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**A Task-Based Syllabus for Post-Graduate
Students of Genetics at Abou Bekr Belkaid
University of Tlemcen**

This dissertation is submitted to the department of foreign languages as a partial fulfillment of the 'Magister' degree in ESP.

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DEDICATION

To my dear parents;

To my brother Zoheir, and my sister Imen.

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ABSTRACT

Though ESP courses are programmed and offered in many Algerian universities, huge lacunas are recorded in the way these courses are implemented in different departments in general including the department of biology. Despite the importance of English for Biology students especially for post-graduate students of Genetics who need English in their studies and more importantly in their future jobs, there is a total absence of a syllabus that caters for their needs and guides them in the acquisition of the knowledge of English they need in their specific field. Therefore, this study aims to identify the needs, wants and lacks of first year post-graduate students of Genetics, to highlight the problems surrounding the teaching of English in the department of Biology at the University of Tlemcen and to give some solutions through the design of a suitable syllabus.

This research is a case study involving three instruments to collect the necessary data: a questionnaire addressed to students, an interview arranged with both language and subject specialist teachers and a classroom observation. The data were qualitatively and quantitatively analyzed.

The results obtained showed that the students under investigation are in need of specific English i.e. English for Medical Sciences to achieve their academic and professional duties. The results also showed that these learners need to develop all language skills with a special focus on reading and speaking. Moreover, the task-based syllabus was opted for because it is believed to provide the Genetics students with a number of tasks that illustrate different situations needed by these learners and help them promote both accuracy and fluency.

The main conclusions that the investigator reached in this research are that English is of paramount importance for these learners who are required to use it not only in their academic, but also in their professional careers since these learners are called upon to use English as part of their daily experiments. This research also provided the investigator with a clear idea about the learning situation of students of Genetics emphasizing the suitability of a Task- Based syllabus for them.

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List of Acronyms

- EAP: English for Academic Purposes
- EBE: English for Business and Economics
- EEP: English for Educational Purpose
- EFL: English as a Foreign Language
- EGP: English for General Purpose
- ELT: English Language Teaching.
- EOP: English for Occupational Purposes
- ESL: English as a Second Language
- ESP: English for Specific Purposes
- ESS: English for Social Studies
- EST: English for Science and Technology
- NIA: Needs Identification and Analysis
- LSP: Language for Specific Purpose
- TBL: Task-Based Learning.
- TEFL: Teaching English as a Foreign Language

GENERAL INTRODUCTION

It is beyond any doubt that the English language has become the most prevailing language in the world. As it has become the linguistic engine that drives not only the global economy and international communication, but also transportations, inventions, technologies in the last century. This could explain the one billion people from the whole world willing to learn English not for pleasure, but because of necessity. Therefore, English has become the most widely taught language worldwide regardless of the status it hires in different countries, either as a mother tongue, or as a second or a foreign language. Hence governments across the world have recently embarked on ambitious educational reforms integrating English more deeply into their curricula in order to equip their learners with the linguistic denominator used and needed everywhere in the world. These courses fall under the prominent area of English for Specific Purposes (henceforth ESP).

To cope with the existing situation, Algeria like any other developing country was obliged to introduce and promote the status of English in its educational system. Thus, a number of ESP courses have been programmed and offered mainly at tertiary level in different departments such as in computer sciences, physics, economics, political sciences and in biology.

Despite the importance of English for Biology learners in general and post-graduate students of Genetics in particular, the investigator has noticed a total absence of a syllabus that caters for their needs from the English language. Consequently, and due to the important role of English in Biology in general and in the field of Genetics in particular, this work is an attempt to help post-graduate students of Genetics develop an acceptable linguistic knowledge that could satisfy their academic and professional needs. It is also an attempt to point at some problems surrounding the teaching of English in the department of Biology at the University of Tlemcen and to give some remedial solutions through the design of a suitable syllabus.

In this research, a questionnaire was addressed to first year post-graduate students of Genetics, an interview was arranged with both language and subject specialist teachers, and finally a classroom observation was conducted in order to answer the following research questions:

- What do Genetics students need English for?
- What are the main problems facing them in learning English?
- What type of syllabus would be suitable and would answer the needs of these learners?

The above questions engendered the following hypotheses:

- Genetics students need English to exploit scientific documents, read related literature and communicate with their foreign peers.

- The main problems faced by students are related to the general conception of English teaching such as time load, non frequent use of the language and non availability of teaching materials.

- A Task-Based syllabus can answer Genetics students' needs because this syllabus provides them with different tasks illustrating different situations that these students are likely to encounter in their academic and professional careers; it promotes both accuracy and fluency.

Accordingly, this work consists of four chapters:

The first chapter considers the theoretical background related to the field of ESP. It provides some key notions about the ESP operation. It focuses on the ESP

course design starting with the identification of needs, syllabus design, and materials production then moves to the explanation of the ESP teaching/learning process.

The second chapter is divided into two parts. The first part deals with the explanation of the status of English in Algeria and in different university departments with a special focus on the department of Biology at Abou Bekr Belkaid University of Tlemcen. The second part, then, highlights the research design and procedures. A detailed description of the research method, sampling and instrumentation is provided.

The third chapter undertakes the needs identification and analysis (NIA); it treats the data collected from the students' questionnaire, the teachers' interviews and the information obtained from the classroom observation.

Finally in the fourth chapter, a Task-based syllabus based on the outcomes of the NIA is suggested. It integrates the skills to be promoted, the materials needed, and the tasks that would be appropriate for post-graduate students of Genetics. This chapter ends with a sample unit illustrating the proposed syllabus content.

Chapter One: English for Specific Purposes.

1.1 Introduction.

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1.6.5 Evaluation and Assessment in ESP Teaching.

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1.1 Introduction

During the last ten years, the focus of research and curriculum development has been upon English, as it has gained ascendancy in international science, technology, and trade. As TEFL (Teaching English as Foreign Language) enters its second quarter century, the demand for English for specific purposes with its various branches EST (English for science and technology), EBE (English for business), ESS (English for Social Sciences) continues to increase and expand throughout the world. Hence, there is a need to understand the different concepts, characteristics and the requirements of ESP.

Consequently, the aim of this chapter is to shed light upon what ESP is, to give an idea about its branches and its teaching /learning process and finally to provide the process through which the ESP courses are designed.

1.2. ESP Defined

ESP is an approach to language teaching whose main objective is to provide learners with the knowledge of English they need in their field of study. It meets the needs of learners who need to learn English for use in their specific areas.

Many definitions of ESP were put forward by many linguists, for example: Mackey and Mountford (1978:2) write: “*ESP is generally used to refer to the teaching of English for a clearly utilitarian purpose*”. In the same vein Robinson (1991:2) states:

Students study English not because they are interested in the English language or English culture as such but because they need English for study or work purposes.

This means that the primary focus in the field of ESP is to help students cope with the different language features needed in their specific disciplines. In the same line, Basturkmen (2006:18) writes:

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

The point is that ESP is not an end in itself, but a means to achieve an end. Its purpose is to increase and develop linguistic potentialities of a specific group of learners who need English to perform their activities and/or studies.

A further definition of what ESP is was offered by Hutchinson and Waters (1987:19) who assert that:

ESP must be seen as an approach not as a product. ESP is not a particular kind of language or methodology... ESP is an approach to language teaching in which all decisions as to content and method are based on the learner's reason for learning.

This means that ESP should not be seen as any language product but rather as an approach to language teaching which is directed by specific and apparent reasons for learning. Accordingly, one may say that ESP is an approach to language teaching based on learners' objectives and reasons for learning a language. It helps learners develop linguistic features and competencies needed in their specific disciplines.

1.3 ESP as a New Trend of EFL Teaching

Though the early 1960's are acknowledged to be the years of the growth of the ESP field as an important and vital trend of EFL teaching, the questions that come to mind are: what are the first instances of ESP teaching? and how did the field of ESP emerge and gain terrain in applied linguistics in general and in TEFL in particular?.

Dudley Evans and St Johns (1998) related the origins of ESP to the early cases of LSP (Language for Specific Purposes) or SP-LT (Special Purpose Language Teaching) courses that can be traced back to the Greek and Roman Empires. In the same line, Stevens (1977) assumed that the history of ESP goes back to the sixteenth century, during which two types of LSP courses were provided “The Traveler Language Course” and “The German for Science Students”. Stevens continues by saying that the Second World War was the prelude of a radical change for the future of SP-LT since a huge number of LSP courses were programmed for the USA armed forces to fit a wide range of restricted purposes which have a close relationship with the requirements of the war. He gives the example of the Royal Air Force being trained to listen to Japanese fighter aircraft dialogues. These courses were restricted to develop only the listening skills. The end of the Second World War brought new perspectives and changes in scientific, technical and economic activity at an international level. These changes resulted in the creation of a world unified dominated by two major forces: technology and commerce. To meet the demands of these forces, there was an increasing request for an international language, the aim of which is to ease the treatment between partners all over the world. Apparently, and as highlighted by Crystal (1997: 13) “*English was at the right place at the right time*”.

In effect, the economic supremacy of the United States in the post war era helped in the emergence of English as the first international language used for most scientific and economic publications, becoming as such the necessary medium of communication if not the only one. Technology and commerce created a new generation of learners who needed to learn English and most importantly they knew why they needed it. (Hutchinson and Waters, 1987). Consequently, a new trend of

ELT emerged to suit different teaching situations that is, to provide students of commerce, economy, medicine, biology...etc with the knowledge of English they need to perform activities in their specific fields. This trend is referred to as: ESP (English for Specific Purposes).

Because ESP is meant to suit different teaching situations, it was broken into many types.

1.4 Branches of ESP

ESP is an umbrella term used to cover various types of courses which differ from one another according to the learners' needs. In the "Tree of ELT" Hutchinson and Waters (1987:17) break ESP into three branches to suit different teaching situations: English for Science and Technology (EST), English for Business and Economy (EBE), English for Social Sciences (ESS). Generally the goals of each type are further regrouped under two major categories which are labeled respectively EAP (English for Academic Purposes) and EOP (English for Occupational Purposes). As presented in figure 1.1

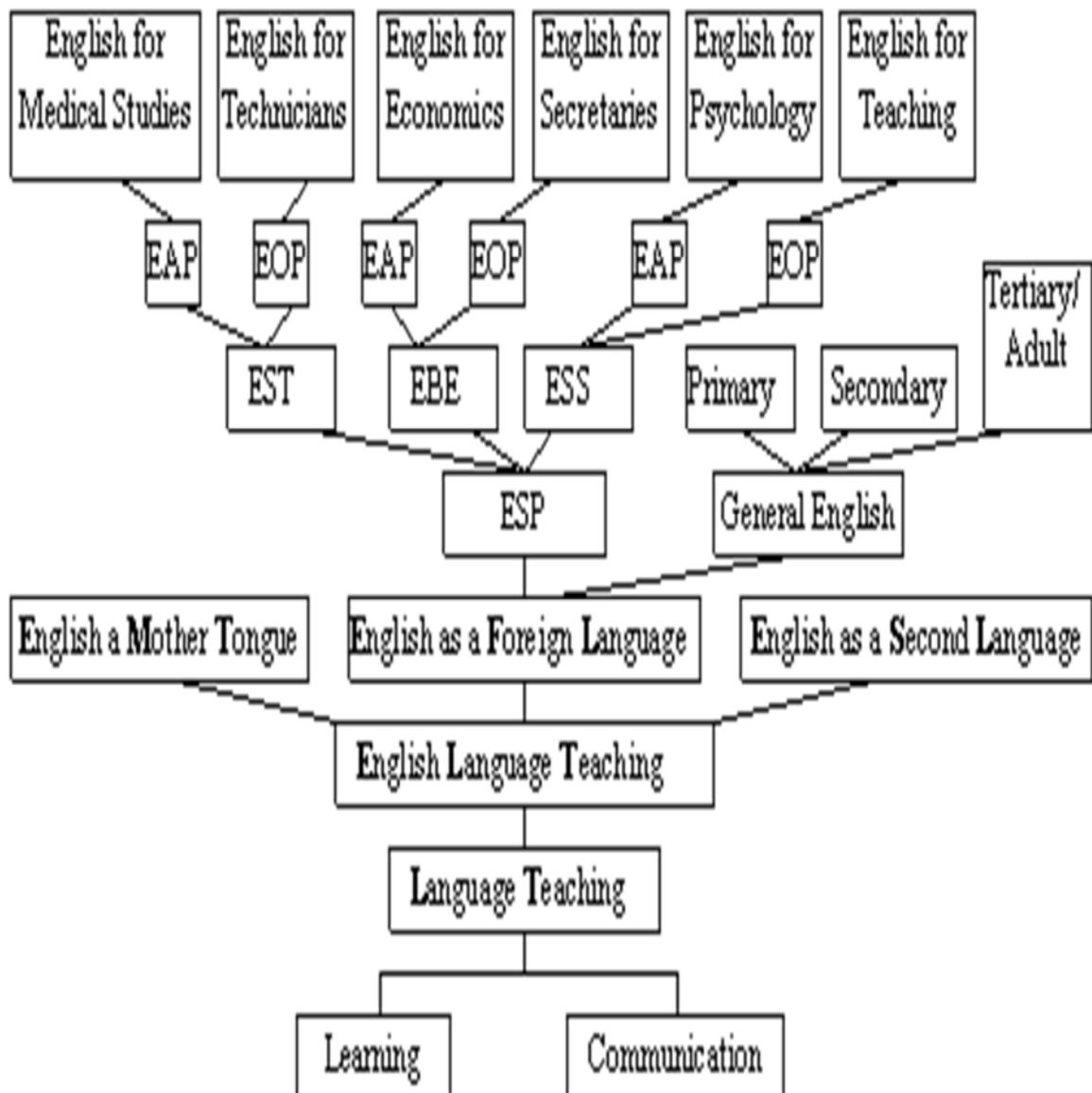


Figure 1.1: Simplified Tree of ELT

(Hutchinson & Waters, 1987:17).

The above figure divides ESP into three main types EST, EBE, and ESS. EST is acknowledged to be the area which helped in the development of the ESP field because of the scientists and technologists around the world who were willing to exchange their experiments and expand their area of inventions.

1.4.1 English for Science and Technology

Applied linguists acknowledge the important role of EST in the development of the ESP field. For example: Hutchinson and Waters (1987:9) state: *“One area of activity has been particularly important in the development of ESP: this is the area usually known as EST.”*

EST is in effect, a branch of ESP dealing with scientific topics. It grew out of the demand of scientists and technologists who were and still are in need of learning English for a number of purposes all of them related to their field of specialism.

EST can be either activity-oriented when used in an occupational setting or curriculum-oriented when used in an educational setting as explained by Robinson (1980:8): *“EST would seem to have both an occupational and an educational use of English”*.

This means that, EST can be taught to be used in academic settings and thus fall under the area of EAP or to be used in work a placement that is in EOP.

1.4.1.1 English for Academic Purposes

EAP is generally taught in educational institutions to students needing English in their studies. EAP courses are programmed in such situations to provide learners with specialized knowledge of the language so that they can read different literature, write essays or communicate in their specialized fields using English. English in this context is used as a medium of study and not as a subject matter as explained by Robinson (1991:106) who writes: *“The current concern in EAP is with studying context, that is with identifying the social as well as academic requirements of a particular situation and equipping students to cope.”*

Thus, EAP is meant to equip students with the English language so that to fulfill their studies as opposed to EOP where English is taught to people needing English to perform their jobs.

1.4.1.2 English for Occupational Purposes

EOP is taught in situations in which learners need English as part of their work. The teaching of English for occupational purposes meets the needs of learners who need English to fulfill their professional duties. The teaching of English in such situations is occupationally-oriented. As supported by Kennedy and Bolitho (1984:4): “*EOP is taught in a situation in which learners need to use English as part of their work or profession.*”

In the same line of thought, Harmer (1983:1) has given some examples to illustrate EOP situations where people may be compelled to use English as part of their everyday job, he states : “*An air traffic controller needs English to guide aircraft through skies... the businessman may need English for international trade.*”

Hutchinson and Waters (1987) however, see that there is no clear-cut distinction between EAP and EOP, they argue that people can work and study at the same time and it is likely that in many cases the language learnt in a study situations will be used later on in job environments such example is found in the English for medical sciences notably in the Genetics field.

1.4.2 English for Medical Sciences

The use of English in the scientific field is steadily increasing and nowadays specialists estimate that about 90% of the documentation relevant to medical publications is written in English as highlighted by Webber ((1993:39) qtd in Piquet *et al.* (1997:98)) who points “*It is well known that 90% of scientific articles are published in English*”. Any work done in the scientific field, international seminars, journals, articles and conferences has to be done in English or has to be translated to English. Along the same line, Ammon and Hollinger ((1992) qtd in Hemche (2007:12-13)) state:

English has become so dominant as the international language of science, especially of scientific publications, that its use seems to be necessary if one wants to be read or discussed outside of one's own country.

In this sense Mackey and Mountford (1978) assert that in the cases where science is taught in English, students need to acquire a higher standard of language proficiency to enable them to understand and manipulate difficult intellectual materials. In such situations success or failure in science is synonymous to success or failure in English.

Being one stream of the medical sciences, Biology has in the last two centuries established itself as a vivid stream of medical sciences dealing with the study of life and living organisms, including their structure, function, growth, origin, evolution, distribution, and taxonomy. This implies that biology is a large area of research gathering samples and species from the whole world, in that the English language turns out to be crucial for Biology researchers all over the world.

The need for English for researchers in Biology increased especially from 2002, when former US president Bill CLINTON called upon Geneticians from the whole world to sequence the human genome providing the world laboratories with financial supports and free access to previous American studies done in this area. Such an international investigation needs without doubt a good command of the English language.

Therefore, it is of paramount importance for biology learners especially for Genetics students to be familiar with the main scientific concepts and ideas of science in English in addition to the register and related vocabulary, they also need to develop some linguistic knowledge in English that is going to permit them to exploit such scientific documents, to attend international conferences and to be able to write using acceptable English

(since they are expected to present scientific reports , to discuss laboratory experiments and research findings).

1.5 ESP Teaching Process

The methodologies of ESP teaching are similar to any other language teaching process i.e., the process of ESP teaching should follow the principles of effective and efficient learning. In this respect, Strevens (1988) notes that:

The methodologies of ESP teaching conform to the same model of the language teaching process as does any other form of language teaching. That is to say, the basic teaching activities are these; shaping the input; encouraging the learners' intention to learn; managing the learning strategies and promoting practice and use.

In the ESP teaching process, several elements have to be taken into consideration, most importantly, the learner, his needs, objectives, goals, motivation and attitudes towards learning i.e., the learner in ESP is placed at the heart of the process, everything is done around him, to him and for him.

