention to learners' needs and ignoring students as a source of basic information.

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                    ┌─────────────────────────────────┐
                    │        Needs Assessment          │
                    └─────────────────────────────────┘
                                   │
                                   ▼
                    ┌─────────────────────────────────┐
                    │ Formulation of Goals and Objectives │ ◀──┐
                    └─────────────────────────────────┘     │
                                   │                          │
                                   ▼                          │
                    ┌─────────────────────────────────┐     │
                    │    Formulation of the content    │     │
                    └─────────────────────────────────┘     │
                                   │                          │
                                   ▼                          │
                    ┌─────────────────────────────────┐     │
                    │ Selecting & Developing ESP Materials │  │
                    └─────────────────────────────────┘     │
                                   │                          │
                                   ▼                          │
                    ┌─────────────────────────────────┐     │
                    │         Course Planning          │     │
                    └─────────────────────────────────┘     │
                                   │                          │
                                   ▼                          │
                    ┌─────────────────────────────────┐     │
                    │           Evaluation             │     │
                    └─────────────────────────────────┘     │
                                   │                          │
                                   ▼                          │
                    ┌─────────────────────────────────┐     │
                    │      Is the result satisfying ?  │     │
                    └─────────────────────────────────┘     │
                         │                    │              │
                         ▼                    ▼              │
                    ┌─────────┐          ┌─────────┐        │
                    │   Yes   │          │   No    │ ───────┘
                    └─────────┘          └─────────┘
                         │
                         ▼
                    ┌─────────────┐
                    │ Formulate the│
                    │   Details    │
                    └─────────────┘
                         │
                         ▼
                    ┌─────────┐
                    │ Finish  │
                    └─────────┘
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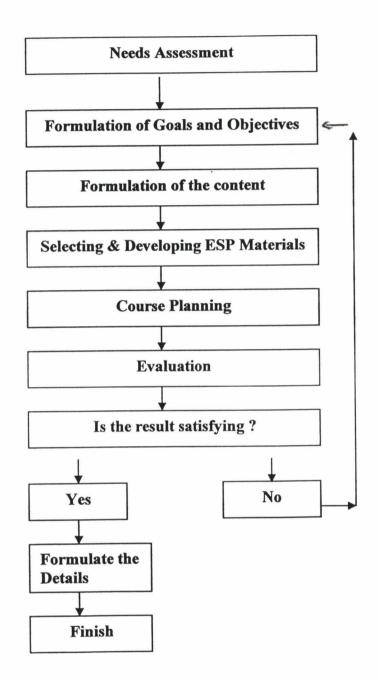
Diagram4.1: Steps in Developing an ESP Course

Adapted from White (1988:26)

Step 2, in this step the language teachers have a clear picture of what to teach, how to teach, and when to teach. As Graves (1996) explains that goals are general statement or final destination, the students need to achieve. Objectives show certain methods of achieving these goals. Nunan (1988) maintains that the following expressions are to be formulated when forming the objective of a course:

1) Students will learn that…………..

2) Students will be aware of………..

3) Students will develop…………..

Step 3, here teachers should determine aspects of ESP learning will be included, integrated and used in the syllabus to meet the students' needs and expectations. The course may focus on the cultural or technical areas or the vocabulary part of the intended target language.

Step4, once the content of the ESP course is determined, the next step is to decide on which materials best meet the needs of the learners. This is also very important in implementing the objectives of an ESP course.

Step 5, in this step in order for the course to go smoothly and make the student understand the subject areas given in an ESP material, activities are given in an order. This order may be deductive or inductive.

Step6, after giving the students the course according to the result of needs assessment, one needs to re-evaluate the students at the end of the course so that

the teacher can see whether the students have reached the intended level or not. If they have not reached the intended level, the assessment starts from Step2 again, with the formulation of goals and objectives. If they have reached the intended level, the details of the curriculum is formulated and the process ends.

4.3 Proposed Sample Units:

It was impossible within the limited scope of this research to design a complete syllabus. Therefore, this research proposed three sample units and to show the horizontal as well as the vertical progression that exist between the units, the first unit is given in the first year, the second one for the third year and the last one for the fourth year since there should be a continuum from the first year to the last one. In order to understand the organization of the different units, the following outline illustrates the major objectives to be emphasized in these units. It also presents the different exercises and activities selected for Biology students.

4.3.1: Outline of Unit:

At the beginning of the unit, it is important to precise three main points of the unit: general aim, the function to deal with in the unit and the different language points that are included in the unit. Formulating goals and objectives for a particular course allows the teacher to create a clear picture of what the course is going to be about. The different units have the following objectives:

1) Scientific texts in order to introduce the learners to the kind of language they will face and need in their field of research

2) Questions testing the comprehension of the text, reading comprehension is also used for the teaching of grammar, vocabulary and even pronunciation as students are asked to read the texts aloud and the teacher at the same time correct their pronunciation

3) Exercises dealing with grammar

4) Activities related to the learning of vocabulary , contextual language and language functions

5) Specific activities focusing on structures of sentences

6) Exercises of listening (dictation) to make the learners aware of the pronunciation and the spelling of the words

7) As the last objective, translation of scientific texts

4.3.1.1 Sample Unit I:

"The Properties of the Cell"

General aim: By the end of the unit, the students should be able *to describe* a cell and *to write* about the differences and similarities of cells.

Function: Describing – Comparing.

Language points:

- Present Simple

- Word order

- Use of conjunctions (whereas; both....and; however)

- Irregular plurals of scientific terms

The text: "The Cell Structure"

Nearly, every cell contains a nucleus and some cells contain more than one. The nucleus is the cell's control centre from which come the instructions that keep the cell alive.
The nucleus also plays the leading role in cell reproduction. It and other cell structures are surrounded by a semi-liquid, cytoplasm rich in protein and other needed materials.

Within the nucleus, are one or more small bodies: These are the nucleoli. They are believed to send instructions for protein synthesis from the nucleus to the cytoplasm. The centrosome is a small structure found just outside (or in few cases, just inside) the nucleus. This structure occurs in all animal cells but in rather few plan cells. It is involved in the reproduction of cells.

The boundary between the nucleus and the cytoplasm is called the nuclear membrane; everything going into or out of the nucleus must pass through this membrane. It acts like a filler allowing substances to pass through and not other.

