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**INTEGRATING WEB-BASED TEACHING IN ESP:  
A CASE STUDY OF COMPUTER SCIENCE  
STUDENTS AT BISKRA UNIVERSITY**

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## **Dedications**

I dedicate this work to:

- Every person who appreciates the value of knowledge
- My dear family, thank you for the unconditioned support you have always given me.
  - My little princesses; Tesnim and Sara

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## **Abstract**

Web-based language teaching has currently gained soundness for its innovative practices. It has become an accessible tool in the language classroom that sustains both asynchronous and synchronous instruction. The present study investigates the effectiveness of integrating web-based teaching in ESP of Master One English for Computer Science students as a case study during the academic year 2011-2012. It aims at gauging the extent to which the implementation of web tools and applications in Computing English creates a thorough learning atmosphere that meets learners' needs and cope with their lacks and wants. A triangulated research method that entails three data-gathering instruments is applied to draw up a set of convenient inferences to the research hypotheses. These research instruments include Needs Analysis questionnaire, quasi-experimental study and course evaluation form as an amalgamation of qualitative and quantitative research methods. The research findings revealed that the use of web-based tasks related in content to students' discipline helps them perform better in their achievement tests, fosters their autonomy and overcomes the impediments of traditional classes. However, they expressed displeasure with the artificial interaction it sets up while learning. Therefore, blended learning was recommended as a sound enterprise that conjoins the best of technology and pedagogy and combines online and face-to-face learning. It may integrate an ordinary class website, online content templates, Moodle platform or other forms of web-based environments in which learning takes progressive process that begins in the classroom and continues online.

## **LIST OF ABBREVIATIONS AND ACRONYMS**

- CALL:** Computer Assisted Language Learning
- CNP:** Communicative Needs Processor
- DA:** Deficiency Analysis
- EAP:** English for Academic Purposes
- ELT:** English Language Teaching
- EOP:** English for Occupational Purposes
- ESP:** English for Specific Purposes
- EST:** English for Science and Technology
- FAQs:** Frequently Asked Questions
- GE:** General English
- GIFs:** Graphic Interchange Formats
- HTML:** Hyper Text Markup Language
- ICT:** Information and Communication Technology
- Info:** Informatique
- IT:** Information Technology
- L<sub>1</sub>:** First Language/ Mother Tongue
- L<sub>2</sub>:** Second Language
- LMD:** Licence, Master, Doctorat
- MA:** Means Analysis
- MP3:** Motion Picture, Audio Layer 3
- N.A:** No Answer
- NA:** Needs Analysis
- NHK:** Nippon Hoso Kyokai (Japan Broadcasting Corporation)
- NCTI:** National Center for Technology Innovation
- PC:** Personal Computer
- PSA:** Present Situation Analysis
- SA:** Strategy Analysis
- SD:** Standard Deviation
- TESOL:** Teaching English to Speakers of Other Languages
- TSA:** Target Situation Analysis
- WWW:** World Wide Web

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## **GENERAL INTRODUCTION**

The recent world-wide increasing tendency towards learning English for specific purposes (ESP) as a chief communication medium in academic and occupational settings has created a new teaching practice that is purposefully intended to match the learning needs to their ends. It has been acknowledged of being prolifically successful in increasing language proficiency. Therefore, ESP courses have been widely introduced as an independent academic discipline in tertiary levels to meet the needs of students who desire to learn English to improve their job and study-related skills in a content-driven instruction. For such reason, ESP branches are constantly thriving to cater for the increasing demands of learners in terms of English for Professional Purposes (EPP), English for Academic Purposes (EAP), English for Vocational Purposes (EVP) and English for Science and Technology (EST) among others.

### **1. Statement of the Purpose**

While it is accredited to be indispensable in the current university instruction, English for specific purposes has been still considered secondary or auxiliary course in many of the Algerian university departments that eventually disregard its status and deter learners to seriously pursue its instruction. This clearly appears in many scenarios as the total absence of any particular programme, specific course content, and underlined approach and teaching materials available for teachers and learners. As far as Biskra University is concerned, the situation is of no exception. From a relatively short experience in teaching English for Computer Science in the Faculty of Technology and Sciences, teachers, including the researcher had been given no particular teaching instructions, programme description or general syllabus content to truly deal with the course. Instead, they have been told: “you know what to do!”, “teach them some English!” etc. In other words, teachers had been given

the total freedom to teach what we think is relevant and appropriate for students without being guided by any particular method.

Although English course for Computer Science classes is supposed to provide students with the needed language skills, the specific discourse functions related to computation domain, many tutors opt for General English programmes that are vocabulary and grammar-driven content to fulfill the requirements of ‘specific’ learners of English. This teaching practice is the end product of having no serious attention to ESP courses in the content-specific disciplines. Therefore, the absence of well- designed syllabuses besides the absence of any set of teaching goals and objectives for this course put learners as well as teachers in an uncomfortable environment that affects their achievement and proficiency level outcomes.

In this educational atmosphere, no particular attention is given to learners’ purposes, levels and needs. Moreover, the instructional decisions as content, method, and evaluation of the ESP course are not based on learners’ reasons for learning. Indeed, teaching “some General English” to “specific learners” opposes the ESP principles and practices. Hence, urgent procedures should be taken in order to cope with these challenging pedagogical issues.

The existing ESP literature reports a wide range of academic studies (Mackay & Mountford 1978; Kennedy& Bolitho 1984; Hutchison & Waters1987; Robinson 1991; West 1994; Jordan 1997; Dudley Evans & St John1998; Harding 2007; Basturkmen 2010) that aim to set the principles and practices of this discipline and familiarize the ESP enterprise with its objectives and classroom procedures. Moreover, all the aforementioned studies stress the idea of “Needs Analysis (NA)” in ESP practice in which learners’ needs are determined and met according to their language requirements and priorities. In doing so, the instructional-related decisions as to objectives, course design, material selection, and teaching aids need to be appropriately thought of for their successful implementation.

Nowadays, in the era of information technology, ESP course designers are looking forward to come up with innovative, inventive and effective solutions to the problems of learners as well as teachers. To help learners engage effectively in the course and produce better outcomes, ESP instruction supports using authentic materials including technology-based ones. Taking the fact that the pace of change brought about by new technologies, especially the internet has significantly impacted on the overall teaching-learning environment, the use of easy world-wide web communication tools in ESP courses overcomes barriers of space and time and opens new possibilities for better learning atmosphere that leads to better learning achievement.

## **2. Research Questions**

The web-based language teaching is undoubtedly a powerful means of instruction that brings rapid and radical change in the way ESP students learn. It creates a new environment in which the constraints of time and space are challenged. All potentialities of teaching and learning are widely available in terms of web pages, articles, graphics, sounds, videos and all types of instructional and communicative interaction media as blogs, wikis and podcasts. This actually offers multiple paths and extra possibilities for better improvement of learners' proficiency level in all language skills and functions needed for study or job. Self-assessments can also be provided through the online tests, exams and web- quizzes. It gives a genuine feedback so that the teacher can set his/her objectives and aims on the basis of students' test achievements.

The above discussion leads to to ask the following research questions:

1. To what extent can web-based language teaching address the different ESP educational challenges to create an effective course that meets learners' needs and improves their language proficiency? And

2. Do learners of Computer Science assess web-based language teaching as a learning experience that brings new learning paradigm to motivate them learn English to meet the language requirements in professional and occupational areas?

### **3. Research Hypotheses**

As far as the ESP course in Computer Science is concerned, all the common features of ESP are met via the use of web-based language teaching. To begin with, authenticity is guaranteed in terms of online dictionaries, encyclopedias, terminology reference books and all the multimedia materials. Moreover, native speakers, professionals and experts' computation conferences are usually held online to discuss the latest and update subjects and inventions in the world of computation. In addition, students can get an easy access to learn language skills (listening, reading, speaking and writing) and other linguistic features (grammar, phonology and vocabulary) via the online lectures.

Thus, the research hypothesis (the alternate hypothesis,  $H_1$ ) states that (1) if ESP teachers use web-based tasks and activities related in content to particular computing themes, they will meet the needs of students and help them perform better in their achievement tests. Moreover, web-based teaching helps the ESP teacher to get access to the authentic teaching resources needed to meet the purposes of learning and breaks the barriers that exist in traditional classrooms.

(2) The null hypothesis ( $H_0$ ) states that integrating web-based teaching for Computer Science classes may not have significant impact on learners' achievement and may produce undesirable results in terms of boring lessons, disruptive, and dependable learners that does not make any difference from the traditional classroom practices.

#### **4. Significance of the Study**

The purpose of such study is to look at the different scopes and areas in which the web-based language teaching can be integrated as a powerful source of real content and carrier content as well as a motivating factor for Computer Science students to make sense of learning and hence perform better in their achievement tests. In addition, it seeks out the feasibility of Needs Analysis to determine learners' needs, lacks and wants.

The study also attempts to demonstrate the different elements that the web-based language teaching may add to the teaching-learning process in terms of authenticity, variety of resources, novelty, interactivity, autonomous learning and self-assessment.

Finally, the present study enquires about the appropriate ways to match the Computer Science learners' needs to the teaching methods, materials and activities through Needs Analysis. Moreover, it seeks students' evaluation of the web-based course to gauge the extent to which the instruction has met learners' expectations and objectives.

#### **5. Research Methodology**

Educational research methodologies vary from one discipline to another according to the nature of the investigation. However, the widely-used methodologies share certain principles that are mainly related to the choice of the method, population and sampling, and data gathering tools (instrumentation).

##### **5.1. The Choice of the Method**

The current study investigates the impact of integrating the web-based language teaching in ESP course on computer science students' achievement tests and their overall proficiency level. To do so, we opted for the methodological triangulation that entails multi research methods of data gathering so that the topic will be diversely treated. It prevents the single sided perspectives of research that eventually head to limitations and bias. This study particularly settles on "between-method triangulation" (Denzin 1970) that encompasses three

contrasting research methods; Needs Analysis questionnaire (see appendix 1), Quasi-experimental study, and Students' evaluation checklist form (see appendix 2).

Therefore, the triangulation research method is applied to combine quantitative and qualitative research tools in order to decrease the risks of results' incredibility and invalidity. These multiple research instruments back up each other to provide a full set of findings that sound convenient to the research hypotheses.

## **5.2. The Population and the Sampling of the Study**

Reaching all members of an ideal population (all ESP learners at Biskra University) is by no means undoable and not realistic (Ladico, Spaulding & Voegtle 2006) for it is time and effort consuming. Therefore, the standards of large population were forgone and "realistic population" (Computer Science students in the department of Computer Science at Biskra University) was selected to allow applicable generalizations of results obtained from the sample. The study population was purposefully selected because it is an available representative of similar research case that consists of "key informants" about the subject being investigated. Moreover, the selected population has an ESP course in the academic year programme that is instructionally in need of adjustments and reconsideration. As far as the sample of the study is concerned, it consists of two randomly assigned groups of 1<sup>st</sup> year Master students who share some common characteristics:

- Members of both groups had almost similar educational background
- They share the same English learning experience (three years of studying English for Computing in the department of Computer Science with 1h.30 weekly.
- They demonstrate similar academic needs to study English with particular interest in speaking and writing.
- They target to use English in their academic and workplace settings.

The chief reason of choosing the current study participants is because of their anticipated familiarity with web tools and applications, in addition to their good manipulation of computer skills due to the nature of their study domain. Moreover, the department provides accessibility to the Internet facilities and computer equipments which help enormously in the completion of the study. Besides, the increasing demands of computer scientists with a good English proficiency in the job market motivates the participants to be actively involved in the current study due to the purposeful learning experience that the study brings to them.

## **6. Data Gathering Tools**

As triangulation method requires the use of more than one method of data gathering tools, the present study uses three of them; Needs Analysis questionnaire, Quasi-experiment, and evaluation checklists.

### **6.1. Needs Analysis Questionnaire**

Needs Analysis questionnaire is used as a pre-requisite for ESP course design that aims at collecting data about students' present situation and target situation needs for the sake of determining objectives, content and materials. It is administered to the study sample which consists of 45 students of 1<sup>st</sup> year Master in the Computer Science Department. It is considered as the essential phase in ESP course that reveals learners' deficiencies, strengths and weaknesses in learning English so that appropriate procedures and decisions are to be made to address them. If the learners' needs are clearly determined, the learning objectives will be appropriately and easily set out, so that the ESP course will be more adequate, interesting, motivating and can meet the needs, level and purpose of students. Needs Analysis provides the teacher with the necessary data to carry out the experimental treatment.

### **6.2. Quasi-Experimental Study**

Quasi-experimental study is conducted with participants to gauge the success of the introduced web-based instructional programme in changing and/or improving students'

performance. This experiment attempts to explore the strength of relationship between two variables; the Independent (the web-based language teaching) and the Dependent (language achievement tests and proficiency level of learners). The researcher, therefore, expects one variable to influence the other. It is usually used to guarantee the maximum of validity and reliability of research (Nunan 1999). A quasi-experiment that relies on one group pre-test and post-test design was opted for because the random assignment of participants to experimental and control group was not viable due to the participants' different study schedule constraints. Yet, it guarantees the causal relationship between variables that is resulted from a specific treatment i.e. web-based instruction. Hence, conducting a pre-test and post-test experimental design will put the researcher in a better position to claim that the differences in tests' scores values are due to the experimental treatment.

### **6.3. Students' Evaluation Forms**

Students' evaluation checklist forms are used as research instruments to rate the effectiveness of the web-based course and the extent of the instructor's success in bridging the objectives of the course to the needs of learners. Moreover, the evaluation checklist forms provide responses to certain questions related mainly to the course effectiveness, the attainment of objectives and the well application of teaching materials.

## **7. Structure of the Thesis**

The study is divided into two main parts; theoretical and practical with a total number of six chapters. The theoretical part which overviews the related literature consists of two chapters; while, the practical part which describes the fieldwork is composed of three chapters and followed by a final chapter of recommendations and suggestions. The first chapter addresses the major issues related to ESP to set about its nature, origins and developments. It also surveys the major approaches to ESP course design and materials writing principles. Furthermore, the chapter investigates Needs Analysis as being the pre-

requisite for ESP course design, and the different approaches used to conduct it. The second chapter is devoted to different issues related to web-based language instruction. It also probes the advantages and disadvantages of using web-based language teaching in EFL besides its designs and structures. The second chapter also looks at the different web-based activities and tasks that can be used in ESP instruction.

The fieldwork begins with the third chapter. It is a Needs Analysis questionnaire which was conducted with Computer Science students at Biskra University attempting to reveal their present and target situation needs as a starting point for the experimental intervention. The fourth chapter deals with the pretest-posttest quasi-experimental study which has been conducted with first year Master students of Computer Science at the University of Biskra to put the issue under investigation into practice. The fifth chapter describes course evaluation checklist that gauges the effectiveness of the web-based experimental treatment in ESP course that students had experienced. Hence, it discusses students' ratings of the web-based course for further recommendations.

The sixth chapter first recommends a number of procedures that should be taken to better ESP teaching via web-based platform, especially the role of the teacher in the web courseware. Then, it suggests a scenario for ESP teacher education and training that has become an indispensable requirement in ESP profession. Finally, the chapter gives instructional tips to design web-based courses that entail both pedagogy and technology to promote the teaching and learning of ESP.

## CHAPTER ONE

### GENERAL OVERVIEW ON ENGLISH FOR SPECIFIC PURPOSES (ESP)

#### INTRODUCTION

ESP has come out as a new trend in ELT to meet the different learning needs and purposes of specific learners in both academic and occupational applications. This chapter addresses the major issues related to ESP in an attempt to understand its nature, trace its origins and developments, and consider the major approaches to course design and ESP materials writing principles. Furthermore, the chapter investigates Needs Analysis as being the baseline for ESP course, and the different approaches used to conduct it.

#### 1.1. English as a World Language

The present status of English as being “the International Language” or “the Lingua Franca” creates a feverish desire among people all over the globe to learn it. Crystal (2003) reported that the 2000 statistics for instance estimates that there are 350-400 million the total number of English speakers as a mother tongue (L1) and about the same number second language (L2) speakers. These estimates conveniently make a quarter of the world population speaks English. Crystal (1988: 10) stated, “one in four’ is an impressive population, none the less. No other language has ever been spoken by so many people in so many places”.

The current world position of English has brought into existence a language that takes over almost all life spheres and applications. The international domains of business, politics, education, media, and entertainment among others are just examples. Hasman (2000: 2) illustrated clearly the internationalization of English. She said:

When Mexican pilots land their airplanes in France, they and the ground controllers use English. When German physicists want to alert the international scientific community to new discoveries, they first publish their findings in English. When Japanese executives conduct business with Scandinavians entrepreneurs, they negotiate in English. When pop singers write their songs, they often use lyrics or phrases in English.

English has actually developed into “a global language” (Crystal 2003) i.e. a language that achieved particular status that is recognized in different parts of the globe. If it is not a mother tongue, it is surely a second or a foreign language. This global standing of English brings people together more than any other language in terms of sharing ideas and building cultural and communicative bridges.

As the number of people using English increases, so the requirements and purposes for which it is used increase as well. These purposes may range from a working language of international organizations and scientific publications to audio-visual cultural products, international tourism, and internet communication (Graddol 1997: 8). To illustrate, Crystal (2003) estimates 99% of European organisations listed in the yearbook of international associations cite English as a working language as opposed to 63% French and 40% German.

As far as scientific publishing is concerned, English is the most widely used foreign language for book publication. A figure presented by Graddol (1997: 9) estimates 28% of the world’s books annually published in English, 13.3% in Chinese, 11.08% in German and 7.7% in French. What can be said about book publication can also be said about journals. Well-known international journals as the Mexican Medical Journal “Archivos de Investigacion Medica” and German journal of Ethology “Zeitschrift fur Tierpsychologie” shifted to English and became “Archives of Medical Research” and “Ethology”. Mackay and Mountford (1987: 7) go a step further to consider English as the international language of science and “success or failure in science is in large measure a consequence of success or failure in English”. Therefore, the assumption that put English as an international currency of science and technology is no longer false.

As far as education and training are concerned, Dickson and Coming (1996) considered English the most popular modern language studied worldwide. The estimation displays 60% of secondary school students in Russia take English courses, 25% German and

15% French. In European Union, English is currently the most widely studied foreign language (Graddol 1997: 44). The statistics estimate 60.3% of all school students in Europe take English as opposed to 30.4% French and 5.2% German.

Speaking about internet communication, Numberg (1996: 37) revealed that English has become the “operating standard for global communication”. Similarly, Graddol (1997: 50) stated that the Internet is seen as “[...] the flagship of global English. A frequently quoted statistic is that English is the medium for 80% of the information stored in the world’s computers”.

The increasing involvement of English in business, technology, international relations among others worldwide has led countries to include English in their educational curricula as a language that should be taught and learnt for different reasons and purposes. For instance, East Asian countries have officially set strategies to teach English in their schools and universities to meet the needs of the international relations agenda. English in these countries is given a priority in the educational programmes for different grounds. Lazaro and Medalla (2004: 9) claimed:

Japan, Hong Kong, and Korea launched major initiatives to increase the use of English, bringing foreigners to teach English or to assist local English teachers. In addition, the purpose of teaching English has changed from being an academic tool, with emphasis on grammar and translation to a working and business language with an emphasis on communication.

Japan as an example has the largest commercial English language education market in the world (NHK report in 2000, cited in Lazaro and Medalla 2004). Therefore, it has taken decisions to introduce ESP courses as an independent academic discipline to meet the challenges of the daily functional and professional life demands. According to Lazaro and Medalla (2004), the Japanese government is now making efforts to reinforce teaching ESP in

universities to increase motivation levels among students and achieve better outcomes in their professional domain.

Kennedy and Bolitho (1984: 1) reported that the status of English as an international language resulted in a worldwide attention and interest in teaching ESP as a successful way to increase language proficiency level and meet the demands and requirements of learners in their own specialities. Therefore, decisions have been made and strategies have been set to improve the way English is taught and learnt. Many countries witnessed a remarkable transition in the field of ELT, i.e. they shifted from teaching General English (GE) to specific English. The discussion above puts us in a position to probe different issues about ESP.

## **1.2. ESP: Definitions and perspectives**

ESP is an acronym that stands for English for Specific Purposes. According to Widdowson (1983: 6), the purpose refers to the eventual practical use to which the language will be put in achieving occupational and academic aims. It is commonly “understood to be about preparing learners to use English within academic, professional or workplace environment” (Basturkmen 2006: 17). It is an enterprise that is based on three pillars of knowledge: “language, pedagogy and the students’/participants’ special area of interest” (Robinson 1991: 1). The definition of ESP has been elaborated over the past 50 years in both theory and practice. From the early 1960’s (Dudley- Evans and St John 1998, Mackay and Mountford 1978), subsequent debates have taken place throughout different ESP conferences to come up with a clear idea of the nature of ESP and all the issues related to it. The changing definitions of ESP over years reflect the changing relationship between the three pillars of knowledge mentioned above. If we look at ESP literature, six major definitions are to be found and are worth mentioning. These definitions are those of:

- Widdowson (1983)
- Hutchinson and Waters (1987)
- Strevens(1988)
- Robinson (1991)
- Dudley Evans and St John (1998)
- Besturkman (2010)

### **1.2.1. Widdowson's (1983) Definition**

Following Widdowson (1983: 6), ESP stresses the idea of preparing learners for their targets via certain identified skills to eventually enable them overcome any required tasks. He states that ESP is,

A training operation, which seeks to provide learners with a restricted competence to enable them to cope with certain, clearly defined tasks. These tasks constitute the specific purposes, which the ESP course is designed to meet. The course, therefore, makes direct reference to eventual aims.

ESP serves the learning or training objectives in terms of job or study-related purposes. It shortens the way to achievement of the set aims and restricts the scope of tasks to fit the need of learners. Taking an ESP course helps students deal with their academic or occupational requirements thoroughly and effectively.

### **1.2.2. Hutchinson and Waters' (1987) Definition**

To begin with, Hutchinson and Waters (1987: 19) declare:

ESP must be seen as an approach not as a product. ESP is not a particular kind of language or methodology, nor does it consist of particular type of teaching material. Understood properly, it is an approach to language learning, which is based on learner need. The foundation of all ESP is the simple question: why does this learner need to learn a foreign language?...ESP, then, is an approach to language teaching in which all decisions as to content and method are based on the learner's reason to learn.

They consider ESP as a branch of ELT that involves neither a particular teaching methodology nor a specific type of language. The key factor in ESP, according to them, is the

learner's need. The need in this context "is defined by the reason for which the student is learning English" (Dudley- Evans and St John, 1998: 3). Hutchinson and Waters set the principles of ESP based on the answer of the following key question: "why does this learner need to learn English?" Thus, the teaching methodology, content, and materials are determined only by the needs of the learner.

### **1.2.3. Strevens' (1988) Definition**

Strevens' definition of ESP (1988) Quoted in Dudley-Evans and St John (1998: 3) has a different perspective. It suggests two distinctive characteristics of ESP: absolute characteristics and variable characteristics. Absolute characteristics of ESP focus on English language teaching which is:

- Designed to meet specific needs of the learner;
- Related in content (that is in its themes and topics) to particular disciplines, occupations and activities;
- Centred on language appropriate to those activities in syntax, lexis, discourse, semantics and so on, of analysis of the discourse;
- In contrast with "General English"
- The variable characteristics are that ESP:
  - May be restricted as to the learning skills to be learned (for example reading only);
  - May not be taught to according to any pre-ordained methodology

Strevens' division of ESP into absolute and variable characteristics is very helpful to understand what ESP includes and what it excludes in terms of concepts. Furthermore, the above description stresses also the specific needs of the learner. ESP teaching, according to Strevens' definition, should be in parallel with the content i.e. the themes should reflect and support the nature of language that is designed for the learner. The activities involved in the teaching of ESP are supposed to contain and maintain particular linguistic features such as

syntax, lexis, and semantics. The absolute characteristics of ESP include the idea of contrast between specific English and General English. Hence, ESP requires specific learners with specific needs, in addition to particular content with appropriate activities and linguistic items. As far as the variable characteristics are concerned, ESP according to Strevens may be designed to teach students a restricted language skill (reading, speaking, writing, or listening). The methodology, in this context, may not be of a great significance in teaching ESP course.

#### **1.2.4. Robinson's (1991) Definition**

ESP, as introduced by Robinson, is “normally goal-directed” (1991: 2). This implies that English is learnt not as an end target but as a means for study or work. She also suggests the idea of NA in determining the nature of ESP for it gives profound vision on what the learner needs the language. She also sets some characteristics of ESP in terms of “specified time period”, “adult learners”, and “identical students/ homogeneous classes”. Dudley-Evans and St John (1998: 3) declared:

Her [Robinson's] characteristics are that ESP courses are generally constrained by a *limited time period*, in which their objectives have to be achieved, and are taught to *adults in homogenous classes* in terms of the work or specialist studies that the students are involved in.

Following Robinson (1991), ESP is a course designed for adult learners in classes having the same kind of constituent elements related to their profession, in which they learn for a limited period determined by their needs.

#### **1.2.5. Dudley-Evans and St John's (1998) Definition**

In the first Japan conference on English for specific purposes (November 8<sup>th</sup>, 1996), Dudley-Evans outlined his definition to ESP and attempted to clear up the confusion among the ESP community. Two years later, Dudley-Evans and St John (1998) refined the definition of ESP in terms of absolute characteristics and variable characteristics.

### **Absolute Characteristics**

- ESP is designed to meet specific needs of the learner;
- ESP makes use of the underlying methodology and activities of the disciplines it serves;
- ESP is centred on the language, grammar, lexis, register, skills, discourse, and genres appropriate to these activities.

### **Variable Characteristics**

- ESP may be related to or designed for specific disciplines;
- ESP may use, in specific teaching situations, a different methodology from that of GE;
- ESP is likely to be designed for adult learners, either at tertiary level institutions or in a professional work situation. It could, however, be used for learners at secondary school level;
- ESP is generally designed for intermediate or advanced students. Most ESP courses assume basic knowledge of the language system, but they can be used with beginners.