In the ESP process not only the learner is emphasized and put at the center of the process, the ESP teacher also has to adapt his role to the ESP situation that is, he has to become a: *“knowledge provider and a facilitator of his students' learning and no more as a resourceful authority.”* (Kashani *et al.* (2007:85).

1.6 ESP Course Design

Course design refers to the planning and structuring of a course to achieve the needed goals. It is the outcome of a number of elements: the result of the needs analysis, the course designer's approach to syllabus and methodology, and existing

materials Robinson (1991). In the same vein, Hutchinson and Waters (1987:65) have defined a course as “*An integrated series of teaching-learning experiences, whose ultimate aim is to lead the learners to a particular state of knowledge.*” Munby (1978:2) continues saying that ESP courses are: “*Those where the syllabus and the materials are determined by the prior analysis of the communication needs of the learner.*” This means that the identification of learners’ needs is the first step upon which the ESP course is going to be designed.

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

From the above definitions, one may say that the aim of the ESP courses are to prepare the learners in accordance with specific skills and vocabulary needed in their own field in order to be able to communicate effectively in the target situation. To achieve these aims, a number of steps need to be completed namely:

- ✓ Needs identification and Analysis (NIA).
- ✓ Syllabus Design.
- ✓ Materials Production.
- ✓ Teaching.
- ✓ Evaluation and Assessment.

1.6.1 Needs Identification and Analysis (NIA)

NIA is a primordial step in any ESP operation. It is the basis upon which the course is going to be designed as explained by Senhadj ((1993) qtd in Hemche (2007:15)) who notes “*...if you define the need, you define the content of the course.*”

Acknowledging its importance as a crucial characteristic in ESP course design, Mc Donough (1984:29) writes: “*Needs analysis reflects the key assumption that the learner is at the heart of any teaching programme.*” He

continues saying: *“The idea of analyzing the language needs of the learner as a basis for course development has become almost synonymous with ESP.”* This means that, the process of needs analysis in ESP teaching provides the core information that is essential in establishing programmes, courses and the required teaching materials. In the same line of thought, Johns (1991:67) writes:

The rationale for needs analysis is that by identifying elements of students' target English situations and using them as the basis of EAP/ ESP instruction, teachers will be able to provide students with the specific language they need to succeed in their courses and future careers.

This means that, needs analysis is central to ESP courses because ESP students are not targeting all the sides of the language, for this reason ESP course designers have to equip them with the knowledge of English they need to fulfill either academic or professional purposes. Thus, the duty of the course designers is to identify learners' needs and design a course around them.

1.6.1.1 The Process of NIA

Many factors have to be taken into consideration when identifying and analyzing learners needs.

➤ Sources:

Many sources are to be considered in the NIA process such as:

- Previous needs analyses i.e., former studies and research exploring the same context or similar programmes targeted to specific students with special needs.

- Learners themselves.
- Applied linguists are seen as helpful and purposeful source providing the course designer with the related theory and the path to follow while undertaking such a task.
- Domain experts, also called insiders, these may be ESP teachers or subject specialists who are familiar with the environment thus, they are certainly aware of the requirements and the problems facing the teaching/learning process.

➤ **Triangulation**

When identifying and analyzing students' needs at least three instruments of data collection should be used because different sources of data lead to the credibility and reliability of the research.

➤ **Multiple Methods**

In the collection of the required data one method may not provide a thorough idea about the situation in question, thus course designers have to use both quantitative and qualitative methods in gathering data. As explained by Bacha (2004:08) *“Collecting data through various methods may add essential insights and help obtain a more realistic picture of the target situation.”*

To collect the necessary data many types of needs have to be identified and analyzed.

1.6.1.2 Types of Needs

Before tackling the types of needs, it is necessary to understand what is meant by the term **“needs”**.

Needs are defined as being the requirements that the students have in order to be able to communicate effectively in the target situation. They are also defined as what the students need to learn to acquire the language.

The above definitions imply the existence of two main types of needs that the ESP course designer has to take into consideration while establishing his/her syllabus: **Target needs** and **Learning needs**. In the same vein Sanhadje ((1993) qtd in Hemche (2007:20)) puts it “*We analyze the learners’ needs by distinguishing target needs and learning needs.*”

Target needs refer to what the learners need to do in order to be able to communicate effectively in the target situation. Viewing the definition as such the meaning is likely to be closest to the term Objectives; this is why further divisions were made to differentiate between Necessities, lacks and wants.

Necessities represent the final objectives. They refer to the academic or occupational requirements of the target situation; they show what the learners are able to do at the end of the English course. That is, what the learner has to know in order to function effectively in the target situation. In this sense needs are described as objectives. Robinson (1991:07)

Lacks refer to the proficiency level and background of the learners; they also refer to what learners lack in order to reach the required level of proficiency. Lacks are then, what learners do not know or cannot do in English.

Wants are the personal aims that the learners like to obtain from the language course. In other terms, wants help in determining the content of the ESP course.

Learning needs however, show how students will be able to move from the starting point (lacks) to the final destination (necessities). They seek information about the learning situation, learners’ level of proficiency and teaching materials. Hutchinson and Waters (1987) claim that it is naïve to base a course design simply on the target objectives, and that the learning

situation must also be taken into account. They added that the target situation (target needs) alone is not reliable indicator, and that the conditions of the learning situation, the learners' knowledge, skills, strategies, motivation for learning, the setting and the time load are of prime importance.

Robinson (1991) mentioned three areas of research in seeking information about the learning situation.

- **Target Situation Analysis:** It enables the investigator to determine the needs of the target situation.
- **Present Situation Analysis:** it enables the investigator to determine learners' lacks and check their proficiency level.
- **Language Audits:** They are used to determine the role that the foreign language hires in the institute or the department in which the study is conducted i.e., the investigator has to :
 - Determine the language skills needed.
 - Determine the abilities (materials, time load) of the department or the institute under investigation.
 - Determine the period of ESP training.

Once the learners' needs are identified the ESP course designer can move on to the following step that is, syllabus design. As maintained by Munby (1978:40) who says: "*syllabus specification in ESP can only take place after the prior and necessary work has been done on needs.*"

1.6.2 Syllabus Design

Designing a syllabus that meets the needs of specific learners is the second step that the ESP course designer is going to handle. Thus, an understanding of the word "syllabus" and the different ESP syllabi is necessary.

1.6.2.1 Definition of a Syllabus

A syllabus can be defined as a statement of what is to be learnt . Robinson (1991:34) defines syllabus as: “*a plan of work and is thus essentially for the teacher, as a guideline and context of class content*”. That is, the syllabus acts as a guide for both the teacher and the learner by providing some goals to be attained .

A further definition of a syllabus is provided by Nunan (1991:2) who considers a syllabus as “*A statement of content which is used as the basis for planning course of various kinds... The task of the syllabus designer is to select and grade this context.*” That is, the syllabus is the main concern of the teacher; it helps him planning and organizing his courses. It also provides a set of criteria for materials production. In the same respect, Yalden (1987:86) explains:

The syllabus is now seen as an instrument by which the teacher, with the help of the syllabus designer can achieve a certain coincidence between the needs and aims of the learners and the activities that will take place in the classroom.

Basturkman (2006:20) provides the characteristics of syllabus:

A syllabus:

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

Figure1.2: Characteristics of a syllabus

What should be noted is that designing an ESP syllabus is far from being an easy task because of its complex and important role in meeting the students' needs; this is why ESP syllabus designers need to be aware in the choice of the adequate type of syllabus so that it can be used most appropriately.

1.6.2.2 Types of Syllabi

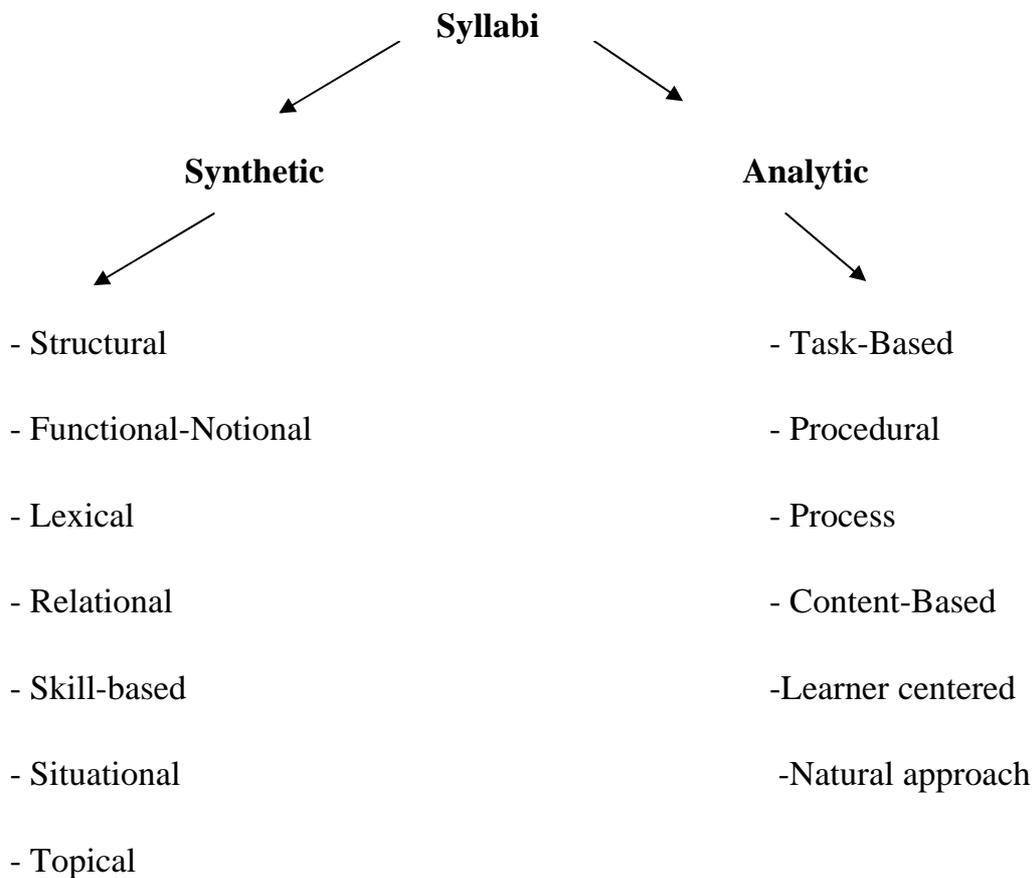


Figure 1.3: Classification of syllabi according to Long & Crookes (1993).

The above figure shows the existence of two main types of syllabi: synthetic and analytic syllabi. Wilkins (1976:02) describes the synthetic approach as:

A synthetic language teaching strategy is the one in which the different parts of language are taught separately and step by step so that the acquisition is a process of gradual accumulation of parts until the whole structure of language has been built up.

This means that within the synthetic approach language forms are tackled separately and progressively, the synthetic approach relies on learners' capacities to learn a language in different parts separately from one another.

In effect, the term synthetic is a generic term used to cover a variety of syllabi such as: Structural, Functional Notional, Skill-Based and Situational syllabuses.

- **Structural Syllabus:**

Emphasizes grammatical structures and form of the language . A structural syllabus proceeds gradually from easy to more complex grammatical structure. According to Jureckov (1998) this type of syllabus characterizes the model of foreign language teaching at its beginning. It focused only on one language aspect which is grammar.

- **Functional-Notional syllabus:**

Wilkins (1976) describes functional-notional syllabus as a semantically-based syllabus which identifies the meanings (the notions) and the communicative acts (the functions). i.e., this syllabus combines both meaning and function (grammar).

- **Skill-based syllabus:**

Combines linguistic competences such as: pronunciation, vocabulary, grammar, and generalized types of behaviour such as: socializing, presentations. The objective of this syllabus is to learn about a given specific language skill/skills and develop it/them.

- **Situational syllabus:**

Provides learners with real situations in which the language is used and practiced. as explained by Reilly (1988) the content of language teaching is formed by real or imaginary situations in which a foreign language is used. Quite often a situation involves a group of participants engaged in performing an activity in a specific situation.

Analytic syllabi are described however, by Wilkins (1975:13) as those syllabi which:

Are Organized in terms of the purposes for which people are learning language and the kinds of language performance that are necessary to meet those purposes.

This means that, the analytic syllabi rely on learners capacities in synthesizing language rules based on their capacities and aptitudes to produce the different grammatical structures and forms.

The analytic approach in its turn comprises a number of syllabi for instance: Task-Based, Content-Based, Learner centered syllabi.

- **Task-based syllabus:**

It is that syllabus in which the content is based on the teaching of complex and purposeful tasks that specific students want or need to perform with the language they are learning. It derives its principles from the task-based language learning, a learner-centered approach based on the use of tasks as the core unit of instruction rather than on language forms. This approach favours the use of real life tasks which engage learners in meaningful, authentic, goal-oriented communication to achieve a well defined outcome. Besides, this type of syllabus promotes real communication situations in the target language.

- **Content-Based syllabus:**

In the Content Based Approach, the language activities are associated with subject matter being taught. As highlighted by Brinton *et al* (1989:2):

In a content-based approach, the activities of the language class are specific to the subject matter being taught, and are geared to stimulate students to think and learn through the use of the target

language. Such an Approach leads itself quite naturally to the integrated teaching of the four traditional skills.

This means that, this type of syllabus permits to learners to know about the knowledge of the target language and the content as well. In other words, it helps them acquiring the needed language in a meaningful context which is closely related to their specific field.

- **Learner-Centered Syllabus**

According to Nunan (1991) learner-centered syllabus seeks to provide learners with efficient learning strategies that will allow them to negotiate on the syllabus, to encourage learners to set their own aims, to choose corresponding learning strategies to fulfill their aims, and finally to develop self-evaluation skills.

Each one of these syllabi is subject to six universal requirements. These requirements lead the ESP course designer to i) focus upon; ii) select; iii) subdivide; and iv) sequence the appropriate outcomes of language learning (Breen, 1987:83):

1. provision of an accessible framework of required knowledge and skills;
2. provision of continuity for its users;
3. ability to give a retrospective account of what has been achieved;
4. evaluation - provision of accountability to colleagues, to learners, and to the wider institution and society;
5. precision of purpose, so that it may be assessed for appropriateness through implementation;
6. Sensitivity to the environment for which the plan is intended.

1.6.2.3 The ESP Syllabus

Hutchinson and Waters (1987) argue that there are various kinds of ESP syllabi to suit different learning situations. In the same vein Robinson (1991:35) maintains that “*One major issue in ESP is the relationship in any*

syllabus of language, pedagogy and content that is, the student specialist subject area.”

It is worth mentioning that the aim behind ESP courses is to equip the learners with the bits of language they need so that they can communicate effectively in the target situation. Therefore, it is necessary to provide them with “syllabus” whose methodology and content enable learners to acquire the necessary language knowledge.

Accordingly, syllabus designers “*might begin with grammar and pronunciation only, as one does in structural approach, but introduce work in the language functions, and in discourse skills fairly early and in time increase the component of the course*”.(Yalden,1987:94).

In effect, designing a syllabus to actually meet students’ needs is far from being an easy task to fulfill because of the crucial role it achieves. The ESP course designers have then, at their disposal various types of syllabi. The question which may be asked is which one to choose. In fact, much depends on what needs analysis reveals, and it is on the basis of the findings of the latter that course designers will choose the most adequate syllabus.

Be it content-based, structural, task-based, functional-notional syllabus, the ESP syllabus is and remains an important document in the teaching/learning process, thus, it should be flexible, open-ended and subject to constant revision.

After the establishment of the adequate ESP syllabus, the ESP teacher or course designer has to select the appropriate teaching materials.

1.6.3 Teaching Materials

It is generally assumed that appropriate materials in an ESP situation are not available all of the time, this is why the main task of the ESP teacher is to tailor materials and suitable activities that match best his/ her students’ needs. Teaching materials can be either **authentic** or **created**

The use of authentic materials is viewed as very important in ESP situation because they ensure relevance of the content to the field of study that is, ESP learners can see the direct link between the course content and their fields of study. Besides, this type of materials has a positive effect on the learners' motivation as supported by Phillips *et al* quoted in Richards (2005:253) who state:

Authentic materials have a positive effect on learners' motivation because they are intrinsically more interesting and motivating than created materials. There is a huge supply of interesting sources for language learning in the media and on the web and these relate closely to the interests of many language learners.

Created materials, however, refer to the textbooks, handouts and other specially developed instructional resources. According to Richards (2005) created materials may be superior to authentic materials because they are generally built around a graded syllabus and hence, provide a systematic coverage of teaching items.

In effect, be it authentic or created, good materials help a great deal in organizing the ESP teaching /learning process because they provide learners with a stimulus and motivation to learn.

After designing the suitable syllabus, and selecting the adequate teaching materials, the next step will be to put the programme into practice. This task falls then on the shoulders of teachers.

1.6.4 Teaching

ESP teachers are said to be facing a variety of problems since the latter are called upon to fulfill a task for which they have received no training i.e., ESP teachers are generally general language teachers whose task is to teach learners with specific needs and has to adapt and adopt himself to the new situation for which he was not

prepared. As explained by Stevens (1988 qtd in Benyelles, 2009:42). an ESP teacher is “ *a teacher of General English who has unexpectedly found himself/herself required to teach students with special needs*”. Unlike the general English teacher, the task of the ESP teacher is that of “instructor, facilitator, role-advisor, monitor, co-communicator, classroom manager and consultant”. In effect, the ESP teacher does not only teach , he is involved in designing, setting up , administering the ESP course, for this reason Swales (1980), Dudley Evans (1998) and Robinson (1991) called him an ESP practitioner rather than an ESP teacher. Robinson goes a stage further stating that besides the tasks assigned to the ESP teacher he has to be flexible i.e., he has to cope with different situation and different learners, he has to be flexible in methods of teaching applied because the ESP practitioner has to be eclectic because eclecticism leaves the door open for any stratagem or technique which could fit in a given situation. Miliani (1994).

1.6.5 Evaluation and Assessment in ESP Teaching

Evaluation is a stage that gives information for re-planning purposes, as well as adjustments which may be needed in a literacy programme. It is worth mentioning that the evaluation stage is central in ESP practice because ESP is as any other teaching enterprise it has certain objectives to reach. Therefore, it is important to evaluate and assess how these objectives have been fulfilled.

➤ Learners’ Assessment

This kind of evaluation is done to check and assess students’ performance besides; it enables teachers to detect the encountered linguistic problems and difficulties for the sake of providing remedies in the following courses.

➤ **Course Evaluation**

This kind of evaluation concerns the ESP course itself. It helps assess whether or not the course objectives have been attained.