There is another membrane; the cell membrane, it is a boundary between a cell and its environment. It regulates the traffic of materials. Here, of course, the regulation is of materials coming into or going out of the cytoplasm, not the nucleus.

Another important element is the endoplasmic reticulum. This network branches throughout the cytoplasm and appears to connect the cell membrane with the nuclear membrane. It acts as a route for transporting protein and other materials through the cell. It thus, forms a communications network between the cytoplasm and the nucleus.

The ribosome is the site of protein synthesis in the cell and the plastids are small structures that are given the name of organelles. Pigments colour them. Among the variety of plastid we find the chloroplasts; they contain green pigment (chlorophylls) and are involved in photosynthesis.

There is another type of organelles. Mitochondria are the powerhouses of the cell. Many important chemical reactions take place inside them. These reactions remove energy from food and make it available for the cell's activities.

Biologists now describe Golgi apparatus as a primary site for the packaging of the cell secretions. Some also believe that it is involved in the production of large sugar based molecules. Both animal and plant cells contain vacuoles; they are fluid-filled bags. Vacuoles are usually small and few in the cells of animals. In plant cells, however, they are frequently large and numerous. Vacuoles in other organisms are used to store food or pigments.

(Green, 1990:211)
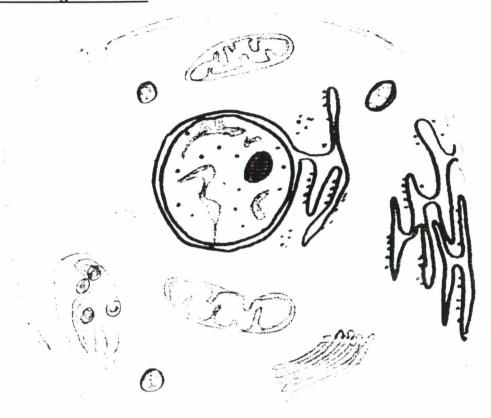
Diagram 4.2: The cell structures

Aim: To make learners aware of scientific terms.

Activity one: Look at the diagram (cell picture) and then label it.

Reading activities:

Activity one: Reading *for gist*

- Read the text (Cell Structure), and then say what it is about

Activity two: *Scanning*

-Read the text and then answer the following questions:

1) What are the main elements of a cell?

2) What does the nucleus represent in a cell?

3) Give a title to each paragraph?

4) What is the role of the nucleus?

5) Do all cells contain the same elements?

Activity three:

- Complete the following table:

Noun	Verb	Sentence
Synthesis		
Reproduction		
Filter		
	To regulate	
	To transport	
	To involve	
Reaction		
Production		

Activity four:

- Find in the text words that have the same meaning as:

Penetrate (§3) - kind (§7) - suppose (§8) - include (§8) - happen (§7)

Activity five:

- Find in the text words that are opposite to:

Few (§8) - outside (§2) -big (§2) - To forbid (§3) – disappear (§5)

Activity six:

- Complete the following table:

Singular	Plural
Nucleus	
	Bacteria
	Mitochondria
	Species

Post- reading activities:

Activity one:

- Complete the following text with the words into the box

The text: "The structure of plant cells"

The outer layer of a plant cell is called the cell wall. This is composed of a non-living material called. The inner surface of the cell wall is lined with a layer of. The nucleus is embedded in this layer. The protoplasm which surrounds the .... is called cytoplasm. The cytoplasm sometimes contains chloroplasts. These are small bodies composed of protein. The surface of the cytoplasm is covered with a cell membrane. The centre of a .... Cell consists of a cavity called the .... It is filled with fluid.

The wall of a plant cell is often joined to other cells, which surround it. The lining between the walls of two cells is called the middle ....

(Nucleus, Biology, 1977:18)

The box: **nucleus – vacuole- cellulose – lamella- protoplasm – plant**

Activity two:

- Read these statements comparing the structure of the cells:

Similarities   Both plant cells and animal cells contain nuclei. A plant cell contains a nucleus. An animal cell **also** contains a nucleus.

Differences   Plant cells contain vacuoles, **whereas** animal cells often do not have vacuoles.

Plant cells contain vacuoles. Animal cells, **however,** often do not have vacuoles.

-Now complete these comparisons:

a) ..... Plant cells ...... animal cells contain......and.......

b) Plant cells always contain.......animal cells often.......

c) Plant cells are surrounded by........ Animal cells, ...are not ....

d) The palisade cells of a leaf contain........ The epidermis cells, however,.......

e) In....... plant cells...... animal cells, the nucleus......by cytoplasm.

f) In ...... the nucleus is embedded in the cytoplasm lining the cell walls,......in......it is connected to the cell wall by........

g) Cells in spyrogyra are joined end to end. Those in the phloem of a plant stem........ However, the end walls of a......cell are perforated (i.e. they contain holes), whereas.......

h) In.......the chloroplasts are spiral-shaped,.......in.......they are round.

Activity three: *Word order*

- Make correct sentences from this table by putting the middle parts in the right order

a) The cytoplasm	Lining the walls of the cells	Contains chloroplasts.
b) The cells	Surrounding the nucleus	Are called guard cells.
c) The wax layer	Containing large air spaces	Covers the surface of the epidermis
d) The protoplasm	Containing chlorophyll	Is called cytoplasm.
e) The layer	Composed of the spongy layer and the palisade layer	Is known as the spongy layer.
f) The cells	Called the cuticule	Do not contain chloroplasts.
g) The part of the leaf	Situated in the epidermis	Is known as the mesophyll
h) The walls	On each side of stomata	Make up the middle lamella
l) The part of the leaf	Immediately below the epidermis	Is called the palisade layer
j) The particles	Of similar cells joined together	Are called chloroplasts

Activity four:

-Look at the following diagram (p20) and then write a short paragraph about the main elements of a leaf cell and the function of each element.

Free reading: "The cell structure of the leaf"

The surface of a leaf consists of a single layer of cells fitting closely together with no air spaces between them. This outer layer is called the *epidermis*. Sometimes the upper epidermis is covered with a waxy layer called the *cuticle*. The *stomata* are located in the lower epidermis. The cells of the epidermis do not usually contain chloroplasts and they are transparent. The *guard cells*, however, do contain chloroplasts. They are situated on either side of the stomata.