It is apparent that Dudley-Evans' and St John's definition is inspired from Strevens' (1988) in most of its characteristics with an elimination of the absolute characteristic: ESP in contrast with GE. The methodology of teaching ESP is given an importance in the sense that it creates the interaction between the teacher and the learners and between learners themselves. It reflects the subject matter of the discipline that the learner undergoes in its various aspects, i.e. the content should necessarily serve the discipline (subject course) in terms of lexis, syntax and semantics through the implementation of appropriate activities.

As far as the variable characteristics are concerned, ESP methodology is supposed to have a different line from that of GE. "What distinguishes them [ESP and GE] is the way in which purpose is defined, and the manner of its implementation" (Widdowson 1983: 5). Dudley-Evans and St John regarded GE classes as a suitable setting to teach grammar items, language structures, drills, and all language skills, whereas ESP classes are devoted to learn

language in context and to obtain a set of professional skills and specific ‘job-related’ functions. ESP, accordingly, brings together the subject matter (the discipline) and language teaching. In addition, GE and ESP differ not only in the nature of learning process but also in the nature of the learner. Following Dudley-Evans and St John, ESP learners are adults who are familiar with language and possess some basics in GE, unlike GE learners who have no prior knowledge of language and begin learning the basics in terms of syntax, grammar, and vocabulary. Furthermore, ESP learners bring with them knowledge, skills and experience of their domain speciality and seek learning the language within the framework of their specialist fieldwork. In this sense, Dudley-Evans and St John (1998: 188) confirmed:

ESP learners bring to their language learning some knowledge of their own specialist field and the communication within it. Those who are still students or apprentices to the specialist field bring less than those who are already experienced and practicing specialist.

Accordingly, ESP is taught as a subject in parallel with the learners’ real world (academic or occupational field).

#### **1.2.6. Basturkmen’s (2010) Definition**

For Basturkmen (2010: 4), ESP is viewed as a narrow scope of GE that focuses on learners’ purpose of learning and the courses are designed to meet their needs in their study or job domains. She states

ESP courses are narrower in focus than general ELT courses because they centre on analysis of learners’ needs. The statements show that ESP views learners in terms of their work or study roles and that ESP courses focus on work- or study-related needs, not personal needs or general interests.

Here, it is noticed that ESP tends to demonstrate the practicality of learning that allows learners to determine their purposes within the constraints of the study or job needs.

Therefore, all definitions emphasize that ESP relates teaching the language with “the communicative needs of speakers of a second language [and foreign language] in facing a particular workplace, academic or professional context”(Basturkmen & Elder 2004: 672).

Following Harding (2007: 07), all ESP definitions stress two axiomatic and fundamental elements: “the sense of purpose and the sense of vocation”. ESP links the language-learning domain to the vocational requirements of the learner in a way that demonstrates the practical application of language in the real world of learners. Although ESP is designed to meet specific needs of learners who desire to use English in their specialist field, it requires a perceptive and well thought-out investigation about their needs and purposes in order to decide what appropriate materials, and methodology should be used and how courses should be designed to carry out adequate activities and instructional procedures.

### **1.3. ESP: Origins and Developments**

Widdowson (1983: 5) considers ESP as a particular sub-division of the general activity of Teaching English to Speakers of Other Languages (TESOL). As a teaching movement within ELT, ESP has emerged because of many changes and challenges in applied linguistics and other related disciplines (educational psychology in particular). Harding (2007) believes that ESP is a consequence of a more practical and application-oriented education. ESP brought new visions to course and syllabus design in terms of materials and methodology. It has also been influenced by different developments in the world of economy and politics as well as the growth of science and technology. ESP, as a young movement within ELT, has come to make the balance between research and practice (Dudley-Evans and St John, 1998: 19). The idea of putting bridges between theory and practice began in the area of Register Analysis that studied the grammatical features of scientific and technical texts carried out by Swales (1988) in his “Episodes in ESP”. His work paved the path for further extended research on teaching specific linguistic areas within the frame of ELT.

Dudley-Evans and St John (1998: 20) claim:

Subsequently, much material was produced as a result of the practitioner engaging within the teaching situation, carrying out a limited text analysis and then writing a handout or series of handouts. This activity may then have been written up and published as an article, forming the basis of more extensive research.

The theoretical platform of ESP has rooted in applied linguistics with the integration of language teaching and occupational field, which led to the production of teaching materials based on the specialist fieldwork register. Subsequently, the produced teaching materials are put as extracts in textbooks for learners of specific purposes to study their linguistic features (especially grammar and vocabulary). According to Dudley-Evans and St John (1998), four trends have shaped ESP growth: Register Analysis, Discourse Analysis, analysis of study skills, and analysis of learning needs.

### **1.3.1. Register Analysis**

Register Analysis principally deals with the grammar and vocabulary of scientific and technical English. It concludes that English for Science and Technology (EST) uses certain grammatical and lexical forms more frequently than others (for example, scientific language uses present simple and passive voice forms more often than other grammatical forms). It also indicates the importance of sub-technical vocabulary in scientific and technical discourse.

Register Analysis was the main trend during the 1960's and such names as Halliday, McIntosh, and Strevens (1964), Herbert (1965), Twier and Latourel (1969) were the associated icons with subject-specific trend. The study focus was on the grammatical and lexical frequencies in scientific and technical writing. Jordan (1997: 288), in his attempt to trace the development of subject-specific language, states:

In the 1960's, the focus was on *Register Analysis*, whereby statistical analysis were conducted into, for example, verb tense frequencies and vocabulary frequencies for different subjects (ESP) in order to provide grammar registers and lexicons for those subjects.

This type of analysis sets out the ground for the corpus for scientific and technical English. Certain grammatical items are highly stressed out like prefixes and suffixes, compound nouns, passive form, cause and effect structures.etc, in addition to sub- technical vocabulary study sections. The aim of Register Analysis is to focus on the language forms that learners would need to use and neglect other forms that are not highly needed. Hutchinson and Waters (1987: 10) state, “The aim was to produce a syllabus which gave high priority to the language forms students would meet in their science studies and in turn would give low priority to forms they wouldn’t meet”.

A typical Register Analysis textbook lesson may begin with a reading passage on a technical subject, and then a series of grammar exercises focusing on language items are followed and a section is devoted to sub-technical vocabulary. A number of books were published supporting the trend such as “Herbert’s the Structure of Technical Skills (1965)”. This trend was not convenient for later writers as Swales (1988). It revealed a set of weaknesses in terms of difficulty in classroom practice as Swales (in Dudley-Evans and St John, 1998) proclaims:

“[...] but as a textbook for classroom use it left a lot to be desired. The passages were dense and lacked authenticity, the accompanying diagrams were not very supportive and, worst of all, the exercises were repetitive and lacking in variety”. (21-22)

The drawbacks of Register Analysis approach gave birth to another major trend in ESP development: Rhetoric and Discourse Analysis.

### **1.3.2. Discourse Analysis**

Discourse Analysis refers conventionally to a number of approaches to analysing written, spoken, or signed language use. The objects of Discourse Analysis are variously defined in terms of coherent sequences of sentences, prepositions, speech acts, or turns-at-talk. Jordan (1997: 229) defines it as follows:

Discourse Analysis is concerned with describing the language and its structures that is used in speech or text that is longer than the sentence, e.g. conversations, paragraphs, complete texts. It examines the communicative context that affect language use...It looks at how, for example, the choice of verb tenses or other grammatical features affect the structure of the discourse. The analysis also looks at the relationships between utterances, for example, aspects of cohesion, and the discourse markers or cohesive devices that are employed.

This 1970's approach shifted from absolute focus on language form to "the idea of relating language *form* to language *use*" (Dudley-Evans and St John, 1988:22). The works of pioneers of this approach such as Lackstrom, Selinker, and Trimble (1973), Widdowson (1979), Bates and Dudley Evans (1976), McCarthy (1991), Nunan (1993), and McCarthy and Carter (1999) made this type of analysis the major movement in ESP. They stressed the primacy of language use over language form. Duan and Gu (2004) compare Register Analysis to Discourse Analysis:

Register Analysis focused on language at sentence level, while Discourse Analysis shifted attention to the level above the sentence. It focused on how sentences are organised to form discourse, and the linguistic models used to determine the modes of organisation.

Hutchinson and Waters (1987) regard this approach as a logical development of the functional/notional concept of language. Allen and Widdowson (1974) who are the leading figures of this approach declare that learners' difficulties are not a product of their "defective knowledge of the system" but a product of "unfamiliarity with English use". Hence, the syllabus they need should be beyond the sentence structure practice; they need to develop "knowledge of how sentences are used in the performance of different communicative acts" (Hutchinson and Waters (1987: 10-11). Discourse Analysis approach, which was the leading ESP teaching trend during the 1970's and 1980's, revealed some drawbacks that are outlined by Dudley-Evans and St John (1998: 23). They believe that Discourse Analysis course still focuses on teaching language items based on functional/notional syllabus and neglects the

development of specific study skills. In addition, the course does not give specific attention to any of the four skills. These deficiencies led to the rise of another type of analysis, which is the Analysis of Study Skills.

### **1.3.3. Analysis of Study Skills**

The notion of study skills refers to those abilities, techniques, and strategies that are used when reading, writing, or listening for study purposes. For example, study skills needed by university students studying from English textbooks including: adjusting reading speeds according to the type of material being read, using the dictionary, guessing word meanings from context, interpreting graphs, diagrams and symbols, note-taking and summarizing (Richards, Schmidt, Kendricks, & Kim, 2002: 521).

This approach stems its ideas from the so-called “functional/notional material” besides the development of NA. The fundamental principle of this approach is that the teaching of language forms alone is not sufficient for the development of the ability to perform the task; it should be accompanied with language use processes (Dudley-Evans and St John 1998). According to Hutchinson and Waters (1987), the main idea behind the skills-centred approach is that underlying all language use there are common reasoning and interpreting processes that enable learners to extract meaning from discourse. This means that teaching language just in its surface level (form) creates deficiency in performing different learning tasks. Each study situation or activity requires a particular study skills associated with it. Therefore, student’s needs to deal with specific study skills may differ according to the learning environment, required task, and the learner’s level as well. Dudley-Evans and St John (1998) give an example in which the medium of instruction was not English, as in Latin America where the focus is on reading skill. In other situation, business people conducting international negotiations certainly need oral skills, international students writing a post-graduated thesis need writing skill, etc.

Jordan (1997) believes that Study Skills approach is designed not only for FL learners but also for native speakers. He suggests a list of study situations and activities and the related study skills. For instance, lectures and talks require listening and understanding, note taking and asking questions for repetition, clarification, and information. Laboratory and practice fieldwork need different skills mainly understanding instructions (written and spoken, formal and informal), asking questions, and recording results. A number of writers have made significant contributions to this trend such as Grellet (1981), Nuttall (1982), Anderson and Urquhan (1984). There have been also outstanding projects adopting this approach including the National ESP Project in Brazil (the ESPECIALIST Journal) and Malaya University ESP Project (UMESPP), in addition to the OUP (Oxford University Press) Reading and Thinking series in 1980.

This approach has developed to meet various questions and enquiries concerning the effectiveness of ESP courses, which in turn led to a period of 'consolidation' in ESP in the late 1970's and early 1980's. The developments of ESP in this period brought to the ground the issue whether ESP courses were more successful than GE courses in preparing learners for studying or working in English. Several works have been carried out to deal with this issue, especially the works of Strevens (1971), Jordan and Mackay (1973), Bowyers' report (1980), in addition to few empirical studies (Foley's 1979). These developments in ESP set the ground for the next approach, which is Learning Needs approach.

#### **1.3.4. Analysis of Learning Needs**

Analysis of learning needs is based on a certain framework that includes a set of questions in terms of learning process and learner's needs. In this connection, Hutchinson and Waters (1987: 62) put forward the following questions:

- Why are the learners taking the course?
- How do the learners learn?
- What resources are available?
- Who are the learners?
- Where and when does the ESP course take place?

In fact, the turning point in the ESP profession was Munby's (1987) model for NA, which was "an indication of the 'coming-of-age' of ESP" (Dudley-Evans and St John 1998). Later works, notably Hutchinson and Waters' various papers (1979, 1980, and 1981) led to the foundation of the Learning-centred approach. The latter "involves learning as a process of 'negotiation between individuals and society', which includes teaching syllabus, methods, materials, etc." (Jordan, 1997: 25)

The approach takes into account different dimensions and factors to achieve the ultimate goal of learners such as the learning process, learners' motivation, and learners' needs. The following example cited in Dudley-Evans and St John (1998: 26) is a genuine representation of this approach. They state:

Even though students may only need to read textbooks and articles in their field, it may be that oral practice will help them reach that end. Similarly, in reading a passage it may help students understand the text if the teacher reads aloud to them while they follow..., but the process of following a text read aloud clearly by a native speaker often helps students understand the main ideas

Thus, the integration of different skills and the learning environment in the whole learning process may give better results. The idea of bridging learners' learning style with the teaching strategies is also emphasized as a chief principle of the learning-centred approach. In addition to the four major trends in the development of ESP suggested by Dudley-Evans and St John (1998), Genre analysis can also be added as a noteworthy stage in its growth.

### 1.3.5. Genre Analysis

Genre analysis research began with the works of Swales (1981 & 1990), who explained Genre as follows (cited in Jordan 1997: 230):

A genre comprises a class of communicative events, the members of which share some set of communicative purposes. These purposes are recognised by the expert members of the parent discourse community, and thereby constitute the rationale for the genre. This rationale shapes the schematic structure of the discourse and influences and constrains choice of content and style.

Genre Analysis is “an exciting and fruitful development within ESP” (Robinson 1991: 27). It describes how language is used in a particular context (business correspondence, legal writing, staff meetings, research reports, etc). Text-based context (writing), for instance, has conventions about layout, form, and style. Studies and surveys that have been carried out on academic articles (Swales, 1981, 1983, 1984), found out that most of them follow certain pattern of “moves” and “steps”. Jordan (1997: 232) mentioned the following pedagogically useful set of moves in academic articles:

- Background information
- Statement of result
- (Un) expected outcome
- Reference to previous research (comparison)
- Explanation of unsatisfactory result
- Exemplification
- Deduction
- Hypothesis
- Reference to previous research (support)
- Recommendation
- Justification

Genre-based approach is usually applied in the teaching of scientific and technical report writing. Although Speech-based context (as in seminars and lectures) has received less attention than writing, it also follows a pattern of moves similar to the writing pattern as cited in the works of Weisberg (1993), Thompson (1994), Shalom (1993). Other academic disciplines, notably economics and law have also received a number of genre-based investigations (Hewings and Henderson 1987). All these trends have shaped the present-day status of ESP teaching.

### **1.3.6. ESP Nowadays**

ESP continues to go forward focusing on involving the learner as an active agent in the syllabus design and put an emphasis on his/her needs in a move to foster “individual learning, learner centeredness, and learner autonomy” (Brunton 2009). Mackay and Mountford (1987: 20) consider ESP more than a growing field in ELT but the dominant approach to the teaching of English as a foreign language (EFL). However, certain ESP areas are currently under ‘hot’ discussion especially at the level of syllabus design and types of content. This has made the discipline of ESP more dynamic and increasingly progressive. Brunton (2009) reports that “ESP is today more vibrant than ever with a bewildering number of terms created to fit the increasing range of occupations that have taken shelter under the ESP umbrella”. The increasing attention to ESP teaching and learning was mainly a result of communication requirements and demands of the workforce in the era of globalization.

According to Dudley-Evans and St John (1998), ESP nowadays does not support one approach over the other; meanwhile, there is now acceptance of different trends to produce different types of materials and methodologies according to the teaching environment and learners’ needs. The various approaches have displayed positive aspects as well as negative ones; however, the tendency towards Swales’ Genre Analysis (1990) seems to gain “an important position in ESP”.

The subsequent developments in ESP branches, namely business English in different regions other than English-speaking world in Middle East, Latin America, Eastern Europe, and Asia led to think of other different types of materials and methodologies appropriate to these new situations and institutions. Therefore, it has been agreed that ESP approaches must meet the different needs of learners, mainly non-native speakers to enable them bridge their specific domain knowledge with the language in order to achieve their end target.

#### **1.4. ESP Course Design**

According to Richards et al. (2002), Course design refers to the development of a language programme or a set of teaching materials; it includes how a syllabus (procedures for deciding what will be taught in a language programme) will be carried out. It is chiefly concerned with the following items:

- What teaching method (s) and materials will be needed to achieve the objectives?
- How much time will be required?
- How will classroom activities be sequenced and organised?
- What will sorts of tests be used?
- How will the programme be evaluated?

Designing ESP course, according to Hutchinson and Waters (1987), is a matter of asking a series of general and specific questions seeking answers that determine what should be implemented in the course in terms of syllabus, materials, and methodology. They believe that course designers need to know:

- Students' reasons to learn
- Participants (teachers, sponsors, inspectors, etc) involved in the process
- The setting of learning and its advantages as well as disadvantages
- The amount of time allotted to the learning period
- The teaching materials related to the aspects of language that should be included

- The level of proficiency required and the topics that should be covered
- The learning theory underlying the course and the methodology employed

In any language course design, certain issues have to be considered especially: goals (objectives), content, context, teaching methods and assessment. Course designers have to ensure the level of interconnection amongst these issue areas. Diamond (1989, in Lublin 2003) claims that a typical process for language course design needs to follow these steps:

- Establish need and demand for the course
- Establish students characteristics
- Determine content
- Set goals and objectives
- Choose teaching and assessment methods
- Implement, evaluate and adjust components as necessary

In fact, course designers need to set clearly their philosophy about learning in terms of language theories and theories of learning. Once the philosophy is well established and clearly set, it can be interpreted into appropriate decisions related to course description, purpose, language content, objectives, outcomes, assignments, assessment, and evaluation. In other words, course design, following Hutchinson and Waters (1987: 65), is

The process by which the raw data a learning need is interpreted in order to produce an integrated series of teaching-learning experiences, whose ultimate aim is to lead the learners to a particular state of knowledge.

As far as ESP course design is concerned, Robinson (1991: 34) believes that it is the product of a dynamic interaction between the results of NA, the course designers' approach to syllabus and methodology, and existing materials. Kennedy and Bolitho (1984: 02) view the learner as the main consideration in course design and his/her needs should be regarded "as central to the problem of deciding course content". Munby (1987) claims that the analysis

of learners' communication needs establishes the criteria for the course syllabus, which strongly reinforces the assumption that course designers should put a great weight on learners' needs and transform them into pedagogical linguistic items. He believes that the identification of learners' needs leads to a well-thought and adequate course content and methodology that fit these needs. Designing ESP course requires taking into account the following issues: innovation, matching the results of NA, production of new materials and modification or adaptation of approaches to fit learners' needs (Robinson 1991: 34). Therefore, NA is seen as the chief and necessary step in ESP course design.

#### **1.4.1. Approaches To ESP Course Design**

The approaches adopted by ESP course designers differ according to the needs of learners and the aims set for the course. Robinson (1991: 35) sets four questions to be considered in ESP course design. (1) How far are the existing syllabuses appropriate for ESP? (2) How far do they offer a suitable conceptual structure within which to realise the objectives of the course? (3) Which of the three elements (language, pedagogy, content i.e. the students' specialist subject area) is paramount? And (4) How far do they combine?

Hutchinson and Waters (1987) suggest three dominant approaches: (1) language-centred, (2) skills-centred and (3) learning-centred.

##### **1.4.1.1. Language-Centred Approach**

It is the most common approach that aims to bridge the learners' target situation and the content of ESP course. The language-centred approach model (*ibid*, 66) begins with the idea of identifying learners' target situation needs aside with selecting the appropriate language theory. The analysis of learners' needs provides the language features of the target situation, and leads to elaborating the fitting syllabus that consists of teaching materials, methodology, and evaluation procedures.

However, this approach seems to have some drawbacks. Hutchinson and Waters (1987) believe that language-centred approach does not consider the learner in every step of the design process; they rather consider it as “not-learner-centred, but learner-restricted”. They also view this approach as “being static and inflexible” for it does not provide a space for feedback in case of unexpected situations such as “wrong initial analysis”. Although this approach appears to be systematic, it supports “the false belief that learning itself is systematic” (Hutchinson and Waters 1987: 68). Language-centred approach, in this sense, does not take into account the pitfalls of Audio-lingual approach, which is based on the mechanical system of learning. Therefore, identifying learners’ target situation needs without a profound data interpretation makes this approach “unable to make use of all sorts of knowledge that are not revealed in the analysis itself.” The last weak point of the approach is that, according to Hutchinson and Waters (1987), it does not reveal clearly the competence that lies behind the performance.

#### **1.4.1.2. Skills-Centred Approach**

This approach is based on two major principles: theoretical and pragmatic (Hutchinson and Waters: 1987). The theoretical principle suggests that any language behaviour encompasses receptive and productive skills that learners should employ to produce or comprehend any written or spoken discourse. The pragmatic principles is inspired from the ideal that ESP learners objectives is to develop particular strategies and skills that will help them deal with any target discourse after the end of the course. Professional skills and communicative skills may form the focus for an ESP course in skill-centred approach (Robinson 1991: 38). Holms (1982), cited in Hutchinson and Waters (1987: 70) sets clearly the principles of this approach when he states that:

[...] is at least realistic in concentrating on strategies and processes of making students aware of their own abilities and potentials, and motivating them to tackle target texts on their own after the end of the course, so they can continue to improve.

Hence, the process of skills-centred approach focuses on:

- Identification of the target situation
- Setting the theoretical view of language as well as theoretical views of learning
- Analysing of the skills required to cope with target situation
- Writing a syllabus
- Establishing teaching material based on skills in the syllabus
- Establishing evaluation procedures which require the use of skills in syllabus

Although this approach stresses the importance of the learner as a vital agent in the process, it, as Hutchinson and Waters (1987) state, still considers the learner as a user of language rather than as a learner of language.

#### **1.4.1.3. Learning-Centred Approach/ Learner-Centred Approach**

Learning-Centred Approach is founded on the ideal that “learning is totally determined by the learner [...] and is seen as a process in which the learners use what knowledge or skills they have in order to make sense of the flow of the new information” (*ibid*, 72). The learning-centred approach considers the learner at every stage of course design seeking the integration of all the components of the course in both the learning situation and the target situation. What makes this approach different from the two others is its dynamic nature in which feedback channels are created to respond to any unexpected situation and development. Another key difference between Learning/Learner-centred approach and other approaches is the “collaborative effort between teachers and learners” (Nunan 1987: 02) in terms of decision-making, course content and teaching methods.

“Which approach is the most appropriate for ESP course?”, “Which syllabus to choose?” are two frequently asked questions by ESP course designers. According to Robinson (1991: 40), all approaches should be treated as being simultaneously available and

each approach needs to be adapted to a particular situation for the simplest reason that there is no single model for an ESP course.

#### **1.4.2. Parameters of ESP Course Design**

All the previously discussed approaches to ESP course design stress the importance of NA in determining the constituents of the course. Dudley-Evans and St John (1998: 122) consider NA as being “the corner stone of ESP and leads to a very focused course”. To achieve such a focused course, ESP course designers are required to take into account the following parameters (Dudley-Evans and St John 1998: 146).

##### **1.4.2.1. Intensive Course Vs Extensive Course**

Intensive ESP course (concentrated into one period of time) occupies totally the learner's schedule and the learner is completely committed to that course, whereas *extensive* ESP course (spread out over a longer period of time) takes up only a part of the learner's timetable. “ESP courses, both EOP and EAP, are frequently intensive” (*ibid*, 146) because the total commitment of learners gives them advantages of time availability, variety of activities, sufficient preparation time, appropriate feedback, absence of distraction, and the immersion in an English language environment. However, the disadvantages of this type of ESP course lie in the course length in which learners' motivation may decline throughout the course time.

The advantages of the extensive course lie in the interrelation and parallelism that exist between the course and the professional discipline of the learner. Hence, learners' motivation increases along the course time. Yet, the frequent interruption that exists between classes remains the main disadvantage of the extensive course.

##### **1.4.2.2. Assessed Vs Non-Assessed Performance**

Assessed course is generally related with compulsory EAP courses. It raises the sense of awareness of the course value and makes both learners and teachers more responsible

towards the course. It also encourages teamwork among teachers in terms of corporation, sharing ideas, and exchanging materials. Nevertheless, it restricts at some extent the freedom in the choice of topics and materials. EOP course is also assessed by testing learners' proficiency in professional/occupational discipline communication. Learners' assessment in ESP can be attained through three basic types of assessments: (1) placement tests, (2) achievement tests, and (3) proficiency tests (Hutchinson and Waters 1987, Jordan 1997).

#### **1.4.2.3. Immediate Needs Vs Delayed Needs**

ESP course designers have to be aware of students' needs; whether they are immediate, i.e. those that students have at the time of the course or *delayed* i.e. needs that will be significant later (Dudley-Evans and St John 1998). A well-designed course makes a good balance between both needs in order to meet the different requirements and demands of learners all the way through the course time. The interrelation of immediate and delayed needs have to be guaranteed to make sure that academic as well as professional communicative skills are to be covered. Thus, ESP course needs to establish a sort of parallelism of subject course and professional world communication needs.

#### **1.4.2.4. The Teacher Knowledge Provider Vs The Teacher Knowledge Facilitator**

ESP teacher may take both roles; s/he can be a provider and facilitator of knowledge. Teachers who are providers consider their job as "the transmission of knowledge from themselves to their students" (Harmer, 2007: 108). This type of teachers is known as 'controllers' in the sense that they are in charge of the class and make all decisions about course design. If the teacher manages rather than controls, s/he will not take all the decisions about the course alone since s/he is not the only vital agent in the process. Learners have shares in the course design process and they are supposed to negotiate, suggest, share, and decide what fits them as activities, methods, and materials. In this case, the teacher takes the role of "facilitator or consultant" (Dudley-Evans and St John 1998) so that he may act as

intermediary agent between the specialist teacher and the learners to make a collective decision.

#### **1.4.2.5. Broad Course Focus Vs Narrow Course Focus**

The broad focus in course design covers ‘a range of target events’ that refer to the academic or professional skills. Dealing with a number of skills increases motivation among learners because they are exposed to a variety of genres that are not their primary focus. Therefore, they welcome this range of target events, as it is a break of the normal study routine. As far as narrow focus is concerned, the concentration is on ‘few target events, i.e. only one or two skills or genres are to be dealt with. This type of focus course fits learners with limited needs.