1.7 Conclusion

This chapter has tried to give a clear idea about ESP, its origin and development. Besides it has shown that the identification of the learners' needs is a key step in the ESP teaching operation and of paramount importance in any ESP teaching situation. Because any ESP survey is based on an analysis of the target informants' needs, wants and objectives from learning, the following step taken by the researcher in the second chapter will be to set the ground for this analysis by providing the set of information needed about the target situation; thus the following chapter will deal with the description of the target situation and the collection of the needed data.

Chapter Two: Situation Analysis and Data Collection.

2.1 Introduction.

2.2 Situation Analysis.

2.2.1 The Status of English in Algeria.

2.2.2 Description of the ESP Situation at Tlemcen University.

2.2.2.1 The Department of Biology.

2.2.2.2 Description of the Target Situation.

2.2.2.3 The Teaching Time Load.

2.2.2.4 Teaching Materials.

2.3 Research Methodology.

2.4 Sample Population.

2.4.1 Students' Profile.

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2.4.2.1 Language Teachers' Profile.

2.4.2.2 Subject Specialists' Profile.

2.5 Data Collection Instruments.

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2.5.2.1 Language Teachers' Interview.

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2.6 Methods of Data Analysis.

2.6.1 Quantitative Analysis.

2.6.2 Qualitative Analysis.

2.7 Conclusion.

2.1 Introduction

The Algerian decision makers strive to develop the status of English in our educational system as it has become of paramount importance in the world of work and the main vehicle of scientific and technological exchanges. Thus, ESP courses are programmed and offered mainly at tertiary level to match the Algerian learners' evolving needs and equip them with the language they need to fulfill their studies or their occupational duties.

This chapter is divided into two parts, the first one aims at describing the status of ESP in Algerian universities more precisely in the department of Biology. It also aims at identifying the problems surrounding the teaching of English in this department. The second part, aims at presenting the research methodology, the participants and the set of instruments used in the collection of the necessary data.

2.2 Situation Analysis

Before embarking in the research methodology, the participants and the instrumentation used in the collection of the required data, an understanding of the status of English in Algeria and in its universities most notably in the department under investigation is necessary.

2.2.1 The Status of English in Algeria

Algeria, like any other country willing to extend its commercial and cultural exchanges, was obliged to implement and develop the use of the English language in its educational system to insure better communication and better access to knowledge to learners, businessmen, scientists... . Although the privileged language used in Algerian education and administration for more than four decades after the independence was French, the awareness of the paramount importance of English in international communication favours the promotion of English language teaching nowadays.

Thus, the Algerian decision makers have implemented English at all levels of education four years in middle schools, three years in secondary schools and in universities.

At tertiary level, English is taught in different departments nationwide, either as a main subject at the English Departments where the lectures are taken in charge by full time teachers holders of ‘Magister’ or ‘Doctorate’ degrees; or as a compulsory module in many fields of specialism such as: computer sciences, economics, psychology, mathematics, engineering, biology,... . However, teachers of English in these departments are part time untrained teachers most of the time holders of a ‘License’ degree.

2.2.2 Description of the ESP Situation at Tlemcen University

As mentioned above, ESP courses are offered in different departments in order to respond to learners’ evolving needs and enable them to undertake research and investigation. The present research is targeting one ESP teaching situation, more precisely, that of first year post-graduate students of Genetics at the department of Biology, in Tlemcen University.

2.2.2.1 The Department of Biology

The department of Biology receives baccalaureate holders from mainly natural sciences stream. These students are supposed to go through a curriculum of four to five years depending on the type of specialty they have chosen.

In the department of Biology, the curriculum is divided into two main stages:

The first two years : are referred to as common stream where all the students receive the same courses including the English course. At the end of these two years, the students have to chose their field of specialism. For this, they study the two or three coming years to obtain either a Diploma of Superior Studies (DES) or to become an Engineer in one of the following specialties offered by the department of Biology at Tlemcen University:

The following two or three years: referred to as The Specialty Years. The students are going to be specialized in one of the following fields.

- Biochemistry (02 years of specialty) → Diploma of Superior Studies.
- Microbiology (02 years of specialty) → Diploma of Superior Studies.
- Physiology (02 years of specialty) → Diploma of Superior Studies.

- Vegetal and Environmental Ecology (03 years of specialty) → Engineer.
- Control of Alimentary Quality (03 years of specialty) → Engineer.
- Animal Ecology (03 years of specialty) → Engineer.

Being awarded of a Diploma of Superior Studies or An Engineering Status, Biology students may pursue their studies but have to succeed first in the post graduation entrance exam. These studies last two years to hold a ‘Magister’ degree in one of the four specialties offered by the Biology department (University of Tlemcen).

- 1- Microbiology.
- 2- Human or animal physiology.
- 3- Ecology.
- 4- Genetics and molecular Biology.

The following table recapitulates the university curriculum adopted in the department of Biology (University of Tlemcen):

Department of Biology		
Graduation		Post Graduation
Year1and 2	Year3 and 04/ (5)	Post Graduation Specialties
Common Stream Years	Specialty Years	1. Microbiology. 2. Human or animal physiology. 3. Ecology. 4. Genetics and molecular Biology.
	1. Biochemistry 2. Microbiology 3. Physiology 4. Vegetal and Environmental 5. Ecology 6. Control of Alimentary Quality 7. Animal Ecology	

Table 2.1 The University curriculum Adopted in the Department of Biology
at Tlemcen University.

Alongside with the modules studied during the theoretical year, post-graduate students receive an English course, whose aim is to equip learners with the language they need in their studies, research or in their future career.

Despite the paramount importance of English for Biology learners, more specifically for Genetics students, it is given a low importance compared to the other content modules. It is still regarded as an additional module. Its coefficient is of one. It is held by General English non trained teachers who recently have been awarded a 'License' degree and who are free to teach whatever aspect or skill of the language they like. Besides, there is no syllabus, the fact which neither eases the task for the teachers nor caters for the needs of those specific learners.

2.2.2.2 Description of the Target Situation

The present research investigates the teaching of English at the Department of Biology with reference to first year post-graduate students of Genetics.

In this field of specialism, Genetics students are compelled to follow an instruction of one theoretical year during which the learners will have to study 16 modules, nine of which are annual modules and seven are semestrial modules tightly related to their field of specialism . These modules are hereby named respectively:

<i>The First Year Magister of Genetics and molecular Biology Modules.</i>	
<i>Annual Modules</i>	<i>Semestrial Modules</i>
<ul style="list-style-type: none"> -Regularization of the Gene Expression. -Biometry and Modeling. -Genetics of Populations. - Phylogeny and Evolution. - Cell and Molecular Physiology. -Cytogenetic. -Human Molecular Genetics. -English. 	<ul style="list-style-type: none"> - Populations' Dynamics. - Molecular Genetics. - Didactics of Genetics. - Immunogenetics. -Bio Informatics. -Jobs of Laboratory and Terrain. -Bioethics.

Table 2.2 The Modules of First Year Magister Genetics and molecular Biology Students.

The time allocated for these modules ranges between two and three hours per week depending on their relevance and importance to the field of Genetics.

The annual modules last for the whole theoretical year and have to be fulfilled in 60 hours. The semestrial modules, however, as their name indicates last for one semester and have to be accomplished in 20 hours. at the end of the theoretical year, students have to sit for examinations and need to obtain an average of 10/20 or above in order to succeed and turn up to the practical year. The latter lasts for 12 months or more, during which the students have to write a memoire summarizing a studied phenomenon.

Though English is of paramount importance in the field of Genetics and though the English module is an annual module, it is regarded as a compulsory module which receives neither a planning status nor an administrative support par rapport to the other main subject modules. In effect, the Department does not provide any prepared materials, syllabus or teaching aids for the ESP teaching situation. The thing which pushes the English teacher to rely on himself and have recourse of the already prepared materials to shape his lectures.

The content of these lectures is chosen randomly focusing most of the time on providing learners with some terminology related to their field of specialism, refreshing their memory with some grammatical rules and/or emphasizing the reading skill at the expense of the other skills through some texts without taking into account the first step of any ESP course i.e., the NIA.

2.2.2.3 The Teaching Time Load

What should be noted, is that the English course is a compulsory module at both graduation and post-graduation levels, in all departments, however, the teaching time differs from one department to another depending on the field and level of study.

In the Department under study, the fixed time allocated to the English course ranges between one hour and a half (1h30) per week in graduation to two hours (2h) per week at post-graduation level. The following table shows the time allocated to the teaching of English in different departments.

<i>Departments</i>	<i>Time Allocated to the Teaching of English</i>					
	<i>Graduation Level</i>				<i>Post-Graduation Level</i>	
	<i>Year01</i>	<i>Year02</i>	<i>Year03</i>	<i>Year04</i>	<i>Year01</i>	<i>Year02</i>
<i>Biology</i>	1h30	1h30	1h30	1h30	2h	-
<i>Physics</i>	-	-	1h30	1h30	1h30	-
<i>Economics</i>	2h	2h	2h	2h	2h	-
<i>Mathematics</i>	-	-	1h30	1h30	1h30	-
<i>Exact Sciences</i>	-	-	1h30	1h30	1h30	-

Table 2.3 Time allocated to the Teaching of English in Different Departments.

2.2.2.4 Teaching Materials

Though the teaching materials are said to be of paramount importance in any ESP course, there is still huge lack of such materials in all departments in general and in that of Biology in particular.

It should be noted that, the ESP teachers who handle such a task in this department are generally untrained teachers, who are given no fixed programme, no syllabus and no materials that could more or less ease their task. Consequently, they are compelled to tailor their own materials which are most of the time unsuitable for the type of learners they teach.

2.3 Research Methodology

The aim of this study is to investigate the reasons laying behind the difficulties and the problems encountered by both English teachers and learners at the department of Biology. also aims at equipping students with the necessary English language in order to be able to communicate adequately in the target situation. The following sections will describe the research methodology of this work.

In the present research, the investigator has not explored all the areas of ESP teaching in the department of Biology; She has tried to investigate a well defined case that of the first year post-graduate students of Genetics by diagnosing the difficulties and the problems surrounding the ESP teaching situation within this particular context.

Accordingly, the methodological approach adopted in this research is a case study which is defined as being “*the empirical inquiry that investigates a contemporary phenomenon within its real-life context.*” Anderson (1993). This entails that, the case study is the approach that provides the researcher with an in-depth study of a given phenomenon as it occurs in its natural environment. In the same line of thought, Stephan and Michael (1981:48) assert that “*case studies are in depth investigations of a given social unit resulting in a complete, well organized picture of that unit.*”

Adelman *et al* (1992) suggest that the case study is an “*instance in action*” it means that the investigator has to select one instance of a particular group of elements or phenomenon from the whole class or organization and investigate the way this instance functions in context. It enables the researcher to either globally depict a situation or focus on specific factors or elements.

2.4 Sample Population

Before introducing the sample population involved in this study; one should first define what is meant by sample population. A sample is defined as being the group of participants or informants whom the researcher actually examines in his empirical investigation and the population is that group of people whom the study is about. (Dornyei 2007:96)

What should be noted is that, sampling or choosing a sample population for one’s research is not an easy task because such an operation is based upon certain scientific techniques that the investigator has to follow to avoid being biased and thus, ensure objectivity for the research. The following criteria were taken into consideration:

- **Randomness:** the investigator has to pick whatever informants (male, female, age...) involved in the target situation, and has not to limit her sampling on a given category (only female, or on a given age) since “*random sampling involves selecting at random from a population list*” (Robson 1993: 137).

- **Quota:** is used for the sake of obtaining a representative research; in other words, “*quota is a cell within an overall sample, designed to have the same socio demographic characteristics as its population*” (Oppenheim, 1966: 41).

Accordingly, both techniques have been used when sampling for this research; both random and quota techniques have been used in the type of students, and a random technique has been used in the choice of the subject specialists and the language teachers.

2.4.1 Students’ Profile

The students have been chosen on a quota basis from all the other post-graduate students of the other disciplines within the department of Biology besides, they were chosen from the other students of the preceding years. Thus, the choice of post-graduate students of Genetics was done on a quota basis of all the other existing fields of post graduation within the Biology department.

This research concerns first year post-graduate students of Genetics Biology at Abou Bekr Belkaid University of Tlemcen during the academic year 2010-2011. All of the six post-graduate Genetics students have been included in this research. The investigator has chosen to construct her research upon these students, firstly, because they are advanced learners and thus, they are aware of their needs from the English course, as it has been highlighted by Kennedy and Bolitho (1984:13-14) “*the older the learner is the more likely he is to have his own definition ideas on what and why he is learning English*”. Secondly, it has been confirmed by the Biology department

staff that though English is important for all the Biologists, it is more important for Geneticians since Genetics is a new field of research that studies the human genome and the characteristics of inheritance from one generation to the other, and whose scientific literature is mainly in English. Besides, once holding their magister, these students are compelled to work in laboratories in which they have to collaborate with researchers from the whole world in order to contribute to the improvement of this field at an international scale.

The six postgraduate students of Genetics are holders of either a Diploma of Superior Studies or of engineering status, their age ranges between 22 and 30 years, all of them have studied English at middle, secondary, and tertiary levels.

2.4.2 Teachers' profile

Two Language teachers and two Subject Specialists are involved in this study. The four teachers have been chosen randomly except the language teacher who is in charge of the English module for the post-graduate students of Genetics.

2.4.2.1 Language Teachers' Profile

The two language teachers included in the present study are teachers at Abou Bekr Belkaid Tlemcen University. One of them is a full time teacher at the English Department who holds a Doctorate degree in TEFL and Applied Linguistics, and the second one is a part time teacher at the English department Tlemcen University, a holder of a License degree. Both of them have been teaching English to Biology post-graduate students. Their teaching experience is that of 05 to 17 years, with an ESP teaching experience of two and five years in the Department of Biology.

2.4.2.2 Subject Specialists' Profile

The two Subject Specialists included in this research are full time teachers, holders of a Doctorate degree in the field of Genetics and whose teaching experience in the department of Biology at Tlemcen University is that of 20 and 27 years.

2.5 Data Collection Instruments

To collect the necessary data, the investigator had recourse to three research instruments for the sake of multiplication of data sources i.e., triangulation which gives reliability and validity to data collection. Moreover, it is acknowledged that different sources of data lead to the credibility and reliability of the research as it is highlighted by Richards (2005:59) who says:

Many different sources of information should be sought (...)information could be obtained from the following sources: samples of students and writing , test data on students performance, reports by teachers on typical problems face, opinions of experts, information from students via interviews and questionnaires...

Accordingly, a questionnaire addressed to Genetics students, an interview arranged with both language and subject specialist teachers and a data based on a classroom observation are used to obtain an account of the target situation.

2.5.1 The Questionnaire

The questionnaire is a one of the most helpful tools of investigation used to obtain useful feedback and reliable results. It enables the investigator to get information about the target situation as explained by Richards (2005:60) who states:

Questionnaires are one of the most common instruments used. They are relatively easy to prepare, they can be used with large numbers of subjects, and obtain information that is relatively easy to tabulate and analyze. They can also be used to elicit information about many different kinds of issues, such as language use, communication difficulties, preferred learning styles, preferred classroom activities, and attitudes and beliefs

This means that the questionnaire is easy to prepare and can be analyzed in a very short amount of time. Moreover, it is a useful instrument that may help the

investigator to get a real and objective view of the problems surrounding the teaching/learning situation.

The questionnaire helps also the investigator to check the validity of the research hypotheses through different questions as highlighted by Richterich and Chancerel (1980:59) who asserts “*questionnaires are structured instruments for the collection of data which translate research hypotheses into questions.*”

For the reliability of the data, the investigator has used a pilot questionnaire to be sure that the questions were clear enough. The results helped the investigator to make the necessary changes to avoid any kind of confusion or irrelevancy.

The questionnaire was written in English then was translated to French to enable the informants to better understand and answer clearly the questions.

What should be noted is that not only one type of questions was used in this research because; different types of questions help the investigator to get more information about the target situation. Besides, each type has its own characteristics that contribute in the gathering of the needed information. In this vein Nunan (1992: 143) asserts that:

Responses to closed questions are easier to collect and analyze (...) It is also likely that responses to open questions will more accurately reflect what the respondent wants to say.

Accordingly, four types of questions were used:

- Closed questions.
- Open questions.
- Mixed questions.
- Graded questions.
-

Closed Questions

This type of questions consists of a selection of an answer from many possibilities i.e., the informant, has to chose the answer that seems to fit best his opinion without providing any comment.

Example: As a future Genetitian, Do you consider English as

- Very important.
- Important.
- Not important.

Open Questions

This type of questions permits the informant to express himself freely by providing his opinions and personal judgments.

Example: What are the problems that you encounter in learning English?.

.....

Mixed Questions

This third type of questions is a combination of both closed and open questions, in other words, the informant is asked first to chose an answer from the given possibilities, then justify his answer.

Example: Do you participate in the English classes?

- Yes
- No

Why?.....

Graded Questions

In these questions, the informant is asked to classify the proposed answers according to his own impression.

Example: indicate the relative importance of each skill in order to attain your objectives (1=most/4=least).

- Writing.
- Speaking.
- Listening.
- Reading.

The examples of questions are retrieved from the students' questionnaire (see Appendix A).

The questionnaire was distributed to all of the six post-graduate Genetics' students during the second term of the academic year 2010-2011. It aimed to draw the profile of these students and their linguistic background; to point out the problems and the difficulties surrounding the teaching/learning situation, to identify these students' English language needs and to know which kind of syllabus will be adequate to this type of learners.

The present questionnaire comprises 15 questions of different types closed, open, mixed and graded questions , all of them regrouped under four sections.

Section One: General Information and Importance of English for the Target Students (questions 01 to 06): Informative section about the learners and their linguistic background in English. It inquires about the importance of English for them.

Section Two: Learning Needs (questions 07 to 12): Asked to give information about the student's needs and wants from the ESP course and about the type of syllabus that can best meet their needs.

Section Three: Problems Facing the Learning Environment (questions 13 to 14): Aimed at knowing the problems and the difficulties encountered by Genetics' students in learning English.

Section Four: Suggestions (question 15): Invited the students to give suggestions or remarks for making the ESP course more effective.

2.5.2 Teachers' Interview

For more in-depth information about the target situation, the investigator has decided to use an interview as a second tool to collect the data.

The Interview is considered as one of the most useful tools of ascertaining and evaluating the quality of research. It permits to the investigator to better understand the situation under study, as explained by Richards (2005:61) "*interviews allow for a more in-depth exploration of issues than it is possible with the questionnaire.*"

What should be noted, is that different types of interviews are available. These interviews differ from one another in terms of degree of formality. The thing which has been highlighted by Nunan (1992:149) who states: "*Interviews can be characterized in terms of their degree of formality, and most can be placed on a continuum ranging from unstructured through semi-structured to structured.*" This reveals the existence of three types of interviews unstructured, semi-structured and structured interviews.