The middle part of the leaf, between the upper epidermis and the lower epidermis, is made up of two layers: the *palisade layer* and the *spongy layer*. These two layers make up the *mesophyll*.

Immediately below the upper epidermis there is a row of tall cylindrical cells. These comprise the palisade layer. There are many chloroplasts in the cytoplasm lining the walls of the palisade cells.
Chloroplasts are particles, which are often disc-shaped. They are composed of protein and contain chlorophyll.
In the spongy layer the cells do not all fit closely together and there are large *air spaces* between them. They contain fewer chloroplasts than the cells in the palisade layer.

(Nucleus-Biology; 1977:20)

4.3.1.2 Sample unit II:

"TURGOR"

General aim: By the end of the unit, the students should be able *to write* about *cause/effect* of a phenomenon.

Function: Describing

Language points:

1) Cause/ effect

- Lack of water $\left\{ \textit{cause, results in, leads to} \right\}$ wilting in plants

- A leaf takes in CO_2 easily $\left\{ \textit{because, since, as} \right\}$ it has a large

surface area.

- A leaf has a large surface area $\left\{\right.$ **therefore; consequently, thus,**

hence $\left.\right\}$ it absorbs CO2.

2) Passive Voice

- Wilting in plants is caused by lack of water.

The text: " TURGOR"

A plant cell must have sufficient turgor (rigidity due to hydrostatic pressure) to function adequately. Turgor is produced as follow:

The outer layer of a cell (the cell wall) is permeable, allowing water and dissolved substances to pass freely. The inner layer of cytoplasm, however, is semi-permeable, allowing molecules of water to enter the cell, but preventing larger molecules from leaving.

The process of photosynthesis leads to an increased concentration of sugar within the cell sap (the liquid substance inside the vacuole). Consequently, osmosis occurs and water enters the cell. The increased volume of water within the cell causes an increase of pressure on the cell wall, thus producing turgor in the cell.

(Frank Chaplen; 1981:12)

Pre-reading activities:

Aim: To push the learners to use scientific terms to define scientific elements

Activity one:

- Look at the examples and complete the sentences according to your previous scientific knowledge:

Example: Lack of water { *causes; results in; leads to* } wilting in plants.

a) Lack of nitrogen in the soil causes........

b) Lack of phosphorus leads to........

c) An excessively low temperature may result in ......

Example: Wilting in plants $\left\{ \textit{is caused by; results from; occurs as results of} \right\}$

lack of water.

   a) Chlorosis in plants may be caused by..........

   b) Decomposition of internal tissue results from.......

   c) Cell damage may occur in plants as a result of......

Example: Healthy plant growth *depends on* the presence of light and water.

a) Healthy plant growth also depends on ....

Example: The presence of sunlight $\left\{ \textit{allows; permits} \right\}$ a plant *to produce* food

by photosynthesis.

The absence of sunlight *prevents* a plant *from* producing food by photosynthesis.

   a) The testa on a plant seed prevents ......

   b) The micropyle allows ....

Reading activities: (1ˢᵗ step)

Activity one:

- Read the text (Turgor) and then answer the following questions:

a) Why can sugar and water pass through the cell wall?

b) Why can't sugar molecules pass out through the cytoplasm?

c) Why does the sugar concentration in the cell sap increase?

d) Why does osmosis occur?

e) Why does pressure on the cell wall increase?

Activity two:

- Look at these examples:

A leaf takes in CO_2 easily $\left\{ \textbf{\textit{because; since; as}} \right\}$ it has a large surface area.

A leaf has a large surface area. **{ Therefore; consequently; thus; hence; for this**

reason, } it absorbs CO2 easily.

- Change the following sentences to the alternative form, using the words in brackets:

a) Leaves have a large surface area because they are broad and flat. *(Therefore)*

b) Photosynthesis does not take place in the epidermis cells because they do not contain chloroplasts. *(Hence)*

c) Sunlight can pass through the epidermis cells, as they are transparent. *(For this reason)*

d) There are a large number of stomata on the surface of leaves. Consequently, exchange of oxygen and CO2 takes place easily. *(Because)*

e) Palisade cells receive a large amount of sunlight because they are near the surface of the leaf. *(Thus)*

f) Chloroplasts are especially numerous in the palisade cells. Thus, they absorb a large amount of light. *(Since)*

g) Water reaches photosynthesising cells easily because leaves contain a large network of water-supplying veins. *(Consequently)*

Activity three:

    - According to the text, say whether these statements are true or false. Correct the false statement.

a) For a plant to have turgor, there must be an adequate supply of water.

b) Water maintains a pressure on the cell walls, thereby making the plant wilt.

c) Wilting is due to loss of turgor.

d) Plasmolysis is due to an inadequate supply of water.

e) Osmosis occurs during both turgor and plasmolysis.

f) If the concentration of water molecules is lower in the liquid surrounding a cell than in the cell sap, water will pass out of the cell.

g) The shrinking of the vacuole is caused by loss of water.

h) The only result of loss of water in the cell is that the vacuole shrinks.

-Read this: **"The Human Skin and Temperature Control"**

The temperature of the body is affected by various factors. (A) If the temperature of the blood reaching the brain is excessive, nerve impulses are sent to the skin, producing two effects.
One effect is that the arterioles which supply blood to the capillaries beneath the skin dilate, or widen. (See diagram in activity 2.) This causes more blood to flow near the surface. (B)
The other effect is that sweating increases in response to nerve impulses. (C) As the sweat evaporates it absorbs heat from the body. (D) Any movement of air over the body helps to speed up the evaporation of the sweat. (E)
On the other hand, if the surrounding air is very humid, evaporation may not occur quickly enough to cool the body adequately. In this case the body temperature may rise to a dangerous level. (F)

(Frank Chaplen; 1981:16)

Activity one:

- Each of the following sentences will fit into one of the spaces in the above passage which are marked by the letters A, B, C, D, E, and F. Match the sentences with these letters.

a) For this reason, fans have a cooling effect on the body, though they may not reduce the temperature of the room.

b) Layer pf moisture is thus produced on the skin's surface.

c) A similar dangerous condition may occur after prolonged sweating due to physical activity at high temperatures. This may cause sweating to stop.

d) Consequently, more heat escapes from the blood into the air.

e) Hence, the temperature of the body is reduced.

f) For example, physical activity or disease may bring about over-heating.