#### **1.4.2.6. Pre-Experience Vs While-Experience**

In pre-experience, learners do not have experience of the target situation at the time of ESP course, while in parallel with experience learners take the course simultaneously with the study course or professional activity. Deciding which course should be taken is often the job of institutions that send groups of learners for language training. Dudley-Evans and St John (1998) argue that learners with pre-experience of professional knowledge are more suitable to take an ESP course because of the great help they provide to the teacher. For this reason, “the teacher is able to draw on the learners’ knowledge, to ask them to give examples from this knowledge” (*ibid*, 151).

#### **1.4.2.7. Common-Core Material Vs Specific Material**

The common-core material uses academic or professional carrier content (means of delivering the linguistic content of the course). However, the specific material is derived from learners’ academic or professional discipline, such as the different topics that learners deal with in their subject course. Introducing any of the materials depends on the type of the

course (intensive or extensive), the timing of the course, the purpose of learners, and their level of motivation.

#### **1.4.2.8. Homogeneous Learners Vs Heterogeneous Learners**

A homogeneous group consists of learners from one discipline or profession, while heterogeneous group is made up of learners from different disciplines, professions, or levels. Homogeneity of the group can be very motivating factor in ESP course because it exposes learners to the same material type and language skills, hence the teacher's work will be much easier than with a heterogeneous group. However, it is much more challenging to introduce teaching materials that fit most of learners in the heterogeneous group, especially, if the heterogeneity is in the specific purpose and the proficiency level.

#### **1.4.2.9. Fixed Course Vs Negotiated Course**

Nunan (1988, cited in Dudley-Evans and St John 1998: 153) considers the course, which is laid down in advance, and seldom changes as a *fixed* course, but the course which accepts modification based on feedback from learners is a *flexible* and *negotiated* course. On the one hand, there are learners who enjoy the flexible course since they suggest their own ideas, have their visions, and modify undesirable sections in the course. It is an opportunity for them to be active agents in the design process. However, there may be learners who prefer sticking on the structure of the course as it is already designed, and any deviation will not be welcomed. A negotiated or fixed course is determined by several standards such as type of learners, institutional constraints, timetable, assessment options, and teachers' philosophy of learning (i.e. if learners have to be involved or excluded).

Consequently, as Dudley-Evans and St John (1998) suggest, balancing of parameters and involving all the participants in the process of course design lead to a successful and fruitful course. The teacher should be aware of all the parameters, make initial revisions, negotiate with learners and take the feedback into account, and have an experience in

materials writing. All these points lead to a well-designed course that fits and meets learners' needs and expectations in both EAP and EOP.

### **1.5. Materials In ESP**

ESP literature considers learning materials very significant especially in practice (Hutchinson and Waters 1987; Jordan 1997; Dudley-Evans and St John 1998; Danilova and Pudlowski 2006; Chen 2008). They are essentially employed to provide language input exposure, motivation and stimulation factor, and teaching aids. According to Richards et al. (2002: 322), teaching materials refer to all the used teaching aids to ease the learning of the language. For them, "Materials may be linguistic, visual, auditory, or kinaesthetic, and they may be presented in print, audio, or video form, on CD-ROMs, on the Internet or through live performance or display".

The role of materials in ESP is unquestionably significant. To Hutchinson and Waters (1987: 107), good materials do not teach, they encourage learners to learn. Therefore, ESP materials should include relevant texts and tasks that are inspired from subject course or professional domain of learners, stimulating activities that entail variety of skills, appropriate content that fits learners' purposes and encourages them to make use of their specialist knowledge. Materials writing is, indeed, a very time demanding and effort consuming task, which requires insightful thinking, profound vision, and a considerable experience as well to reach the right decisions. Furthermore, Hutchinson and Waters (1983) view that so many ESP materials do not consider "the realities of ESP classroom". This makes students uninterested in what is presented in the lesson. Another issue in ESP materials is the factor of creativity. Hutchinson and Waters (1987, 100) believe that students' lack of interest in ESP materials is because "they are too often uncreative; the scope of the language activities they attempt to engage the learner in is limited; and their knowledge content is largely unexploited".

### **1.5.1. The Role of Materials**

Dudley-Evans and St John (1998) mention four roles of utilising materials in the ESP context: (1) as a source of language, (2) as a learning support, (3) for motivation and stimulation, and (4) for reference.

#### **1.5.1.1. Source of Language**

Using the different ‘authentic’ materials in ESP classroom provides learners with opportunities to be exposed to a range of language features in their real context. The more they get exposure to the language, the more they enhance their language proficiency level.

#### **1.5.1.2. Learning Support**

ESP learners, in particular, need substantial involvement in materials writing for without it enhancing learning will not be achieved. Materials are utilised to help learners engage better in the learning process via stimulating activities of cognitive and communicative skills. Materials, as *learning support*, need to come up with new and stimulating ideas that provide explanations, practice, and reference as well as attract learners’ attention and meet their needs and interests. They provide extra dimensions for learning in terms of knowledge, skills, tasks, and activities.

#### **1.5.1.3. Stimulation and Motivation**

Since *motivation* is essential to success (Harmer 2007: 98), materials need to be exciting, challenging, and engaging. Stimulating and motivating materials certainly create a strong learning drive that pushes learners to get actively involved. For materials to be motivating, they have “to offer new ideas and information whilst being grounded in the learners’ experience and knowledge to encourage fun and creativity” (Hutchinson and Waters, 1987: 172).

#### **1.5.1.4. Reference**

ESP learners are usually busy people with little time devoted for language study. Self-study is among the most appropriate alternatives that learners seek refuge in to improve their language level and keep in touch with courses. Therefore, materials of self-study and *reference* should be carefully prepared and organised especially in units, sections, skills, tasks and texts, alongside with coherence, consistency, and authenticity.

#### **1.5.2. Principles of Materials Writing**

Good ESP teaching materials need to follow certain principles and guidelines to achieve their objectives, mainly the ones related to helping learners cope with different learning tasks related to their target situation needs and encouraging them improve their cognitive and communicative skills. Hutchinson and Waters (1987: 107-108) set six major principles that should be taken into account when producing any teaching materials.

1. Materials provide stimulus for learning; hence, they need to contain appropriate content, interesting texts, and enjoyable activities that stimulate learners' existing knowledge and thinking capacities.
2. Materials help to organise the teaching- learning process. This can be done through providing a clear and coherent unit structure yet not tightly structured to allow a space for creativity and variety.
3. Materials writing should be based on the author's view of language theories and theories of learning. Hence, texts, activities, and learning items are to be designed as a reflection of these theories.
4. Materials reflect the learning task. Taking the assumption that learning is generally recognised as a complex process, materials need to "create a balanced outlook which both reflects complexity of the task, yet makes it appear manageable" (*ibid*, 108).

5. Materials can benefit the teacher as well by broadening his experience via acquainting him with new techniques and methods.
6. Materials elaborate models of correct and appropriate language use.

As far as ESP materials selection is concerned, certain issues should be taken into account to guarantee that they really meet their needs and fit their purposes. These issues are outlined by Grave (1996) in Danilova and Pudlowski (2006: 390).

- Effectiveness in achieving the course purposes;
- Appropriateness of the material so that students will feel comfortable; this means that the materials will be relevant to their interests, course objectives and language level;
- Feasibility, so that the materials will be in accordance with students' capabilities and the course will not prove too difficult for them.

The materials design model that is presented by Hutchinson and Waters (1987: 109) practically interprets the above principles in a coherent framework that integrates various aspects of learning. The model consists of four elements: (1) *input*, (2) *content focus*, (3) *language focus*, and (4) *task*.

To begin with, the *input* may represent a printed (text, dialogue), audio-video (recorded extracts, films, clips), non-verbal (diagram, chart, and table) materials, or any piece of communication data. The *content focus* involves both linguistic and non-linguistic items that can be exploited to convey information and feelings as well as generating meaningful communication in the classroom. The *language focus* aims to enable learners to use language by taking it to pieces, studying how it works and putting it back together through practice. Finally, the task allows learners to use the content and language knowledge they gained in a communicative framework. Accordingly, Hutchinson and Waters clarify:

The primary focus of the unit is the *task*. The model acts as a vehicle, which leads the learners to the point where they are able to carry out the *task*. The *language* and *content* are drawn from the *input* and are selected according to what the learners will need in order to do the *task*. (109)

Consequently, materials' writing is unquestionably very significant in providing learners with sources of language and stimulating their existing specialist knowledge in a coherent and organised frame. For this reason, designing good materials that reflect the teacher's views and meet the learners' needs will certainly create environment for better language achievement and active engagement that serves the learners' specific purposes.

## **1.6. ESP and Needs Analysis (NA)**

The entire reviewed ESP literature considers NA as the 'corner stone' and the major step of ESP course design (Munby 1978; Hutchinson and Waters 1987; Nunan 1988; Jordan 1997, Dudley-Evans and St John. 1998; Basturkmen 2006; and Basturkmen 2010). NA aims to determine the type of course content, materials and methodology, in addition to the characteristics of learners and their learning styles, preferences and purposes. Moreover, it deals with the description of language and the level of proficiency that will be required. It is regarded as critical to ESP despite of being used in other educational disciplines.

### **1.6.1. Needs Analysis: Definitions**

Richards et al. (2002: 353-354) define NA as being "the process of determining the needs for which a learner or group of learners requires a language and arranging the needs according to priorities". Needs assessment makes use of both subjective and objective information (e.g. data from questionnaires, tests, interviews, and observation) and seeks to obtain information on:

- The situations in which a language will be used (including *who* it will be used *with*).
- The objectives and purposes for which the language is needed.
- The types of communication that will be used (e.g. written, spoken, formal, informal).

- The level of proficiency that will be required. Needs assessment is a part of curriculum development and is normally required before a syllabus can be developed for language teaching.

The practice of ESP teaching has proved that identifying learner's needs for the language "leads to a very focused course" (Dudley-Evans and St John 1998: 122) that matches their needs to their aims, which differ from one discipline to another. NA gives language teachers insights into learners' interests and purposes of learning the language. Moreover, it enables course designers to make appropriate interpretations of learners' needs into "linguistic and pedagogical terms in order to produce and teach an effective course" (Mackay and Mountford 1987: 21). Needs analysts are usually insiders (members of the institution) or outsiders (outside experts). They carry out NA according to the type of ESP course and the status of the institution (Robinson 1991: 10). An outside expert can do it for large institutions.

ESP practitioners conduct NA using various means and mediums such as surveys, interviews, tests, questionnaires, etc to collect data that serve the analysis. Data providers are often the potential students, the language teaching institution (teachers and administrators), those who are or will be concerned with the students' specific job or study situation, students' sponsors and even past students (*ibid*, 11). Having a range of data providers and information sources broadens the scope of the NA and gives the analyst a range of viewpoints to carry out a true and convincing analysis. After collecting data, analyzing and interpreting results to determine learners' objectives and purposes are the fundamental stages that permit practitioners to decide upon the type of the course, syllabus, materials, methodology, tests and evaluation. Thus, "Need Analysis should be the starting point for devising syllabuses, courses, materials and the kind of teaching and learning that take place" (Jordan 1997: 22).

ESP syllabus is heavily based on NA (Basturkmen 2006). This does not mean that NA exists only in ESP; it can be applied in GE as well. However, what makes ESP different from GE “is not the *existence* of a need as such but rather an awareness of the needs” (Hutchinson and Waters 1987: 53). This awareness stems from learners’ experience in the occupational or academic setting and its demands. They require the language not for its own sake but for learning a set of professional skills to perform particular-job- related functions (i.e. they learn the language and they ‘know’ for what purpose(s)).

The courses, which are based on NA, are generally believed to be more effective and motivating as long as learners feel more involved in the learning process and their actual needs, demands, views and ideas are taken into account. NA allows practitioners and course designers to bridge the gap between the present situation needs and the target situation demands. Basturkmen and Elder (2004: 674) conclude that “needs analysis has been seen as the attempt to identify the gap between what students know and can do at the present point of time and what they need ideally to be able to do in the target situation”.

Therefore, analyzing learners’ needs gives ESP teachers and course designers a better and clear image of the learners’ reasons of learning and the requirements of the course. Moreover, it is a vital procedure to identify and understand the culture of the specialism (Harding, 2007. 17), and the different microskills involved in learners’ study or work environment (Basturkmen, 2006. 27).

### **1.6.2. Needs Analysis: Developments**

NA has existed for many years, especially as a tool for planning industrial training in business and marketing domains. Munby’s (1987) Communicative Needs Processor (CNP) is considered the earliest model of NA in language teaching. Other detailed models have followed aiming at creating a practical syllabus for learners according to their needs. Here, three major NA models are presented to trace its development.

### **1.6.2.1. The Council of Europe Modern Language Projects Group**

NA has first made its appearance in language curriculum design through the work of the Council of Europe Modern Language Projects Group during the 1970's as Van Ek and Trim (2001) cited in Fatihi (2003: 41) point out that this council was the first that used NA to promote language learning in Europe. As a result of its research, the group recognised the importance of devising courses on the basis of learners' communicative needs rather than ready-made language structures courses. The council's project came up with the idea of 'specification' and stressed the principle that language teaching should provide learners with the means of meeting their personal and functional communicative needs.

### **1.6.2.2. Munby's Communicative Needs Processor (CNP)**

Phan (2005: 150) believes that NA did not make significant effects in ESP teaching until Munby's communicative syllabus design (1978) to NA came into being. Munby's model emphasises the concept of language user's competence and its relation to knowledge and communication (Fatihi 2003). He set out what is known as Communicative Needs Processor (CNP), which forms the heart of NA. Phan (2005: 151) summarises CNP as follows:

The CNP set out under eight variables that 'affect communication needs by organising them as parameters in a dynamic relationship to each other'. The CNP operates by looking at its input- the foreign language participant- and information concerning the participant's identity and language. Then it requires information on the eight variables: purposive domain, setting, interaction, instrumentality, dialect, target level, communicative event, and communicative key.

What can be noticed from the above citation is that CNP mainly stresses the 'objective needs' of learners via identifying their real world communicative requirements. It aims at collecting data about the participant's identity (age, sex, nationality, place of residence, etc) as well as data related to language (mother tongue (L1), target language, present level of the target language, other languages known (L2), and extent of command of

L2). Munby (1987: 54) states that collecting data about learner's language helps materials producers to design "pedagogically viable learning units" based on the information that resulted from the CNP model. The data about participants' identity and language constitute the reference point for the input to the CNP.

Munby suggests seven variables to describe his CNP model. To start with, (1) the *purposive domain* variable, according to Fatihi (2003: 45) specifies the occupational or educational purpose for which the target language is required, whereas (2) the *setting* variable refers to "the time and place of communication" (Munby 1978: 60). It principally specifies both physical and psychosocial environment in which the language is needed. (3) The *Interaction* variable identifies the elements with whom the participant needs to establish communicative relationships. (4) *Instrumentality* is mainly related to mediums and channels of communication that the participant is supposed to use. (5) The *Dialect* variable refers to language varieties, while the (6) *target level* is concerned with the participants' desired proficiency level. (7) The *communicative event* variable identifies the different steps and procedures that should be made; however, the communicative key deals with the manner of performing activities that comprise an event.

Although Munby's model is well set out, sophisticated and complex, it has received criticisms. To illustrate, Le Ha (2005: 151) claims that Munby's model fails to produce a 'real' syllabus with its implementation (activities, resources, and classroom dynamics). However, Fatihi (2003: 44) proclaims:

Munby's Communicative Needs Processor (CNP) is considered the most popular procedure for the analyzing of needs. Teachers of English, especially those concerned with the teaching of English for Specific Purposes, highly utilize his approach to the analysis of needs.

### **1.6.2.3. Richterich's Needs Analysis**

Richterich (1975) worked as a member in the Council of Europe Modern Language Projects Group, in which he developed the concept of 'specification' that is suggested by the council. He views learning process as "being responsive to learners' needs" (Fatihi, 2003: 43) depending on learners' feedback and consultation.

Conducting NA, according to Richterich (1975), begins with providing answers to questions concerning "what", "why", "when", "who", "for whom", and "how" of the procedure. He came up with the notions of 'Objective and Subjective needs', in which the former is associated with the learners' real world communicative requirements as suggested by Munby's model (1978), while the latter is related to learners' psychosocial, cultural and cognitive needs as being an individual in the learning cycle. Richterich (1975) believes that needs vary from one individual to another; thus individual differences and learning styles have to be taken into account to make sure that both objective and subjective needs are integrated in the designing of ESP course.

Richterich and Chancerel (1980) proposed a model of NA which is based on three sources of needs (Nitchamon Jialim 2006: 17):

1. Identification by the learner of his needs
2. Identification of the learners' needs by the teaching establishment
3. Identification of the learners' needs by the user- institution

This model differs from Munby's model in the sense that it considers the learner as the centre of the process not just as a 'participant' and his needs are ongoing and changing all along the course period. Moreover, it is a multifaceted model for it views learners' needs from different perspectives (learners themselves, teaching establishment and user-institution).

### **1.6.3. Needs Analysis: Different Approaches**

Jordan (1997) presents five main approaches to NA: Target-Situation Analysis, Present Situation Analysis, Deficiency Analysis, Strategy Analysis and Means Analysis.

#### **1.6.3.1. Target-Situation Analysis (TSA)**

Learners use the target language in different situations according to the functional requirements of the context and setting. Therefore, as Richards et al (2002: 539) state, TSA is

The situation or setting in which the student will have to use the target language. This may be a study or work situation or any context in which the learner needs to use the language. Analysis of the communicative and linguistic demands of the target situation is an essential phase in Needs Analysis.

This indicates that the learning environment's demands determine the learners' needs in the target situation and hence the syllabus to be implemented. For Jordan (1997), TSA is best expressed in Munby's model (1978) in which he focuses on the learners' needs at the end of a language course and the target level performance.

Munby's model produces a profile of the learners' language needs, which then converted into "a communicative competence specification from which a syllabus can be drawn up" (Jordan, 1997: 24). Munby's CNP takes into account "the variables that affect communication needs by organizing them as parameters in a dynamic relationship to each other (Munby 1978: 32 cited in Songhori 2008). Hutchinson and Waters (1987: 59) believe that TSA "involves asking questions about the target situation and the attitudes towards that situation of the various participants in the learning process". They suggested a framework that outlines the kind of information that teachers and course designers need to gather from the analysis of target needs. Songhori (2008: 8) approximates Munby's model to Hutchinson and Waters' framework as follows.

Hutchinson and Waters' framework	Munby's model
<p>1. Why is language needed?</p> <ul style="list-style-type: none"> <li>• for study;</li> <li>• for work;</li> <li>• for training;</li> <li>• for a combination of these;</li> <li>• for some other purposes, e.g. status, examination, promotion</li> </ul>	Purposive domain
<p>2. How will the language be used?</p> <ul style="list-style-type: none"> <li>• Medium: speaking, writing, reading, etc.;</li> <li>• Channel: e.g. telephone, face to face;</li> <li>• Types of text or discourse: e.g. academic text, lectures, catalogues, etc.</li> </ul>	Instrumentality
<p>3. What will the content areas be?</p> <ul style="list-style-type: none"> <li>• Subjects: e.g. medicine, biology, commerce, shipping, etc.;</li> <li>• Level: technician, craftsman, postgraduate, etc.</li> </ul>	Communicative event
<p>4. Where will the language be used?</p> <ul style="list-style-type: none"> <li>• Physical setting: e.g. office, lecture theater, hotel, workshop, library;</li> <li>• Human context: alone, meetings, demonstrations, on telephone;</li> <li>• Linguistic context: e.g. in own country, abroad.</li> </ul>	Setting (physical and psychological)
<p>5. When will the language be used?</p> <ul style="list-style-type: none"> <li>• Concurrently with the ESP course or subsequently;</li> <li>• Frequently, seldom, in small amounts, in large chunks.</li> </ul>	

Table 1.1. Hutchinson and Waters' Framework Vs Munby's Model (Songhori 2008: 8)

TSA is generally expressed in terms of target needs, which are in turn expressed in terms of necessities, lacks and wants (Hutchinson and Waters 1978: 55). First, necessities refer to “the type of need determined by the demands of the target situation”. They are also called “Objective Needs” (Jordan, 1997: 25), in which the target situation requires the learner to be aware of certain issues to function effectively and get better outcomes. Second, lacks “represent the gap between the target proficiency and what the learner knows already” (*ibid*, 26). In other words, lacks match the target proficiency against the existing proficiency of the learner. Third, wants are unlike necessities in the sense that they are ‘Subjective Needs’. They are related to learners’ motivation, willingness and attitudes to learn. Bowers (1980), as cited in Jordan (1997: 26), believes that students will learn best what they want to learn. Therefore, learners’ wants are also important factors besides necessities and lacks in course design and materials writing.

#### **1.6.3.2. Present-Situation Analysis (PSA)**

PSA ascertains the students’ state of language development at the beginning of the language course (Jordan, 1997: 24). It allows teachers and course designers to deduce and assess learners’ lacks as well as estimate strengths and weaknesses in language, skills and learning experience (Dudley-Evans and St John 1998). Indeed, it sets the ground for TSA for it determines learners’ proficiency level before carrying out any step in the language course i.e. it is the starting phase in which further objectives can be established. PSA relies on the learner as the main source of data collection, besides the teaching or working institution. Songhori (2008) notes that effective NA has to combine both TSA and PSA in order to meet the needs of learners and reach the desired goals.

### **1.6.3.3. Deficiency Analysis (DA)**

The necessities that the learner lacks are often referred to as Deficiency Analysis (DA) (Jordan, 1997: 26). It bridges the gap between language information about the learners i.e. what their current skills and language use are, and proficiency information i.e. the tasks and activities learners are/will be using the language for (Dudley-Evans and St John 1998). In other words, DA is the difference between the learners' current language competence and the target/desired competence.

### **1.6.3.4. Strategy Analysis (SA)**

SA focuses more on “the methodology employed to implement language programmes” (Nunan 1988, cited in Jordan 1997: 27). This tendency observes the preferred learning styles and strategies of learners as well as the applied teaching and learning methods. Learners' views and perceptions form the heart of this approach as suggested by Alwright (1982) who was the pioneer of Strategy Analysis. Areas related to “preferences in group size, correction procedures and methods assessments” are often the most covered areas of strategy analysis (*ibid*, 27). Jordan (1997) believes that teacher's-centred approach to language teaching has shown to be ‘inappropriate’ and ‘inefficient’ because learners have to adopt learning strategies that are perceived by their teachers. Therefore, cultural and individual differences have become significant factors in learners' training and learning setting.

### **1.6.3.5. Means Analysis (MA)**

Holliday and Cooke (1982) introduced MA as an attempt to adapt language course to local situations. In other words, MA “looks at the environment in which a course will be run [...] the environment in which the project will take root, grow healthily and survive” (Dudley-Evans and St John 1998: 124). West (1998), as cited in Songhori (2008), claims that MA tries to investigate those considerations that Munby excludes, which are chiefly related to the practicality and workability of the language course. For this reason, MA is suggested to

“establish a workable course design” (Dudley-Evans and St John 1998). Moreover, the cultural environment in which the course will take place determines the syllabus of the course since what works in one situation may not work in another. To illustrate, Dudley-Evans and St John (1998: 124) give the following example:

While hotel staff around the world may share some similar language needs, how they learn the language, the conditions in which they are learning and where and how they apply the language are not the same. So the needs and how they are prioritized, ordered and then met will be different.

This example demonstrates that the cultural learning setting/environment (classroom culture) and the social context are the factors that establish Holliday and Cooke’ (1982) Means Analysis. For this reason, Jordan (1997: 28) calls this approach “Environmentally-Sensitive Approach”.

To sum up all the discussed approaches to NA, Dudley-Evans and St John (1998: 125) present a “current concept of NA in ESP” which takes in the different approaches. It includes:

1. Professional information about the learners: the tasks and activities learners are/will be using English for- *target situation analysis and objective needs*
2. Personal information about the learners: factors which may affect the way they learn such as previous learning experiences, cultural information, reasons for attending the course and expectations of it, attitude to English – *wants, means, subjective need*
3. English language information about the learners: what their current skills and language skills are – *present situation analysis-*, which allows us to assess the learners’ lacks.
4. The learners’ lacks: the gap between language information and professional information – *lacks*
5. Language learning information: effective ways of learning the skills and language to overcome learners’ lacks – *learning needs*

6. Professional communication information about the tasks and activities learners are/will be using English for: knowledge of how language and skills are used in the target situation – *linguistic analysis, Discourse Analysis, genre analysis*
7. What is wanted from the course
8. Information about the environment in which the course will be run – *means analysis*

#### **1.6.4. Data Collection Methods for NA**

A number of methods are widely used when conducting NA for ESP course. They are generally intended to explore the various linguistic features of the target situation and the complexities of learners' needs. Jordan (1997) proposes 13 methods of collecting data for NA, which are listed as follows:

1. Advance documentation
2. Language test (at home and/or on entry)
3. Self-assessment
4. Observation in class; monitoring
5. Class progress test and error analysis
6. Surveys, questionnaires
7. Structured interviews
8. Learners' diaries and journals
9. Case study
10. End-of-course test
11. Evaluation feedback
12. Follow-up investigation
13. Previous research

Generally, there are six main methods for data collection in NA, suggested by Dudley-Evans and St John (1998: 132), which are questionnaires, analysis of authentic

spoken and written texts, discussions, structured interviews, observation and assessments. ESP course designer/teacher has a wide range of data collection methods to elicit the information needed to determine the needs for which the learner requires a language and arranges the needs according to the priorities. Robinson (1991: 14) suggests what is called “Participatory needs analysis” in which students are active participants in terms of taking part in discussions, recommendations and even in further research. Data collection methods are mainly used to find out information about the learner in order to determine his objectives of learning the language, the skills that should be focused on, the situation in which the language will be used, with whom the language will be used and the level of proficiency required. For these factors, carrying out NA using the different data collection methods “leads to a very focused course” (Dudley-Evans & St. John, 1998).