In this case, the investigator has opted for the most formal type of interviews i.e., the structured interview, in such an interview "*the agenda is totally predetermined by the researcher, who works through a list of set questions in a predetermined order*". Dornyei (2007:156). This means that in this type of interviews, the interviewer has an already pre-prepared list of questions to ask.

In effect, the investigator has adopted for such an interview to make sure that the interviewee focuses on the target topic area and that the interview covers a well-defined domain. Dornyei (2007 :153). Accordingly, a structured interview has been arranged with both language and subject specialists teachers.

2.5.2.1 Language Teachers' Interview

The investigator has conducted a structured interview with two language teachers one of them is a full time teacher at the department of English at Tlemcen University, who holds a Doctorate degree and the second one is a part time teacher at the department of Biology at Tlemcen University, a holder of a License degree. Both of them have been teaching English to Biology post-graduate students for a period of seven and two years respectively.

The interview has been arranged with these language teachers to seek information about the situation that the English course occupies in the department under study, the problems facing the teaching/learning situation and to help the investigator elaborate the most appropriate ESP syllabus for these specific learners.

The language teachers' interview comprises 21 questions, grouped under four sections. (see Appendix B).

Section One: General Information (questions 01 to 05) informative section about the teachers' qualifications, their experience in ELT teaching as a whole and more precisely their experience in ESP teaching. These questions inquire also about whether these teachers have had a special training in ESP teaching.

Section Two: Needs, Content, and syllabus Design (questions 06 to 17) this section asked about the organization of the English course; that is the class-size, the weekly teaching time, the language skills emphasized. It also aimed at knowing whether there were any teaching aids provided by the department and the teachers' opinion about the appropriate syllabus for these types of learners.

Section Three: Teaching Problems. (questions 18 to 20) asked the teachers about the problems they face in their teaching. Moreover, it sought information about the collaboration between them and subject specialists teachers.

Section four: Suggestions(question 21) this section invited the teachers to give whatever suggestion or remarks for making the ESP course more effective.

2.5.2.2 Subject Specialists' Interview

Another structured interview has been arranged with two Subject specialists teachers. Both of them are full time teachers, holders of a Doctorate degree in the field of Genetics and whose teaching experiences in the department of Biology at Tlemcen University is that of 20 and 27 years.

This interview was conducted to have a further perception of the target learners' needs, wants and lacks because they have encountered the same problems few years earlier when they were themselves post-graduate students. In sum, one can say that these teachers are best placed to know the English language needs of their learners.

The present interview includes ten questions, regrouped under four sections.(see Appendix C)

Section One: General Information (questions 01 to 03) is an informative section which sought information about the teachers, their qualifications and their experience in teaching Genetics.

Section two: Needs and Objectives from Learning (questions 04 to 07) intended to have the specialists' opinion about the English language needs of Genetics students, the teaching materials, the syllabus and the content which are adequate for these specific learners.

Section three: Problems Surrounding the learning Environment (questions 08 to 09) asked about the difficulties encountered by Genetics students and aimed at identifying the source of these difficulties.

Section four: Suggestions (question 10) this section invited the teachers to give suggestions or remarks for making the ESP course more effective.

2.5.3 Classroom Observation.

In order to construct a clear and thorough picture of what is really happening in the ESP course, the investigator uses to classroom observation as a third tool of data collection.

In addition to providing direct information about the area under study, classroom observation is regarded as one of the three basic data sources for empirical research. It is also considered as another way of knowing about the students' needs, wants and lacks. In this line Richards (2005:61) asserts: "*observation of learners' behaviour in a target situation is another way of assessing their needs*". Indeed, classroom observation is a tool of data collection which allows the investigator to obtain more information and better explore the situation under investigation in its natural environment.

An observation checklist adapted from the one used at the University of Setif for the sake of gathering information about the deficiencies observed in a particular educational setting. (See appendix D) has been used, the main objective of such an observation is to draw a line between the knowledge provided and the one really expected and needed by Genetics' students, via assessing:

- Description of course conduct and content
- Assessment of the learners' language proficiency including:
 - Use of speech sounds.
 - The use of vocabulary.
 - Grammar.
- Attitudes towards the teaching learning situation.

To ensure systematic recording, an observation form was structured in accordance with the appropriate use of the different language units; which are structured as follows:

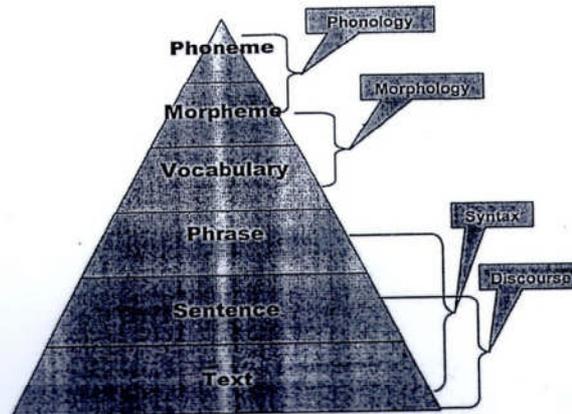


Figure 2.2 Units of Language in the Observation Process

(adapted from: Van Lier 1995).

The nature of the human being rejects the observation of one's behaviour in any domain, the thing which pushed the investigator to reassure both the teacher and her learners that this kind of observation is targeting the information provided in the lectures and that it is of no way a form of inspection.

All the six post-graduate students of Genetics were observed for a period of six weeks (six sessions) i.e. one hour and a half per week. During the observation sessions, the researcher used note taking always referred to as real time observation (Wallace 1998), and audio recordings which aim at recording learners' linguistic behaviour when performing the different activities of the course.

Though it was impossible to record everything happening in the classroom, this observation helped the investigator a great deal to determine the language lacks and therefore, confirm the assumption about the present research.

2.6 Methods of Data Analysis

After data collection, both quantitative and qualitative analyses were used because “*Using more than one type of analysis is believed to provide more reliable research findings since the latter are not compressed into a single dimension of measurement*” (Hamzaoui, 2006:130). Thus, both quantitative and qualitative methods of analysis have been used for the sake of answering the present research inquiries.

2.6.1 Quantitative Analysis

It was used to analyze students’ questionnaire to quantify their answers and contribute to depict and estimate their language needs and requirements. The quantitative data has provided the investigator with the numerical data about the difficulties and the problems encountered by Genetics students as well as their needs and wants from the English language course.

2.6.2 Qualitative Analysis

It was used in both interviews of language teachers and subject specialists and in classroom observation. Its aim was to help the investigator construct a clear and a thorough idea about the target ESP situation. The qualitative analysis of the interviews and the classroom observation contributed a great deal to this study since it has permitted to the investigator to retrieve information about the problems that both students and teachers are facing; in addition, it has given the investigator an insight into how things are occurring in their natural environment.

2.7 Conclusion

This chapter attempted to describe the status that the English language holds in the Algerian universities, especially in Biology department. It has also set the ground for the study by pointing out the problems surrounding the English language teaching/learning process, in addition to identifying the requirements of the target situation and providing the set of instruments and methodologies to go through.

Accordingly, the aim of the third chapter is to discuss and analyze the collected data as it is an important parameter in the design of the adequate syllabus which is going to cater for the needs of the Genetics students. This step is of paramount importance since it is upon the analysis of the target data that the required syllabus is going to be designed.

Chapter Three: Data Analysis and Interpretation of the Results.

3.1 Introduction.

3.2 Questionnaire.

3.2.1 Analysis.

3.2.2 Summary of the Results.

3.3 Language Teachers' Interview.

3.3.1 Analysis.

3.3.2 Summary of the Results.

3.4 Subject Specialists' Interview.

3.4.1 Analysis.

3.4.2 Summary of the Results.

3.5 Classroom Observation.

3.5.1 Course Conduct and Content.

3.5.2 Students' Language Lacks.

3.5.3 Summary of the Results.

3.6 Summary and Discussion of the main Results.

3.7 Conclusion.

3.1 Introduction

It is well known that any ESP investigation is based upon the identification and analysis of the specific needs of particular groups of learners. For this reason, the elaboration of a syllabus that actually meets the needs of Genetics students must be preceded by a needs identification and analysis of the target situation. Thus, this chapter presents the empirical phase of the study. It attempts to conduct a needs analysis in order to design suitable syllabus destined to post-graduate students of Genetics. For this purpose the case of first year post-graduate students of Genetics is studied.

In this chapter, the investigator tries to analyze target students' needs, wants and lacks; and attempts to find the reasons behind the problems facing these learners and the learning context. This will be done through the analysis of the collected data and discussion of the main results.

3.2 Questionnaire

The Students' questionnaire enabled the investigator to draw the profile of students, to know about their linguistic background, to point out the problems and the difficulties surrounding the teaching/learning situation, and helped her determining these students' needs, lacks and wants. Moreover, it helped her in the design of the suitable syllabus.

The questionnaire was distributed to all of the six post-graduate students of Genetics and all of them answered it.

3.2.1 Analysis

In this section, the investigator tries to analyze and report the answers provided by the post-graduate students of Genetics.

Questions 01 and 02: Students' Learning experience in English

The data collected revealed that all the students have received English courses for a period of seven years i.e., two years at middle school, three years at secondary school and two years at tertiary level.

From the six students involved in this study, five have studied English during their third and fourth years of graduation and only one student has studied it during his first and third years of graduation. Concerning the content of the English courses they have received, three students reported that they have dealt with scientific texts, two have received grammar lectures and one student has been taught scientific terminology.

Questions 03 to 05: The importance of the English course and students' proficiency level in English.

All the students consider the English language as being very important as far as their academic and future careers are concerned, for this, all of them reported that they are always attending the English classes.

Concerning students' proficiency level in English, four students out of six evaluate their level in English as being weak; however, the two remaining students consider themselves as having an average level in English.

Question 06: Students' participation during English Classes.

Four students affirm participating during the English course, arguing that they are interested in learning English as it is of paramount importance for their academic and future career; in addition their aim behind participating during the English classes is to improve their language.

Chapter Three Data Analysis and Interpretation of the Results.

The remaining two students answer negatively, arguing that they prefer listening to the teacher speaking and not interrupting her so that they can have a better exposure to the English language at least during these sessions.

Questions 07 and 08: Students' satisfaction with the English course and the time allocated to it.

Five students out of six answer that the content of the current English course does not satisfy their needs because it does not fit their specific context. The one left student considers that the English course satisfies partly his needs. Yet, he adds that though it does not cater for his language needs at 100 %, at least it helps him in the sense that it provides him with some terminology in Genetics and some grammatical and functional notions that help him in communication. Alongside with the students' satisfaction from the language course, all of them reported that the weekly time allocated to the English course is not sufficient.

Question 09: Students' needs and objectives from learning English.

Regarding this question, five students out of six reported that they need English to read and understand scientific publications and articles, they also need it so that they can take part in oral discussions when interacting with foreigners since the speaking skill will ease their interaction, and thus encourage and promote their participation in international conferences they are called upon to attend. Moreover, these students express the need of English to write scientific reports arguing that English is the language of science and technology and writing in that language means that you have a chance to be read.

Chapter Three Data Analysis and Interpretation of the Results.

All in all, the totality of students involved in this study argue that they do need English for all the preceding reasons because English is the global language used in all spheres of life; this is why they are in need of it.

Question 10: Choice of the adequate syllabus.

After explaining the advantages and the drawbacks of each syllabus namely: the structural syllabus, the content-based syllabus, the functional notional syllabus, the skill based syllabus, the situational syllabus, and the Task-Based syllabus. Five students out of six opt for the Task-based syllabus believing that this is the most adequate syllabus for their situation because this syllabus is intended to promote learners' communication in the target situation. Besides it allows the integration of all language skills and encourages both fluency and accuracy.

Question 11: Classification of the four skills according to their importance in attaining students' objectives.

The data revealed that all the skills are of paramount importance for these learners. Thus, a perfect equality was revealed, i.e., three students place speaking and reading as the most important skill, followed by writing and listening. The other three students however, place listening and writing as the most important skills followed by reading and speaking.

Question 12: Teaching materials helping them in their studies.

All the students reported that there are no materials offered by the department that ease their language learning and that they do accept all materials that allow more exposure to the target language such as: situational dialogues, videos, tape records handouts, and texts books.

Question 13 : Problems facing the learning environment.

Four students relate their language difficulties to lack of exposure to the English language; the two remaining students relate their difficulties to lack of practice resulting from the non-availability of opportunities to practice that language outside the 2h a week offered by the department.

Question 14: The classification of the skills according to their degree of difficulty.

Regarding the difficulties of language skills, four students out of six consider that the speaking skill is the most difficult one, followed by listening and finally writing and reading. Thus, the four skills are ranked as follows:

- 1- Speaking.
- 2- Listening
- 3- Writing and reading.

Question 15 :Students' suggestions for a more effective English course.

Almost all the students are for the integration of activities and tasks that cover all the four language skills; so that they can benefit from this course and construct a balanced mastery of the English language, which can more or less help them both in their academic and afterwards in their occupational settings.

3.2.2 Summary of the Results

The collected data, from the students' questionnaire confirm partly the first hypothesis concerning the need for the development of reading and speaking skills. They revealed that students under investigation need to develop their four skills and that primacy should be given to reading and writing to read and explore scientific publications and write scientific reports. The data revealed also that these students are encountering many problems in learning English such problems are the results of their non frequent use of the English language outside the educational setting, the unavailability of the teaching materials that could help them in the acquisition of the English language and the time allocated to the learning of English, these arguments confirm the second hypothesis about the difficulties of Genetics students in learning English. The data collected from students' questionnaire revealed also, that the most adequate syllabus for these learners is the Task-Based syllabus because this kind of syllabus allows the integration of all language skills and promote both accuracy and fluency.

3.3 Language Teachers' Interview

The main objective of this interview is to have a combination of language teachers' points of view about the adequate ESP syllabus intended for this specific type of learners, the importance of the four skills for them and many other factors contributing to the effectiveness of the English instruction in this particular context.

The structured interview was arranged with two language teachers from the English department who have an experience of ESP teaching at the department of Biology and especially who have taught English to Genetics students.

3.3.1 Analysis

Language teachers' answers are to be analyzed in this section.

Questions 01 to 05 : Teachers' qualification and experience

Both language teachers involved in this study are English teachers at the department of English at Abou Bekr Belkaid University of Tlemcen, one of them is a full time teacher, a holder of a 'Doctorate' in TEFL and Applied Linguistics and whose teaching experience as a whole is about 17 years from which seven years of ESP teaching at the department of Biology. The second teacher is a part time teacher who holds a 'License' degree in English and whose teaching experience as a whole is about five years from which three years of ESP teaching at the department of Biology. Both of them did not receive any training to teach ESP.

Questions 06 and 07: The number of students in the ESP classes.

Both language teachers argued that the number of the learners within this particular educational setting is most of the time suitable since the number of the post-graduate students of Genetics usually ranges from six to fifteen learners, depending on the ministerial decree with which the number of posts are fixed.

Questions 08 to 12: The weekly time allocated to the teaching of English and the existing teaching materials.

The language teachers involved in this study reported that the weekly time allocated for the teaching of English is not sufficient (two hours per week) for this type of learners who are in need of the English language; instead, they suggested that 4:30h to 6h per week would be better for an efficient ESP course. Regarding the teaching

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materials, both language teachers reported that they do not have any materials designed for Genetics' learners; and that they do chose and tailor some scientific texts and activities by themselves.

Questions 13 and 14: Teachers' opinion on the syllabus for Genetics students.

Both teachers respond negatively saying that they do not have any available syllabus for these specific learners.

Regarding their own points of view on the most suitable syllabus for this type of learners, language teachers reported that the Task-Based syllabus is adequate for such a learning situation as it can cater for the needs of this type of learners. They explained that the Task-Based syllabus is the syllabus that best fit the ESP environment. Moreover, it supplies learners not only with the target language but also with the scientific context as well. Furthermore, this syllabus promotes learners' communication and integrates all the language skills, so it permits to the learners to build knowledge of the target language where the four skills are balanced.

Questions 15 and 16: Classification of the four skills according to their importance in attaining students' objectives.

Regarding the importance that should be devoted to each language skill, language teachers reported that the four skills have to be developed all together however, they claim that primacy should be given to reading and speaking , without excluding writing and providing students with the required terminology.

Consequently, language skills are ranked as such:

- 1- Reading.
- 2- Speaking.
- 3- Writing and listening.

Question 17: Teachers' opinion about the content they provide their learners with.

Concerning the content they provide their learners with, Both teachers reported that their students are not satisfied at 100% with the content they provide their learners with arguing that they are not subject specialists consequently they cannot match the scientific topics with the target language, in addition, to the lack of the teaching materials.

Questions 18 to 20 : ESP teachers' problems and the collaboration with the subject specialists.

Language teachers reported that there are a lot of problems facing the ESP teachers, namely the lack of teaching materials since the ESP teacher is compelled to tailor by his /her own materials which are most of the time difficult to render adequate for the type of learners he/she is teaching. Besides, the ESP teacher is a language teacher and not a subject specialist, so the lack of the scientific knowledge is another issue that faces the ESP practitioner. For this reason, language teachers welcome the idea of collaboration with subject specialists and do believe that it would be a very constructive step for the achievement of an efficient ESP course.

Question 21: Teachers' suggestions and recommendations.

Language teachers welcome the idea of bringing some solutions to the problems that they face and show a real positive attitude towards the elaboration of a suitable syllabus that eases the task of both the ESP teachers and the learners.

In addition to Task-Based syllabus, one of the language teachers claims that the Content- Based Syllabus may also fit the ESP context under study since the latter combines both the target language and the scientific context.

3.3.2 Summary of the Results.

The results obtained from the structured interview with language teachers confirm the first hypothesis as far as the needs of Genetics learners are concerned, language teachers involved in this study reported that the four skills have to be developed all together, giving primacy to reading and speaking, then to writing and listening. The results also confirm the last hypothesis concerning the elaboration of a Task-Based syllabus for this type of learners. In effect, language teachers are for the design of a Task-Based syllabus arguing that this kind of syllabus fits best the ESP context under study, in addition, they reported that this kind of syllabus allows the integration of all language skills and promotes both accuracy and fluency. Last but not least, language teachers welcome the idea of collaboration with subject specialists arguing that it would be a very beneficial step that can without doubt lead to good results.

3.4 Subject Specialists' Interview

The objective behind conducting another structured interview with the subject specialists is to have a further perception of their learners' needs, wants and lacks because these teachers are best placed to know the needs of their learners from the language course.

The second structured interview was conducted with two teachers of Genetics in the department of Biology at Abou Bekr Belkaid University of Tlemcen.

3.4.1 Analysis

In this section, Subject specialists' answers are analyzed and interpreted.