Activity two:

- Now look at these diagrams and answer the questions below then:

Very little heat radiated   **much heat radiated**
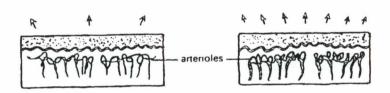
Diagram 4.3: Section through human skin

(Nucleus, English for Science and Technology: Biology, 1986:55)

a) In which diagram are the arterioles dilated?

b) Which diagram represents the skin of a healthy man in cold weather?

c) Which diagram represents the skin of a healthy man in cold weather?

d) What causes the condition shown in the second diagram?

e) What is the other effect of over-heating in the brain?

Activity three:

- This a summary of the text2, including sentences in activity one, but the points are listed in the wrong order. Put them in the right order.

1) The effect of lack of evaporation of sweat.

2) The cause of sweat production.

3) The effect of blood flowing near the surface of the skin.

4) Two factors affecting the temperature of the body.

5) The effect of sweat evaporation.

6) The effect of lack of sweat production.

7) The effect of air movement.

Activity four:

Example: Physical activity *causes* body temperature to increase.

i.e. Increase of body temperature *is caused by* physical activity.

- Now change these sentences in the same way:

a) Nerve impulses cause the arterioles to dilate. (Dilatation of the arterioles......)

b) Over-heating causes the body to produce sweat. (Production of sweat by the body...)

c) Movement of air over the body causes sweat to evaporate. (Evaporation........)

d) A difference in water concentration causes osmosis to occur. (The occurrence.......)

e) Photosynthesis causes compounds to be decomposed. (The decomposition.....)

f) Photosynthesis also causes oxygen to be released. (The release......)

g) Photosynthesis also causes sugar molecules to be concentrated in the cell sap. (The concentration......)

Post-reading activities:

Activity one: Look at this diagram and then complete the following sentences:
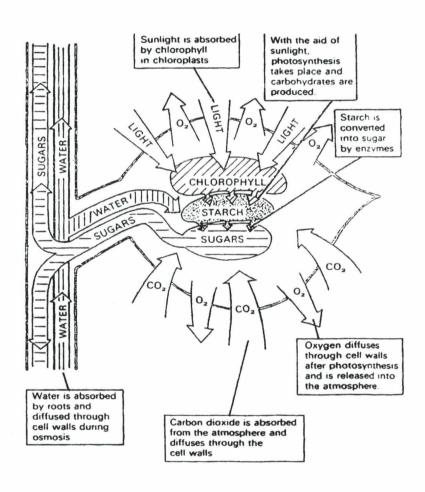
Diagram 4.4: The process of photosynthesis in the leaf (Nucleus, English for Science and Technology: Biology, 1986:59)

a) The chlorophyll which is stored in the ..... enables the leaf......

b) The action of .... Permits water to enter the cells.

c) CO2 enters the cells as a result of absorption from the ...... and diffusion through the ......

d) The action of photosynthesis leads to the production of .....

e) Enzymes act on ....to produce......

f) The chemical action of photosynthesis also results in the release of ......

g) For photosynthesis to occur.......must be present in the leaf, and......and......must be present in the air

4.3.1.3 Sample unit III:

"Biotechnology"

General aim: By the end of the unit, the students should be able **to translate** a scientific text from English to French and vice versa.

Function: Translation.

Language points:

- Scientific vocabulary: Bacteria; fungi; casein; root....

- Sequences: First; then; however;

- Use of parts of speech.

- Punctuation

The text1: "Biotechnology and Genetic Engineering"

Biotechnology may be defined as the application of organisms. Biological systems or processes to the manufacturing and service industries (The Royal society, 1981). Where whole organisms are involved, theses are generally micro-organisms, such as bacteria, viruses, fungi and algae. The estimated market for biotechnology is about & 40 billion per annum by the end of the century. Some of the products will be produced in bulk at relatively low cost; others will be 'fine' products, produced in small quantities for relatively high prices.

At the heart of biotechnology are the fermentation processes. Originally the term fermentation was reserved for anaerobic activity, but it is now applied more loosely to any process in which microbes are cultured in containers (fermenters or bioreactors). The traditional fermentation industry includes brewing, baking, cheese and butter manufacture, but there is now an enormous range of products.

Cheese manufacture usually depends on the combined activities of bacteria and fungi. During the process the milk sugar lactose is fermented to lactic acid which causes the milk protein, casein, to curdle. The solid curds, containing protein and fats, are separated from the liquid whey and lacted by bacteria and/or fungi, inoculation with different microbes produces different varieties of cheese, such as cheddar from lactobacillus species.

Some famous cheese are ripened with penicillium species, such as Roquefort (P. Roqueforti) camembert (p. camemberti), Danish Blue, and Italian gorgonzola.

The souring of cream during butter manufacture and the flavour of butter are caused by lactic acid streptococci. Lactobacillus species are also used by in the production of sauerkraut (from cabbages), silage and pickles.

Another important fermentation industry which utilizes yeasts in backing.
Strains of S. cerevisia selected for their high production of carbon dioxide, the raising agent, are used by bakeries; the alcohol produced at the same time is driven of as a vapour by the heat of baking.

(Green, 1990:301)

Pre-reading activities:

Aim: To make the learners aware about the pronunciation and the spelling of the words

Activity one:

- Listen to the text1 (dictation) then try to correct the words using the dictionary

Reading activities:

Activity One:

- Read the text 1 and then match each paragraph with the corresponding title:

A	B
Paragraph 1	The use of lactic acid
Paragraph 2	Definition of biotechnology
Paragraph 3	Cheese manufacturing

Paragraph 4	The use of yeasts
Paragraph 5	Fermentation is the most important process of biotechnology

Activity Two:

A) Explain the following words orally: "involved"- "loosely"- "process" – "activity".

B) Give the opposites of: "fluid"- "different"- "low"- "separated".

Activity Three:

- Answer the following questions:

1) How is cheese manufactured?

2) What is biotechnology?

3) What is fermentation?