## **CONCLUSION**

The current chapter defined ESP from multi-dimensions and traced its developments from its early beginnings with the studies of Discourse Analysis to the late works of genre analysis. It also spots light on ESP course design approaches and material writing. The chapter also discussed the role of NA in ESP course besides its approaches and data gathering tools. The global awareness of ESP teaching has led teachers and course designers to think about the appropriate approaches and models to enhance learners’ language proficiency level via considering their needs. Then, teaching materials are adequately provided as a source of language and a learning support. Moreover, the conduction of NA before carrying out ESP course is necessary to collect a wide range of information about learners since they are viewed as the central agents in the whole process. Furthermore, using different data collection tools in NA aims to elicit information needed to determine the needs and arrange them according to learners’ priorities. Therefore, NA permits ESP practitioners to decide upon the type of the course, syllabus, materials, methodology, tests, and evaluation.

## CHAPTER TWO

### WEB-BASED LANGUAGE TEACHING IN ESP

#### INTRODUCTION

The use of Information Technology (IT) in education is rapidly increasing, especially in the era of World Wide Web (WWW). It represents a powerful interactive source of learning that boosts learners' motivation and fosters autonomous learning. The massive expansion of the Internet worldwide has made the process of integrating IT into EFL classroom instruction an accessible and easy task for teachers. It succeeded in removing all the traditional learning barriers of time and place and created new spaces for interactive communication between learners and teachers. Therefore, this chapter explores the basic concepts related to the field of Web-based language teaching. It also surveys the advantages and disadvantages of integrating Web-based language teaching in EFL and ESP in particular. The chapter also looks at the different activities and tasks that can be used in this field.

#### **2.1. Basic Concepts and Definitions**

Providing key concepts that will be used frequently in this chapter is necessary to have a clear and comprehensive image about Web-based language teaching. We will be looking at "Information Technology", "the Internet", "World Wide Web", "Browser", and "Web-based instruction". 'The Internet' and 'the web' are often used interchangeably throughout this dissertation.

##### **2.1.1. Information Technology (IT)**

It generally refers to "the use of computers as an aid to creating and maintaining data, i.e. information. IT is related to all aspects of managing and processing information, especially with a large organization." (Cheltenham courseware LTD 1995-2005: 7)

### 2.1.2. The Internet

The Internet consists of global interconnected networks and the web is just a small part of the Internet as a whole. It also includes FTP (File Transfer Protocol), e-mail and newsgroups, besides all the hardware and software (Cheltenham courseware LTD 1995-2005). Moreover, Duggleby (2001: 19) defines it as

The biggest library that has ever existed and also one that you can pop into with a few mouse clicks or keyboard strokes. It is a library that you can reach from your workplace, from your home, from the place where you study and possibly from your local library.

The following figure represents how the interconnected networks form the Internet look like.

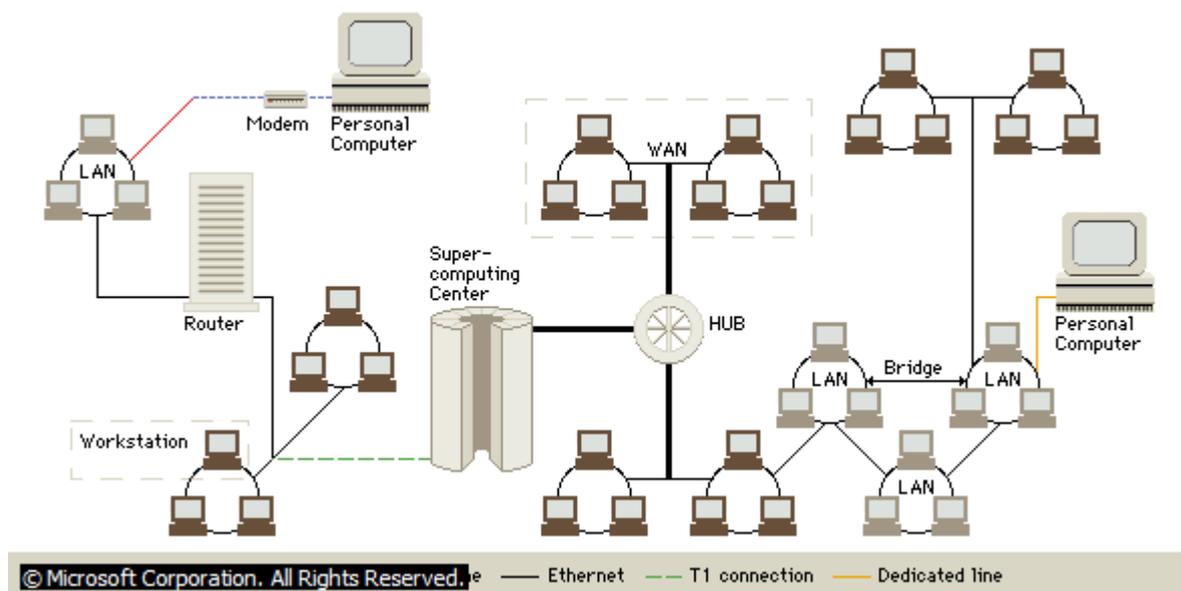


Figure 2. 1. Internet Topology (Microsoft Encarta Encyclopaedia 2009)

The figure shows that a simple network is composed of connected Personal Computers (PCs). Connecting the networks to each other creates the Internet (a series of interconnected networks). These networks are locally interconnected via a modem or standard phone line. Bridges and hubs are used to connect a series of networks to each other creating a wider area network.

### 2.1.3. World Wide Web

Microsoft Encarta encyclopedia (2009) defines WWW as,

A library of resources available to computer users through the global Internet [...] users generally navigate through information in the WWW with the aid of a programme known as www browser. The browser presents text, image, sound, or other information objects on the user's computer screen in the form of a page, which is obtained from www server.

Web users browse the web to access to enormous amount of available information (documents, audio-visuals, graphs, and animations). The web server distributes data to all personal computers up to the users' request, which makes it easy and user-friendly navigation environment. It displays information in web pages as shown below.



Figure 1. 2. An Example of a Web Page

(<http://www.asicentral.com/asp/open/ProductsAndServices/dist/OnlineSolutions/asinternet/index.aspx>)

### 2.1.4. Browser

The browser is a programme that enables a computer to locate, download, and display documents containing text, sound, video, graphics, animation, and photographs located on computer networks. The act of viewing and moving about between documents on computer

networks is called *browsing* (Microsoft Encarta Encyclopaedia 2009). Duggleby (2001. 24) also defines it as,

The software that you use to view web pages and it is installed on the computer you use to access the web. It is like the window that you look through. The most widely used browsers by far are the Netscape Navigator and Microsoft Internet Explorer.

#### **2.1.5. Web-based Instruction**

Numerous experiences of using web-based instruction in language classroom (Schacter 1999; Graham, Cagiltay, Craner, Lim, & Duffy 2000; Kannan & Macknish. 2000; Zhao 2002; Daubariene & Zdanyte 2003; Baskerville 2005; Matkin 2007; Son 2008, Gonzalez 2009) have revealed that learners demonstrate an increased level of awareness, interest and motivation while learning in a web-based environment. Khan (1997) defines it as “A hypermedia-based educational programme which utilizes the attributes and resources of the World Wide Web to create a meaningful learning environment where learning is fostered and supported” (cited in Pacheco 2005: 5). Web-based instruction began with the advent of the Internet and developed with the growth of WWW. It takes the advantage of the web development to deliver information (Zhao 2003: 9)

#### **2.2. The Use of IT in Language Teaching: Historical Overview**

The growing pressure on teachers and educational institutions to develop and improve learning and update instructional approaches leaves them “with a growing challenge of working out what to include in a course of study” (Maier, Barnett, Warren, Brunner 1998: 13). This pressure led them to keep pace with developments in IT. Castells (2004: 01) regards IT as the present-day equivalent of electricity in the industrial era. It is increasingly covering every corner of life to the extent that the modern era is characterized by the use of IT. In education, the use of IT becomes an important attribute of today’s language classroom worldwide. In USA, for instance, Carter and Titzel (2003) report the remarkable increase in

technology use in programmes across the country. In fact, the use of IT in education is not a new teaching fashion. It began with the integration of language laboratory as an investment of audio resources in classroom instruction in the 60's and 70's (Stack 1971; Dakin 1973). Language lab instruction was mainly a trend grounded in a stimulus-response behaviour pattern and audio-lingual principles. Although it was a positive step in linking technology and language education, it was soon criticized to be a mechanical process that produces a non-communicative learner (Singhal 1997).

The era of audio and video- tape based language teaching with its advantages and drawbacks was the starting point that led to a more sophisticated period of IT in education. The coming out of communicative approach to FL teaching and the remarkable increase of computer technology paved the path to the development of Computer-Assisted Language Learning (CALL). Chaka (2009: 539) defines CALL as “an approach to language learning and teaching that uses the computer as an aid to presenting, reinforcing, and assessing the material to be used”. CALL was mainly an interactive medium for classroom practice. A number of computer applications and software provides activities for vocabulary, grammar, and pronunciation for learners with the integration of multimedia instructional programme materials. Currently, most FL course books series are accompanied with a CD or DVD as reinforcement material for vocabulary, grammar, and pronunciation practice (Switala 2005: 2758). Following Moras (2001), CALL has gone through three different periods: behaviourism, communicative, and socio-cognitive (integrative) (cited in Pacheco 2005). It shifted from audio-lingual drilling to skills practice and finally to authentic, meaningful and communicative interaction between learner-teacher and learner-learner.

CALL technologies are generally divided into three categories: Mainframe computer Technologies, PC Technologies, and Multimedia Networked Computer Technologies (Warschauer 2000, cited in Chaka 2009). Each category supports particular language features

to be practised in classroom. Kern and Warschauer (2000) claim that Mainframe Technology reinforces repetitive drilling (grammar, vocabulary, and spelling), reading and pronunciation, and listening to audio recording models for repetition. PC Technologies emphasize the use of CD-ROMs and DVDs oral and written communicative activities, language games and text reconstruction, critical thinking, problem-solving and hypothesis-testing activities. However, Multimedia Networked Computer Technologies stress Internet chatrooms and e-mail interactive tasks and activities, audio and video online conferences, and Web-based activities. The appearance of hypermedia (multimedia resources such as text, graphics, audio, video, and animation) provides CALL extra wonderful features. Rozgiene, Medvedeva, and Strakova (2008: 05-06) list a number of advantages that hypermedia adds to CALL such as authentic environment, skills integration, greater control, more learning engagement, and instant access to online language tools such as grammar activities, vocabulary explanation, pronunciation modelling and content-based resources.

Unquestionably, the Internet is one of the modern world landmarks that represents “an extraordinary human adventure” (Castells 2004: 09). The Internet “boom” has revolutionized most of the life domains and language learning and teaching paradigm in particular. It marked the emergence of online learning and Web-based language teaching era. One of the major features that distinguish it from other instructional technologies is the easy “access to information that was never available before in a school library” (Berger 1998: 71). It offers learners the instructional space to enjoy and make full use of multimedia resources. The e-Testimony to the Web-based Education Commission comes to a decision that “there is no going back, the traditional classroom has been transformed” (Kerry and Isakson 2000: 01).

### 2.3. Web-based Language Instruction in FL Classroom

Following Microsoft Encarta Encyclopedia (2009), Vinton Cerf created the Internet in early 1973 as a part of a project headed by Robert Kahn and conducted by the Advanced Research Project Agency, part of the US Department of Defence. Tim Berners-Lee, working at CERN (European Organization for Nuclear Research, originally the Conseil Européen pour la Recherche Nucleaire), developed it in 1989 (Brooks, Nolan & Gallagher 2001: 3). The Internet has grown rapidly to dominate every aspect of peoples' daily life (business, entertainment, communication, education, etc). Kerry and Isakson (2000: 1) view the Internet as "perhaps the most transformative technology in history, reshaping business, media, entertainment, and society in astonishing ways. But for all its power, it is just now tapped to transform education". This truly expresses the radical change that the Internet has brought to develop and improve traditional classroom instruction and practice especially in the twenty-first century. It attempts to change the architecture of the education city. Teachers are to be transformed into e-tutors and web-based course developers, learners to be shifted from "passive recipients of information to active information-literate producers" (Berger 1998: 71), and learning environment is to become "constructive" (*ibid*, 93). Maeroff (2003: 2) believes that the implementation of Internet in education will enormously spread as the technology develops, and "E- learning will be an embedded feature of education, widely available and no longer an object of controversy". Shawki (1999: 55) views WWW as an innovative front-end to the Internet.

The web soon becomes "a more-user friendly" tool for language teachers and learners as well. Its potentiality of providing versatile resources (graphics, text, animation, audio, video, etc) into classroom environment made it such a powerful, efficient and enjoyable technology that should not be missed. Khan (2001: 05) confirms that the increasing developments in the web technologies have produced a learning environment that is "well-

designed, learner-centered, engaging, interactive, affordable, efficient, easily accessible, flexible, meaningful, distributed and facilitated”. Nowadays, the Web-based courses and projects are very popular and widely used at schools, universities and homes for the simple reason that they take the full advantage of different available resources in the virtual library of the WWW (Harley, Maher, Henke, and Lawrence 2003, 2004; Semenov 2005; Harley 2007; Meloni 2007; Hirtz, Harper and Mackenzie 2008). Teachers across the world use the Web for its instructional opportunities. Brooks, Nolan & Gallagher (2001: 9) state three important characteristics of web-bases teaching:

1. Anytime, anywhere medium
2. Nearly generic multimedia delivery system
3. Capability for supporting active learning systems

Web-based courses take four main forms (Maeroff, 2003: 6-7):

1. Real-time, online, synchronous instruction, in which students communicate with teachers and other students from their computers as the teacher teaches the course;
2. asynchronous instruction in which students work on their own and later receive messages on their computers from the teachers;
3. web-based, packaged programmes consisting of a pretest, a tutorial, a practice, and a post-test that the student submits online, without contact with teachers;
4. traditional book-based courses in which students work online on their own pace, turn them in, and receive responses, feedback, and recommendations from teachers.

The WWW offers numerous websites that are created just for online learning. To illustrate, this list represents various websites for different purposes.

- American English Language Foundation (<http://www.aelf.com>) focuses on American language and culture
- Berlitz Online (<http://www.berlitz.com>) for business language classes
- EFI - English School on the Net (<http://www.study.com>) offers free English Language Classes in Grammar, Reading and Writing, Listening and Speaking, as well as specialized classes in TOEFL English for Special Purposes
- English Course Online (<http://www.english-course.com>) is based on a virtual learning environment that features online exercises, assessment and a hyperactive (hyperlink-based) glossary. The entire course is also available on CD-Rom for offline studies, etc.

### **2.3.1. Web-based Course: Advantages/ Benefits**

Currently, the web-based courses are integrated in all educational levels and in all school subjects for the benefits it affords for learners and teachers as well. Campbell, Perlman, & Hadley (2003: 232) state, “web-based courses offered at every skill level from Basic Math to advanced placement calculus and for subjects from personal finance to advanced Japanese”. However, there are voices from different streams and levels calling to keep the traditional form of education because web-based instruction is “inhuman and inhumane, a mechanistic, robot-like approach to education” (Maeroff 2003: 16), which is unable to create and maintain the interaction taking place in the classroom. Duggleby (2001) views web-based course from both sides; positive and negative. She suggests five major advantages and disadvantages of web-based course (online learning). The advantages are mainly related to communication, interaction, material development and courses accessibility.

To begin with, web-based courses make communication between student-tutor and student-student easier and quicker. Students can receive and send information at any time and “enjoy speedy feedback on completed assignments” (*ibid*, 9). Moreover, teachers can provide instant clarification and explanation of ambiguous points in the lecture. The individualization

of communication is well guaranteed in web-based learning environment. The learner has a variety of media to express and practise his learning style without being confronted with other learners' style. The teacher can also design and deliver a variety of materials, activities and tasks to meet the different learning styles of learners. Hence, communication in online learning is comfortable, effective and secure. As far as classroom interaction is concerned, web-based courses rely on activities and tasks that enhance collaboration in terms of e-mail exchange, chat rooms, forum discussions, pair and group tasks, video conferencing and social interaction (facebook, twitter). Online learning makes the development and maintenance of learning material easier. The development of internet services and facilities makes the receiving and sending of all multimedia files easier and faster than ever. In addition, teaching materials can be constantly reviewed, updated, modified, and improved in the light of learners' feedback. Duggleby (2001: 10) states:

As the technology becomes faster, more stable and more sophisticated then sound, video and animation can be exchanged with ease...Web materials can be amended, added to and uploaded in minutes ensuring that the content is always accurate, up to date and relevant. There is no need for the providing institution to reproduce and distribute learning materials.

As web materials become cheaper and easier to produce, web-based courses are widely accessible. Learners from different educational levels and cultural backgrounds are increasingly having access to web-based courses designed for different purposes. Hannum (2001) classifies the advantages of web-based course into three categories: (1) logistical, (2) instructional, and (3) economic.

#### **2.3.1.1. Logistical Advantages**

They are generally related to the ease of distribution, delivery and use of the web-based course. The flexibility that the course provides in terms of time and place allows learners to study at their own pace and schedule. For Hannum, "The cross-platform compatibility of the software" (13) is another important logistical advantages of the web-

based course. The fact that the course is Internet-based, it will work with different computer platforms, operating systems and browsers. Unlike the traditional distribution methods of learning materials (course books, worksheets, handouts, and other printed materials) that require arranging the schedule and setting the study rooms in advance for the teacher and learners, web-based course materials are distributed online via e-mail registration. The exams and success certifications can be also distributed to learners online. Another logistical advantage is the easy access to any information or learning material available on other sites through a web-link that can be attached or incorporated in the course website. Moreover, the updating of content and delivering it to learners instantly forms an important logistical advantage.

#### **2.3.1.2. Instructional Advantages**

The possibility to integrate a variety of multimedia resources in the web-based course enriches the learners' experience, enhances learning and motivates learners to achieve better outcomes. The Web applications permit learners to take control over aspects of the lesson on their own pace. For instance, they can go quickly through the familiar points in the lesson and slow down for the new, unfamiliar or complicated and difficult aspects. In addition, "the learner may ask for a definition or an example of a new concept being taught. Any time in a lesson, a learner may ask to see the objectives, review the prerequisites, see an overview, attempt to practice a problem and get feedback, or take a mastery test" (Hannum 2001: 14). Communication and collaboration between the learners and the teacher via e-mail, discussion forums and chat rooms work best for online group tasks, projects and assignments.

#### **2.3.1.3. Economic Advantages**

Unlike the traditional learning environment, web-based classroom eliminates time and effort of traveling and transportation to attend the course. While studying, learners can save all documents in web-ready HTML (Hyper Text Markup Language) format and retrieve them

whenever needed. This certainly saves time and printing papers and all other classical studying objects. The technical support and teaching aids (audio laboratory, T.V and video, OHP, the board, printed handouts, etc) that the classical classroom uses are all provided and implemented in a very less expensive rate by the web services.

### **2.3.2. Web-based Course: Disadvantages**

Like any teaching medium, web-based teaching is not always the solution for every instructional and learning problem. Considering web-based instruction as “the salvation of education” (Maeroff, 2003: 18) would be very ambitious and an “unwise” view towards the future of education. As having advantages and benefits, it has also drawbacks that should be taken into consideration when deciding to build a web-based course. McCormack and Jones (1998) list a number of problems with web-based classroom. They are mainly related to access, cost, training, adapting new methods, infrastructure, quality, copyright and security.

#### **2.3.2.1. Access to Resources**

Students and teachers as well in many parts of the world are still having serious problems to maintain or even get access to the Internet due to the problem of low technology services in these areas. Therefore, “slow connections have a bottleneck” (Hannum, 2001: 17) that limits building or using a web-based course. The download of multimedia is generally slow and time consuming, which leads to annoying and distracting learners while waiting the download operation to finish.

#### **2.3.2.2. Cost**

One of the most cited problems with using web-based classroom by students is that “access to the web costs money” (*ibid*: 17). Hence, using the web for learning means extra money to pay. This can lead, as McCormack and Jones (1998: 22) state, to “student anxiety about making extensive use of their web-based classroom”. Anxiety and effective learning do not meet in any instructional environment.

### **2.3.2.3. Training**

Many teachers and students still do not feel comfortable when using the web because of the lack of training. They generally have some sort of unfamiliarity with the new learning environment that leads to the lack of self-confidence and self-motivation. Hannum (2001: 17) declares that the web uses many features, such as e-mails, conferencing, chat; naïve users need training before starting the web-based course. They often believe that the web is a learning environment that requires training and learning its highly technical rules and instructions.

### **2.3.2.4. Infrastructure, Support, and Administration**

Some institutions are still struggling to provide the appropriate infrastructure (computers, Internet access, technicians and other related hardware and software equipments) to build a web-based classroom. Moreover, the administration is also required to change some of its procedures and regulations to meet the needs and requirements of the new learning setting that are different from the traditional classroom.

### **2.3.2.5. No Uniform Quality**

The increasing developments of the web industry resulted in a fierce competition between different companies to produce new Internet browsers. This certainly indicates that “the web pages written especially for one browser may not work for another” (Hannum 2001: 23). Teachers may face problems related to the incompatibility of browsers used by students i.e. certain web pages require a particular browser to be read.

### **2.3.2.6. Copyright, Privacy, Security and Authenticity**

Most teachers find the issue of copyright and security of some web sites and internet applications frustrating. Some sites require regular registration and membership with passwords that may frequently change. Other sites change their web links without informing the users. Berger (1998: 93) notices that some web pages do not only change their address,

but also sometimes disappear all together. Some web pages or internet applications and programmes should be paid to use. Authentication is also a serious problem that exists in web-based classroom. Some learners use “copy-paste” for assignments and tasks, which makes cheating easier. Hannum (2001: 17) wonders how can teachers certify that the examinations or work submitted are the effort of the learner not a plagiarized work from Internet resources.

Added to these disadvantages, some other instructional limitations can be also included. The absence of human interaction (face-to-face) between learners and the instructor reduces the chance for better understanding and communicating. Some learners need the direct supervision, monitoring and scheduling of the teacher to be motivated to complete the required task, which is not always provided in a web-based course where learning is generally self-paced. Designing a web-based course may deviate from its purpose in case non-experts and professionals design it. Many beginners in website design use the technology to implement irrelevant materials because “technology by itself does not improve poorly designed lessons” (Hannum 2001: 18). The web-based course is not the solution for all instructional problems and issues, and technology alone without pedagogical considerations and support will not fit the purpose of the learning environment. Juwah (2006: 249) declares:

[E-learning environment] should not focus exclusively on technology to the detriment of learning. Rather, it should be based on sound pedagogical principles and incorporate a mix of materials, content, multiple media, facilities and resources to suit different learning contexts and situations.

#### **2.4. Web-based Course: Levels and Classifications**

Nantz (2005) classifies web-based courses (classes) into six levels (types) that range from a simple hypertext format class to an entire Internet-based class. The following table presents in details the six levels’ features and content requirements.

Level	Description	Typical Content
1	Traditional Course Presentation, Basic-Level Course Materials on Web—Internal Links	Instructor data (name, phone, office hours, e-mail address) Course materials (syllabus, generic schedule, assignments); non-interactive
2	Traditional Course Presentation—Intermediate-Level Course Materials on Web—External Links	All Level 1 Some external links, such as textbook and reference sites; non-interactive.
3	Traditional Enhanced Course Presentation—Intermediate-Level Course Materials on Web and Web Content Delivery	All Level 2 All traditional course materials posted. Web access in class used for delivery of some course content. Some assignments/requirements involve interaction, e.g., e-mail submissions, listserv postings.
4	Traditional Enhanced Course Presentation—Complete Web Content and Materials	All Level 3 Course presentations and lectures dynamically available on Web. Data files, links, programs on Web for students. Forms for student “reply” assignments, course evaluations, etc. Link to course grades.
5	Web-Delivered Course with Orientation and Testing Meetings	All Level 4 plus any additional materials to allow for full Web delivery of course including audio and video augmentation; multimedia CDs. Few or no regular classes—orientation meeting may be necessary. Testing may be proctored off-site or unproctored on the Web.
6	Virtual Class	All Level 5 plus online testing and orientation. Discussion, chat groups, listserv, e-mail, and other interactive tools. Teleconferencing. No class meetings.

Table 2.2. Levels of a Web-based Course (Nantz 2005)

The table shows the classifications of the web courses from a hypertext format that simply replaces the traditional printed handouts (level 1 and 2) to a more elaborated and sophisticated course that is fully internet-based (level 6). Therefore, Moving from a traditional class to a virtual class requires adequate web resources and technology equipments. A well-designed web-based course involves not only technical aspects but also pedagogical components to make the teaching/learning process meaningful and relevant. According to Zhao (2002), web-based course combines the best of computer applications and

the existing methods of language teaching. Technology and pedagogy make such a good combination in the web-based learning paradigm in the sense that they bring attributes of both disciplines to the classroom setting. Integrating technology and pedagogy in a language course makes learning accessible and the learning materials easy to update (Hirtz, Harper, Mackenzie 2008). Moreover, it fosters the interaction and involvement elements in the classroom and increases the motivation level.

## **2.5. Web-Based Course: Components**

Pacheco (2005: 11-12) presents seven basic components, both technical and pedagogical to create a web-based course. These components are:

1. General information
2. Course information
3. Schedule
4. Resources
5. Multimedia presentation of content
6. The virtual classroom
7. Assessment and testing

### **2.5.1. General Information**

In 'general information' component, the web-based course should contain course name, learners' level, course hours, instructor contacts, course prerequisites, technology tools, etc. This component is the course façade where learners can be acquainted with the general layout of the course.

### **2.5.2. Course Information**

This component usually contains course description, objectives, types of activities, course requirements, testing and evaluation policy, etc. This component forms the core of the course in which the learner is supposed to know all about the course requirements and prerequisites

### **2.5.3. Schedule**

It is the calendar of the course where the teacher sets the timeline for the lessons, activities, tests and exams. It may include the number of sessions and weeks of study with the number of breaks and holidays.

### **2.5.4. Resources**

The resources component provides learners with all learning materials that are either web pages format or downloadable files. Learning resources include lecture notes, texts, handouts, e-books, audio and video materials, and the related and relevant websites links.