Questions 01 and 02: Teachers' profile.

Both subject specialist teachers involved in the present study are full time teachers at the department of Biology at Abou Bekr Belkaid University of Tlemcen, holders of a 'Doctorate' degree in Molecular Genetics and Human Populations and whose teaching experience is that of 20 and 27 years.

Question 03: The importance of English in the field of Genetics.

None of the subject specialists teachers involved in the study deny the importance of English in the field of Genetics, they believe that English has a prominent role in their field especially within the globalization process. They also maintain that Genetics students without a certain mastery of the English language cannot move further and be in touch with foreign partners all over the world.

Question 04: Needs for learning.

Subject specialists teachers report that their students do need English not only to read and understand scientific publications and articles, but they are also in need of English to take part in oral discussions when interacting with foreigners when participating in international conferences. Furthermore, Genetics students need English to write scientific reports arguing that English is the language of science and technology and writing in that language is to be read at an international level.

Question 05: Classification of the four skills according to their importance in attaining students' objectives.

Subject specialists teachers are for the development of the four skills all together, and reject the idea that one skill should be emphasized at the expense of the other. However, they reported that for their students' interest primacy should be given to reading and speaking, without excluding the need for promoting the listening and the writing skills.

Consequently, language skills are ranked as such:

- 1- Reading.
- 2- Speaking.
- 3- Listening.
- 4- Writing.

Question 06: Choice of the adequate ESP syllabus.

Regarding the choice of the adequate syllabus for Genetics students, the subject specialists are for the elaboration of a syllabus that integrates and gives an equal emphasis on the four language skills. They also reported that their students are in need of a syllabus which promotes and encourages both accuracy and fluency. Thus, they opt for the Task-Based syllabus arguing that their learners are in need of a syllabus which supplies them not only with the target language but also with the scientific context as well. In addition, they need to promote their linguistic communication, and these are the basis of the Task-Based syllabus so this syllabus permits the learners to build knowledge of the target language where the four skills are balanced.

Question 07: Teaching materials.

Subject specialists claim that their students are in need of materials which allow more exposure to the target language, they add that all materials focusing on the development of the language skills are welcomed: video tapes, text books, and all the materials that syllabus designers judge helpful in the construction of a thorough knowledge in the English language.

Questions 08 and 09: Teachers' opinion on the difficulties encountered by Genetics students in learning English and their opinion on the collaboration with language teachers.

Subject specialists reported that their students encounter a lot of problems mainly with the productive skills, that is to say, in the interaction with foreigners and taking part in oral communications, in addition to their difficulties in writing scientific

reports. They believe that these problems are due to lack of practice and lack of exposure to English.

Regarding collaboration, Subject Specialists welcome the idea and affirm that it will be very beneficial for their students. Furthermore, they believe that it will help a great deal in the effectiveness of the ESP course.

Question 11: Teachers' Suggestions and Recommendations.

Subject specialists show a very high motivation towards the elaboration of a syllabus which is going to cater for the need of Genetics students. They also suggest the possibility of integrating the English module during the entire curriculum i.e., not only a module studied in first year but also in the second year of post-graduation.

3.4.2 Summary of the Results:

The outcomes of the interview conducted with subject specialists confirmed the first hypothesis concerning the need of Genetics learners from the language course stating that these learners need English not only to read and understand scientific publications and articles, but they are also in need of English to take part in oral discussions when interacting with foreigners, and when participating in international conferences. Placing reading and speaking skills at the top of their students' interest, besides, subject specialists show a high motivation and a positive attitude concerning the idea of collaborating with language teachers, believing that this step will bring without doubt beneficial results. Subject specialists involved in this study are for the design of a Task-Based syllabus arguing that this kind of syllabus allows the integration of all language skills and promotes both accuracy and fluency and thus confirm the third hypothesis about the adequate syllabus for Genetics students.

3.5 Classroom Observation

The aim of observing the teaching/learning situation is to be close to the natural environment under study, to explore more the field and to have more information about the learners and their wants, lacks and expectations from the English course.

The observation consisted of two main parts; during the first part, the investigator tries to observe and generally describe the content and the way the ESP course is conducted. The second part, however, aimed at depicting students' lacks through different activities performed within the classroom.

3.5.1 Course Conduct and Content

Four units were dealt with throughout the six weeks of observation. During this period, the ESP teacher was following the same rhythm i.e., at the beginning of each unit, she was introducing and explaining the theme of the unit in English then translating what she said into Arabic or French, so that she makes sure that everyone has grasped the idea of the theme because though the studied themes belong to the Biology stream, they do not fit the specific field of the students i.e., the themes belong to General Biology and not to the field of Genetics.

After explaining the overall idea of the theme, the teacher starts asking some questions related to the theme, so that she opens an area of interaction. The students are then given an illustrative text; which is read by the teacher, afterwards by some students. The teacher then, cuts the text into paragraphs and tries to explain each paragraph. As an immediate reaction, students begin asking questions about the significance of some vocabulary be it technical or not and note the synonyms in Arabic or in French.

Students' answers to the comprehension questions provided orally by the teacher; are given through the use of a mixture of words from the three languages,

these answers are generally unstructured sentences. The teachers' reaction is to restructure her students' sentences. Students are then, left alone dealing with the different activities. The latter will be solved after a while under the teacher's guidance.

3.5.2 Students' Language Lacks

What kept the attention of the investigator while observing, is the language proficiency of the learners and the discourse employed when answering or when taking part in a given discussion, for this reason, the collected data have been organized according to the linguistic levels (see diagram2.1).

a- The Phonological Level

Taking into account the linguistic knowledge of the Algerian learners, the tendencies of errors while studying English are frequent since these learners are experiencing a negative transfer due to the resemblance existing in the sound systems of both languages. Such errors are mostly occurring when articulating or pronouncing some consonants such as / /, /d /, / /, /t/, /θ/. Some illustrations of these errors are provided in the following table.

Exemples	Wrong pronunciation	Right pronunciation
Biology	/bɪPlɪ ɪ/	/baɪPl d ɪ/
Genetics	/ enetɪks/	/d netɪks/
Thymine	/tɪmɪn/	/θaɪmɪn/
Shape	/ p/	/eɪp/
Vesicles	/vɪsɪkls/	/vɪzɪklz/
Thousand	/θɪznd/	/θaʊz nd/

Table 3. 1 Students' Realizations of Consonants and vowels.

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Vowels are of no exception, students do pronounce English vowels the same way they do with Arabic or French. The table below shows some examples.

Examples	Wrong Pronunciation	Right Pronunciation
Cytoplasm	/sɪtɒpl zm/	/saɪtɒpl sm/
Old	/ɒld/	/ ɪd/
Nucleus	/nuklus/	/nju:lɪ s/
cellular	/silul r/	/selj l /
power	/pɔwɪr/	/pa /

Table 3.2 Students' Realizations of Vowels.

Considering the fact that English is a rhythmical language in which the stress respects the phonological distance between words within the same sentence, students' negative transfer cuts this rhythm making sentences sound more Arabic than English.

e.g.: 'The pla'sma mem'brane 'resembles that of proka'ryotes in 'function.

b- Vocabulary

What should be noted, is that the observed students have a very large technical vocabulary related to the field of Biology field; this large repertoire is the result of a positive transfer from their French knowledge. In this case, negative transfer cannot take place since the technical words are derived from Latin origin, i.e., the technical words are the same in both languages; it is just a matter of pronunciation. The problem is then, depicted with general English vocabulary where it is frequent that students have a very limited vocabulary.

➤ False Friends

Most of students' English vocabulary is retrieved from their knowledge of the French language since the latter shares a lot of cognates with English; this may be an advantage but not most of the time since learners may fall in what we call false friends or false cognates, those words that exist in both languages but have different meanings. Thus, Students' lexical lacks are due to the overgeneralization and the negative transfer from French to English,

e.g. - **Actuellement** : now (in French)

-**Actually** : in fact (in English)

-**Affaire**: can mean *business, matter, deal*, (in French)

-**Affair**: A love affair (in English).

c- Grammar.

The unstructured sentences are due to some lacunas in the grammatical knowledge of the learners. Grammatical errors can be the result of overgeneralization of rules, or interference of both Arabic and French languages.

A huge number of grammatical errors have been noted during the observation period. Such errors maybe found in different areas that is, in tenses, word order, the use of pronouns and axillaries ...etc

➤ Tenses.

Students encounter a number of difficulties in using verb tenses:

- Present Tense: students usually tend to omit the [s] which marks the third person singular, they do however, mention it with the third person plural.

e.g. The centrosome produce the microtubules of a cell.

The enzymes, however contains some protein.

- past tense: students often confuse between regular and irregular verbs, besides they over generalize the use of the [ed] form to the regular and irregular verbs.

e.g. cells grewed through the functioning of cellular metabolism.

Students also, often confuse between the use of simple past and the past participle.

e.g: cytoplasm has gave a full picture about the human cell.

➤ World Order.

The most common type of mistakes is the omission of one of the sentence elements, the thing which affects the correct structure of the sentence. Furthermore, word order maybe reversed influenced by L1 or L2.

e.g

Word order Errors	Right sentence
Seconding high	High seconding
Genetic field	field of Genetics
The two first	The first two

Table3. 3 Examples of Word Order Errors.

➤ Auxiliaries

The fact that the copulas “do, does, did”, which are used to form the negative or interrogative, exist neither in French nor in Arabic languages, they are most of the time not used by learners. Hereby some instances of some erroneous sentences.

Erroneous sentences	The sentences as used in either French or Arabic	The correct sentences
- Is the DNA sequence the human genome?	- Est-ce que le ADN séquence le génome humain?	- Does the DNA sequence the human genome?
- The enzymes not carry the protein	- Les enzymes ne transportent pas les proteine.	- Enzymes do not carry the protein.

Table3.4 Erroneous Use of Negative and Interrogative Statements.

➤ Use of Pronouns

Once more, the interference of the Arabic or French languages may influence the use of pronouns after having just mentioned the word referring to. This maybe the result of literal translation.

e.g.

Erroneous Sentences	The sentences as used in French or in Arabic	The correct sentence.
- Robert Hooke he was the first to define the cell	- روبرت هوك هو أول من عرف الخلية	- Robert Hook was the first to define the cell.
- Biology it is that field scientific field which it takes into consideration life and the living organisms.	- علم البيولوجيا هو ذلك العلم الذي يأخذ بعين الاعتبار الحياة و الكائنات الحية	- Biology is that field scientific field which takes into consideration life and the living organisms.
- The cancerous cell who is a living organism affects the good cells	- La cellule cancéreuse qui est un organisme vivant affect les cellules seines.	- The cancerous cell which is a living organism affects the good cells

Table3.5 Erroneous Use of Pronouns in Sentences.

3.4.3 Summary of the Results

The observation helped the investigator to construct a thorough idea about the course conduct and content, the investigator observed that students had a lot of bad learning habits since they considered English as a group of words that should be translated and be learned in isolation. It also permitted to the investigator to observe

students' lacks at the linguistic level that is to say: phonology, vocabulary, grammar ...etc and identification of the sources of their lacks. The results led to confirm the second hypothesis about the problems facing Genetics students, in the sense that the general conception of the English course, the materials used and the time load are main reasons for students' low proficiency level in English.

The influence of the learners' linguistic background turns out to be another major problem behind their lacunas and their failure in learning English. Students are living most of the time a negative transfer experience. In effect, French and Arabic are thought to exercise a negative influence on the course of English language learning. This often results in a total failure in the construction of meaningful sentences.

3.5 Summary and Discussion of the main Results

Students' questionnaire, teachers' interviews and classroom observation enabled the investigator to collect a large amount of data concerning the importance of English for post-graduate students of Genetics in their studies and future careers; the data also aimed at identifying students' needs and expectations from the English course, seeking their lacks and detecting the reasons of their difficulties in learning English. The results helped to lay the foundation for the design of an appropriate syllabus and the related teaching materials.

The outcome of the students' questionnaire and the teachers' interviews confirmed the first hypothesis i.e., Genetics students need to develop their reading and speaking skills in order to exploit scientific documents, read related literature and communicate with their foreign partners using acceptable English. The results revealed that Genetics students are in need of English as it has become the dominant language in the world and the main vehicle of scientific and technological research. More than that, they revealed that these students are aware of their needs from English and the impact that this language has in their academic and future careers. Besides, it appears from the quantitative data that though Genetics students were for the development of

Chapter Three Data Analysis and Interpretation of the Results.

all the language skills with special focus on reading and writing skills, reading and speaking skills have to be stressed on . Because both language teachers and subject specialists involved in this study emphasized the need for the development of these skills arguing that these are the skills which are most needed by the Geneticians in their occupational careers since the latter will require to read related literature, explore scientific documents and more than that they will communicate with foreign Geneticians worldwide. Accordingly all the skills will be developed and primacy should be given to reading and speaking because the teachers involved in this research are aware of the needs of the Genetics learners from the language course. Findings show also that, the overall informants involved in this study are interested in learning English. They believe that the target language can help them to improve their communication skills and thus, ease their interaction with their mates all over the World.

Regarding the second hypothesis which relates the problems facing Genetics students in learning English to the general conception of English such as: the non availability of the teaching materials, the teaching time load and the non frequent use of the English language. Most informants related their difficulties to lack of exposure to this language. The thing which confirms the second hypothesis. The findings of classroom observation also related their difficulties to low linguistic knowledge at the level of : phonology, vocabulary, grammar, word order, and to the negative transfer resulting from their linguistic background (influence of Arabic and French).

Concerning the last hypothesis, about the elaboration a Task-Based syllabus for Genetics students, participants involved in the study showed a very positive attitude towards the elaboration of such a syllabus believing that this syllabus may cater for their needs from English providing them with tasks that illustrate real world situations that these students are likely going to encounter in their daily experiments. This syllabus also allows the integration of language skills needed by learners and helps them to promote both accuracy and fluency. Confirming as such the last hypothesis. As far as the pedagogical materials needed in this specific context are concerned, all the informants involved in this study share the same idea of accepting whatever

materials which permit their exposure to the target language, they added that all materials focusing on the development of the language skills are welcomed: videos, tapes, text-books..., i.e., all the materials that syllabus designers judge helpful in the construction of a thorough knowledge in the English language.

To conclude, all informants welcomed the idea of elaborating a syllabus which caters for the needs of Genetics students; by choosing the Task-based syllabus as the adequate syllabus for these learners because this kind of syllabus allows the integration of all language skills and promotes both accuracy and fluency. The outcome of the data also shows a high motivation about the idea of collaboration between language teachers and subject specialists, believing that this step will bring without doubt beneficial results.

3.6 Conclusion.

In this chapter, the investigator attempted to analyze and interpret the findings drawn from students' questionnaire, language teachers' and subject specialists' structured interviews and classroom observation. The outcomes showed that both teachers and students are aware of the paramount importance of the English language for Genetics students.

The identification of needs is the most important step upon which the ESP practitioner is going to handle his task and design the suitable syllabus that caters for the needs of the Genetics students and help her establishing the appropriate ESP materials.

Accordingly, the next step to be tackled will concern the elaboration of the suitable syllabus that is going to meet post-graduate students of Genetics' needs and wand from the English course.

Chapter Four: Syllabus Design for Genetics Students.

4.1 Introduction.

4.2 Syllabus Design Criteria.

4.3 Syllabus Design Process.

4.3.1 Task-Based Syllabus.

4.3.2 General Principles and Characteristics of Task-Based Instruction.

4.3.3 Components of the Task –Based Learning Framework.

4.4 Setting Aims and Objectives.

4.5 Sequencing Tasks and Grading Content.

4.6 The Suggested Syllabus.

4.6.1 The Post Graduate Genetics Students' Syllabus.

4.6.2 Sample Unit 01.

4.6.2.1 Aims and Objectives of the Unit.

4.6.2.2 Unit Content.

4.7 Conclusion.

4.1 Introduction

The results obtained from the analysis and interpretation of the data in the previous chapter show the willingness of Genetics students to study English to facilitate their everyday experiments and challenges. These results were helpful for the investigator in the sense that they allowed her to design the adequate syllabus which is going to cater for the needs of the post-graduate students of Genetics and help them achieve good results.

Accordingly, the aim of this chapter is to provide a theoretical assumption about the ESP syllabus design, it provides the framework of the Task-Based syllabus intended for the post-graduate Genetics students, and gives a sample unit to illustrate the syllabus content.

4.2 Syllabus Design Criteria

In order to design a syllabus, the ESP teacher or the syllabus designer has to take into consideration many criteria as highlighted by Harmer (2001:295) who points it: *"whatever type it is, every syllabus needs to be developed on the basis of certain criteria"*. These criteria are set out to inform decisions about selecting, organizing, sequencing and justifying the content of the syllabus or of the curriculum.

Harmer (2001) asserts that four criteria are to be considered by the ESP teacher/syllabus designer, these criteria are:

- **Learner ability:** the content of the syllabus should not exceed learners' level of competence.
- **Validity:** the language of the syllabus has to be authentic.
- **Significance:** the content of the syllabus has to match the aims and objectives put forward.
- **Interest:** the content of the syllabus should motivate the learners and raise their interest.

4.3 Syllabus Design Process

Taking into consideration students needs and objectives from the English course and considering the NIA outcomes, a Task-Based syllabus was chosen to be the syllabus that best fits the ESP situation under study. In effect, this kind of syllabus is used in many ESP situations worldwide and it proves its usefulness in achieving good results. Moreover, both teachers and learners involved in this investigation were for the elaboration of a Task-Based syllabus arguing that this kind of syllabus suits the ESP context under study, they reported that this kind of syllabus emphasizes meaning rather than language forms, it permits the integration of all language skills and promotes both accuracy and fluency, it also provides learners with real life tasks that they are likely to encounter in their everyday academic or professional environments, in addition to supplying them with authentic materials to be used inside and outside the educational setting.

The NIA, revealed that Genetics students are in need of promoting all the language skills, giving priority to the development of reading and speaking skills so that they can read scientific documents and interact with foreign peers, then to writing and listening skills which are going to allow them to listen to different video tapes as well as to their foreign peers, to understand and write scientific reports. Consequently, a Task-Based syllabus for Genetics students will be designed to cater for the needs of these learners. This choice implies an understanding of the principles and the basis of the Task-Based syllabus.

4.3.1 Task-Based Syllabus

Task-Based syllabus is the syllabus in which the teaching content is based on series of complex and purposeful tasks that specific students want or need to perform with the language they are learning. It derives its principles from the Task-Based language learning, a learner-centered approach based on the use of tasks as the core unit of instruction rather than on language forms. This approach favours the use of real

life tasks which engage learners in meaningful, authentic, goal-oriented communication to achieve a well defined outcome.

In order to fully comprehend the Task-Based learning, there is a need to clarify the central concept of this instruction i.e., there is a need to understand the concept of “task”.