Activity Four:

- List the different steps used in the process of milk sterilization. Use the following sequences: *First; then; finally; in the end.*

Post-reading activities:

Activity One:

- Choose the right alternative:

The text 2: "Biotic Analysis"

In analysing the organism *(living/ lived)* in a given habitat [the biotic *(component/ composed)* of the ecosystem] the community structure must be *(determines/determined)* in terms of species present in the *(habitat/ place)* and numbers within each population. It is obviously impractical to attempt to find and count all the members of a given *(species/specie)*, and so sampling *(technical/ techniques)* have to be devised which will give *(indicated/ indications)* of species present and their numbers. *(Generally/ General)* speaking, the more accurate the result required the more time- consuming the method, so it *(is /have)* necessary to be clear about objectives. Also, if possible, non-destructive techniques should be *(uses/ used)*.

In all cases, reliable *(methods/ methodology)* of sampling [recording and/or *(collecting/collected)*] organisms are required and it is safe to say that "no stone should be left unturned" (providing it is replaced) since organisms will *(occupy/occupied)* almost all available microhabitats. For example, at first sight, a square metre of grass, soil, sand , rocky, share or stream bed may not appear to support many species, but closer*(examinated/ examination)*, involving hand-sorting the soil, grass and weeds, turning over stones and examining roots, stems, flowers and fruits of plants and holdfasts of seaweeds will *(revealing/reveal)* many more species.

((Green, 1990:444)

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Activity Two:

- Punctuate the following passage: **"Biology"**

       This term was coined by *lamark in* 1802 it is the branch of science that deals with properties and interactions of physico-chemical systems of sufficient complexity for the term "living" (or dead) to be applied these are usually cellular or acellular in organization but since viruses share some of the same polymers (nucleic acid and protein) as cells and moreover are parasitic they are regarded as biological systems but not usually as organisms

((Green, 1990:2)

Activity three:

-Translate the text1 and text2 into French

4.4 Further Suggestions:

If the status of ESP teaching in Algeria hopes to grow and flourish in the future, there are other elements that may contribute to a great extent to the teaching/learning process and that are worth considering: course contents, cooperative teaching, learners' attitudes, teacher training, timetabling and evaluation. The aim of providing such information is to propose immediate and effective solutions to improve the ESP teaching and learning in the Department of Biology.

4.4.1 Course Contents:

The subjects' suggestions on the course contents can be of great use to course designers and materials developers. Particularly, information about the typical features in biological science will give ESP teachers more confidence to proceed with either the exploitation/adaptation of authentic texts or development of some valid materials for use in language activities and practices. It must be remembered that most textbooks are designed for an ideal homogeneous group. It is the role of the teachers to overcome this restriction by adapting already exiting materials and creating new ones. Thus, most of the activities were and had to be adapted from materials which had been specially designed for scientific English, for instance *"Nucleus"* , especially because students are not prepared to face authentic materials as such.

Needs analysis clearly reveals (see 2.2.3) that students already are assigned, or at least attempt, research with English language journal articles for their research

papers and the recognized necessity for those who continue their post graduate studies. So, as tutorial (a supplementary activity to consolidate the unit), judiciously-selected scientific articles that are current, relevant, interesting, and manageable in terms of length (3 to5 pages) can therefore gear students to the forms and patterns of written scientific discourse in English. They also help students begin the practical application of reading strategies. With guidance from worksheets and through class work with the teacher and interactive group work, students focus on the form and content of the articles; starting with the abstract of the article, students analyse the organisation and pattern of presentation, including description of research design and experiments, reports of observations and findings, statements of hypotheses, discussions of implications and conclusions, and directions for further research. They are able to apply content comprehension strategies that focus on the rhetorical features of English scientific discourse to parts of the articles, working from both structure to meaning and meaning to structure in a *" purposeful interaction with the text"* (Hudson 1991:79). Crandall in 1994 also argued that:

> **students cannot develop academic knowledge and skills without access to the language in which that knowledge is embedded, discussed , constructed, or evaluated. Nor can they acquire academic language skills in a context devoid of content**
>
> (Crandall 1994:256)

4.4.2 Co-operative Teaching:

Co-operation between language teachers and subject specialists: both language teachers and subject specialists are important in teaching ESP. As Robinson posits:

> **As important first condition for successful team teaching of any type is that both specialist department and language department (or individuals in each) recognise that there is a problem and that some form of collaboration is needed to help solve it.**
> (Robinson 1991:93)

Co-operative teaching can also offer an ongoing means of both the knowledge and skills for integrated instruction. Another positive aspect that emerged from co-operative teaching is that ESP teacher is accepted as part of the class since it can reduce their ignorance of scientific field. The ESP teachers should work in collaboration with subject specialist teachers because the ESP teacher should have more than a superficial knowledge in the subject concerned.

> **Seen dull, boring, complicated, incomprehensible, confusing. This can only have a negative aspect on teaching......ESP teachers should help to realise that they already have much of the knowledge needed to understand the subject matter.**
>
> (Hutchinson and Waters, 1987:163)

4.4.3 Learners' Attitudes:

Another important fact to bear in mind is that learners bring to ESP courses conceptual and linguistic knowledge, attitudes towards the learning process, and different degree of motivation The degree to which syllabus planners are familiar with the modes of thought, procedures, and specializations of the particular subject-matter

The students are involved with, will partly determine their ability to view content in a view perspective; it will also aid them in selecting teaching strategies and techniques, and will make them realize the need to consult with subject-matter specialist when planning such courses. Also, students come to ESP courses with different levels of linguistic competence (mixed-abilities). This means that provision will have to be made for remedial work or self-access materials or even the division of students into different groups according to their level of competence. So, the teachers' task is to arouse within students the psychological framework which will challenge and enable

them to feel like studying by themselves, without the teachers' help; as Miliani puts it: *"A great deal of importance is given to the learner in directed individualised instruction, self access learning, self-learning, autonomous learning"* (Miliani 1991:103).

4.4.4 Teacher Training:

Concerning the ESP teachers, as a consequence of the observations made during this research, the basic recommendation should be based on the general increase in the number of teachers of English since there is real lack of ESP teacher; as Robinson posits: *"A serious problem for ESP in many parts of the world lies in the provision of an adequate supply of teachers."* (Robinson 1980:75).