### **2.5.5. Multimedia Presentation**

As online learning requires the integration of multimedia resources in the course content, the multimedia presentation component contains all audio-visual elements (pictures, maps, graphs, figures, audio clips, videos, films, etc). These elements enrich the course and support its content so that it can attract learners' attention and motivate them to learn effectively online.

### **2.5.6. The Virtual Classroom**

Web-based course is built to enhance communication and interaction among learners and their tutor. The virtual classroom provides discussion forums, chat rooms, and e-mail communications to encourage learners participate and engage in individual and group tasks.

### **2.5.7. Assessment and Evaluation**

This component is set to deliver the course online tests, assignments and exams. It also determines the criteria for the course grades and provides a space for learners to track their learning progress and achievement through self-assessment.

### **2.6. Web-based Course: Planning and Design**

Integrating a web-based course in the language classroom needs careful decision-making about the different elements involved in the course. According to Maeroff (2003: 34), these elements may include

The layout, illustration, and colors [...], the ways that links are displayed, the manner that lessons incorporate sound and video, the arrangement by which students move through the lesson, the instruction they receive for navigating the site, the decision about how to incorporate electronic bulletin boards and chat rooms.

Good preparation and complete readiness on psychological, professional, financial, instructional and administrative levels are required to plan and design a web-based classroom. McCormack and Jones (1998: 53) claim that planning helps the teacher establish his/her goals and set the approaches to achieve them. To do so, Campbell, Perlman, & Hadley (2001: 237) believe that course designers need to ask some questions to guide them with, which are mainly related to content, students, teachers, technology, and management.

- Content: what are the purposes, grade levels, and the content area of the course?
- Students: how many students will register and what are their prerequisites?
- Teachers: what training is needed for the teacher? Will there be instructional support?
- Technology: what hardware and software are available? Will internet access be available for learners out of class?
- Management: are there partners to financially support the online course project?

The answers to these questions determine the course planning, design structure, layout and appearance.

### **2.6.1. Planning**

McCormack and Jones (1998) and Duggeleby (2001) consider planning as the fundamental step to build web-based classroom. It can be divided into two types; preliminary planning and actual planning. Preliminary planning is principally related to the availability of necessary technological equipments in the institution where the course is to be delivered. In addition, the teacher should find out if the institution is willing to invest time and money in online courses. The actual planning consists of three steps: develop a list of educational goals, identify how to achieve these goals, and prioritize the list (McCormack and Jones, 53).

#### **2.6.1.1. Educational Goals**

The major educational goal in integrating a web-based course is often associated with developing learners' skills, knowledge, competencies, and deciding the appropriate methods and approaches to measure the extent to which these skills and competencies are achieved. Empowering students to be autonomous and self-dependent learners is also a primary goal that should be included in the list. Using technology in your classroom should not be regarded as an aim in itself, but as a tool to achieve a highly educational goal.

#### **2.6.1.2. Approaches**

To achieve the set goals for the web-based course, the teacher should be familiar with the different innovative approaches used in the domain and s/he should not restrict her/his goals to one single approach. Making full use of the web practices and applications certainly results in greater benefits and better achievements of goals. However, using the web may not be always the solution for all class problems; therefore, the web-based course does not solve all the emerging instructional problems. Providing traditional backup can sometimes fix up technology failure. Moreover, using multiple approaches helps the teacher meet the different learning styles of students.

McCormack and Jones (1998: 58) express best this idea by giving an example of a three-pronged approach. They state:

For example, if your goal is to increase interaction between students and teachers, you can choose a three pronged approach: set up a mailing list for general discussions and announcements, use an anonymous forms page as a feedback mechanism, and employ an interactive chat tool to maintain a virtual office. Each of these approaches has different characteristics that will make them suitable for different students and purposes.

Using the appropriate approach to achieve teaching goals depends also on the simple and clear instructions simply because “increased complexity increases the likelihood of failure” (McCormack and Jones 1998: 59). Students usually feel frustrated when technology fails to develop their abilities and skills. Therefore, varying the approaches and learning from other experiences in web-based instruction improve teachers’ knowledge, makes them avoid their mistakes and helps them achieve their goals.

#### **2.6.1.3. Goals Ranking**

The primary goals in the teachers’ list are usually broken down into sub-goals that should be ranked in order to determine which one should be implemented first. In this step, ranking each goal “is based on its cost-to- benefit ratio” (*ibid*, 61). This means that the goal that is beneficial for learners and it is not time and resource consuming should be prioritized in the list of educational goals. Certain questions are to be asked to help the teacher prioritize the list such as: will the implemented approach help students increase motivation, improve grades and make learning autonomous? Do the available software and hardware equipments support teaching goals and help achieve them? Do students have good access to the Internet connection, and will it cost for them to get Internet access? Will learners need to learn new skills or improve their web knowledge to meet the requirements of the course?

#### **2.6.1.4. Planning Requirements**

In order to go through these steps successfully, Duggleby (2001: 55) suggests some basic recommendations for teachers who wish to integrate web-based course in their classrooms. She recommends teachers to:

- Equip themselves with the basic Internet skills, particularly searching skills and email use.
- Learn the fundamentals of good web page and site design.
- Examine and learn from other comparable online courses.
- Inform themselves well with the principles and practice of online education.
- Make contact with other teachers and share their experiences through subscribing to relevant discussion lists and newsgroups.
- Find experts who wish to enroll on their web-based classroom to make its development viable.

#### **2.6.2. Design**

The design process requires skills from different fields such as computing, graphic design, typography, and multimedia. However, designing a particular website remains “a matter of taste and purpose” (McCormack and Jones 1998: 78). Actually, a number of issues should be taken into account before starting the design process. Duggleby (2001: 59) summarizes them in four points.

1. The type of delivering the course (shall it be exclusively online or will it be accompanied with face-to-face sessions?).
2. Selecting the course materials (will the course be supplemented with other non-Internet materials like books printed worksheets and handouts?).
3. Learners’ working methods (will they work individually, in pairs or in groups?).

4. The pace of work (will the learners work completely on their own pace or will they have to meet deadlines?).

A good design attracts learners' attention and retains their interest. That is why web-based course designers need to pay attention to the structure, presentation, and organization of the website so that it provides learners with a positive learning experience.

#### **2.6.2.1. The Structure**

The web-based course should display information in a logical and familiar structure so that users of that information will be able to perform the necessary task or accomplish the required assignment easily. In fact, any website consists of two structures; the presentation structure and the storage structure. McCormack and Jones (1998: 67) define the two structures as follows:

The presentation structure is the mental model of the web-based classroom' structure formed by visitors as they browse through the pages of the site. The storage structure is the hierarchy of files and directories (often called folders) used on the web server to store the classroom's web pages and other data. [...] the storage structure is created and maintained by the author of the website. The presentation structure becomes apparent to website visitors.

Thus, the storage structure stores all the HTML pages, images, sounds, movies, data files and other materials on the hard-drive of the server. However, the presentation structure binds these materials together in a form of hyperlinks that shows to the visitor how to access and browse the website. The presentation structure can be hierarchical, sequential or hypermedia (*ibid*, 68).

First, a hierarchical structure includes a group of elements (links) displayed at one level and provide access to another group of related elements. A navigation bar at the bottom and top of each page often supports the hierarchical web-based course for better and easy navigation and browsing of materials. Second, as far as the sequential structure is concerned, the visitor has the access to move from one page to another like a book. A navigation bar that

contains the forward and back arrows generally supports the sequentially structured web pages. Third, the hypermedia presentation structure allows the visitors to browse different links that may lead to a huge number of pages and get “lost in hyperspace” (McCormack and Jones 1998: 71).

### **2.6.2.2. Presentation and Organization**

A well-designed presentation (appearance) grabs students’ attention and motivates them to accomplish the required tasks and makes browsing the website easier and enjoyable. It is a combination of various dimensions “including pedagogical, technological, interface design, evaluation, management, resource support, ethical and institutional” (Khan 2001: 05). McCormack and Jones (1998: 80-82) suggested some guidelines for teachers to make the appearance of their website look appealing and meet the purpose of the course.

1. The major focus is to be given to content: Course designers should make use of the web applications and programmes such as JavaScript and animated GIFs (Graphic Interchange Formats) not for the decoration purpose but rather for content distribution. The reason is that visitors are often distracted by the animated content and some irrelevant decoration and they are driven away from the main content of the course.
2. The content should be kept simple: Overloading web pages with graphics, animation, bullets, headings, and other visuals may prevent learners from getting to the target content. Therefore, making the organization of the content simple and clean certainly serves the purpose and facilitates access to the content.
3. Legibility needs to be considered: Using the appropriate font type and font size, right text colours, less graphics and visuals prevents web pages from being illegible and makes texts easy to read and understand.

4. The context has to be clearly provided: providing relevant instruction about the tasks or assignments allows learners to know their standing in relation to the rest of the web page content, where they are heading, their progression, and the result of the task being performed.
5. Consistency and credibility have to be kept: keeping consistency throughout the course website gives learners good signs about the website working method. It makes them able to predict how to perform the different tasks and find their way around. Learners may get confused if certain changes in the structure and organization of the course happen.
6. Accuracy of information is to be guaranteed: course designers have to check frequently the accuracy of the information displayed in the course to avoid any invalid HTML pages, low-resolution pictures, invalid and irrelevant links. Installing some software applications decreases the level of mistakes in the course.
7. Uniqueness of website is required: each web-based course serves a particular purpose that needs a distinguished appearance and presentation so that learners feel engaged in that course not in another one. Even though there are similarities in all web sites, making the teacher's unique touch gives the teacher and his/her learners a feeling of satisfaction and difference.
8. Appearance and the purpose are to be matched: varying the pages layout according to their purpose eases tasks for learners. For instance, assessment and testing pages should have elements to modify and submit answers, and online lecture pages may be accompanied with audio and video files for illustration and demonstration.
9. Attracting the attention of a variety of visitors: incorporating different versions of HTML to accommodate different browsers and having different page layouts

availability keep the learners comfortable and pleasant working with their teacher's web-based course.

All these considerations and others such as the choice of colours and templates, upload and download facilities, appropriate graphics and animations, and other technical support surely make a teacher's web-based classroom the one that must be visited. As McCormack and Jones (1998: 93) conclude:

The web-based classroom must draw on technical, educational, artistic, design factors, and personal preference. [...] designing web-based classroom must be done with a set of educational goals and the characteristics of your class firmly in mind. The beauty of design is that you are never finished. The more experience you have, the more ideas you will generate for improving the design.

So, designing a website for classroom practice does not need only a technology-based expertise but also the artistic and educational-related considerations.

### **2.6.3. Web-based Course Framework**

Khan (2001: 78) suggests a framework for any web-based course in which he introduces different dimensions and sub-dimensions that should be included when designing a website. It consists of seven dimensions: (1) pedagogical, (2) technological, (3) interface design, (4) evaluation, (5) management, (6) resource support, and (7) ethical.

#### **2.6.3.1. Pedagogical Dimension**

It generally addresses issues related to goals and objectives, design approach, organization, methods and strategies, and instructional media. To begin with, it is necessary for a teacher to set clear and specified goals and objectives for the course and the ways to achieve them. Learners as well have to be aware of the course objectives in order to set strategies to achieve them. The design approach of the web-based course depends on the purpose of the course, the instructional issues it aims to address, and the role of the instructor (facilitative, didactic or both). To help learners achieve their goals set for the course, "the

learning content should be organized with proper sequencing strategies and always strive for clarity, style, readability, and the usage of content-relevant graphics” (*ibid*, 80). As far as methods and strategies are concerned, they should be implemented to serve the philosophy of the course. Relying on presentation, demonstration, drill and practice, tutorials, simulations, role-playing, discussion, or interaction depends on the instructional philosophy of the course. The pedagogical dimension also makes use of all the media available online to enrich the learning/teaching experience.

### **2.6.3.2. Technological Dimension**

It is mainly concerned with technology issues such as infrastructure, hardware, and software. Web-based learning environment infrastructure includes “standards, policies, course personnel, orientation programme, and internet services” (Khan 2001: 83). Hardware generally includes computer equipments and accessories as server, modem, networking devices, printer, scanner, web camera, storage devices, etc. The teacher has to make sure that learners know how to install and use hardware requirements for the course. As far as software is concerned, necessary programmes should be included in any web-based course such as word processor, e-mail packages, spreadsheet, database, authoring tools, browsers, etc.

### **2.6.3.3. Interface Design Dimension**

It consists of page and site design, content design, navigation and usability testing. Website designers must consider the physical appearance of the website “to look good in a variety of web browsers and devices [...] and use a standard font type so that the text appears same in different computer platforms and browsers” (*ibid*, 84). The content design is related to the quality of the course subject matter (text density, editing –spelling and grammar checking and proofreading-, and scannability). As far as navigation is concerned, the web-based course should provide site map to guide the learners’ navigation and move through the

site with ease and reasonable speed. Usability testing is a web application that involves users to evaluate the effectiveness of the course design and improve its interface design.

#### **2.6.3.4. Evaluation Dimension**

Assessment of learners and evaluation of teaching/learning environment are two aspects involved in the evaluation dimension. As in the traditional classroom assessment, web-based assessment attempts to provide various assessment and evaluation strategies and techniques to give learners the space to demonstrate what they have learned in the course. The issues of authenticity, cheating, and fair and accurate assessment are real problems that encounter online learning. The evaluation of teaching and learning environment deals with evaluation of the course content, the instructors' method, learning environment, learning resources, course design, and technical support, etc. In addition to these issues, "does the course provide an instant feedback button on most screens/ pages in order to receive learners' feedback for improvement of the course?" (Khan 2001: 86).

#### **2.6.3.5. Management Dimension**

Management consists of administration, maintenance, and operation of web-based learning environment. It is a collaborative effort performed by experts who are in charge of specific tasks such as "instructors, subject matter experts, project managers, instructional designers, editors, interface designers, course developers, graphic artists, media production specialists, programmers, consultants, Webmasters, etc" (*ibid*, 87). Management dimension in web-based learning deals primarily with the maintenance of learning environment that covers staffing, course content management (updating, reprinting, copyright, security procedures, etc), budgeting, and evaluation policies (submissions, online quizzes and tests). Moreover, management deals with the distribution of information related to the course schedules, syllabus updating, announcements, submission of tests and exams

with learners' grades. This process is generally done via e-mail contacts, announcement page, or alert boxes.

#### **2.6.3.6. Resource Support Dimension**

In order to keep the success and the well functioning of the web-based course, technological and human-based support are to be provided for learners “who may have a particularly high degree of anxiety at the beginning of the course” (Moore and Kearsley, 1996. In Khan 2001: 88). Providing psychological, instructional and technical guidance for learners to cope with their uncomfortable feeling and unfamiliarity with web-based learning is necessary to overcome their learning obstacles and be effective online learners. Providing online resources (multimedia archives, online dictionaries, Webliographies, recommended reading list, e-books and journals, tutorials, internet manuals, etc) and offline resources (books, journals, magazines and other printed documents) motivates learners to work effectively in a web-based environment.

#### **2.6.3.7. Ethical Dimension**

It chiefly considers the issues of social and cultural diversity, geographical diversity, etiquettes, and the legal issues. The web-based courses can be designed to learners of different social, cultural, linguistic, and religious backgrounds. Therefore, course designers have to be aware and cautious of “the cross-cultural communication issues” (Khan 2001: 89). Avoiding the excessive use of jargon, slang, idioms, humour, and culturally bound terms may reduce the cultural misunderstanding among learners. As far as etiquette is concerned, a web-based course must provide an etiquette guideline, which determines the rules for appropriate behaviour especially in discussion forums, and chat rooms so that learners keep respect and maintain good and appropriate communication manners. Legal issues are also included in the ethical dimension of the web-based learning environment. They are mainly those of privacy,

plagiarism, and copyright. The course should provide clear instructions about these issues at the beginning and keep reminding learners with the policies regulating them.

These dimensions of the web-based learning framework form the general policies and regulations that control and govern the learning and instructional environment. Any mishandling or mistreating of one of these issues may result in failure of the whole learning experience. Therefore, course designers and instructors should pay careful attention and consideration when designing and using the course for better achieving the goals set for both the learner and the teacher as well.

## **2.7. Web-based Learning Tools**

The internet offers a number of services that can be used as learning/ teaching tools. Here are some of the most popular tools that enable teachers to make use of them.

### **2.7.1. E-Mail**

The electronic mail is “a method of transmitting data, text files, digital photos, or audio-visual files from one computer to another over an intranet or the Internet” (Microsoft Encarta Encyclopaedia 2009). It enables computer users to send messages and data quickly through the Internet. Ledgerwood (1999: 36) considers E-mail as the oldest Internet application that is used to save time, money and effort in messaging.

Language teachers use e-mails for many purposes and reasons. To begin with, e-mail is a very practical online correspondence means that connects the learner with the entire class, the teacher, and the institution. Teachers may use it to mentor the class projects, assignments and homework through sending the relevant information, requirements, guidelines, deadlines and all the related issues for students to their e-mail box at any time. Learners can also use e-mails for group work in which they can contact each other and collaborate effectively, easily, and quickly to accomplish the required task. In addition, they can receive answers, clarifications, explanations, and feedback from their teacher(s). Shawki

(1999: 53) sums up the instructional possibilities of e-mails when he pointed out that “feedback from the instructor can be received more quickly than messages sent by mail. Students can read messages at their convenience and easily store them for later reference”. E-mails can be used to learn the target language culture. Learners have the opportunity to make informal relationships (friends from the entire world) and formal relationships (academic and professional contacts) via the Internet. These contacts expose learners not only to the target language but also to the target culture of its speakers. Singhal (1997) describes other instructional applications of e-mail that involve:

- Students to use computers in realistic, authentic situations in order to develop communicative and thinking skills;
- Students to free-write without any imposition, and can be used to generate ideas about a discussion topic;
- Responding to others’ e-mails (teacher, student, and faculty member) allows learners to express their ideas and opinions freely so that all opinions can be heard and read. This may not always happen in a traditional classroom;
- Writing for international communication (with language learners from different parts of the world, especially native speakers. This provides learners with a real context for improving their writing skill and develop their interaction and communication abilities;
- Students expanding their ideas of the “content area” reading and functional writing across cultural boundaries.

### **2.7.2. Listserv**

Microsoft Encarta Encyclopaedia (2009) defines Listserv as a software that manages computer mailing lists on the Internet. These lists, sometimes called, discussion groups, [...]. Listserv replaces manual management and can add and remove members and distribute new messages posted to the list to all members via e-mail.

Listserv is made up of people who have common interests and share a particular subject. It receives e-mails from its subscribers and sends them out to everyone on the list. Ledgerwood (1999: 37) claims that listserv is not used very often for language learning “except when teachers decide to create a class ‘distribution list’ and communicate with class via e-mail. In classroom practice, listserv can be applied in various learning situations such as writing assignments, in which the teacher sends the assignment to all learners simultaneously and receives their inquiries, responses, and feedback. It can be used to deliver teaching tips, announcements, news, and class meeting schedules. The following figure is an example of a listserv.

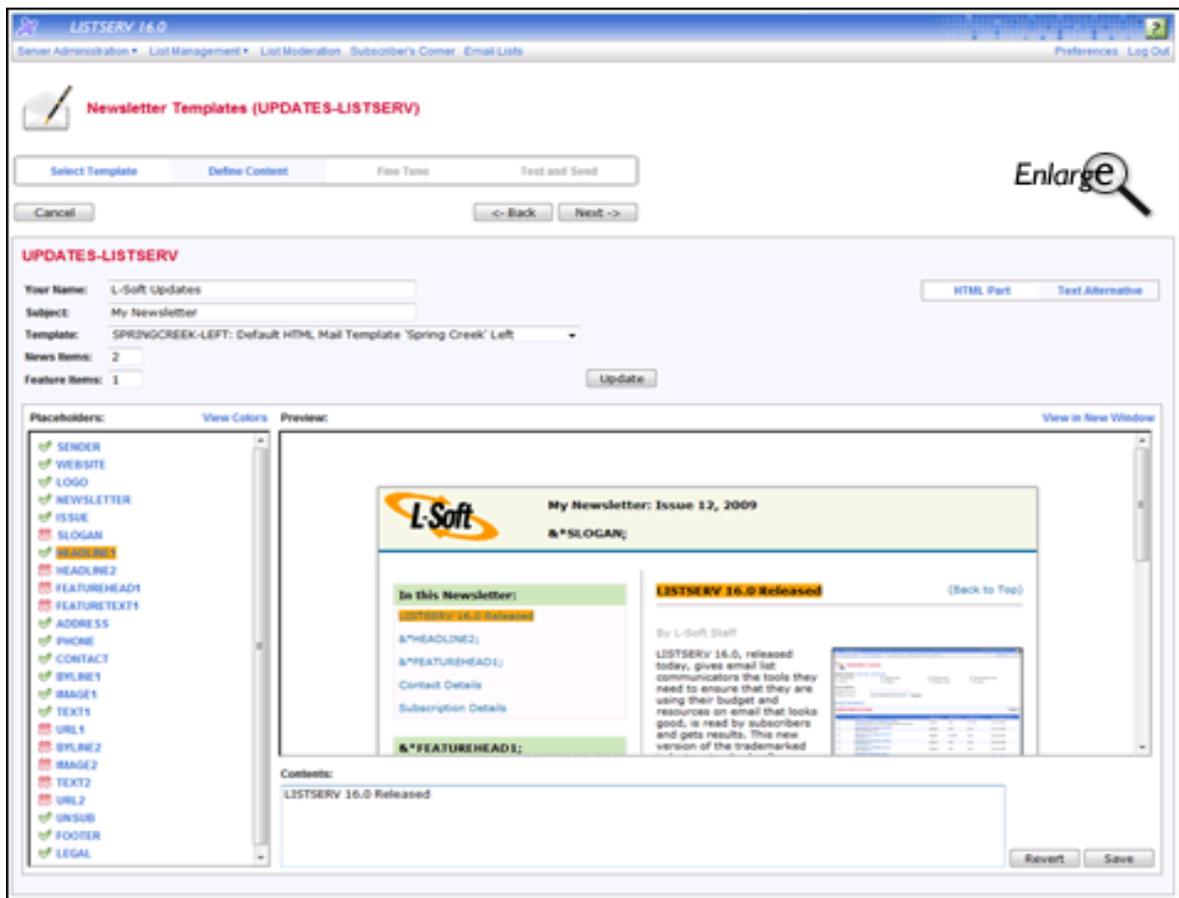


Figure 2. 3. An Example of Listserv ([http://www.lsoft.com/images/listserv\\_templates.gif](http://www.lsoft.com/images/listserv_templates.gif) )

### **2.7.3. Conferencing**

Conferencing technology was first introduced in the 1980s. It permits teachers to interact with their learners (talk, listen, discuss and exchange ideas) with no delay in the transmissions even if they are not located in the same region. Technically speaking, conferencing is a means to facilitate distance learning and get both teachers and learners to a central virtual location in which the limitations of time and distance are overcome. It can be text conferencing, audio conferencing or video conferencing. Mair, Barnett, Warren, and Brunner (1998: 121) view conferencing as “an electronic environment with various areas set aside for small group work, large group work, socializing, and resources [...] it is a mode of communication taking place at the convenience of the participants”.

Web-based class makes use of conferencing on the web, where teachers and students present different learning materials (text, pictures, audio, and video) so that teachers and students in one location can interact with teachers and students in other locations via video technologies. Conferencing can be asynchronous or synchronous according to the class requirements and the availability of computer equipments.

Asynchronous conferencing “is not live with messages staying available for a fairly long time” (Lodgerwood, 1999. 37) so that students or participants can discuss and send comments to the shared space to stay available to the whole study period.

Synchronous conferencing takes place in real time. Participants usually use a webcam (a very tiny camera on top of a computer monitor) for audio-visual conversation in which a face-to-face conversation is simulated. Duggleby (2001: 46) suggests a number of applications of conferencing in teaching and learning. It recreates both the formal atmosphere of the classroom and the informal setting of a small group discussion. It helps teachers to demonstrate practical subjects and allows learners to demonstrate their learned skills. Conferencing, mainly video-conferencing enables teachers to show diagrams, graphs, video

clips and audio recordings to the participants for better understanding. Inviting an expert guest lecturer to participate is also available via conferencing.

#### **2.7.4. WebQuest**

According to the first and main developer of WebQuest strategies Bernie Dodge (1995) in Hassanien (2006: 42), WebQuest is

An inquiry-oriented activity in which most or all of the information used by learners is drawn from the web. WebQuest are designed to use learners' time well, to focus on using information rather than looking for it, and to support learners' thinking at the levels of analysis, synthesis, and evaluation.

WebQuest helps learners to gather, analyse and evaluate information from teacher-nominated Internet websites. Moreover, it fosters learners' online research skills, problem-solving abilities and other study skills (Kelly 2000). It is suitable for all learning levels and subjects if it contains the following six components (Berger 1998: 76):

1. An introduction that sets the stage and provide some background information
2. A task that is doable and interesting
3. A set of information and resources needed to complete the task
4. A description of the process the learners should go through in accomplishing the task
5. Guidance on how to organize the information
6. A conclusion that brings closure to the quest, reminding the learners about what they have learned

There are two levels of webQuest: short-term and long-term. The short-term webQuest generally takes two or three class periods in which the aim is to integrate the web for knowledge acquisition and information and skills learning. The long-term webQuest aims at challenging the learner to extend the acquired knowledge into a learning space in which different skills are to be demonstrated such as comparison, deduction, commenting,

responding, classifying, and analysing. The long-term webQuest takes one to four weeks of class periods. WebQuest can be used in language classroom for a number of tasks such as compiling, retelling, and journaling, in addition to analytical and creative tasks. Figure 3 represents a screenshot of WebQuest.