The term “task” has been used as an umbrella term covering various activities including grammar exercises, practice activities, everyday duties... .These are not tasks in the sense the word is used in Task-Based learning. To avoid misunderstanding of these concepts, Nunan (2001) makes a distinction between task, exercise and activity. He defines task as a communicative act that does not usually have a restrictive focus on a particular grammatical structure and which has a non-linguistic outcome, the exercise however, has a restrictive focus on a specific language element, and has a linguistic outcome, finally, the activity usually has a restrictive focus on one or two language items, but also has a communicative outcome.

Nunan goes a step further by drawing a distinction between real-world or target tasks, and the pedagogical tasks. For him the target tasks as their name implies refer to the use of language in the world beyond the classroom and when they are transformed from real world to the classroom, they become pedagogical in nature whereas, pedagogical tasks are:

pieces of classroom work that involve learners in comprehending, manipulating, producing or interacting in the target language while their attention is focused on mobilizing their grammatical knowledge in order to express meaning, and in which the intention is to convey meaning rather than to manipulate form.

Nunan (2004:04)

This means that pedagogical tasks are those activities that occur in the classroom, they require learners to use language with emphasis on meaning to attain a specific

objective and that grammar exists to enable the language user to express different communicative meanings.

From the above definitions, one may say that in TBL, tasks are defined as being activities where the target language is used for a communicative purpose in order to achieve an outcome in which the emphasis is on exchanging meaning rather than producing specific language forms.

4.3.2 General principles and Characteristics of Task-Based Instruction

Task-Based learning has some characteristics which are hereby listed. (Richards and Rodgers: 2001).

- Task-Based learning is based on the use of tasks as the core unit of instruction in language learning rather than language forms
- Tasks that involve real communication are essential for language learning.
- Learners learn language by interacting communicatively and purposefully while engaged in the task.
- It addresses the crucial problem directly by using real tasks as learning activities.
- Tasks provide both the input and output necessary for language acquisition.
- Tasks activity and achievement are motivational by permitting learners to use authentic language and by tolerating and encouraging a variety of communication.
- TBL can be very effective when learners are engaged in activities similar out of class activities.
- Both accuracy and fluency are emphasized as well as all the language skills are focused on , depending on the needs of learners.
- The focus in TBL is on process rather than product.
- Language that is meaningful to the learner supports the learning process.
- The central role of the teacher is in selecting , adapting and creating tasks that matches learners needs, and their language skill level besides, the

teacher has to prepare the learners for tasks by clarifying and helpin them to learn.

- Learners have to take risks and innovators in case where they fail in translating their ideas in words.
- The difficulty of tasks depends on a range of factors including the previous experience of the learner, the complexity of the task the language required to undertake the task and the degree of support available.
- Errors are not the result of bad learning, but are part of the natural process of inter-language forms gradually moving towards target forms (Ellis:1994).

4.3.3 Components of the Task –Based Lectures for Genetics Students

Task-Based learning lesson follows certain stages always referred to as the three components of Task-Based framework (Willis: 1998): pre-task, task cycle and language focus. In the construction of the lessons of the syllabus for Genetics learners, the researcher used these components to create optimum conditions for language acquisition and thus, provide rich learning opportunities to suit different situations that these learners are likely going to encounter in their daily experiments.

Pre-task	Introduction to topic and task: during this phase, the researcher proposes that the English teacher will introduce the topic then gives students clear instructions on what they have to do, he has to highlight the useful and the key words and phrases and help students understand the task instruction.
Task Cycle	Task: Genetics students are required to complete the task individually, in pairs or in groups depending on the nature of the task using the language resources that they have. Meanwhile, the English teacher will monitor from a distance and will offer encouragements without correcting since mistakes are allowed during this phase.

	<p>Planning: in this phase, Genetics students are required to prepare a short report to tell the class (orally or in writing) how they did the task and what they decided or discovered, meanwhile the teacher is available for students to ask for advice to clear up any language question they have.</p> <p>Report: Genetics students will present in this phase their reports orally or the written reports, and compare results, at this stage the ESP teacher can give some quick feedback on the content.</p>
Language Focus	<p>Analysis: in this stage Genetics students will examine and discuss specific features of the text, and the ESP teacher can highlight some words that students used during the report phase.</p> <p>Practice: the ESP teacher is required to select language areas to practice based upon the needs of students and what emerged from the task and report phases. The students then do practice the tasks to increase their confidence and make a note of useful language features.</p>

Table 4.1 Components of the Task-based Framework intended for Genetics

Students.

4.4 Setting Aims and Objectives

- **Aims:** The aim of the ESP syllabus intended for Genetics students is to provide learners with a natural like context in which the scientific knowledge can be translated into the target language. It also aims at equipping the learners with the set of skills they are in need of i.e., reading and speaking skills so that they will be able to read and understand scientific documents related to their field of specialism and communicate with their foreign peers using an acceptable English.
- **Objectives:** At the end of the ESP course,

- Genetics students are required to read and understand related literature and target terminology,
- They are required to be able to communicate in the target language with foreign partners using acceptable English.
- They are expected to accomplish different tasks such as comprehending and communicating in international events.
- Write scientific reports.

4.5 Sequencing Tasks and Grading Content

In constructing the content , the tasks and the materials of the syllabus intended for Genetics students, the investigator has followed the general principle governing learning i.e., she followed the transition from simple to complex tasks taking into consideration learners' proficiency level and the time load.

The researcher went through the following steps in sequencing the tasks for Genetics students.

First: she identified learners' problems and difficulties and their proficiency level .

Second: she prioritized the needs and the difficulties of Genetics students and ordered them .

Third: she selected appropriate learning tasks which meet Genetics students' needs and address their problem area by consulting many Genetic, didactic books and web sites. Her aim was to combine language and science and to design appropriate tasks that could help Genetics students to cater for their needs and overcome their difficulties in learning English.

4.6 The Suggested Syllabus:

As previously mentioned, a Task-Based syllabus is the syllabus which is going to be designed to meet first year post-graduate Genetics students' needs and wants from the target language course.

The researcher decided to select and design relevant tasks in accordance with the language skills taking into account :

- The complexity of tasks.
- The proficiency level of the students.

Thus, eight types of tasks were designed:

- Comparing (to be able to recognize the similarities and difference between divergent issues).
- Listing the main points (so that they can depict the essential ideas and thus promote reading comprehension).
- Sharing personal experiences (to be able to talk and promote speaking abilities).
- Describing either orally or by written (to promote both speaking and/or writing skills).
- Ordering and sorting (to know about vocabulary and also organize the ideas logically and chronologically).
- Debating (to create discussion, share opinions, know about others' points of view and, thus, promote speaking skills).
- Presenting (to develop self confidence and communicate in the target language).
- Reporting (to communicate by writing about their ideas and opinions).

The syllabus' content will last for one theoretical year and will comprise 8 units, each unit is completed in four hours and a half (04h30). These units are built around a theme related to learners' specific field of study and contain either a reading

text or tape records, images followed by tasks that focus on the development of Genetics students English competencies.

All the language skills are integrated in the suggested syllabus, giving priority to reading and speaking skills as a result of the NIA outcomes, this does not mean that writing and listening are not going to be emphasized. In effect, all the language skills have their fair share in the content of this syllabus.

The Reading Comprehension phase :

This phase aims at providing learners with texts or passages for reading, it is designed to help Genetics students understand texts and store related vocabulary and lexis which they will use to communicate during the post reading phase. This stage may include tasks such as:

- Answering questions related to the text.
- Checking facts and ideas.
- Connecting facts and ideas.
- Finding synonyms and opposites
- True or false activity.

The Speaking Phase:

Aims to develop the Genetics students speaking abilities so that to be capable to communicate about different scientific topics. During this phase, learners will use the already acquired vocabulary in order to communicate in the target language. This phase may include tasks such as:

- Sharing experiences.
- Discussions.
- Debates.
- Describing.
- Presenting.

The Listening phase:

This phase aims at developing students' listening skill by putting them in an educational linguistic bath, to understand experts talking about scientific matters and take notes in conferences. The tasks that may be included in such phase are:

- Listening and comparing between two tape record passages.
- Listening to the teacher reading a specific passage.
- Listening to tape records.

The Writing Phase:

Aims at promoting students' writing abilities. The tasks included in this phase may be:

- Writing a composition about a specific topic.
- Write scientific reports.
- Summarizing.

Language practice phase:

The aim of such phase is to help Genetics students recognize the functions and deduce their meaning to enable them express different communicative meanings.

Tasks that may be included in such a phase are:

- Fill in the gaps.
- Matching the pairs using connectors.
- Deriving nouns/adjectives/verbs.

4.6.1. The Post-Graduate Genetics Students' Syllabus

Units	Theme and unit content	Teaching Materials	Language' skills
Unit 01	<p><u>The Mendelian Genetics.</u></p> <p>1. <u>Reading</u></p> <ul style="list-style-type: none"> -Answering questions related to the text. -Listing the main ideas of the text. -Finding out about the meaning of words. -Checking and connecting facts and ideas. <p>2. <u>Speaking</u></p> <ul style="list-style-type: none"> -Describing similarities and differences and comparing between two experiments. -Describing features used in experiments. .Discussing personal experiments. <p>3. <u>Listening</u></p> <ul style="list-style-type: none"> -Listening to the teacher reading a passage and taking notes. -Reordering the events. <p>4. <u>Writing</u></p> <ul style="list-style-type: none"> -Constricting a paragraph taking into consideration the vocabulary acquired during the unit. 	<ul style="list-style-type: none"> -Simplified text related to the field of Genetics. -Scientific experiments. 	<ul style="list-style-type: none"> -Reading comprehension. -Speaking. -Topic discussion. -Listening. -Writing.

Units	Themes and unit content	Teaching Materials	Language' skills
Unit 02	<p><u>The Transposons</u></p> <p>1. <u>Reading</u></p> <p>-Answering questions related to the text.</p> <p>-Finding out about the meaning of words.</p> <p>-Checking and connecting facts and ideas.</p> <p>2. <u>Speaking</u></p> <p>-Labeling items.</p> <p>-Describing form and structure.</p> <p>-Comparing functions.</p> <p>-Defining a group of organisms and anatomical structures.</p> <p>3. <u>Listening</u></p> <p>-Listening to a tape record.</p> <p>-Reordering the events from the tape.</p> <p>4. <u>Language practice</u></p> <p>-Fill in the gaps.</p> <p>- Deriving nouns and adjectives.</p>	<p>-Simplified text related to the field of Genetics.</p> <p>-Video tape.</p>	<p>-Reading comprehension.</p> <p>-Speaking.</p> <p>-Listening.</p> <p>-Language practice.</p>

Units	Themes and unit content	Teaching Materials	Language' skills
Unit 03	<p><u>Bacteria Fage</u></p> <p>1. <u>Reading</u></p> <ul style="list-style-type: none"> -Reading and listing the important points. -Finding out about the meaning of words. <p>Checking and connecting facts and ideas.</p> <ul style="list-style-type: none"> -Ordering ideas. <p>2. <u>Speaking</u></p> <ul style="list-style-type: none"> -Describing a sequence of events. -Stating a condition and its consequences. -Structuring information. <p>3. <u>Writing</u></p> <ul style="list-style-type: none"> -Ordering ideas then writing a coherent paragraph. 	<p>-Simplified text related to the field of Genetics.</p>	<p>-Reading comprehension .</p> <p>-Speaking.</p> <p>-Writing.</p>

Units	Themes and unit content	Teaching Materials	Language' skills
Unit 04	<p><u>The DNA carries genetic materials: the double helix</u></p> <p>1. <u>Reading</u></p> <ul style="list-style-type: none"> -Checking facts and ideas. -Connecting facts and ideas. -Finding synonyms and opposites. -True or false activity. -Listing the main ideas of the text. <p>1. <u>Speaking</u></p> <ul style="list-style-type: none"> -Comparing experiments. -Describing a sequence of events and structuring them. -Debating on the contribution of Watson and crick in the shape of DNA. <p>2. <u>Listening</u></p> <ul style="list-style-type: none"> -Transfer of information. -Storing content of a sequence in the tape record. <p>3. <u>Language practice</u></p> <ul style="list-style-type: none"> -Active and passive forms. -Matching pairs. 	<ul style="list-style-type: none"> -Adopted text. -Video tape. -Tape record. 	<ul style="list-style-type: none"> -Reading. -Speaking. -Debating. -Listening. -Language practice.

Units	Themes and unit content	Teaching materials	Language skills
UNIT 05	<p><u>Messenger RNA</u></p> <p>1. <u>Reading</u></p> <ul style="list-style-type: none"> -Reading and listing the important points. -Finding out about the meaning of words. -Checking and connecting facts and ideas. -Ordering and sorting ideas. <p>2. <u>Speaking</u></p> <ul style="list-style-type: none"> -Explaining the transformations of information by the RNA inside a cell. -Describing the components and different composites of the RNA. -Comparing functions of both DNA and RNA. -Discussing and reporting about personal experiments. <p>3. <u>Writing</u></p> <ul style="list-style-type: none"> -Re-writing the notice using personal style. 	<ul style="list-style-type: none"> -The RNA notice. -Scientific experiments. 	<ul style="list-style-type: none"> -Reading. -Speaking. -Writing.

Units	Themes and unit content	Teaching materials	Language's skills
Unit o6	<p><u>RNA Interference</u></p> <p>1. <u>Reading</u></p> <ul style="list-style-type: none"> -Reading and listing the important points -Finding out about the meaning of words. -Checking and connecting facts and ideas. -Ordering ideas. <p>2. <u>Speaking</u></p> <ul style="list-style-type: none"> -Performing a dialogue. -Explaining and discussing the important ideas of the dialogue. -Talking and reporting personal experiment. <p>3. <u>Language practice</u></p> <ul style="list-style-type: none"> -Fill in the gaps. -Matching ideas. -Direct/indirect speech. <p>4. <u>Listening</u></p> <ul style="list-style-type: none"> -Comparing two tape records. 	<ul style="list-style-type: none"> -Adopted text -Visual aids: Pictures and video tape. 	<ul style="list-style-type: none"> -Reading. -Speaking. -Language practice. -Listening.

Units	Themes and unit content	Teaching Materials	Language' skills
Unit 07	<p><u>The Genetic Code</u></p> <p>1. <u>Reading</u></p> <ul style="list-style-type: none"> -Reading and Comparing two texts. -Listing the important ideas of both texts. -Ordering ideas. -Depicting the irrelevant ideas. <p>2. <u>Speaking</u></p> <ul style="list-style-type: none"> -Making an oral presentation individually or in pairs. -Commenting on the presentations. -Opening a debate about the presentation content. <p>3. <u>Writing</u></p> <ul style="list-style-type: none"> -Summarizing the important points of the presentation dealt with in the speaking phase. 	<ul style="list-style-type: none"> -Two adopted texts. -Oral presentations. 	<ul style="list-style-type: none"> -Reading. -Speaking. -Writing.

Units	Themes and unit content	Teaching materials	Language' skills
Unit 08	<p>1. <u>Reading</u></p> <ul style="list-style-type: none"> -Reading and translating the Genetic code. -Ordering ideas and organizing them. -Finding synonyms and opposites. -True or false. -Listing the important ideas. <p>2. <u>Speaking</u></p> <ul style="list-style-type: none"> -Making oral presentation. -Commenting. -Describing the issues talked and their consequence. -Debating the content. <p>3. <u>Listening</u></p> <ul style="list-style-type: none"> -Listening to the teacher reading two passages. -Transferring information. -Ordering ideas. <p>4. <u>Writing</u></p> <ul style="list-style-type: none"> -Writing a scientific report on one of the themes talked in the English course. 	<ul style="list-style-type: none"> -Adopted text. -Oral Presentations. -Passages for listening. 	<ul style="list-style-type: none"> -Reading. -Speaking. -Listening. -Writing.

4.6.2 Sample Unit 01

The following section will try to illustrate the content of the Task-Based Syllabus intended to Genetics students.

4.6.2.1 Aims and Objectives of the Unit

The aim of this unit is to familiarize students with the terminology in Genetics, to provide them with the four skills focusing on reading and speaking. By the end of this unit , learners are expected to comprehend the set of vocabulary and terminology of the text and use them appropriately, to discuss orally some scientific topics and initiated to write scientific paragraphs.

The objectives of this unit are:

- To comprehend a wide variety of scientific texts related to their field of specialism.
- To discuss different scientific matters and communicate orally in English.
- To write a paragraph.

4.6.2.2 Unit Content

Text

Since the beginning of human history, people have wondered how traits are inherited from one generation to the next. Although children often look more like one parent than the other, most offspring seem to be a blend of the characteristics of both parents. Centuries of breeding of domestic plants and animals had shown that useful traits — speed in horses, strength in oxen, and larger fruits in crops — can be accentuated by controlled mating. However, there was no scientific way to predict the outcome of a cross between two particular parents.

It wasn't until 1865 that an Augustinian Monk named Gregor Mendel found that individual traits are determined by discrete "factors," later known as genes, which are inherited from the parents. His rigorous approach transformed agricultural breeding from an art to a science. He started with parents of known genetic background — to provide a baseline against which to compare patterns of inheritance in the resulting offspring. Then he carefully counted the numbers of individuals showing the various traits in successive generations of offspring.

To follow the inheritance of genes from parent to child, Mendel first needed to be sure which genes each parent carried. Since pea plants are naturally self-fertilizing, "pure-bred" strains were readily available. Each strain contained only one form of the gene that determined a trait. Pure-bred plants with yellow seeds only produced offspring with yellow seeds. Pure-bred plants with green seeds only produced offspring with green seeds. From the results of further experiments, Mendel reasoned that pure-bred plants must have two copies of the same gene for each trait.

DNA from the Beginning
(www.wikipedia.fr)

Reading Comprehension:

Task one:

Read the text then answer the following questions:

1. Give an appropriate title to the text.
2. What did Mendel discover?
3. What are the "Genes"?

4. How do you explain what happened in the first generation offspring and how do you explain what happened in the next generation offspring?
5. What did Mendel exactly do with the pure-bred?

Task Two

In the text above many steps and stages handled by Greger Mendel were of paramount importance in the discovery and the establishment of the Genetics field as a separate field of Biology dealing with the natural inheritance of Genes from one generation to the other.

Depict the most important steps that helped in the creation of the Mendelian Genetics.

Task Three

Define the following terms

1. Dominant factors.
2. Recessive factors.
3. Genes.
4. Inheritance.

Task four

a) Find in the text words which are close in meaning with the following words:

1. Sequencing.
2. Asking one self
3. Act (to)
4. Decendence
5. Resemble

b) find in the text words that are opposite in meaning with the following words.