Another important aspect to take into consideration is the fact that ESP teachers in the Department of Biology have never received any ESP training. To quote Robinson once again, *"....the people teaching and administrating ESP programme have received no special training in ESP"* (Robinson 1980:075). As consequence, it is important for an ESP teacher to receive a pre-service and in-service training in order to be properly trained and to feel more confident while teaching ESP courses. On the other hand, Strevens suggests: *"Becoming an effective teacher of ESP requires more additional training, extra effort, and a fresh commitment, compared with being a teacher of general English"* (Strevens quoted by Robinson 1991:96)

4.4.5 Timetabling and Evaluation:

One of the most important suggestion made by both teachers and students is to increase the number of teaching hours from one half or two hours per week to four or six hours a week and plan them in the morning or at the beginning of the week. Another important suggestion is to increase the coefficient of the English module being '1' which shows to the students that the English module is not an important module so, if the coefficient becomes '2'(at le   ) or '3' , it would motivate students.

The need to assess the language abilities of second language learners is of a paramount importance. Assessment can be seen as an ongoing process, in which the teacher uses various tools to measure the progress of learner as well as their weaknesses. Among those tools are evaluation and tests, as Nodoushan explained: *"If assessment can be seen as a movie, then a test is a freeze frame"* (Nodoushan 2002:14), it gives a picture of the learner's language at a particular point of time. Used properly, these tools can help the teacher develop a full picture of the learner's progress and needs in order to adapt an adequate ESP courses and they can also be considered as a self-assessment for the teacher whether he has succeeded in enabling the students to achieve their objectives. It is important to note that all types of testing and assessment are important in gathering information about students.

4.5 Conclusion:

As just described in this chapter, teaching ESP at University level, especially when the courses are offered as free-choice subjects, is not an easy task. Heterogeneity and, with it, mixed-abilities and large classes make the teaching-learning process a challenge for the teacher. This entails a number of decisions regarding such fundamental aspects as *what* to teach (syllabus, materials, topics, etc.), *how* to teach (lesson planning, preparation, involvement, management, pair and group work interaction, feedback, etc.) and *to whom* (for example, should all students be taught the same and use the same materials if their interests and levels are so different?). However, despite the difficulties, nothing is impossible. Accordingly, if the teacher has good disposition and with some effort and reflection, taking into account the students' needs and wants that should be identified from the very first day.

University will surely, though not exempt of difficulties, be able to cope with such problems. An example of how this could be done is provided in this chapter; among others, the importance of creating opportunities for discovery learning and genuine exchange of information, using the language in problem-solving processes; collaboration between teachers; the integrated use of various authentic materials and four language skills in English For Science and Technology (EST) course can provides students with an interesting, manageable, and effective programme of study, and so forth. Finally, this chapter cannot be ended without saying that: *"the ideal teaching situation would be that in which the learner receives individualised attention"* (McDonough and Shaw 1993:243).

General Conclusion

General Conclusion

This research work has concentrated on providing an analysis of the English teaching/ learning process in the Department of biology at the University of Tlemcen, the case of the 4th year students. The project is then based upon some problems involved in English courses as they were run. The study has shown the many reasons that have led to the students' incapacity to use English effectively. One of the main reasons is the total absence of adequate syllabus. As a result, the teachers are obliged to prepare for each session a lesson. This day-to-day work has generated problems in terms of lack of continuity, organisation of units, etc). Therefore, the need to have a syllabus that could harmonize the teaching process is necessary.

The first part of this project seeks to provide a general view about English for Specific Purposes (ESP). With respect to English, there are different definitions of ESP, but probably the clearest one is Hutchinson and Waters's (1987, 1994) who see it as an approach rather than a product. This chapter has also discussed its origins , addressed key notions about it and examined issues in ESP course design. ESP is characterized by its content but most importantly by a definition of the particular need of students; so, it is necessary to analyse necessities, lacks and wants.

Whereas, in the second chapter, the research tries to shed light on the situation of English language teaching in the Department of Biology. The goal of such description is to consider some major issues facing ESP teachers in the department as well as the difficulties of learning process. It has also described the different

research instruments used to conduct the needs analysis. The participants of the project, who are fourth year students of Biology, have supplied the research with data that require action. As already stated, students are the best judges of their own needs apart from being the main stakeholders of their education. Thus, it is recommended that their views be taken into consideration when formulating the English curriculum and developing courses in universities in the future. The English language programme for students of Biology will motivate them only when they see the direct benefits it brings to them.

The third part of this project is devoted to the analysis of the results, since a needs analysis exercise is vital in designing and piloting an ESP course. The results obtained reveal that students have definite opinions about their abilities in various language skills, and they are aware about the importance of English in their academic studies, future profession and social life. The data helped to provide the necessary information of how teaching and learning should take place. As part of the needs analysis, observation of how the ESP target language is used in the field is of paramount importance. By doing this, curriculum designers can learn first hand what type of language ESP learners will need to learn to become proficient. The results clearly demonstrate that the students consider reading and listening skill for a short term goal since the students of Biology study English to understand scientific texts for their theses or research papers and also for translation and examination marks, whereas students also need speaking for long term goal since they are fully aware about the importance of the English language for their post-graduate studies or for their future career. An analysis of the type of language in-use in real situations in specialized fields will help ESP teachers determine their own strengths; direct them

in the writing of the course objectives, the syllabus, the materials, and the tests; and determine the methodology and teaching procedures to be used. As part of the needs analysis, an analysis of the learners' language ability is necessary in order to know what type of language they already know and what type of language they lack. Again, this knowledge will not only allow curriculum designers to decide what and how to teach, but also decide on whom they will teach and how to cater for a myriad of learning styles preferred by the course students.

In the light of the study findings, it is necessary to conclude that priority should be placed on the four broad areas: (1) improving reading and listening skills for international publication and conferences, (2) introducing translation activities to promote the fifth skill in teaching ESP[13], (3) building vocabulary especially within students' specific disciplines, (4) building confidence by including collaborative teaching with subject specialists, and (5) raising students' motivation in language learning. (6)It is essential to continue to provide students with practice and training as well as teachers in the area of ESP to overcome all their problems.