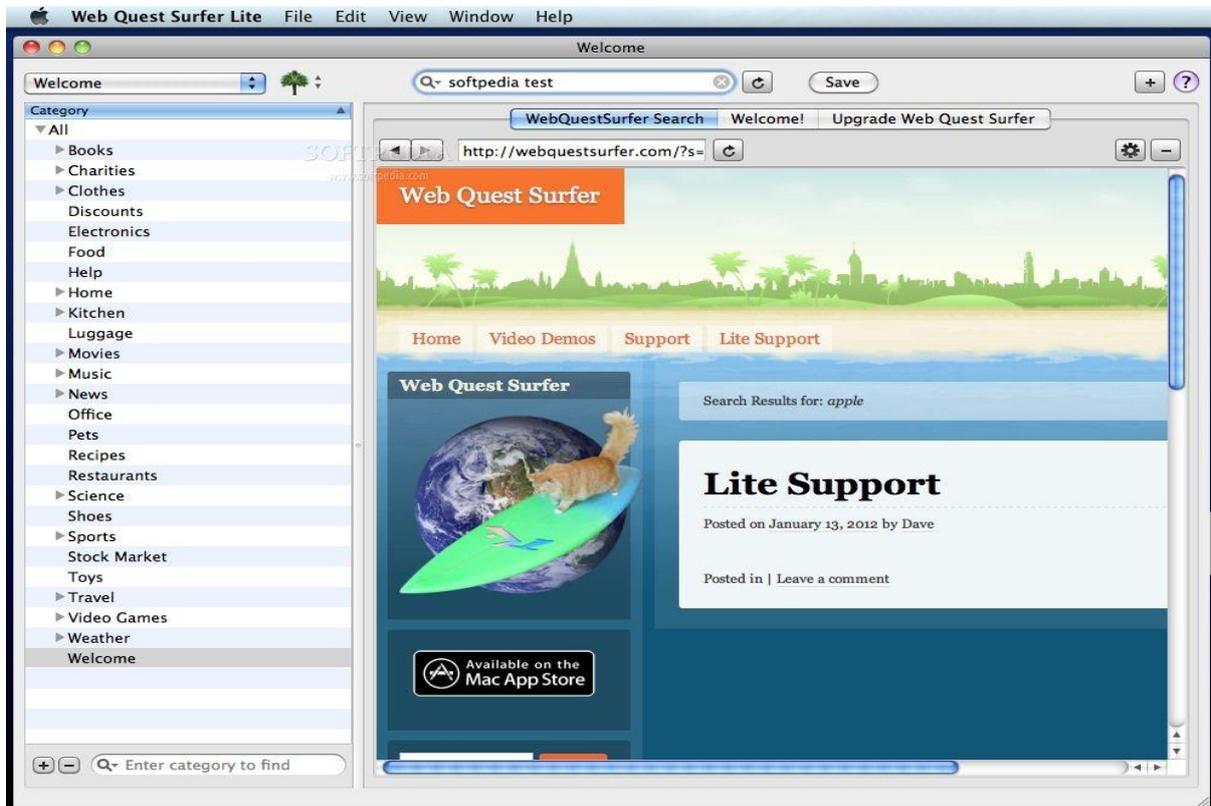


Figure 2. 4: An example of WebQuest ([http://i1-mac.softpedia-static.com/screenshots/Web-Quest-Surfer\\_6.jpg?1354831141](http://i1-mac.softpedia-static.com/screenshots/Web-Quest-Surfer_6.jpg?1354831141))

### 2.7.5. Blog

“Blogging refers to the frequent, chronological publication on the Web of personal thoughts and opinions for other Internet users to read. The name, coined in the late 1990s, derives from “Web logging.” The product of blogging is known as a “blog.” (Microsoft Encarta Encyclopaedia 2009). They are usually considered as “online diaries” (Cobanoglu, 2006: 83) in which bloggers post their daily experiences and activities chronically so that the reader feels a sense of continuity and updating. A typical blog includes texts, pictures, videos, links to other blogs and websites of common interest. Blog readers have a total access to read

and comment on the postings at any time. The bloggers can also reply to all the postings and have “asynchronous interaction” with their readers (*ibid*, 84). In his research about the effectiveness of blogs as a teaching tool, Cobanoglu (2006: 87) found out that students feel more comfortable with blogs as they post messages and the teacher has more opportunities for outside classroom discussion via blogging. Figure 5 below represents a screenshot of a typical Blog.



Figure 2. 5. An Example of Blog (<http://www.freetech4teachers.com>)

Huette (2006) suggested some practical guidelines for language teacher to develop (a) classroom blog(s) and engage learners in the blogging process, including

1. Creating a teacher main blog in which pertinent class information and news, class lectures, announcements, assignments, learning tips, and useful learning links can be frequently posted
2. Posting a subject for discussion or an issue of interest and asking learners to respond and post their own comments

3. Encouraging learners to create their own individual and group blogs to exchange information, lecture notes, learning experiences and other educational activities
4. Creating an ongoing portfolio of samples of learners' writing and designing rubrics for evaluation
5. Completing project work in small groups, assigning each group a different task
6. Developing the course programme via reflecting on the work being undertaken in the class.

Using blogs in language classroom is probably the substitute for the traditional class magazine. The teacher's positive attitude towards blogging encourages learners to be active bloggers and the blog effectiveness depends on how the course is designed.

#### **2.7.6. Wiki**

Wiki is a simple website or document that allows its users and visitors to create, alter, add, and edit its content (Grant 2006; Guth 2007; Parker and Chao 2007). The term *wiki* is derived from the Hawaiian word "*wiki-wiki*" that means "quick," to indicate how fast and easy it is to create and develop one. Wikis allow people to have both roles of reader and author in such an interactive manner that comes up with elaborated, flexible, collaborative web document that offers the visitors the privilege of editing and contribution. Wikipedia is one of the greatest popular and successful online wiki that attracts the interests of the internet users.

The web offers a wide range of wikis; some of them are frequently read and edited for their elaboration such as Wikipedia, the free encyclopaedia. Figure 6 represents a screenshot of Wikipedia homepage.

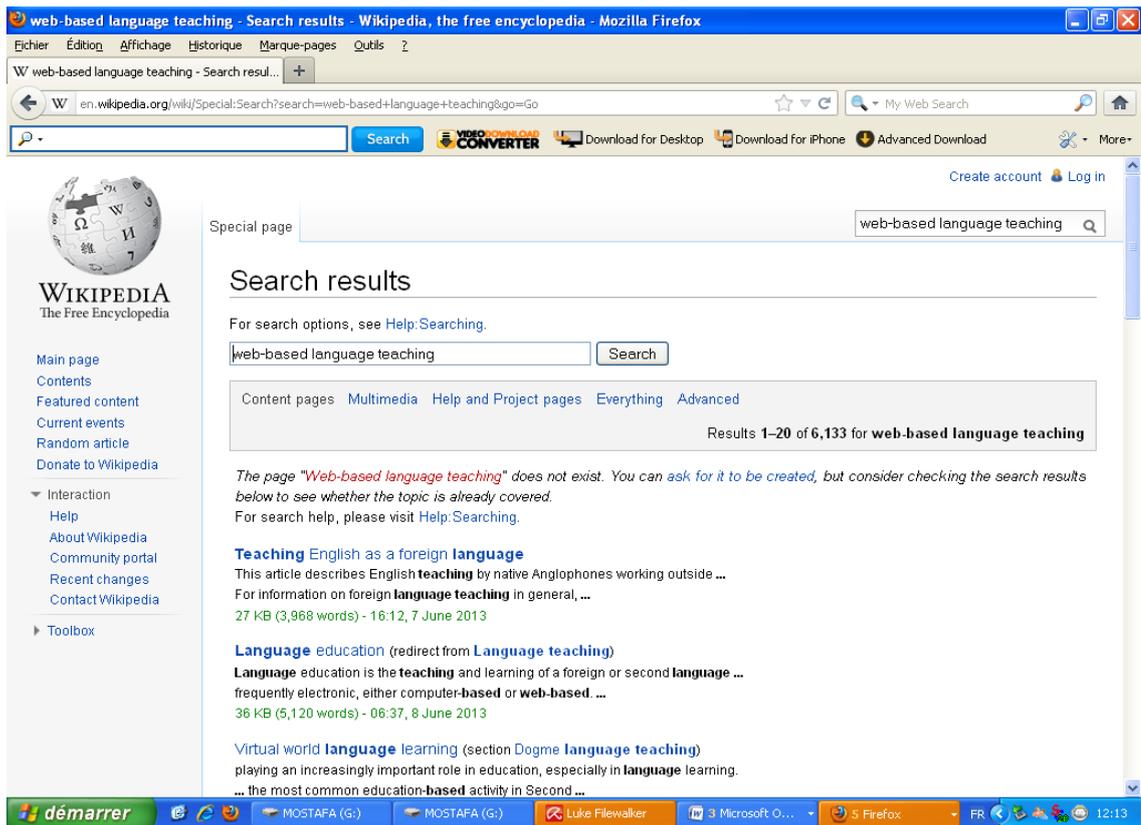


Figure 2. 6. An example of Wiki (Wikipedia)

(<http://en.wikipedia.org/wiki/Special:Search?search=web-based+language+teaching&go=Go>)

In a report carried out by IT user services at Delaware University in 2008 investigating the value of wikis in higher education, the faculty found a number of typical activities and practices that can be done in classroom. Here are some of them:

- Brainstorming: students participating in a wiki project can generate and add ideas at the beginning of a specific project or a creative process and link them together.
- Group project: A wiki allows all participating students to contribute, communicate, and share resources (texts, videos, spreadsheets, links, etc), in order to write a final report.
- Make lists: students can collaborate to form lists, ranging from books titles to glossaries of concepts and FAQs (Frequently Asked Questions) in a specific field of study. Wikis are ideal web tools to create this type content.

- Collections of links: Wikis are wonderful tools for social bookmarking. They enable participants to post, add, group, and classify web links according to their topics, types and nature.
- Writing a collective letter, composition or research project: Learners can produce a collective piece of writing by suggesting ideas, relevant information and facts, which lead to a final agreed upon work. Participants have the access to the group's wiki for editing, revising, and contributing.
- Building a class portfolio: learners can use a wiki to post past projects, lectures, exams and course handouts as a class portfolio and as archive references for further applications.

Therefore, wikis are web tools that reinforce students' engagement in any group work that requires collaboration, editing and active participation. They encourage contact between learners and teachers besides the appreciation and accepting of diverse ideas and talents. In her research about the difference between private and public wikis, Guth (2007) found out that students developed a sense of responsibility for the content they created. They also gained a greater sense of ownership via contribution besides a sense of knowledge sharing.

In addition to all the already mentioned web-based learning tools, the Internet offers other services that can be integrated in teaching/ learning context such as podcasting, chat rooms, newsgroups, Moodle, and other social interactive sites especially facebook and twitter. All these tools share the features of interaction, motivation, exploration, knowledge construction, information exchange, and communication. The various applications these tools provide for learners led teachers to apply them increasingly in classrooms.

## **2.8. Web-based Language Teaching in ESP**

The increasing expansion of ESP as a new approach in ELT has led practitioners to think of innovative and more effective tools to be integrated. Web-based instruction has appeared to be a new promising environment that “supports the shift from the traditional teacher centred classroom to a learner centred environment” (Pacheco 2005). The pedagogical features of web-based instruction encourage ESP teachers and practitioners to make use of the web as learning and teaching environment that offers interaction, autonomy, motivation and knowledge construction. Furthermore, the fact that ESP is a learner centred approach, web-based courses serve well its principles of autonomous online learning, independent decision-making, time and space flexibility, and the changing role of teachers from instructors to consultants, guides, and learning facilitators.

### **2.8.1. Features of Web-based Teaching in ESP**

The Internet has been seen as an “inexhaustible source of comprehensive information” (Chuchalin and Danilova 2005: 130) that offers a range of features and benefits for ESP learners, including authenticity, study skills, autonomy, and empowerment.

#### **2.8.1.1. Authenticity**

The Internet is a world library that contains an enormous range of authentic materials related to ESP disciplines (Luzon, in Pueyo 2009: 15). These materials include academic papers, documents, professional workshops’ reports, lectures, dictionaries, encyclopaedias, and terminology reference books. ESP learners may view, retrieve, and download any of these authentic materials related to their academic or professional disciplines for study or work purposes. Chuchalin and Danilova (2005: 130) view online authentic materials as “opportunities for authentic communication and publishing, which is rewarding and motivating”. Luzon (2009: 17) agrees with them by claiming that:

the Internet enables students not only to communicate with other students in different places, making it possible to engage in authentic communication tasks, but also to join subject specific discussion lists and to publish for authentic audience

Authenticity in ESP learning allows learners to interact with the real academic and professional world away from all kinds of materials' adaptation or simplification. It also reinforces knowledge construction from learning sources that are relevant to learners' field, in addition to the interaction with native speakers via web tools (e-mails, chatrooms, conferencing and blogs).

### **2.8.1.2. Study Skills**

Academic and professional achievement is generally associated with learners' mastery of certain study skills (reading, writing, researching, speaking, discussing, etc) that help ESP learners carry out tasks in their study or work field. Web-based instruction provides learners with necessary literacy needed to develop competences in the Information and Communication Technology (ICT) age, including e-mail writing, web-researching, online publishing, and online interaction.

Macia, et al (2009) suggest a number of strategies that assist ESP learners develop the four language skills via web-based instruction. According to them, the integration of ICT particularly the Internet assists learners improve reading strategies related to predicting and guessing via the combination of written texts with graphics and videos. They can also read authentic texts of different genres in their disciplines using online dictionaries, encyclopaedias, and glossary lists for explanation of difficult words and technical terminologies.

Writing skill can be developed as well via web tools. The phases of writing process (planning, drafting, editing, revising, and final version) can be successfully practised online using WebQuest, e-mail, blogs, and wikis. The interactivity of these tools motivates learners

to write and receive immediate feedback from peers and the tutor. Online writing offers ESP learners the opportunity to publish their productions to be viewed, revised, evaluated and ranked. Moreover, learners have a free access to a variety of samples in different EAP and EOP writing genres (business letters, memos, medical reports, scientific papers, journals and magazine articles, etc).

As far as listening is concerned, ESP web-based courses offers learners a variety of listening resources that reflect the real academic and professional world. They expose learners to different varieties and accents of English spoken by native and non-native speakers in different study and work situations. Learners can view and listen to academic seminars, real lectures, and presentations online. Web-based environment has the power to display real life listening situations and purposes so that ESP learners “may access the audio and video input and use a recording tool to save an oral contribution” (Macia, et al 2009: 70).

Speaking skill can be practised online as well. Learners can develop their oral communication skill through interactive tools such as chat rooms and conferencing. Their oral productions can be saved, retrieved, transmitted, and downloaded for further evaluation and improvement. The Internet services give ESP learners opportunities to communicate orally with lecturers, specialists, professionals, and academics in different ESP disciplines.

### **2.8.1.3. Autonomy**

The integration of web-based teaching in ESP generally aims at developing learners’ autonomous learning. Autonomy does not refer only to “students working alone with the computer, but as set of skills and attitudes required to become more effective learners” (*ibid*, 71). ESP web-based courses encourage learners to learn on their own pace and have more control, responsibility, and self-reflection on the learning process. Macia, et al. (2009) suggested a number of tools for promoting autonomy in web-based instruction, including:

- Setting learning objectives
- Evaluating their progress
- Constructing language information
- Choosing activities and tasks to deal with
- Having access to personal log to keep track of their progress
- Having an electronic portfolio to save their written and oral productions
- Having access to language resources online (subject-specific dictionaries, grammar guides, glossaries, etc)

Since the ESP teacher is supposed to play the role of a guide and mentor, web-based courses support the supposition assuming that the teacher is no longer the only provider of knowledge.

#### **2.8.1.4. Empowerment**

The features of web-based instruction do not only help ESP tutors and learners to go beyond the limits of traditional classroom, but also to experience the life-long learning. ESP learners and teachers make use of all the web tools to satisfy their academic and occupational needs through the diverse facilities required for individual and collaborative work. Empowering learners and teachers to be more productive, responsible, and motivated are among the premises and promises of online instruction.

Designing web-based ESP courses does not require only technology-based knowledge but also pedagogical considerations and requirements that make the course relevant to the needs and disciplines of learners. The course is required to include purposeful tasks that enhance learners' academic and occupational skills. The course needs also to expose learners to authentic input from different academic orientations in order to promote independence, decision-making and ongoing learning.

## **2.9. Designing web-based ESP Course in E-learning platform**

The rocketing expansions of web applications in every life domain has inspired educational institutions and teachers to shift from traditional learning to e-learning to keep pace with the increasing developments in the ways people live and learn. ESP teaching has never been an exception in keeping up with the updating methods in language delivery and organisation. According to Hockly and Clandfield (2010), as cited in Kavaliauskiene (2012: 2), the concept of E-learning “is broad, ranging from the use of a virtual learning environment to desktop video conferencing”. This means that e-learning does not necessarily mean going entirely online; it can be partially implemented according to what has been decided on in terms of the general philosophy of the course. Practically speaking, Odhiambo and Acosta (2009) introduced three types of e-learning, which are (1) using e-Learning instruction as a supplement to face-to face instruction, (2) using e-Learning in a mixed mode with face-to-face instruction, and (3) using e-Learning instruction instead of face-to-face instruction.

E-learning experience in ESP has been proved to minimise time and place constraints and help teachers to reach distant learners who need to learn English for study or workplace purposes. Laanemaa (2010: 1) states that the implementation of E-learning in ESP courses “is a way to enhance traditional language learning experience, as well as to provide long-distance students with possibilities to acquire language skills long distance outside classroom environment”. Besides its attributes as an open platform for multimedia leaning sources, e-learning caters for different learning styles, adapts to learning needs and increases their motivation. Moreover, it fosters autonomous learning and establishes highly interactive learning environment using authentic materials.

### **2.9.1. Web-based ESP course: Designing Principles**

Designing a web-based course for ESP learners needs to follow certain guidelines to ensure its success and effectiveness. Kavaliauskiene (2005) sets four principles which were originally designed by Warschauer (1997) for web-based course design.

#### **2.9.1.1. Identification of Goals**

The web-based course designer is required to determine which aspect of language the course should primarily focus on, i.e. practising technical or sub-technical vocabulary, grammar, language skills, etc. As ESP courses set clear objectives for learners, random posting up of online tasks and assignments confuses learners and loses sense of learning.

#### **2.9.1.2. Integration of Activities**

For better performance of ESP learners online, integrating web-based activities in the general curriculum in parallel with the classroom activities makes the best of both environments. For instance, writing e-mails as a business English writing activity can be practised initially in classroom with the help of the teacher in terms of the layout and format of the e-mail and then online practice can be supplementary initiated. Certain web tools as WebQuest and blogs are ideal environments to integrate online activities in the learners' classroom curriculum.

#### **2.9.1.3. Computer Literacy Knowledge Support**

Increasing learners' motivation is one of the principles of ESP course design; therefore, coping with the web problems as "malfunction of hardware & software, slow loading of websites and time-consuming tasks" (Kavaliauskiene 2005: 3) reduces learners' anxiety and encourages them to work safely and confidently in web assignments and tasks. Hence, it is recommended to provide a computer assistant to help and guide learners in every activity they do while learning.

#### **2.9.1.4. Learners' involvement**

ESP is known as a learner-centred approach which requires having the learner as a collaborative agent and active partner in the course design. Web-based course design should not be seen as an exception; it accordingly necessitates involving learners to make decisions on the type of online activities and their corresponding web tools. Doing so, learners will demonstrate their instructional centeredness that they are primarily looking forward. Course designers are encouraged to ask for learners' opinions and expectations throughout the design process especially during NA procedure.

Giving much attention to learners' priorities in e-learning does not negate the role of the teacher that remains highly vital in many ways. Kavaliauskiene (2005) suggested for teachers to plan group work and coordinate between groups, help learners to pay attention to computer-based texts and familiarise them with the different linguistic discourses, in addition to their roles in fostering their computer literacy and web knowledge.

#### **2.9.2. Language Skills Integration**

The ultimate goal of teaching ESP is to enable learners to practise language skills for communicative purposes in authentic context. This includes the mastery of the so-called macro-skills (reading, writing, speaking and listening) in addition to grammar and vocabulary knowledge. In traditional classroom syllabus, these skills are practised whether separated or integrated according to what the learners have opted for in the NA. When it comes to web-based instruction, these skills can be also integrated or practised separately. The richness of the web in learning resources provides abundant authentic texts, audio and video materials, interactive tools to practise writing, grammar references and content-based vocabulary dictionaries. Vaičiūnienė and Užpalienė (2010: 95) listed a number of language activities and skills that can be practised using web-based resources. They state:

The variety of internet-based text types means that it is easier to find something that will interest the learner and may even encourage for further reading, listening or watching. It can also promote other skills such as skimming/scanning, extensive/ intensive reading, summary, essay, email writing, outlining, mapping, sorting, adding information and may result in oral performance, such as newscasts, conversations, interviews, presentations, lectures, reports, etc

The exposure to authentic resources online motivates students to develop their language skills as they are looking for a sense of learning. Traditional classroom and the limited resources sometimes hinder more than they help.

### **2.9.2.1. Reading skills in Web-based ESP course**

ESP learners read a variety of text genres for different purposes according to their discipline. This may include reading notices, manual instructions, business letters and reports, journal and magazine articles, etc. Kennedy and Bolitho (1984) stated a number of reading purposes for ESP learners which entail extracting the main points in a text, looking for specific details, decoding elliptical messages for successful comprehension.

The literature reports three approaches of integrating reading materials in the curriculum (Brandle 2002): (1) teacher-determined, (2) teacher-facilitated and (3) learner-determined. ESP practitioners recommend learner-determined reading texts that “follow an approach to integrating Internet-based resources that is entirely learner-centered” (*ibid*, 9). One of the web-based activities that is learner-determined is the project-based work which targets learning for content to simulate the real-life reading. It can be done collaboratively in small groups in which groups are supposed to make online enquiry about a particular topic and share the knowledge with each other. Therefore, the Internet search engines as Google and Yahoo are excellent web tools for topic enquiries. Moreover, authentic reading resources are widely available and accessible online for learners to read the language in its real context. Vaičiūnienė and Užpalienė (2010) listed a number of reading resources for a wide range of ESP disciplines. This includes

- Day to day objects (e.g. Business cards, banks leaflets, photographs, receipts, catalogues, currency, reports, financial statements, instructions, banks accounts, application forms, pictures, registration forms, letters/emails, diagrams, agreements, brochures, bank instructions, etc. );
- Broader (e.g. newspapers, journals, TV and radio scripts, films posters, documentaries comments, internet websites, etc).

The exposure to these authentic reading materials makes learning more interesting and motivating since it easily brings the real world to the classroom and removes the artificiality of coursebook reading texts. In addition, the internet grants updated materials for reading as daily newspapers and periodicals which increase students' motivation.

#### **2.9.2.2. Writing skills in Web-based ESP course**

Kavaliauskiene (2010) believes that writing skill is one of the most challenging skill for ESP learners for it involves many processes as planning, drafting , revising and editing. Students also see it as tiring and anxiety- initiator activity that requires self-confident, stress-free environment and inspiring atmosphere that the traditional classroom would never provide. Web-based environment grants the ESP learner the needed milieu for writing practice in terms of multimedia links, authentic texts, discipline-related documents and interactive internet tools as e-mail, wiki, webQuest, blog, etc in which practising writing can be enjoyable and meaningful.

Marko (2001) suggested some web-based writing activities for ESP learners. The objective of these activities is to write different text genres depending on web reading materials. They include simulation-based tasks such as writing university scholarship online application, online application letters and CVs for jobs, company's product description, filing for a patent, and writing texts about computing inventions. All these writing genres processes begin with visiting a recommended website for data gathering and reflections.

Moreover, the Internet provides tools for online writing practices as wikis and blogs. Their benefits include “instant publishing online, having a readership, and creating an online portfolio of student written work” (Kavaliauskiene 2010: 1). Even though writing blogs and wikis require considerable knowledge and experience which some students do not have, their advantages lead learners to experience new writing mediums different from the ones of traditional classroom and have more opportunities to improve their writing skill in a more authentic and purposeful context.

### **2.9.2.3. Listening Skills in Web-based ESP Course**

The purpose of teaching listening for ESP learners is to enable them to identify the topic of the discourse of different registers and follow its development through recognition of discourse markers. It aims also to enable them guess the meaning of words from context and their functions, in addition to intonation and sentence structure (Dudley-Evans and St John 1998). The exposure to authentic communicative situations as listening to lectures, seminars, oral presentations, and one-on-one dialogues and discussions in academic or professional settings (Jordan 1997) allows ESP learners to listen to the language in its real context. As the classroom context does not allow such exposure to authentic situations, the Internet is the ideal alternative for learners to listen to different discourses and language functions via the audio and video recourses available online.

The Internet has become “the goldmine of listening materials” (Peterson 2010). For instance, news channels websites offer real time listening to political, economic and sport news in different English varieties and formality levels so that learners listen according to their needs and levels. Listening frequently to these audio or video clips online has been proved effective strategy to develop listening skill as it permits self-paced listening through pause, play, and replay actions. Peterson (2010: 141) states a wide range of authentic audio and video resources that include:

Unending stream of audio and video lessons, television and radio broadcasts, including news and documentaries, and music videos are now at our fingertips through different sources. In addition to this, a new generation of internet tools are available (Skype, podcasts, online webcasts and conferences, voice boards). Moreover, social networks create multiple opportunities for authentic communication.

These listening materials may range from short and simple passages for beginners or low level learners to long and difficult passages for advanced learners. They are usually accompanied by language activities practice as vocabulary, pronunciation, writing and speaking. They can be also downloadable with scripts to MP3 (Motion Picture, Audio Layer 3) players and mobile phones for self-pacing practice. Since podcasts are the popular web-based listening materials, ESP learners can make the best of professional podcasts (<http://learnenglish.britishcouncil.org/en/professionals-podcasts>), business English podcasts (<http://www.businessenglishpod.com/category/esl-podcast/>), and academic podcasts ([http://www.bbc.co.uk/worldservice/learningenglish/general/talkaboutenglish/2009/04/090427\\_tae\\_al.shtml](http://www.bbc.co.uk/worldservice/learningenglish/general/talkaboutenglish/2009/04/090427_tae_al.shtml)).