1. Never
2. Same
3. Savage

Task five

Check whether these ideas are true then connect them.

1. Mendel was the first one to discover the laws of inheritance.
2. Children always look like one of their parents.
3. The revolutionary breakthrough that Mendel came with is restricted to plants and animals only.
4. Mendel believed that pure-bred plants must have one copy of gene for each trait.
5. The Mendelian Genetics is an ancient Genetics

Speaking :**Task Six**

One of the experiments that Mendel dealt with was the wrinkled and rounded beans, the following pictures show that.

Describe the similarities and Comment on the differences that Mendel has found in these two species of beans.



Picture one

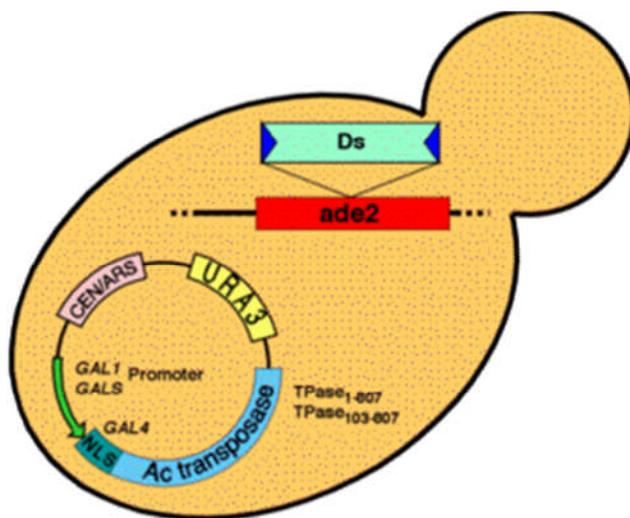


Picture two

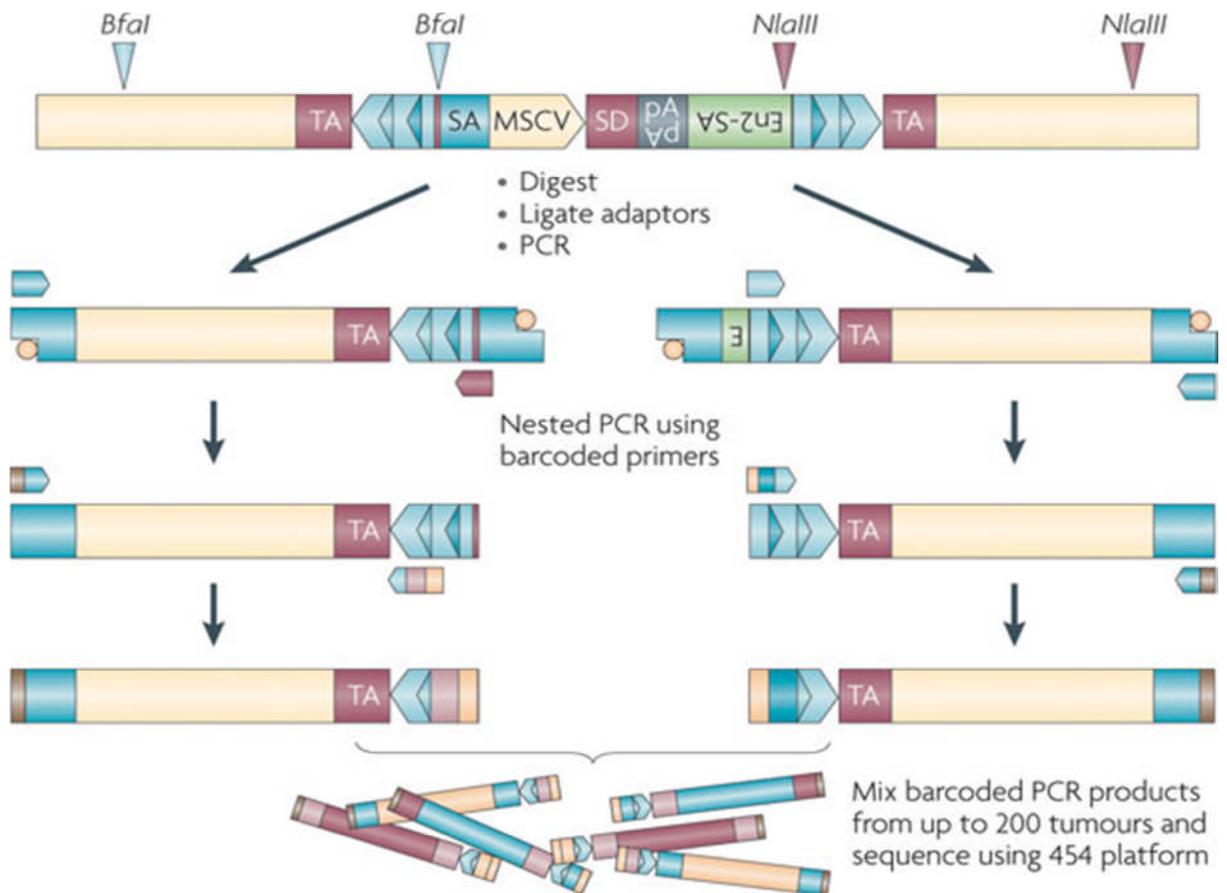
Task Seven

The following two pictures represent two experiments of Barbara Mc line Tark and other Geneticians on transposons factors that carried out what Mendel discovered about genes, yet they came to make a revolutionary breakthrough in the history of Genetics since they make it clear that genes are not always static and can change the characteristics taking into consideration many factors.

1. Describe the features embodied in the following two pictures that permit to the genes to recidivate and change characteristics.
2. Compare between the two experiments



Experiment 1



Nature Reviews | Cancer

Experiment 2

Task eight

When studying the different features of inheritance that children receive from their parents you have not only noticed that many physical genes can appear or cannot appear in children, but also many diseases can recidivate and will affect a whole family.

Discuss and share your personal family inheritance features either physical or moral and report about your family inherited diseases.

Listening**Task Nine**

1. Listen to the following paragraph in which ideas are mixed.
2. Take notes of the important ideas and key terms that you are listening to.

Mendel believed that genes behave like atoms that compose a pure substance. Genes can combine in various ways, but always maintain their distinct identities. Why then do offspring from such a cross have only yellow seeds? Mendel proposed that although both gene alternates are present, there is no blending of color because the gene alternate for yellow is "dominant" over the gene alternate for green. For example, in a cross between two pure-bred parents with different traits like seed color, the hybrid offspring would have both the gene alternates for green and yellow seed color. The dominant trait is seen whenever a single copy of its gene is inherited. When he crossed the hybrid offspring, green seeds reappeared in the next generation. Mendel reasoned that the "recessive" green trait is shown only when a copy of the recessive gene form is inherited from each parent.

3. Reorder the ideas to make a coherent and logical paragraph.

Writing**Task Ten**

Write a short paragraph on the contribution of Greger Mendel in the emergence of the field of Genetics.

4.7 Conclusion:

The purpose behind this chapter was to provide a model of Task-Based syllabus that can cater for the Genetics students' needs from the language course. The suggested syllabus offered the integration of all language skills, supplied learners with related terminology and provides them with some practical language forms. In effect, the aim behind this chapter was to elaborate a kind of syllabus taking into consideration the NIA outcomes and the specific context of these students.

In this chapter, a sample unit which illustrates the content of the Task-Based Syllabus intended to Genetics students was presented besides; ten different tasks were provided wishing that it can help these specific learners reach their needed objectives. The tasks of this sample were sequenced in accordance with the specific context of Genetics students.

GENERAL CONCLUSION

Despite the importance of English for Biology learners and more precisely for post-graduate students of Genetics who need English not only to perform their academic purposes but also to fulfill their professional careers, these students seem to be deprived from a syllabus that meets their needs from the English course and guides them in the acquisition of the required knowledge of English language. Therefore, the aim behind the case study conducted in this investigation was to identify the needs, wants and objectives of post-graduate students of Genetics from the English course, to highlight some problems surrounding the teaching/learning process at the department of Biology at Tlemcen University and to design a syllabus for these students in order to cater for their academic and professional needs as far as English is concerned.

Three research questions were asked in this research:

- What do Genetics students need English for?
- What are the main problems facing them in learning English?
- What syllabus would be suitable and would answer the needs of these learners?

The following hypotheses were formulated:

- Genetics students need English to exploit scientific documents, read related literature and communicate with their foreign peers.

- The main problems faced by students are related to the general conception of English teaching such as time load, non frequent use of the language and non availability of teaching materials.

- A Task-Based syllabus can answer Genetics students' needs because this syllabus provides them with different tasks illustrating different situations that these

students are likely to encounter in their academic and professional careers; it promotes both accuracy and fluency.

The work was constructed around four main chapters; the first chapter prepared the ground for the investigation by providing the theoretical framework related to the field of ESP. The second chapter gave in its first part a thorough explanation of the status of English in Algeria and in different university departments with a special focus on the department of Biology at the University of Tlemcen. The second part highlighted the research design and procedures and described the research method, sampling, and instrumentation. The aim of the third chapter was to undertake the analysis of the collected data from the students' questionnaire, teachers' interviews and the classroom observation. Then taking into consideration the results obtained, a Task-Based syllabus was designed in the fourth chapter in which the skills to be promoted as well as the materials needed were integrated. In addition, the tasks that would be appropriate for post-graduate students of Genetics were proposed. This chapter ended with a sample unit to illustrate the proposed syllabus content.

In this research, three instruments of data collection were used; a questionnaire was addressed to first year post-graduate students of Genetics, an interview was arranged with language teachers as well as subject specialists and finally a classroom observation was conducted in order to collect the necessary data. The data was both quantitatively and qualitatively analyzed.

The results obtained from the analyzed data revealed a high motivation and a positive attitude of Genetics students towards the study of the English language, which they believe, can help them to improve their communication skills and thus, ease their interaction with their mates all over the world. They also explained that learning English will help them to read and exploit scientific documentation and fulfill their job in the future as they will be working with different foreign Geneticians. Besides, it appears from the quantitative data that though Genetics students were for the development of all the language skills with special focus on reading and writing skills, reading and speaking skills have to be stressed on because both language teachers and subject specialists involved in this study emphasized the

need for the development of these skills arguing that these are the skills which are most needed by the Geneticians in their occupational careers since the latter will require to read related literature, explore scientific documents and more than that they will communicate with foreign Geneticians worldwide. Accordingly all the skills will be developed and primacy should be given to reading and speaking because the teachers involved in this research are aware of the needs of the Genetics learners from the language course. These results confirmed the first hypothesis as far as the need for English in the field of Genetics.

Concerning the second hypothesis about students' English learning difficulties, teachers and students related these difficulties to lack of exposure to English, lack of practice and insufficient time for English instruction. The thing which confirms the second hypothesis. On the other hand, findings of the classroom observation related these difficulties to linguistic weakness recorded at the levels of phonology, vocabulary, grammar and to the negative transfer resulting from their linguistic background (Arabic and French) .

As far as the last hypothesis is concerned, a Task-Based syllabus for post-graduate students of Genetics is believed to be suitable to meet the needs of these learners from the English course. It will provide them with different tasks illustrating different cases that they will encounter in their daily experiments; it will also encourage both accuracy and fluency and promote the four skills, but emphasize the reading and speaking ones. It should be noted that the sequencing of the tasks and the choice of the related activities was done in accordance with the needs of the learners and the results of the NIA.

An important point to emphasize is that this investigation concerned the importance of English instruction for first-year post-graduate students of Genetics and not all Biology streams; it is, therefore, worth mentioning that the suggested syllabus may not be suitable for all the Biology streams. Another limitation of this research is the small number of informants which cannot pretend to be representative. Further research involving a larger sampling may provide more generalized results.

Finally, one may say that this case study investigated the needs of Genetics students from the English course, it also aimed at elaborating a syllabus that would

cater for their needs, what should be noted is that the elaboration of a syllabus cannot be achieved without suitable materials that would put into practice the content suggested, for this reason some financial support to provide these specific learners with suitable, up to date materials is welcomed and will probably help these learners a great deal. This research is the first stone regarding the elaboration of a syllabus for Genetics learners; it opens the door for future research tackling not only the field of Genetics but also all fields of Biology.

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APPANDICES

**APPANDIX A:
STUDENTS' QUESTIONNAIRE.**

Students' Questionnaire

Dear students;

This questionnaire is part of a magister project, carried out to design a syllabus for Genetics' students, which is going to match their language needs. So, would you please answer the following questions .

Section 1: General Information

1- How long have you been studying English?

.....

2- Have you studied English at tertiary level?

- Yes

- No

If yes;

a) at which years?

- Year 1

- Year 2

- Year 3

- Year 4

b) what was the content of the English course for each year?

- Year 1

- Year 2.....

- Year 3.....

- Year 4.....

3- As a future Genetitian, do you consider English as

- very important
- important
- not at all

4- How do you evaluate your level in English

- Good
- Average
- week

Section 2: Needs for Learning

5- Do you attend the English classes?

- rarely
- often
- always

6 - Do you participate during the English Classes?

- Yes
- No

Why?

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

7-To what extent do the English courses satisfy your language needs?

- Completely
- Partly
- Not at all

8- Is the time allocated for the English course

- Enough
- Not enough

9- Do you need English for

- Reading comprehension
- Listening comprehension
- Taking part in oral discussions
- Understanding and acquiring scientific terminology
- Attending international conferences
- Write scientific reports

Others,specify.....
.....

10-According to you, what kind of syllabus could better help you in learning English ?

- **Structural syllabus** based on grammar
- **Content-based syllabus** (combines English learning to the content).
- **Functional notional syllabus** (combines meaning (notion) to communicative act (grammar)).
- **Skill based syllabus** (focuses on and intended to promote a specific skill e.g. speaking or writing...).
- **Situational syllabus** (intended to teach the English across different real or imaginary situations).
- **Task based syllabus** (intended to promote learners communications in the target situation and allows the integration of all skills and encourages both orality and writing)

11-Indicate the relative importance of each skill in order to attain your objectives

(1=most/4= less)

- Writing
- Speaking
- Listening
- Reading

12-According to you, what kind of materials could help you best in the language learning?

- Texts
- Topics
- Tasks
- Dialogues

Others,specify.....
.....

- **Section 3: Problems Facing the Learning Environment**

13-What are the problems that you encounter in learning English?

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

14-Which of these skills you find difficult?

- Writing
- Speaking
- Listening
- Reading

15-Do you have any suggestions for making the English course more effective?

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

THANK YOU

APPANDIX B :
LANGUAGE TEACHERS'
INTERVIEW

Language Teachers' Interview

Dear Teachers;

This questionnaire is part of a magister project, carried out to design a syllabus for Genetic Students, which is going to match their language needs. So, would you please answer the following questions .

Section 1: General Information

1- What is your degree

- Licence
- Magister
- Doctorate

2- What is your status

- Part time teacher
- Full time teacher

3- What is your experience in English Language Teaching?

.....

4- What is your experience in ESP?

.....

5- Did you have any special training to teach ESP?

- Yes
- No

Section2: Needs , Content and Syllabus Design

6- How many students your classes comprise?

.....

7- According to you, how many students should An ESP class comprise?

.....

8- What is the weekly time allotted for the teaching of English?

.....

9- Do you think that the weekly time allotted is

- Sufficient
- Not sufficient

10-According to you, what should be the sufficient weekly teaching time?
per week.

11-Do you have any specialized teaching material designed for Genetics' students?

- Yes
- No

If yes, specify

12-What type of materials do you use ?

.....

Why?.....

13-Do you have any specialized syllabus designed for Genetics' students?

- Yes
- No

If yes, what is it?

14- According to you, what kind of syllabus fits best the Genetics' students?

- Structural syllabus
- Content-based syllabus
- Functional notional syllabus
- Skill based syllabus
- Situational syllabus
- Task based syllabus

Why?

15- As far as the needs of your students from the English course, on which skill do you focus? (1=most/4=less)

- Writing
- Speaking
- Listening
- Reading

16-Your students need English for
(you can choose one or more than one answer)

- Reading comprehension
- Listening comprehension
- Taking part in oral discussions
- Understanding and acquiring scientific terminology
- Attending international conferences
- Write scientific reports

17- How do the students find the content you present to them

- Interesting
- Some how
- Not at all

Section3: Problems Facing the Teaching Instruction

18- What are the problems that you encounter as an ESP teacher?

- Lack of scientific knowledge
- Lack of teaching materials

other, please specify,

.....
.....

19-Do you work in collaboration with subject specialist?

- Yes
- No

20-Do you think that collaboration is useful in achieving good results?

Please justify,

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

Section 04: Suggestions

21- Do you have any other suggestions for making the English course for Genetics' students more effective and relevant to their field of study?

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

THANK YOU

**APPANDIX C:
SUBJECT SPECIALISTS'
INTERVIEW.**

Subject Specialists' Interview

Dear Teachers;

This questionnaire is part of a magister project, carried out to design a syllabus for Genetics' students, which is going to match their language needs. So, would you please answer the following questions .

Section 1: General Information

1- Degree

.....

2- What is your experience in teaching Genetics?

.....

3- As a Genetitian ? Do you consider English as

- Very Important
- Important
- Not important

Section2: Needs and Objectives from Learning

4- For which reason do your students want to learn English
(You can choose more than one answer depending on your needs)

- Reading comprehension
- Listening comprehension
- Taking part in oral discussions
- Understanding and acquiring scientific terminology
- Attending international conferences
- Write scientific reports

5- Would you classify these skills according to their importance in your field?
(1=most/4= less)

- Writing
- Speaking
- Listening
- Reading

6- According to you, what kind of syllabus could better help your students in learning English ?

- **Structural syllabus** (focuses on the target language aspect I.e. grammar).
- **Content-based syllabus** (combines target language learning to the content).
- **Functional notional syllabus** (combines meaning (notion) to communicative act (grammar)).
- **Skill based syllabus** (focuses on and intended to promote a specific skill e.g. speaking or writing...).
- **Situational syllabus** (intended to teach the target language across different real or imaginary situations).
- **Task based syllabus** (intended to promote learners communications in the target situation and allows the integration of all skills and encourages both accuracy and fluency).

Please specify,

.....
.....

7- According to you, what kind of materials could help your students better in the language learning?

- Texts
- Topics
- Tasks
- Dialogues

Others,specify.....
.....

Section3: Problems Surrounding the learning Environment

8- According to you, What are your students' difficulties in English

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

9- According to you, these difficulties are due to what exactly?

.....
.....

Section 04: Suggestion.

10-Do you have any other suggestions for making the English course for Genetics' students more effective and relevant to their field of study?

.....
.....