As the last step of this work, according to the analysis done in the second chapter, some sample units were proposed to overcome the identified obstacles in order to recognize them and realize their effect on students' motivation, which in turn has to be considered in the design of materials and methods of assessment. Many of the problems that have been mentioned in this proposal; problems of motivation, materials and methods are common to English language teaching situations in general and not peculiar to ESP, ESP has not produced these problems, they have

been in existence for instance in Algeria as long as English language teaching has existed; and all that ESP has done is to recognize them and suggest ways in which they night be overcome. The value of ESP is that it is attempting to tackle fundamental problems in ELT and has given a fresh to the teaching and learning of English language.

When it comes to deciding how ESP exercises should be developed, there are certainly many avenues that can be pursued. Here, we have looked at what occurred in an actual driving situation from the viewpoint of student-interpreters and designed a mini-course based on the information they provided. The teacher should always consider the students' feedback to make new decisions on his/her teaching but sometimes they may also use intuition as the main boost for decision-making. However, one cannot disregard the fact that every ESP subject, every class, and even every student will be different, and therefore ESP teachers have always to keep an eye on the situation at every moment and be aware of difficulties and demanding peculiarities of the free-choice ESP language classroom.

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NOTES TO CHAPTERS

1. Hutchinson and Waters 1987 as cited in Nitu, 2002. Nitu is an international ESP conference which was held Japan in 2002.

2. Tenor is an acronym which was first introduced in 1981 by Abbot & Wingard. Tenor is Teaching English for Non Obvious Reason.

3. The ESP movement in Japan has shown a slow but definite growth over the past few years. In particular, increased interest has been spurred by the Ministry of Education's decision in 1994. And in November 1997, the ESP community came together as a whole at the first Japan Conference on ESP held at Aizu University in Fukushima Prefecture.

4. Strevens is the first scholar who introduced the two terms '*Absolute*' and '*Variable*' characteristic in 1988 in order to define ESP.

5. "ESP must be seen as an approach not as a product. ESP is not a particular kind of language or methodology, nor does it consist of a particular type of teaching material. Understood properly, it is an approach to language learning, which based on learner need; it is also an approach to language teaching in which all decisions as to content and method are based on the learners' reason for learning" (Hutchinson & Waters, 1987:19).

6. The concept of *"special language"* is the focus of the word *"special"* in ESP is on the purpose for which learners learn and not on the specific jargon or registers they learn.

7. The concept of "*specialized aims*" refers to the purpose for which learners learn language, not the nature of the language they learn

8. The use of 'competence' and 'performance' as technical terms originates with **CHOMSKY** (1965:4). 'Competence' refers to 'the speaker-hearer's knowledge of his language' and 'Performance' to 'the actual use of language in concrete situations'. Chomsky's primary goal has always been to provide a description of competence and the innate mechanism underlying it

9. The project of Kristen Gatehouse has discussed the origins of ESP, addressed key notions about ESP and examined issues in ESP curriculum design. The content of the paper was determined by a need identified based on her professional experience as an ESL instructor designing and delivering the content-based language programme – Language Preparation for Employment in the Health Sciences.

10. International communication is scientific article that students are supposed to prepare in order to be published at the international scale for the requirement of a 'doctorate' degree.

11. Ministerial decree n° 04-371 of 21/11/2004 (article 2), includes the scientific English module within the official programme by setting the main objectives of the module.

12. The objectives are: At the end of the year the students should be able to master,

   - scientific English
   - the writing and listening skills to prepare oral communication in biology
   - the methodology for scientific research

Appendices

Appendix I

Please tick (*) in the appropriate box the chosen answer or give a full answer where needed;

1-   Name ....
2-   Age   ....
3-   Sex ....
4-   Year of study? ....
5-   Field of study? ....
6-   What is your medium of instruction? ....
7-   Which language does speak/write? ....
8-   Number of years in English learning? ....
9-   Do you think English is
        a- A very easy language   b- An easy language   c- A difficult language

10-   Do you find difficulties in learning English?
            YES   NO

11-   Do you think that your problems in English are due to?
        a- Vocabulary   b- Grammatical structures   c- Pronunciation   d- Methods of teaching

12-   Do you think that you have in English the level of?
        a- Beginner   b- Intermediate   c- Upper-intermediate

13-   How do you read in English?
        a- Easily   b- With some difficulties   c- With great difficulties

14-   How often do you read English?
        a- Daily   b- Weekly   c- Monthly   d- Occasionally e- Never

15-   What do you read in English?
        a- General texts b- Newspaper c- Scientific article

16-   Do you find the English   module   necessary?
            YES   NO

17-   How many hours of English do you have per week?

18-   Is the English module I interesting?
       YES   NO

19-   Is the English course delivered in English only?
       YES   NO

20-   Are you motivated?
       YES   NO
21-   If no, does the teacher motivate you?

22-   How do you find the course atmosphere?
       a- Pleasant   b- Normal   c- Not interesting

23-   Does   the teaching method is appropriate to your needs?
       YES   NO

24-   Does the content of the course correspond to your needs?
       YES   NO

25-   Do you think that within your own field of study you need English to:
       a- To understand lectures on sociology in English
       b- Take part in oral discussions in English
       c- Read and translate articles in your field of study in English
       d- Write answers to examination questions

26-   What are the areas in which you think you need English?
       a- In your post graduation studies   b- In everyday life   c- In your future woks

27-   What are your needs in the four skills?
       a- To listen and understand (listening)
       b- To read and understand   (reading)
       c- To speak (speaking)
       d- To write   (writing)

   Classify the four skills according to your needs?
           1-   2-   3-   4-

28-   What are your necessities?
       a- Reading comprehension
       b- Specialized vocabulary
       c- Grammar
       d- Writing and composition
       e- General vocabulary
       f- Listening comprehension
       g- Conversation

h- Translation

29- What level do you hope to attain in English at the end of the course?
a- Intermediate   b- Advanced

30- What types of teachers do you need?
a- A language teacher
b- A subject specialist

31- Are you against the use of Arabic and/ or French during the English course?
YES   NO

32- Are you for the use of audiovisuals?
YES   NO

33- Do you think that the English course should be organized in a different way?
a- YES   b- NO   c-Do not know

34- If yes, how?
....
....