#### **2.9.2.4. Speaking Skills in ESP Web-based Course**

Speaking is one of the highly required skills for job market for the opportunities it grants for job applicants as it reflects their attitudes, ideas, and impressions. Speaking for specific purposes is an umbrella term used to describe “spoken language in various academic [and professional] settings” (Jordan 1997: 193). This may include asking and answering questions in lectures, seminars and meetings, making oral presentations, one-on-one conversations in workplace settings, etc. The objective of teaching speaking to ESP learners is to enable them engage actively in communicative events and sustain the flow of speech to express their ideas and share them with participants.

The Internet provides a variety of tools for speaking practice as chat rooms, Skype, voice chat, forums, and conferencing. If appropriately and frequently used, they will enhance learners’ oral proficiency. To illustrate, in chat rooms and message boards a student can find

“penpals” of mutual interest to practise the target language. Learners may also sign in a forum of a particular interest in which they can exchange ideas of common concerns. There are also blogs for professionals of particular disciplines such as blogs of doctors, scientists, businessmen, politicians, etc in which learners may get in touch with them orally via chatting, voice mails and conferencing so that the objective of practicing speaking online is fulfilled, which is engaging in authentic communication.

The ESP teacher may also create a specific website, blog or interactive webpage to enable learners practise speaking through simulations, role plays and online discussions. However, these activities require networking knowledge and convenient software to avoid any technical trouble that leads to failure and hence dissatisfaction and demotivation to carry on similar activities.

#### **2.9.2.5. Vocabulary in Web-based ESP Course**

Vocabulary knowledge penetrates in all language skills as being a pre-requisite to master them. ESP learners strive to expand their vocabulary knowledge using dictionaries, word lists, glossaries, etc to cope with the unfamiliar written and oral discourses. Yet, paper-based dictionaries do not generally include jargon terms and technical words that ESP students need to learn. In ESP teaching, two types of vocabulary are distinguished; technical and semi-technical (Jordan 1997: 152). The former refers to the word items which are exclusively used in specialised texts; however, the latter refers to the words of high frequency in a number of academic disciplines. Learning both types requires extensive practice of reading and writing which are widely and accessibly available online.

The internet provides an infinite supply for reading material that entails a wide range of technical and sub-technical vocabulary. ESP learner may choose a topic of his/her own interest and focus on the vocabulary presented in the text. Furthermore, Kiliçkaya and Krajka (2010) compared traditional vocabulary learning strategies with online strategies and found

out that web-based vocabulary activities as “online glossing tool, *WordChamp*” are helpful tools to learn academic vocabulary when compared to other traditional or paper-based strategies or activities. Glossing tools make the words on any webpage into links so learners can look them up with just a click. It also links every word to an online content-specific dictionary or thesaurus. *WordChamp* is an educational site that provides the audience with vocabulary of different types of drills including translation, listening comprehension, dictation, and language-specific drills. Online dictionaries, Word Banks, interactive word databases are also popular online tools for vocabulary learning (Horst, Cobb, & Nicolae 2005).

#### **2.9.2.6. Grammar in Web-based ESP course**

As vocabulary, grammar should not be considered “outside the remit of ESP teaching” (Dudley-Evans and St John 1998: 74) due to the difficulties that ESP learners encounter especially in productive skills of writing and speaking. Therefore, it is recommended to pay attention to learners’ weakness in certain grammatical areas. Although they are available on library shelves for different levels, grammar books and guides are sometimes unable to cater for the needs of ESP learners for the specific requirements they have. Moreover, grammar books are generally for General English learners that contained detailed rules of grammar with drills and practices without considering the specific- content area of learners. As a remedy, online assisted-grammar lessons are designed particularly to satisfy ESP learners’ needs. Tercanlioglu (2001) suggested a list of websites for learning grammar online as <http://www.chompchomp.com/>, <http://www.English4us.com/>, <http://www.bettergrammar.org/>, etc because of their relevance in adapting to different learning styles and enhancing learner-centred environment.

Grammar can be practised in context through reading and listening to downloadable authentic passages. It can be also practiced through online quizzes that “can be selected and

organized to meet the needs of students whose fluency levels vary based on their exposure to and experience in the language” (Rajaretnam 2004). These online quizzes entail categorising the exercises into beginning, medium, advanced levels to cater for learners’ grammar proficiency level. They are also presented in different format as multiple-choice questions, filling in gaps, matching techniques, true and false, etc. Some quizzes are categorised according to language skills (reading, writing, listening, speaking) so that grammar can be practiced in context. At the same time, immediate online feedback is provided for learners via correction markers as scores, green ticks, etc. These quizzes are developed by teachers as self-study guides for learners to develop their grammar competency on their own pace and according to their needs.

## **CONCLUSION**

This chapter highlighted the basic concepts related to web-based instruction and reported its pros and cons. It also described the basics of building different levels of web-based course and emphasised the processes of planning and designing such instruction. Finally, it demonstrated the benefits of implementing web-based teaching in ESP. Theoretically speaking, web-based instruction stands as an ideal alternative for traditional classroom due to the enormous advantages it brings to learners and teachers as well in terms of availability and accessibility of multimedia resources that allow for authentic practice of skills in communicative events. The learner-centeredness in ESP instruction makes web-based platforms suitable for autonomous learning, motivation and interactivity. Therefore, language skills, grammar and vocabulary can be agreeably practised and enhanced due to the facilities and tools the web environment grants for learners. Yet, technology-based knowledge remains insufficient for successful learning unless pedagogical considerations are seriously taken.

## CHAPTER THREE

### COMPUTER SCIENCE STUDENTS' NEEDS ANALYSIS

#### INTRODUCTION

ESP practitioners regard NA as a pre-requisite to attain the instructional objectives that lead to a focused and tailored course (Jeong 2005). It is commonly conducted to identify learners' needs, lacks and wants which gives insights into course objectives, material selection, language skills, teacher's roles and evaluation and assessment methods. Regardless to the data-gathering tool used to conduct NA, students are the major source providers of information in whatever tool is applied (Long 2005). The present NA is conducted with Computer Science students at Biskra University attempting to reveal their learning needs as a starting point to integrate a web-based instruction in ESP course. It specifically deals with students' present situation, target situation and strategy analysis. Therefore, this chapter describes the different procedures and steps used to conduct the present NA. It includes description of the questionnaire, data analysis and results interpretation as well as statistical procedures.

#### 3.1. Needs Analysis Rationale

NA stems its rationality from the belief that students decide on their learning and determine the components of the course they take. Long (2005: 26) goes along with this belief and asserts that "it goes without saying that learners have special rights when it comes to deciding the content of courses they are to undergo". The current NA is a questionnaire survey administered to Master students of Computer Science aiming at acquiring an accurate, thorough picture of their strengths and weaknesses as well as collecting data about their present proficiency level in English besides their target level. The questionnaire is chosen as a data-gathering tool because it "procures sizeable amounts of focused, standardized, and organized data" (*ibid*, 38). Both open and close-ended questions were asked to obtain

information about students' learning background, current English language programme, and the future use of English. A version from the questionnaire was administered to 60 students; however, only 45 of them handed it back answered.

Two versions of the questionnaire were made; the pilot and the final version attempting to guarantee the reliability of the findings and increase the sound credibility of the results analysis.

### **3.2. The Pilot Questionnaire: Description**

Before having the final questionnaire, a pilot version had been given to 12 participants (26.66 % of the sample size) as a small scale trial version of the final questionnaire. The questionnaire was distributed to students during their English class time (1h: 30) in June 2011. They responded directly after the teacher's reading and explaining of the different questionnaire items. The chief problem while administering the NA questionnaire was the absence of many students, which prevented the researcher from collecting as many answers as possible. The piloting of the questionnaire was done to check the comprehensibility of the instructions, verify the wording and the layout of the questions in terms of style, redundancy and ambiguity, and obtain necessary feedback on the general structure and content of the questionnaire. Therefore, the ultimate objective is to strengthen the validity and reliability of results and ensure that the questionnaire items are conveying the intended messages.

The pilot NA questionnaire (see appendix 1) was administered to participants in their class period and it took them one hour and ten minutes to read and answer the questions.

#### **3.2.1. The Pilot Questionnaire: Some Inconveniences**

The main troublesome issue for participants was the wording of the questions; they contain unfamiliar and difficult vocabulary items for them. For instance, the frequency scale used for agreeing and disagreeing contains five adverbs of frequency (never, rarely, sometimes, often, always) some of which are confusing for some participants especially

‘rarely’ and ‘often’. Therefore, it was necessary to explain and distinguish between the adverbs to ease the answer process. The questionnaire also contains acronyms as ‘ESP’, ‘GE’, and ‘NA’, which needed spelling out and explanation. Redundancy was another emerging problem in the pilot version. In the ‘Strategy Analysis’ section, for example, two questions probe the same issue which is class and group size that students prefer to learn in; therefore, one of them was omitted. Moreover, the unfamiliarity with some vocabulary items misled some participants to give inappropriate response. To illustrate, the question investigating the familiarity of participants with web tools encompasses a list of options, some of which are brand-new such as ‘WebQuest, listserv, blogs, and wikis, which required brief explanation.

All the emerging piloting inconveniences were paid attention to and considered in the final NA questionnaire version.

### **3.3. Student’s Final Questionnaire: Description and Findings**

The final NA questionnaire (see appendix 2) is made up of three sections (personal information, present situation analysis (PSA), target situation analysis (TSA), and strategy analysis). Personal information section seeks students’ age, gender and learning background. PSA seeks students’ current language proficiency level, deficiencies and strengths as well learning setting. TSA aims to find out about the learners’ needs at the end of a language course and the target level performance. Strategy analysis investigates preferred learning styles and strategies of learners, evaluation and assessment methods as well as the applied teaching and learning methods.

Section one (Personal Information) contains six questions. It mainly represents students’ personal profile. It seeks their gender, age, mother tongue, and learning background. Section two (PSA) contains sixteen questions. It states students’ general attitude toward the current English course components, course schedule, learning medium, the

frequency of practising skills in English as well as their present language proficiency level. It also surveys students' reasons for dissatisfaction of the current ESP course components and other issues related to the present ESP course. Section three (TSA) includes eight questions concerning their learning goals and priorities as well as the desired topics to be covered in ESP course. It also surveys students' ranking of certain language skills in terms of their importance. TSA helps ESP course designers set the objectives and content of teaching and learning. Section four (Strategy Analysis) contains six questions that investigate students' preferred learning medium, class size, class work, types of tests, and other items related to web-based tools.

### **3.3.1. Results: Analysis and Interpretation**

Having collected the responses of the participants, a process of analysing and interpreting the results is to be conducted to picture out the present status of ESP teaching in Computer Science Department and the target needs that students are aiming to meet. Here are the findings.

#### **3.3.1.1. Personal Information**

##### **1. Gender distribution**

Response	Male	Female
Participants	15	30
Percentage	33.33%	66.66%

Table 3.3. Students' Gender Distribution

Out of 45 participants, 30 (66.66%) are females and 15 (33.33%) are males. Computer Science has always been a male-targeted field; however, it has been recently targeted by female students due to the professional opportunities that the field offers in the job market. Female students have become real contestants of males in Computer Science and more often get the highest grades in different exams and tests.

## 2. Age distribution

Response	20-25	25-30	Over 30
Participants	45	00	00
Percentage	100%	00%	00%

Table 3.4: Students' Age Distribution

The table shows that participants' age ranges between 20 and 25 years which indicates their homogeneity and reveals their similar learning experience.

## 3. Mother tongue

Response	Arabic	Berber	French	Others
Participants	40	05	00	00
Percentage	88.88%	11.11%	00%	00%

Table 3.5: Students' Mother Tongue

This question is asked to confirm the participants' status of English as being a foreign language. The majority of participants (88.88%) reported that Arabic is their mother tongue, and only five participants (11.11%) having Berber as their mother tongue. So English for both speakers (Arabs and Berbers) is a foreign language.

## 4. How long have you been learning English?

R	07	08	09	10	11	12	13	14	N.A
P	01	08	15	11	03	01	01	01	04
%	02.22%	17.77%	20%	22.22%	24.44%	26.66%	28.88%	02.22%	08.88%

Table 3.6: Years of English study

Table 3.6 indicates that the number of years of learning English ranges from 7 to 14 with a supremacy of participants who reported 9 years of studying English as a foreign language (20%). 4 participants (8.88%) did not answer the question. Having different study

programmes has resulted in different language experience and therefore different English proficiency level.

**5. Have you ever studied in an English speaking country?**

Response	Yes	No	N.A
Participants	02	40	03
Percentage	04.44%	88.88%	06.66%

Table 3.7. Studying in an English-speaking Country

Out of 45, 40 participants (88.88%) did not study in an English-speaking country, which means that they have gone through local (national) EFL study programmes in the Algerian school through different English syllabi designed by the Ministry of Education. Only 2 participants (04.44%) studied abroad; however, they did not mention for how long they studied. 3 participants (06.66%) did not answer this question.

**3.3.1.2. Present Situation Analysis**

**1. Do you use English in your study?**

Response	Yes	No	N.A
Participants	37	08	01
Percentage	82.22%	17.77%	02.22%

Table 3.8. Students' Use of English in Their Study (Computer Science)

37 participants (82.22%) claimed that they use English in their discipline; however, 8 participants (17.77%) claimed the opposite opinion. Although French is the medium for writing lessons, assignments, and exams in Computer Science classes, English is also used to write certain programme applications and instructions as in the following illustration, which shows some programmemeing instructions in English:

*“If x is greater than y”, “then goto instruction #10”, “else continue”, etc.*

2. If you use English in your study, is it in writing and/or speaking?

Response	To speak	To write	Both	N.A
Participants	03	22	10	01
Percentage	06.66%	48.88%	22.22%	02.22%

Table 3.9. The medium of English used in students' studies

22 participants (48.88%) reported that the written form is the most used in Computer Science, 3 participants (06.66%) reported the opposite (the oral form), and ten 10 (22.22%) claimed that both mediums are used. Writing in English is mainly required in different forms of academic writings (paragraphs, research papers, programme applications). Despite its importance, speaking is apparently absent due to the lack of oral practices and communicative tasks, which perhaps reflects students' lack of interest in speaking at this level.

3. How many hours a week do you study English?

Response	01.30h	02.00h	03.00h
Participants	07	00	38
Percentage	15.55%	00%	84.44%

Table 3.10. Allotted time to English class

Out of 45, 38 participants said that they study English three hours weekly, and seven 7 participants (15.55%) said that they study an hour and a half (01:30h). The English course in the official programme is divided into two sessions of one hour and half each; a session for all groups as a lecture and a T.D session (Travaux Dirigés) for each group. Having this division allows learners to be exposed to the language in different learning formats (theory and practice).

#### 4. How interested are you in learning English?

Response	Not interested	Interested	Very interested	N.A
Participants	07	30	07	01
Percentage	15.55%	66.66%	15.55%	02.22%

Table 3.11. Students' Description of their Attitudes towards Learning English

In spite of being widely used in the field of Computer Science, not all participants are interested in learning English. Only 7 participants (15.55%) reported that they are very interested in learning English and other 07 participants (15.55%) are not interested at all for unknown reasons. The fact that the majority of the participants (82.21%) are interested in learning English shows the learners' need to improve their English proficiency level because of its importance in Computer Science.

#### 5. Where do you learn English?

R	Traditional class (chalk, board, paper handouts)	Audio-visual class	Internet-based class	All of these
Ps	33	00	08	04
%	73.33%	00%	17.77%	08.88%

Table 3.12. The Current Class Type for English studies

33 participants (73.33%) said that they learn English in traditional class and 8 participants (17.77%) said that they learn in Internet-based class. 4 participants (08.88%) did not answer the question. Traditional class (board, chalk, handouts) is still the most available setting to learn English. The absence of audio-visuals prevents learners to benefit from these valuable materials.

**6. In which class do you use English?**

Response	English class	Computer science class	Both classes	N.A
Participants	19	04	20	02
Percentage	42.22%	08.88%	44.44%	04.44%

Table 3.13. Classes Where Students Use English

Table 3.13 shows that English is generally used in both classes (English class and Computer Science class). 19 participants (42.22%) use English in English class, 4 participants (08.88%) use it in Computer Science, and 20 of them (44.44%) use it in both classes. English is still limitedly used by Computer Science students due to the dominance of French and Arabic as being the languages of instruction; otherwise, it will not be used at all.

**7. How often do you practise the following tasks in English?**

**a. Writing e-mails**

Response	Never	Rarely	Sometimes	Often	Always	N.A
Participants	18	09	14	01	02	01
Percentage	40%	20%	31.11%	02.22%	04.44%	02.22%

Table 3.14. Frequency of Writing E-Mails in English

**b. Internet messaging**

Response	Never	Rarely	Sometimes	Often	Always	N.A
Participants	09	08	17	06	02	03
Percentage	20%	17.77%	37.77%	13.33%	04.44%	06.66%

Table 3.15. Frequency of Internet messaging in English

**c. Writing letters and CVs**

Response	Never	Rarely	Sometimes	Often	Always	N.A
Participants	24	05	11	01	00	04
Percentage	53.33%	11.11%	24.44%	02.22%	00%	08.88%

Table 3.16. Frequency of Writing Letters and CVs in English

**d. Academic writing (lessons, paragraphs, essays, and research papers)**

Response	Never	Rarely	Sometimes	Often	Always	N.A
Participants	16	10	14	01	00	04
Percentage	35.55%	22.22%	31.11%	02.22%	00%	08.88%

Table 3.17. Frequency of Writing Lessons, Paragraphs, Essays, and Research Papers in English

**e. Writing academic articles for publications**

Response	Never	Rarely	Sometimes	Often	Always	N.A
Participants	31	06	02	02	00	04
Percentage	68.88%	13.33%	04.44%	04.44%	00%	08.88%

Table 3.18. Frequency of Publishing Articles in English

**f. Writing blogs and wikis**

Response	Never	Rarely	Sometimes	Often	Always	N.A
Participants	27	05	07	03	00	03
Percentage	60%	11.11%	15.55%	06.66%	00%	06.66%

Table 3.19. Frequency of Writing Blogs and Wikis in English

**g. Computer programmes**

Response	Never	Rarely	Sometimes	Often	Always	N.A
Participants	02	04	17	07	12	03
Percentage	04.44%	08.88%	37.77%	15.55%	26.66%	06.66%

Table 3.20. Frequency of Writing Computer Programmes in English

Tables 3.15, 3.16, 3.17, 3.18, 3.19, and 3.20 respectively report participants' frequency of practising a range of writing tasks in English such as e-mails, Internet messaging, letters and CVs, lessons and articles. Therefore, when grouped together, they resulted in the following:

- Unexpectedly, 40% of participants have never written e-mails in English, 20% rarely do so, and 31% said that they sometimes write e-mails in English. This may be due to the over dominance of Arabic and French in students' writings.
- As expected, 37.77% of the participants sometimes chat online because of the accessibility of Internet and the popularity and attractiveness of socio-interactive websites especially among young people.
- Even though they are important in today's' job market, writing letters and CVs in English are not practised activities by Computer Science students (53.33% of participants never write letters or CVs in English).
- Academic writing in English is normally a central element in their English course programme; however, 16 participants (35.55%) reported that they have never practised writing in English which seems to be a serious issue. Yet, 14 participants (31.11%) claimed that they sometimes practise writing in English. Due to its fundamental role in classroom practice, writing should be regularly practised. To do so, teachers are supposed to establish a writing routine for students as Harmer (2007: 329) sates it; "we need to help such students build the writing habit so that they recognize writing as being

a normal part of classroom practice and they come to writing tasks with as much enthusiasm as they do other activities.”

- As far as writing for publication is concerned, 68.88% of the participants have never done such an activity in English due to the fact that they are still undergraduate students with no experience in writing articles for publication.
- Although blogs and wikis are very trendy internet activities among university students, 60% of Computer Science students have never written them, and only 15.55% of them sometimes do so. The unfamiliarity of students with blogs and wikis can be a reason for not being interested in writing them. Lack of accessibility and unavailability of internet tools in the hands of most students may lead to a negative response and attitude towards writing blogs and wikis.
- When it comes to writing computer programmes, 17 participants (37.77%) sometimes write them in English, 12 participants (26.66%) always do so, and only 2 (04.44%) claimed that they have never written computer programmes in English. Programming is the writing task that all students are required to do for its importance in students’ academic career.

Generally speaking, participants’ responses concerning writing skill reflect their paucity of practice and lack of interest as well as shortage of experience in different writing tasks.

**h. Reading articles related to students’ discipline**

Response	Never	Rarely	Sometimes	Often	Always	N.A
Participants	11	04	18	07	01	03
Percentage	24.44%	08.88%	40%	15.55%	02.22%	06.66%

Table 3.21. Frequency of Reading Articles in English for Computer Science

The majority of the participants (40%) sometimes read materials (books, articles, web pages, etc) related to their field of expertise simply because of the fact that most of the published materials (printed or internet) are written in English, which is seen as the currency of science and technology. However, 24.44% never read articles in English which is very probably due to the low reading proficiency or due to the availability of learning materials in French, which satisfies students' needs.

**i. Making phone calls**

Response	Never	Rarely	Sometimes	Often	Always	N.A
Participants	29	07	06	00	00	03
Percentage	64.44%	15.55%	13.33%	00%	00%	06.66%

Table 3.22. Frequency of Making Phone Calls in English

Table 3.22 shows that 29 participants (64.44%) have never made a phone call in English, 7 (15.55%) rarely do; however, 6 participants (13.33%) sometimes phone in English. The lack and in most cases the absence of communication with English-speaking people justify the situation.

**j. Speaking to the teacher and classmates**

Response	Never	Rarely	Sometimes	Often	Always	N.A
Participants	13	07	18	04	02	03
Percentage	28.88%	15.55%	40%	08.88%	04.44%	06.66%

Table 23. Frequency of Speaking to the Teacher and Classmates in English

**k. Speaking in conferences and seminars**

Response	Never	Rarely	Sometimes	Often	Always	N.A
Participants	33	05	04	00	00	03
Percentage	73.33%	11.11%	08.88%	00%	00%	06.66%

Table 24. Frequency of Speaking In Conferences and Seminars in English

Tables 3.23 and 3.24 are to be reported together since they demonstrate the frequency of the students' practising speaking, mainly speaking to the teacher and classmates in class and speaking in conferences. Here are the results.

- 18 participants (40%) sometimes speak to their classmates or their teacher in English, 28.88% never speak in class. Only 4 participants (8.88%) often speak in English in the classroom. Unlike students in the Business fields, Computer Science students do not give much attention to speaking despite its communicative value. As a productive skill, speaking helps them in seminar discussions, classroom presentations, question-response situations, etc.
- As for speaking in conferences, 33 participants (73.33%) have never used English to participate in a conference because all the organized conferences by the department of Computer Science use French as the event language.

#### I. Translations

Response	Never	Rarely	Sometimes	Often	Always	N.A
Participants	03	04	20	06	08	03
Percentage	06.66%	08.88%	44.44%	13.33%	17.77%	06.66%

Table 25. Frequency of Translating Texts (French-English, Arabic-English)

Table 3.25 shows that out of 45, 20 participants (44.44%) sometimes translate texts from and to English, and 8 participants (17.77%) always do so. The reason is that the available updated learning materials (printed or online) in the field of computing are written in English; therefore, students need to translate texts to Arabic and/or French for better input comprehension.

For other tasks students perform in English, they suggested watching TV programmes in English. In fact, they have become widely accessible for almost all students through satellite receivers, which are valuable sources for listening comprehension.

**8. Do you learn English somewhere to improve your proficiency level?**

Response	Yes	No	N.A
Participants	18	25	02
Percentage	40%	55.55%	04.44%

Table 3.26. Further Learning of English to Better Proficiency Level

Although they reported considerably low proficiency level and dissatisfaction of the current English course, more than half of the participants (55.55%) do not take any English course to better their proficiency level; however, 18 participants (40%) study English at private schools with a considerably high cost that may prevent other students to join such classes.

**9. Which type of English course you study to improve your level?**

Response	General English (GE)	Specific English (ESP)
Participants	16	02
Percentage	35.55%	04.44%

Table 3.27. The Type of English Students Learn to Improve Their Proficiency Level

Out of 18 participants who join English classes outside university, 16 of them take GE courses, and only 2 take ESP courses. In General English classes, students are intensively exposed to certain rules of grammar, pronunciation, vocabulary and the four skills (usually for three to six months of learning). In those classes, the learner hopes to improve his/her English proficiency level. Such types of courses are increasingly taught in different private schools and learning centres; they mainly target university and high school students of poor

or medium level of English. However, the absence of a clear method, content, and objectives in those private schools resulted in unsatisfying outcomes. The novelty of the ESP branch and the lack of teacher training in this domain as well as the absence of well-designed ESP programmes and course books led to its unfamiliarity.

**10. Describe your proficiency level by ticking the appropriate box?**

Language area	Very weak	weak	Acceptable	good	Very good	N.A
Grammar	03	09	18	12	01	02
	(06.66%)	(20%)	(40%)	(26.66%)	(02.22%)	(04.44%)
General vocabulary	02	08	24	08	01	02
	04.44%	17.77%	53.33%	17.77%	02.22%	04.44%
Specific vocabulary	02	07	25	08	01	02
	04.44%	15.55%	55.55%	17.77%	02.22%	04.44%
Pronunciation	03	05	23	07	02	05
	06.66%	11.11%	51.11%	15.55%	04.44%	11.11%
Speaking	05	09	22	06	01	02
	11.11%	20%	48.88%	13.33%	02.22%	04.44%
Listening	02	08	19	14	01	01
	04.44%	17.77%	42.22%	31.11%	02.22%	02.22%
Reading	01	07	22	09	04	01
	02.22%	15.55%	48.88%	20%	08.88%	02.22%
Writing	01	10	19	11	03	01
	02.22%	22.22%	42.22%	24.44%	06.66%	02.22%

Table 3.28. Students' Description of their Language Proficiency Level

Students of Computer Science reported an acceptable (average) English proficiency level in different language skills (40% in grammar, 53.33% in general vocabulary, 55.55% in specific vocabulary, 51.11% in pronunciation, 48.88% in speaking, 42.22% in listening, 48.885 in reading, and 42.225 in writing). Table 28 indicates that the top three language areas students reported to have low (weak or very weak) proficiency level are speaking (31.11%) in the first rank, then grammar (26.66%) and finally writing in the third rank (24.44%). However, the skills in which participants claimed high proficiency level (good and very good) are: listening (33.33%), followed by writing (31,11%), and then reading (28.88%). The immediate interpretation of the results points to the difficulty students have in the productive skills, mainly speaking and writing. This is mainly due to the linguistic and cultural input that both skills require, which leave students in a frustrated and cumbersome situation. Productive skills also require knowledge of grammar rules and good supply of vocabulary, which are the biggest issues of most students. The other interesting remark from table 28 is the idea of “acceptable level”, which is apparently a sign for students’ need to elevate their English proficiency to the next levels (good and very good).