THANK YOU

**APPANDIX D:
CLASSROOM OBSERVATION
SHEET.**

LESSON OBSERVATION SHEET

Institution _____
Date _____
Observer _____
ESP teacher _____
Major _____

Academic Year _____
Number of students present _____
Aims of the lesson as expressed by the teacher _____

Teaching time load	Course conduct and content			Students' language' lacks			Classroom activities			Teaching materials	
	Units developed	translation	interaction	Phonological level	vocabulary	grammar	Grammar activities	Language practice activities	Writing exercises	texts	exercises
60 hours											
First semester											
Second semester											

الملخص

الهدف من هذه الدراسة هو تحديد متطلبات طلبة علم الوراثة لما بعد التدرج و تسليط الضوء على المشاكل المحيطة بتدريس اللغة الانجليزية بقسم البيولوجيا بجامعة ابو بكر بلقايد تلمسان ، وكذا تقديم بعض الحلول من خلال تسطير برنامج دراسي يتوافق و هذه الشريحة من الطلبة.

لهذا تطرقنا فيهذا البحث الى دراسة الوضعية و تحليلها و اقتراح برنامج مناسب ، خاصة و أن نتائج نفس الدراسة أثبتت أن طلبة علم الوراثة يطمحون لدراسة اللغة الانجليزية قصد تطوير مهاراتهم الأربع مع التركيز بشكل خاص على القراءة والحديث .
الكلمات المفتاحية: اللغة الانجليزية لأغراض خاصة ، تحديد و تحليل الاحتياجات ، تسطير برنامج دراسي، برنامج قائم على اساس مهام.

Résumé:

L'objectif de la présente étude est d'identifier les besoins afin de répondre aux attentes des étudiants en post-graduation de Génétique, de mettre la lumière sur les problèmes qui entourent l'enseignement de l'Anglais au département de Biologie à l'Université Abou BekrBelkaid Tlemcen, et de proposer certaines solutions en rapport avec l'élaboration d'un programme approprié et adapté à cette catégorie d'étudiants. A travers cette étude, la recherche sera entamée par une étude de la situation en question suivie de l'analyse des données recueillies et se termine, enfin, sur l'échafaudage d'un programme adapté aux besoins à cette catégorie d'étudiants à savoir les étudiants en post-graduation de Génétique. Les résultats de l'analyse effectuée ont prouvé que les étudiants de génétique optent pour l'apprentissage de l'Anglais tout en voulant développer leurs quatre habilités et plus particulièrement la compétence de la lecture et de l'oral.

Mots clés: Anglais sur objectifs spécifiques, identification et analyse des besoins,conception d'un programme, programme basé sur des tâchesàaccomplir.

Abstract:

The aim of the present case study is to identify the needs, wants and lacks of first year post-graduates students of Genetics, to highlight the problems surrounding the teaching of English in the department of Biology at AbouBekrBelkaid University of Tlemcen and to give some solutions through the design of a suitable syllabus. In this study, the researcher started by investigating the target situation needs, analyzing them and finally proposing a suitable syllabus that can cater for the needs of the students under study. The outcomes of the NIA showed that Genetics students are willing to study English and need to develop their four skills focusing on reading and speaking skills.

Key words:ESP, needs identification and analysis, syllabus design,Task-Based syllabus.

PEOPLE'S DEMOCRATIC REPUBLIC OF ALGERIA
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**A Task-Based Syllabus for Post-Graduate
Students of Genetics at Abou Bekr Belkaid
University of Tlemcen**

This dissertation is submitted to the department of foreign languages as a partial fulfillment of the 'Magister' degree in ESP.

SUMMARY OF THE RESEARCH

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It is beyond any doubt that the English language has become the most prevailing language in the world. As it has become the linguistic engine that drives not only the global economy and international communication, but also transportations, inventions, technologies in the last century. This could explain the one billion people from the whole world willing to learn English not for pleasure, but because of necessity. Therefore, English has become the most widely taught language worldwide regardless of the status it hires in different countries, either as a mother tongue, or as a second or a foreign language. Hence governments across the world have recently embarked on ambitious educational reforms integrating English more deeply into their curricula in order to equip their learners with the linguistic denominator used and needed everywhere in the world. These courses fall under the prominent area of English for Specific Purposes (henceforth ESP).

To cope with the existing situation, Algeria like any other developing country was obliged to introduce and promote the status of English in its educational system. Thus, a number of ESP courses have been programmed and offered mainly at tertiary level in different departments such as in computer sciences, physics, economics, political sciences and in biology.

Despite the importance of English for Biology learners in general and post-graduate students of Genetics in particular, the investigator has noticed a total absence of a syllabus that caters for their needs from the English language. Consequently, and due to the important role of English in Biology in general and in the field of Genetics in particular, this work is an attempt to help post-graduate students of Genetics develop an acceptable linguistic knowledge that could satisfy their academic and professional needs. It is also an attempt to point at some problems surrounding the teaching of English in the department of Biology at the University of Tlemcen and to give some remedial solutions through the design of a suitable syllabus.

In this research, a questionnaire was addressed to first year post-graduate students of Genetics, an interview was arranged with both language and subject

specialist teachers, and finally a classroom observation was conducted in order to answer the following research questions:

- What do Genetics students need English for?
- What are the main problems facing them in learning English?
- What type of syllabus would be suitable and would answer the needs of these learners?

The above questions engendered the following hypotheses:

- Genetics students need English to exploit scientific documents, read related literature and communicate with their foreign peers.

- The main problems faced by students are related to the general conception of English teaching such as time load, non frequent use of the language and non availability of teaching materials.

- A Task-Based syllabus can answer Genetics students' needs because this syllabus provides them with different tasks illustrating different situations that these students are likely to encounter in their academic and professional careers; it promotes both accuracy and fluency.

Accordingly, this work consists of four chapters:

The first chapter considers the theoretical background related to the field of ESP. It provides some key notions about the ESP operation. It focuses on the ESP course design starting with the identification of needs, syllabus design, and materials production then moves to the explanation of the ESP teaching/learning process. The

aim behind this chapter is to give an overall image about ESP, its different concepts, characteristics and its requirement. In effect, ESP is an approach to language teaching whose main objective is to provide learners with the knowledge of English they need in their field of study. It meets the needs of learners who need to learn English for use in their specific areas.

What should be noted is that ESP is an umbrella term used to cover various types of courses which differ from one to another according to the learners' needs. In the "Tree of ELT" Hutchinson and Waters (1987:17) break ESP into three branches to suit different teaching situations: English for Science and Technology (EST), English for Business and Economy (EBE), English for Social Sciences (ESS). Generally the goals of each type are further regrouped under two major categories which are labeled respectively EAP (English for Academic Purposes) and EOP (English for Occupational Purposes). EST is acknowledged to be the area that helped in the emergence and the development of the ESP field because of the scientists and the technologists around the world who were willing to exchange their experiments and expand their area of inventions thus, the use of English in the scientific field is steadily increasing and nowadays specialists estimate that about 90% of the documentation relevant to scientific publications is written in English. Any work done in the scientific field, international seminars, journals, articles and conferences has to be done in English or has to be translated to English.

Being one stream of the medical sciences, Biology has in the last two centuries established itself as a vivid stream of medical sciences dealing with the study of life and living organisms, including their structure, function, growth, origin, evolution, distribution, and taxonomy. This implies that biology is a large area of research gathering samples and species from the whole world, in that the English language turns out to be crucial for Biology researchers all over the world.

The need for English for researchers in Biology increased especially from 2002, when former US president Bill CLINTON called upon Geneticians from the whole world to sequence the human genome providing the world

laboratories with financial support and access to previous American studies done in this area. Such an international investigation needs without doubt a good command of the English language.

Therefore, it is of paramount importance for biology learners especially for Genetics students to be familiar with the main scientific concepts and ideas of science in English in addition to the register and related vocabulary, they also need to develop some linguistic knowledge in English that is going to permit them to exploit such scientific documents, to attend international conferences and to be able to write using acceptable English. To meet those ends, it is necessary to construct a suitable syllabus that goes hand in hand with the needs of post-graduate students of Genetics and to tailor a course that caters for the needs of these learners because the ESP courses are meant to prepare the learners in accordance with specific skills and vocabulary needed in their own field in order to be able to communicate effectively in the target situation. To achieve these aims, a number of steps need to be completed namely:

- ✓ Needs identification and Analysis (NIA).
- ✓ Syllabus Design.
- ✓ Materials Production.
- ✓ Teaching.
- ✓ Evaluation and Assessment.

The second chapter is divided into two parts. The first part deals with the explanation of the status of English in Algeria and in different university departments with a special focus on the department of Biology at Abou Bekr Belkaid University of Tlemcen. The second part, then, highlights the research design and procedures. A detailed description of the research method, sampling and instrumentation is provided. To collect the necessary data, the investigator had recourse to three research instruments for the sake of multiplication of data sources i.e., triangulation which gives reliability and validity to data collection.

Questionnaire, the questionnaire was distributed to all of the six post-graduate Genetics' students during the second term of the academic year 2010-2011. It aimed to

draw the profile of these students and their linguistic background; to point out the problems and the difficulties surrounding the teaching/learning situation, to identify these students' English language needs and to know which kind of syllabus will be adequate to this type of learners.

Interviews, for more in-depth information about the target situation, the investigator has decided to use a structured interview as a second tool to collect the data. The interview has been arranged with two language teachers and two subject specialist teachers to seek information about the situation that the English course occupies in the department under study, the problems facing the teaching/learning situation and to help the investigator elaborate the most appropriate ESP syllabus for these specific learners.

Classroom observation, in order to construct a clear and thorough picture of what is really happening in the ESP course, the investigator uses to classroom observation as a third tool of data collection.

The third chapter undertakes the needs identification and analysis (NIA); it treats the data collected from the students' questionnaire, the teachers' interviews and the information obtained from the classroom observation. It is well known that any ESP investigation is based upon the identification and analysis of the specific needs of particular groups of learners. For this reason, the elaboration of a syllabus that actually meets the needs of Genetics students must be preceded by a needs identification and analysis of the target situation.

In effect, the outcomes of the NIA enabled the investigator to collect a large amount of data concerning the importance of English for post-graduate students of Genetics in their studies and future careers; the data also aimed at identifying students' needs and expectations from the English course, seeking their lacks and detecting the reasons of their difficulties in learning English. The results helped to lay the foundation for the design of an appropriate syllabus and the related teaching materials.

The results of the students' questionnaire and the teachers' interviews confirmed the first hypothesis i.e., Genetics students need to develop their reading and

speaking skills in order to exploit scientific documents, read related literature and communicate with their foreign partners using acceptable English. The results revealed that Genetics students are in need of English as it has become the dominant language in the world and the main vehicle of scientific and technological research. More than that, they revealed that these students are aware of their needs from English and the impact that this language has in their academic and future careers. Besides, it appears from the quantitative data that though Genetics students were for the development of all the language skills with special focus on reading and writing skills, reading and speaking skills have to be stressed on. Because both language teachers and subject specialists involved in this study emphasized the need for the development of these skills arguing that these are the skills which are most needed by the Geneticians in their occupational careers since the latter will require to read related literature, explore scientific documents and more than that they will communicate with foreign Geneticians worldwide. Accordingly all the skills will be developed and primacy should be given to reading and speaking because the teachers involved in this research are aware of the needs of the Genetics learners from the language course. Findings show also that, the overall informants involved in this study are interested in learning English. They believe that the target language can help them to improve their communication skills and thus, ease their interaction with their mates all over the World.

Regarding the second hypothesis which relates the problems facing Genetics students in learning English to the general conception of English such as: the non availability of the teaching materials, the teaching time load and the non frequent use of the English language. Most informants related their difficulties to lack of exposure to this language. The thing which confirms the second hypothesis. The findings of classroom observation also related their difficulties to low linguistic knowledge at the level of : phonology, vocabulary, grammar, word order, and to the negative transfer resulting from their linguistic background (influence of Arabic and French).

Concerning the last hypothesis, about the elaboration a Task-Based syllabus for Genetics students, participants involved in the study showed a very positive attitude

towards the elaboration of such a syllabus believing that this syllabus may cater for their needs from English providing them with tasks that illustrate real world situations that these students are likely going to encounter in their daily experiments. This syllabus also allows the integration of language skills needed by learners and helps them to promote both accuracy and fluency. Confirming as such the last hypothesis. As far as the pedagogical materials needed in this specific context are concerned, all the informants involved in this study share the same idea of accepting whatever materials which permit their exposure to the target language, they added that all materials focusing on the development of the language skills are welcomed: videos, tapes, text-books..., i.e., all the materials that syllabus designers judge helpful in the construction of a thorough knowledge in the English language. To conclude, all informants welcomed the idea of elaborating a syllabus which caters for the needs of Genetics students; by choosing the Task-based syllabus as the adequate syllabus for these learners because this kind of syllabus allows the integration of all language skills and promotes both accuracy and fluency. The outcome of the data also shows a high motivation about the idea of collaboration between language teachers and subject specialists, believing that this step will bring without doubt beneficial results.

Finally in the fourth chapter, a Task-based syllabus based on the outcomes of the NIA is suggested. The Task-Based syllabus is the syllabus in which the teaching content is based on series of complex and purposeful tasks that specific students want or need to perform with the language they are learning. It derives its principles from the task-based language learning, a learner-centered approach based on the use of tasks as the core unit of instruction rather than on language forms. This approach favours the use of real life tasks which engage learners in meaningful, authentic, goal-oriented communication to achieve a well defined outcome.

In order to fully comprehend the task-based learning, there is a need to clarify the central concept of this instruction i.e. there is a need to understand the concept of “task”.

The term “task” has been used as an umbrella term covering various activities including grammar exercises, practice activities, everyday duties.... These are not tasks in the sense the word is used in task-based learning. To avoid misunderstanding of these concepts, Nunan (2001) makes a distinction between task, exercise and activity. He defines task as a communicative act that does not usually have a restrictive focus on a particular grammatical structure and which has a non-linguistic outcome, the exercise however, has a restrictive focus on a specific language element, and has a linguistic outcome, finally, the activity usually has a restrictive focus on one or two language items, but also has a communicative outcome.

Nunan goes a step further by drawing a distinction between real-world or target tasks, and the pedagogical tasks. For him the target tasks as their name implies refer to the use of language in the world beyond the classroom and when they are transformed from real world to the classroom, they become pedagogical in nature whereas, pedagogical tasks are:

This means that pedagogical tasks are those activities that occur in the classroom, they require learners to use language with emphasis on meaning to attain a specific objective and that grammar exists to enable the language user to express different communicative meanings.

From the above definitions, one may say that in TBL, tasks are defined as being activities where the target language is used for a communicative purpose in order to achieve an outcome in which the emphasis is on exchanging meaning rather than producing specific language forms.

Therefore, the aim of the Task-Based syllabus intended for Genetics students is to provide learners with a natural like context in which the scientific knowledge can be translated into the target language. It also aims at equipping the learners with the set of skills they are in need of i.e., reading and speaking skills so that they will be able to read and understand scientific documents related to their field of specialism and communicate with their foreign peers using acceptable English. The Objectives behind the suggested syllabus are that at the end of the ESP course,

- Genetics students are required to read and understand related literature and target terminology,
- They are required to be able to communicate in the target language with foreign partners using acceptable English.
- They are expected to accomplish different tasks such as comprehending and communicating in international events.
- Write scientific reports.

As previously mentioned, a Task-based syllabus is the syllabus which is going to be designed to meet first year post-graduate Genetics students' needs and wants from the target language course.

The researcher decided to select and design relevant tasks in accordance with the language skills taking into account :

- The complexity of tasks.
- The proficiency level of the students.

Thus, eight types of tasks were designed:

- Comparing. (to be able to recognize the similarities and difference between divergent issues).
- Listing the main points (so that they can depict the essential ideas and thus promote reading comprehension).
- Sharing personal experiences (to be able to talk and promote speaking abilities).
- Describing either orally or by written (to promote both speaking and/or writing skills).
- Ordering and sorting (to know about vocabulary and also organize the ideas logically and chronologically).
- Debating (to create discussion, share opinion , know about others' points of view and ,thus ,promote speaking skills).

- Presenting (to develop self confidence and communicate in the target language).
- Reporting (to communicate by writing about their ideas and opinions).

The syllabus' content will last for one theoretical year and will comprise 8 units, each unit is completed in four hours and a half (04h30). These units are built around a theme related to learners' specific field of study and contain either a reading text or tape records, images followed by tasks that focus on the development of Genetics students English competencies .

All the language skills are integrated in the suggested syllabus , giving priority to reading and speaking skills as a result of the NIA outcomes, this does not mean that writing and listening are not going to be emphasized, in effect, all the language skills have their fair share in the content of this syllabus.

The Reading Comprehension phase :

This phase aims at providing learners with texts or passages for reading, it is designed to help Genetics students understand texts and store related vocabulary and lexis which they will use to communicate during the post reading phase. This stage may include tasks such as:

- Answering questions related to the text.
- Checking facts and ideas.
- Connecting facts and ideas.
- Finding synonyms and opposites
- True or false activity.

The Speaking Phase:

Aims to develop the Genetics students speaking abilities so that to be capable to communicate about different scientific topics. During this phase, learners will use the already acquired vocabulary in order to communicate in the target language. This phase may include tasks such as:

- Sharing experiences.
- Discussions
- Debates
- Describing
- Presenting

The Listening phase:

This phase aims at developing students' listening skill by putting them in an educational linguistic bath, to understand experts talking about scientific matters and take notes in conferences. The tasks that may be included in such phase are:

- Listening and comparing between two tape record passages
- Listening to the teacher reading a specific passage
- Listening to tape records.

The Writing Phase:

Aims at promoting students' writing abilities. The tasks included in this phase may be:

- Writing a composition about a specific topic.
- Write scientific reports.
- Summarizing

Language practice phase:

The aim of such phase is to help Genetics students recognize the functions and deduce their meaning to enable them express different communicative meanings. Tasks that may be included in such a phase are:

- Fill in the gaps.
- Matching the pairs using connectors.
- Deriving nouns/adjectives/verbs

An important point to emphasize in this research is that this investigation concerned the importance of English instruction for first-year post-graduate students of Genetics and not all Biology streams; it is, therefore, worth mentioning that the suggested syllabus may not be suitable for all the Biology streams. Another limitation of this research is the small number of informants which cannot pretend to be representative. Further research involving a larger sampling may provide more generalized results.

Finally, one may say that this case study investigated the needs of Genetics students from the English course, it also aimed at elaborating a syllabus that would cater for their needs, what should be noted is that the elaboration of a syllabus cannot be achieved without suitable materials that would put into practice the content suggested, for this reason some financial support to provide these specific learners with suitable, up to date materials is welcomed and will probably help these learners a great deal. This research is the first stone regarding the elaboration of a syllabus for Genetics learners; it opens the door for future research tackling not only the field of Genetics but also all fields of Biology.