35- What other suggestions (if any) can you make?
....
....

Thank you

Appendix II

Université de Tlemcen
Institut des Science Naturelle
Département de Biologie

Chère étudiants

Ceci est un questionnaire de recherche scientifique qui contribuera au development et à l'amélioration du module d'anglais. Ainsi, d'après vos réponse nous pourrons par la suite proposer un programme adapter a vos besoins pour les années a suivre.

Merci de votre coopération

Veuillez, S.V.P, répondre aux questions suivantes en cochant sur la réponse qui vous convient et qui exprime votre opinion merci:

1- Nom :
2- Age :
3- Sexe :
4- Année d'étude :
5- Filière :
6- La langue utiliser dans vos études :
7- Les langues que vous pratiquer régulièrement :
8- Depuis combien de temps apprenez vous l'Anglais ?
9- Que pensez vous de l'Anglais ?
   -Une langue très facile   - Une langue facile - Une langue très difficile
10- Trouvez vous des difficultés à apprendre l'Anglais ?
        OUI   NON
11-Est que vous pensez que vos difficultés en Anglais sont due au :
   - Vocabulaire   - Les structure en grammaire   - Prononciation   - Méthodes d'enseignement
12- Votre niveau en Anglais est :
    - de débutant   - moyen   - avancé
13- Comment lisez vous en Anglais :

- Facilement   - Avec quelques difficultés   - Avec beaucoup de difficultés
14- Combien de fois lisez vous des textes en Anglais ?
- tout les jours   - toutes les semaines   - tous les mois   -occasionnellement
- jamais
15- Que lisez vous en Anglais?
- des textes en générale - des textes de base dans votre spécialité - des
journaux - des

Articles scientifiques.
16- Le module d'Anglais, est-il obligatoire ?
OUI   NON
17- Combien d'heure de coures avez-vous par semaine ?
18- Est que le coure d'Anglais est intéressant ?
OUI   NON
19- Est que le coure est délivré en Anglais seulement ?
OUI   NON

20- Est-vous motivé (positivement) pendant le coure d'anglais et quelle est la
raison de votre motivation ?
OUI   NON
21- Si c'est 'NON' es que votre enseignant essaye de vous motivez ?
OUI   NON
22- Décrivez l'atmosphère a l'intérieure du coure
-agréable   - normale   - pas intéressante

23- Est que la méthode d'enseignement utilisé vous permet d'atteindre le niveau
nécessaire qui convient a vos besoins ?
OUI   NON
24- Dans votre domaines (scientifique) avez-vous besoin de l'Anglais pour :
- comprendre les textes scientifiques en Anglais
- participer a ces conversations orales
- lire et traduire les articles scientifiques
- répondre aux questions durant l'examen
25- Est que les coures d'Anglais correspondent a vos besoins ?
OUI   NON
26- Dans quel domaine pensez-vous avoir besoin de l'Anglais ?
- pendant vos études de post-graduation
- dans la vie de tous les jours
- dans votre future vie professionnels
27- Quels sont vos aptitudes en Anglais ?
- écouter et comprendre (listening)
- lire et comprendre (reading)
- parler (speaking)
- écrire (writing)
Classez ses « skills » du plus important au moins important (par apport a vous)

1-   2-   3-   4-

28- Quel aspect de l'Anglais vous les vous le plus développez ?
   - compréhension du texte (reading comprehension)
   - les termes techniques et vocabulaires
   - grammaire
   - l'écrit (writing)
   - la compréhension orale (listening comprehension)
   - traduction

29- Quel niveau espérez-vous atteindre en anglais ?
   -Moyen   -Très levé
30- Est-il préférable d'avoir un enseignant :
      - d'Anglais - de biologie
31- est-vous contre le faite d'utiliser l'arabe et le français en coure d'Anglais ?
      OUI   NON
32- Est- vous d'accord pour utilisez le matériel audio-visuel en coure ?
      OUI   NON

33- Est que vous que le coure d'Anglais doit être organiser autrement ?
      OUI   NON   JE NE SAIS PAS
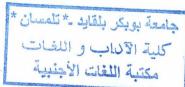34- Si c'est OUI, de quelle manière ?

35- Avez-vous d'autres propositions ?

Merci

Appendix III

Students' ˇ-structured interview

Q1. What is the main purpose of learning English?

Q2. Do you think your study can help you achieve this purpose? Why and why not?

Q3. Do you think that English is necessary in your field of study and why?

Q4. What are the major situations that you use English in your field of study?

Q5. What are your lacks in learning English?

Q6. According to you what are the necessary skills for you in English?

Q7. What do you think the teacher's role in your learning?

Q8. According to you, what are your main needs?

Q9. What are your suggestions to improve the module of English?

Question 7: What amount of time would you suggest for the module of English (as an ESP TEACHER?)
     -Explain, briefly why:

Question 8: How would you describe your students' attendance (in ESP course)?
     -Regular   -Average   -Irregular

Question 9: How would you describe your ESP' students in the course?
     -Highly motivated   -Motivated   -Not motivated at all

Question 10: Is there any objectives and syllabus provide by the administration for the module of English you are teaching (in an ESP department)?
          -**Objectives** (YES/NO)   -**Syllabus** (YES/NO)

          -If 'yes', what are, briefly the main points of such objectives and /or syllabus?

Question 11: Which type of teaching materials did you use?

Question 12: On which ground did you select your teaching materials?
          -Relevance to the topic   -Difficulty of English

Question 13: What do you focus most on in your teaching?
          -Grammar   -Comprehension   -Writing -Reading -Pronunciation
          -Terminology and translation

Question 14: Do you conduct a formal 'needs analysis' at the beginning of the course (in ESP course)?
          -YES   -NO
  -If 'yes' state, briefly what you consider to be the most important results of this analysis:

Question   15: Do you conduct an informal 'needs analysis' at the beginning of the course (in ESP course)?
          -YES   -NO

Question   16: What are students' lacks in the four skills? and why?

Question   17: How do you classify the four skills (and sub-skills) according to their needs?

Question   18: Did you enjoy your experience as an ESP teacher? And why?
          -YES   -NO

Question   19: What would you suggest to improve the teaching of English in the 'Institute Pripherique'?

<u>Thank you</u>