11. Rank the following skills according to their importance in your discipline.

The ranked skill	Participants and percentages	
Reading	08	17.77%
Writing	08	17.77%
Speaking	08	17.77%
Grammar	05	11.11%
Listening	04	08.88%
Specific vocabulary	03	06.66%
Pronunciation	02	04.44%
General vocabulary	02	04.44%

Table 3.29. Skill Ranking According to its Importance to Students' Discipline

Reading speaking and writing are ranked in the first place in terms of importance in students' discipline. Listening and grammar ranked the second and specific vocabulary in the bottom three. General vocabulary and pronunciation are reported to be the least important skills in English for Computer Science course. Having the productive skills (speaking and writing) in the top of the list signifies their communicative value. Speaking is the skill by which learners are most often judged while first impressions are being made and writing is the channel that connects learners with the outside world of international community of academia via e-mails, letters, and other forms of correspondence. Both skills require knowledge of language and the skill of using it.

12. Describe your satisfaction level with the current English course components.

Course components	Very satisfied	Satisfied	Fairly satisfied	Not satisfied	N.A
Achievement of objectives	01	11	07	24	02
	02.22%	24.44%	15.55%	53.33%	04.44%
Amount of lectures/lessons	00	08	12	23	02
	00%	17.77%	26.66%	51.11%	04.44%
Level of lectures/lessons	00	11	10	22	02
	00%	24.44%	22.22%	48.88%	04.44%
Students' participation	01	13	09	18	04
	02.22%	28.88%	20%	40%	08.88%
Number and level of activities	00	10	11	21	03
	00%	22.22%	24.44%	46.66%	06.66%
Schedule (class time and duration)	03	17	09	14	02
	06.66%	37.77%	20%	31.11%	04.44%
Materials used (printed, audio, video, internet, etc)	03	07	06	26	02
	06.66%	15.55%	13.33%	57.77%	04.44%
Teacher' method and style of teaching	02	11	15	15	02
	04.44%	24.44%	33.33%	33.33%	04.44%
Teacher' qualification and performance	00	12	15	15	03
	00%	26.66%	33.33%	33.33%	06.66%

Table 3.30. Students' Level of Satisfaction with the English Course Components

According to Basturkmen (2006: 06) "ESP has functioned to help language learners cope with the features of language or to develop the competencies needed to function in a discipline, profession, or workplace". Yet, table 30 indicates that most of the participants are quite unsatisfied with almost all current English course components.

To begin with, out of 45, 24 (53.33%) participants are not satisfied with their achievement of course objectives (using English in the target environment) which is possibly due to the blurred objectives right from the start and the lack of pursue from both the learner and the teacher. 23 participants (51.11%) show displeasure with the amount of lessons and 22 participants (48.88%) are displeased with their quality (level). This negative response is a result of the non-regular attendance of the teacher and the lack of innovation in the quality of the existing lessons according to participants' claim.

Learners' attitude towards students' participation is fairly the same as achievement of objectives and lessons. 18 participants (40%) are not satisfied with the classroom participation which is the outcome of the lack of motivation on the one hand and the low level of students on the other hand. As far as the number and the level of activities are concerned, 21 participants (46.66%) reported their dissatisfaction about the quantity as well as the quality of language activities and tasks and they described them as inappropriate to their level. The materials used in the current English course are not an exception; participants claimed that they do not reflect their needs or they are not updated and most often printed-based materials that do not motivate them. Audio-visual and web-based materials are entirely unavailable as most participants reported. 15 participants (33.33%) claimed that the teacher's shortage of experience and her centered approach led them to form a negative impression on her qualification and performance. The only satisfying English course component is its schedule and duration; the current two morning sessions of one hour and half weekly please 17 participants (37.77%).

### **13. State your reasons for dissatisfaction**

Table 31 sums up the different reasons for the students' dissatisfaction with the course components as being reported in their questionnaire answers. The reasons are classified into nine categories, which are related to:

1. Achievement of objectives
2. Amount of lectures/lessons
3. Lessons' level
4. Students' participation
5. Number and level of activities
6. Course schedule (time and duration)
7. Implemented Materials (printed, audio, video, internet, etc)
8. Teacher's method and style of learning
9. Teacher's qualification and performance

The reasons of dissatisfaction are expressed in students' words as they appear in their answers with necessary language modifications of the researcher.

Course components	Reasons for students' dissatisfaction
1. Achievement of objectives	<ul style="list-style-type: none"> <li>▪ No clear objectives given by the teacher at the beginning of the course</li> <li>▪ The programme is not appropriately related to the field of Computer Science</li> <li>▪ The frequent absence of the teacher</li> <li>▪ Lack of time due to the overloaded programme of Computer Science sessions</li> <li>▪ Lack of interest from the part of the administration in the course of English (no materials provided, no experienced teachers, inappropriate time, and absence of well-designed programme)</li> <li>▪ No noticeable improvement in proficiency level due to the repeated lessons</li> <li>▪ Students' lack of interest and motivation in the course of English due to the French language dominance over the academic studies in Computer Science</li> </ul>
2. Amount of lectures/lessons	<ul style="list-style-type: none"> <li>▪ The non-regular attendance of the teacher</li> <li>▪ The allotted time is not sufficient (we need more time)</li> <li>▪ The repeated lessons, so nothing new to learn</li> <li>▪ The heavy reliance on grammar lessons resulted in students' lack of motivation and interest</li> </ul>
3. Level of lessons	<ul style="list-style-type: none"> <li>▪ No lessons' variety and absence of innovation (only reading comprehension followed by grammar practice)</li> <li>▪ Lessons are not interesting (no clear relation with Computer Science topics)</li> <li>▪ The level of lessons does not correspond to the university level (I feel like I am in High School)</li> </ul>
4. Students' participation	<ul style="list-style-type: none"> <li>▪ The students' intermediate and sometimes low level in English</li> <li>▪ Very low participation due to the lack of attention and interest in the course of English</li> <li>▪ The teacher's lack of motivation "the teacher does not motivate me to participate"</li> <li>▪ Shyness and fear of making mistakes in class</li> </ul>
5. Number and level of activities	<ul style="list-style-type: none"> <li>▪ The few number of activities is due to the frequent absence of the teacher</li> <li>▪ Very low-level of activities that do not meet students' needs</li> <li>▪ Lack of practice in and outside the class</li> </ul>
6. Schedule (class time and duration)	<ul style="list-style-type: none"> <li>▪ The computer science programme is overloaded (no time for English)</li> <li>▪ The class time is considerably short</li> </ul>
7. Materials used (printed, audio, video, internet, etc)	<ul style="list-style-type: none"> <li>▪ The unavailability of appropriate materials for computer science students in the library</li> <li>▪ The traditional materials (mainly printed handouts for exams) resulted in students' lack of motivation</li> <li>▪ The absence of audio-visual and internet integration in the course of English</li> <li>▪ Lack of teacher-students interaction (the teacher should give us books to read and share ideas)</li> </ul>
8. Teacher' method and style of teaching	<ul style="list-style-type: none"> <li>▪ Teacher-centered approach diminishes the role of students in all aspects of course design</li> <li>▪ The use of traditional methods that lack innovation and updating</li> <li>▪ Lack of teacher's experience makes the style of teaching unattractive and inappropriate</li> <li>▪ Fluctuated level of the teacher (sometimes good and sometimes bad) creates a confused teaching and learning rhythm</li> </ul>
9. Teacher' qualification and performance	<ul style="list-style-type: none"> <li>▪ Newly graduated teachers lack experience and innovation</li> <li>▪ The department usually hires young and unskilled teachers with no teaching experience</li> <li>▪ "We need specialized teachers in English for Computer Science, not General English".</li> </ul>

Table 3.31. Students' Reasons for the Dissatisfaction with the Different Course' Components

**14. Does the current English course content have a relationship with your discipline?**

Response	Yes	No	Parts of it
Participants	12	17	16
Percentage	26.66%	37.77%	35.55%

Table 3.32. The Relationship between the English Course Content and Computer Science

ESP is generally related in content to the discipline it serves (Stevens 1988, in Hutchinson and Waters 1987). However, out of 45 participants 17 asserted that the current English course content (themes, topics, texts and activities) is not related to the field of Computer Science. 16 participants (35.55%) assumed that there are some parts of the content which are related to their discipline. While other 12 participants (26.66%) claimed that the course content is related to the domain of computer science. Taking learners' needs into account motivates them and makes them recognize the "obvious relevance of what they are studying" (Basturkmen, 2006: 18). Therefore, having learners' needs out of consideration resulted in students' belief that the course content is of no or slight relation to their field.

**15. Who has designed the current English course?**

Response	The teacher	Students and the teacher	N.A
Participants	41	03	01
Percentage	91.10%	06.66%	02.22%

Table 3.33. The English Course Designers for Computer Science class

The majority of the participants (91.10%) stated that the current English course is designed by the teacher alone and they have not been involved in the design process at any stage. Only 03 participants claimed that they have been involved in the course design. Practically, ESP tends to be flexible and negotiated course in which all partners (teachers, students, and administration) take part in different design phases without excluding any ones' suggestions and ideas. The flexible course ensures the partnership and gives students the

opportunity to be active agents in the design process since the course relies on their needs, lacks and necessities. Having students involved in the course design motivates them and makes sense to what they are learning.

### 3.3.1.3. Target Situation Analysis

#### 1. How interested are you in an ESP course designed according to your needs?

Response	Very interested	Interested	Fairly interested	Not interested
Participants	25	14	04	02
Percentage	55.55%	31.11%	08.88%	04.44%

Table 3.34. Students' Interest in an ESP Course

Students' displeasure of their present learning situation reflects their responses towards their interest in taking ESP courses. 25 participants (55.55%) declared that they are very interested, 14 participants (31.11%) are interested, 4 participants (08.88%) are fairly interested and only 2 participants claimed that they are not interested in taking ESP course. Actually, ESP has currently become the new trend in ELT teaching which attracts learners from different academic disciplines and professions because it serves the requirements of their "real world". The participants' positive response indicates their awareness and willingness to ameliorate their English proficiency level.

#### 2. What is your goal of taking ESP course?

Response	Get a job which requires English	Continue studies in Computer Science
Participants	22	23
Percentage	48.88%	51.11%

Table 3.35. Students' Academic and Professional Goal

Principally, ESP is learned for study or job purposes; therefore, participants' answers about their academic and professional goals are divided into two fairly equal partitions. Out of 45, 22 participants (48.88%) assumed that their goal to learn ESP is to get a job that

requires English, while the goal of the remaining 23 participants (51.11%) is to pursue their academic studies.

**3. Do you have a goal to Study/ work in an English-speaking country?**

Response	Yes	No	N.A
Participants	34	10	01
Percentage	75.55%	22.22%	02.22%

Table 3.36. Students' Goal to Study/ Work in English –Speaking Country

The majority of the participants (75.55%) have a goal to study or work in an English-speaking country, while 22.22% of them do not have such a goal. In recent decades English-speaking countries, especially UK and USA have become targets for overseas Science and Technology learners who believe that these countries offer better chances to get a profession of their area of expertise. The other 10 participants who are not attracted by the lure of the English-speaking countries job market consider the lack of mastery of English language and their preference of French language as chief obstacles/reasons for not having a goal to study or work in these countries.

**4. Reasons for not having a goal to study or work in English speaking country**

The majority of the participants stated two chief reasons for not desiring to work or study in an English-speaking country. They are:

- Lack of mastery of English
- Students' preference for French

5. What topics do you need to study in ESP course?

Topics	Participants	Percentage
Artificial intelligence	30	66.66%
Blogging	10	22.22%
Computer animation	17	37.77%
Data base administration	21	46.66%
Desktop publication	08	17.77%
Graphic design	14	31.11%
Hardware engineering	13	28.88%
Network administration	25	55.55%
Online teaching	15	33.33%
Programmeming	27	60%
Security	26	57.77%
Software engineering	10	22.22%
Website design	33	73.33%
Others (operating system)	01	02.22%

Table 3.37. Topics Needed to be Studied in ESP Course for Computer Science Students

As mentioned previously, ESP is related in content to the learners' field. Computer Science is a discipline that covers a wide range of topics that vary in their importance and value from one student to another. Table 3.37 reveals that top five needed topics to be implemented in ESP course for computing are respectively website design (73.33%), artificial intelligence (66.66%), programmeming (60%), security (57.77%) and network administration (55.55%). While the bottom five topics in terms of importance are: software engineering (10%), blogging (10%), desktop publication (17.77%), hardware engineering

(28.88%) and graphic design (31.11%). It seems that the web-related topics are the most needed to be dealt with due to their novelty, excitement, wideness, attractiveness, and entertaining factors. Learners need to be acquainted with these topics for a better understanding, vocabulary building, skills development and knowledge formation.

**6. How much importance do you give to these types of language skills?**

Students' answers to this question are classified into four categories according to the four language skills: reading, speaking, listening and writing. Students are also asked to rate some types of each of the four skills according to their importance.

**a. Reading types**

Reading types	Not important	Important	V. important	N.A
Reading manuals and instructions	13	21	18	03
	28.88%	46.66%	40%	06.66%
Reading web pages and internet materials	12	21	10	02
	26.66%	46.66%	22.22%	04.44%
Reading printed documents	11	22	07	05
	24.44%	48.88%	15.55%	11.11%
Others	00	00	00	00
	00%	00%	00 %	00%

Table 3.38. Students' Ranking of Reading Types

Almost all the suggested reading types are considered by the participants as either important or very important. However, reading manuals and instructions is ranked the most important of all other reading types. 40% for reading manuals and instructions, 22.22% for reading web pages and internet materials, and finally reading printed documents (15.55%). Even though reading is the skill that exposes learners to

the updated publications and documents, it seems that students of Computer Science do not read for that purpose but mainly for the purpose of understanding how the new technology apparatus and gadgets function.

**b. Speaking types**

Speaking types	Not important	Important	Very important	N.A
Speaking to the teacher	13	21	08	03
	28.88%	46.66%	17.77%	06.66%
Speaking to classmates	18	13	09	05
	40%	28.88%	20%	11.11%
Speaking to foreign visitors	10	18	13	04
	22.22%	40%	28.88%	08.88%
Phone calls and online chatting	17	16	09	03
	37.77%	35.55%	20%	06.66%
Speaking in conferences	26	09	06	04
	57.77%	20%	13.33%	08.88%
Giving presentations	15	17	09	04
	33.33%	37.77%	20%	08.88%
Others	00	00	01	00
	00%	00%	02.22%	00%

Table 3.39. Students' Ranking of Speaking Types

As far as speaking skill is concerned, almost all participants view the listed skills as important or very important except for “speaking in conferences”, which is considered by 57.77% of participants as not important. The most important skill

according to them is “speaking to foreign visitors” (28.88%). The reason that “speaking in conferences” is ranked last is due to the fact that French is the language of conferences organized by the department of Computer Science in Biskra or in other Algerian universities. However, “speaking to foreign visitors” in English makes sense to students because English is the *Ligua Franca* and the international language of communication. For other suggestions, only one participant (2.22%) suggested giving lectures as a way to practise speaking in class.

c. Listening types

Listening types	Not important	Important	Very important	N.A
Listening to lectures and lessons	04	23	14	04
	08.88%	51.11%	31.11%	08.88%
Listening to online presentations and reports	06	24	10	05
	13.33%	35.55%	22.22%	11.11%
Listening to TV and radio shows	08	18	16	03
	17.77%	40%	35.55%	06.66%
Listening to movies and songs	08	14	20	03
	17.77%	31.11%	44.44%	06.66%
Others (listening to audio-video tutorials)	00	00	01	00
	00%	00%	02.22%	00%

Table 3.40. Students’ Ranking of Listening Types

As with reading and speaking skill, all the suggested listening types are reported to be important. Yet, the unexpected result is that listening for entertainment (TV and radio shows, movies and songs) is claimed to be more important than listening to lectures and presentations (online or in class) in English. Statistically, 44.44% (20 participants) declared that “listening to movies and songs” is very important and 35.55% (16 participants) said that “listening to TV and radio shows” is very important.

**d. Writing types**

Writing types	Not important	Important	Very important	N.A
Writing articles	18	17	06	04
	40%	37.77%	13.33%	08.88%
Writing theses	22	11	07	05
	48.88%	24.44%	15.55%	11.11%
Writing web pages	12	24	06	03
	26.66%	53.33%	13.33%	06.66%
Writing blogs and wikis	23	17	03	02
	51.11%	37.77%	06.66%	04.44%
Writing e-mails	13	25	05	02
	28.88%	55.55%	11.11%	04.44%
Writing letters and CVs	19	17	06	03
	42.22%	37.77%	13.33%	06.66%
Writing reports	20	14	06	05
	44.44%	31.11%	13.33%	11.11%
Writing computer programmes	05	25	14	03
	11.11%	55.55%	31.11%	06.66%
Translations	06	21	12	06
	13.33%	46.66%	26.66%	13.33%

Table 3.41. Students' Ranking of Writing Types

Table 3.41 reports the following:

- Writing theses, letters and CVs, and reports in English are not important types of writing as reported by Computer Science students because they are required to write them in French.
- Writing blogs and wikis in English is considered by 51.11% of the participants as “not important” types because it is not among the requirements of their studies in addition to its novelty and prerequisite (Internet knowledge, skills and tools).

- 25 participants (55.55%) declared that writing e-mails in English is important in their academic studies
  - Writing computer programmes and translation are the two types of writing that are reported to be the top two most important skills (31.11% for writing programmes and 26.66% for translation).
7. What language priority do you think you need ESP course for?

In this question, students are asked to tick more than one option according to the need primacy.

Response	Participants	Percentage
To be a fluent speaker	29	64.44%
To be an accurate speaker	21	46.66%
To expand general vocabulary	18	40%
To expand specific vocabulary	17	37.77%
To improve pronunciation	21	46.66%
To improve reading skill	23	51.11%
To improve writing skill	24	53.33%
To improve listening skill	23	51.11%

Table 3.42. Students' Learning primacies

Table 3.42 shows that out of 45, 29 participants (64.44%) prioritize fluency, 24 participants (53.33%) said that improving writing skill is their learning primacy. Improving listening and reading skills are the priority of 23 participants (51.11%). Students' learning priorities seem to lie in improving the four language skills, especially writing and speaking. The two skills are the communicative pillars of language which help learners carry and sustain oral or written communication.

8. How important do you think ESP is in comparison with other computer science subjects?

Response	More important than other subjects	As important as other subjects	Less important than other subjects	N.A
Participants	03	22	19	01
Percentage	06.66%	48.88%	42.22%	02.22%

Table 3.43. ESP Course importance Compared to Other Computer Science Subjects

Table 3.43 shows that 22 participants (48.88%) consider ESP course as important as other subjects, 19 participants (42.22%) consider it as less important than other subjects and only 3 participants (06.66%) see it as more important than other Computer Science subjects. Learners' positive response to the importance of ESP stems from the need to improve their English proficiency level, especially productive language skills. Moreover, English has become the international language of Computer Science that led learners to appreciate its value and utility in their domain.

#### 3.3.1.4. Strategy Analysis

##### 1. Where do you think ESP course needs to take place?

Response	Traditional class	Web-based class	Blended class (Combination of traditional class and web-based class)	N.A
Participants	07	13	23	02
Percentage	15.55%	28.88%	51.11%	04.44%

Table 3.44. Students' Needed Learning Environment

Out of 45, 23 participants declared that they need to study in a blended class, 13 participants (28.88%) opt for "web-based class", and 7 participants (15.55%) believe that "traditional class" is their required learning environment. In fact, blended class combines the advantages of the traditional learning and the web-based instruction. Besides the one-to-one learning environment that traditional class offers, it establishes a genuine social network, in

which the teacher may interact with students and know more about their learning styles, preferences, abilities and language level. Meanwhile, web-based class creates a virtual setting that eliminates the boundaries of space and time and motivates students to experience a different learning environment with its audio-visual and animated world. So, half of participants opts for “blended class” as their needed learning medium for the purpose of making use of both environments.

2. How familiar are you with the following web tools?

Web based tool	Know well	Want to know more	Don't know	N.A
E-mail	30	13	01	01
	66.66%	28.88%	02.22%	02.22%
Website	24	18	02	01
	53.33%	40%	04.44%	02.22%
Blog	13	19	11	02
	28.88%	42.22%	24.44%	04.44%
WebQuest	03	06	33	03
	06.66%	13.33%	73.33%	06.66%
Conferencing	02	15	24	04
	04.44%	33.33%	53.33%	08.88%
Wikis	14	20	08	03
	31.11%	44.44%	17.77%	06.66%
Listserv	11	17	14	03
	24.44%	37.77%	31.11%	06.66%

Table 3.45. Students' Familiarity with Web Tools

Although participants are Computer Science students who are expected to know more than other students about the different web tools, there are certain tools which are unfamiliar to some of them. Table 3.45 shows that “webQuest” and “conferencing” are not familiar web tools for most of participants (73.33% do not know about webQuest and 53.33% are unfamiliar with conferencing). “E-mails” (66.66%) and “websites” (53.33%) are very familiar web tools. Yet there are other tools that are reported to be familiar but they need to be known more, mainly blogs, wikis, and listeserv.

**3. What type of class work do you need?**

Responses	Individual work	Pair work	Group work	Project-based work
Participants	06	12	23	04
Percentage	13.33%	26.66%	51.11%	08.88%

Table 3.46. Students’ Needed Type of Class Work

The 45 students who participated in the NA survey have different learning styles that affect their grouping preferences. The responses revealed that 23 participants (51.11%) opted for “group work”, 12 participants (26.66%) opted for “pair work”, 6 participants (13.33%) need “individual work” and 4 participants (8.88%) opt for “project-based work”. According to Harmer (2007: 165), “small groups of around 5 students provoke greater involvement and participation rather than large groups”. Learning in small groups increases speaking opportunities and brings out different opinions and contributions to the subject under study smoothly and effectively. Moreover, it encourages cooperation and negotiation not only between students themselves but also between the teacher and students. The teacher also feels at ease and more motivated when teaching small groups.

4. What type of tests do you need to take?

Responses	In-class test	Take-home test	Online test	All of these	Non of these	N.A
Participants	07	12	07	15	03	01
Percentage	15.55%	26.66%	15.55%	33.33%	06.66%	02.22%

Table 3.47. Students' Needed Types of Test

Table 3.47 shows that not all participants agree on one particular type of tests. 12 participants (26.66%) prefer “take-home tests”, 7 participants (15.55%) chose “in-class tests”, other 7 participants opt for “online tests”, and 15 participants (33.33%) claim that all types of tests needed to be integrated. Various testing methods give students extra chances to improve their outcomes and help them make appropriate decisions to overcome their deficiencies.

## 5. Statements comment

Statements	Strongly agree	Slightly agree	Agree	Slightly disagree	Strongly disagree	N.A
1. Web-based ESP course will motivate me to learn English better than traditional classroom.	19	04	17	03	00%	02
	42.22%	08.88%	37.77%	06.66%	00%	04.44%
2. Web-based ESP course will improve my study skills (reading, speaking, listening, writing, and researching).	20	03	16	03	01	02
	44.44%	06.66%	35.55%	06.66%	02.22%	04.44%
3. Web-based ESP course will encourage me to engage in authentic communication online.	13	09	16	04	01	02
	28.88%	20%	35.55%	08.88%	02.22%	04.44%
4. Web-based ESP course will develop my autonomous learning.	12	04	15	10	02	02
	26.66%	08.88%	33.33%	22.22%	04.44%	04.44%
5. Web-based ESP course will empower you to be a life-long learner.	14	10	13	05	01	02
	31.11%	22.22%	28.88%	11.11%	02.22%	04.44%

Table 3.48. Students' Comments on Statements Related to Web-Based Learning

Table 3.48 shows that most participants strongly agree or agree with all the statements related to the benefits of integrating web-based teaching in ESP. Most students reported that web-base course creates a source of motivation, improves their study skills, engages them in authentic communication online, develops their autonomous learning, and empowers them to be life-long learners.

## **CONCLUSION**

This chapter surveyed students' present situation and target situation to find out the type of the course, skills, content, class work, and tests they need. Based on the results obtained from the present NA questionnaire, Computer Science students' dissatisfaction with the different English course components resulted from the absence of clear objectives in the course curriculum besides the inappropriate course content to the discipline. Moreover, students' lack of motivation to learn ESP is due to the dominance of French language in Computer Science studies. Teacher-centered approach and the use of traditional methods led to the lack of teaching innovation and fluctuation in the teachers' performance. Therefore, thoughtful decisions in terms of teachers' experience and methods of teaching in addition to the involvement of learners in the process of course design are required. Likewise, students' low proficiency level in English productive skills necessitates reconsideration of teaching speaking and writing and demands considerable focus on the communicative aspects of the target skills. Although they are not totally familiar with all web tools, NA questionnaire revealed that Computer Science students are aware of the importance of web tools and applications in empowering them to be autonomous learners in authentic online communication.

## CHAPTER FOUR

### QUASI-EXPERIMENTAL STUDY ON THE EFFECT OF INTEGRATING WEB-BASED INSTRUCTION ON ESP STUDENTS' ACHIEVEMENT

#### INTRODUCTION

The NA survey revealed the participants' target academic and professional requirements and the various deficiencies they encounter in ESP class which deter them from a better performance in language skills, especially productive skills. As a remedy for the unsatisfied language achievement of participants, it was necessary to instructionally intervene to elucidate students' concern and insinuate a manipulation to address this issue. Therefore, a web-based instructional treatment has been introduced and experimentally conducted with students during two semesters to ascertain its effectiveness in bettering students' language performance. Thus, the present chapter deals with the pretest-posttest quasi-experimental study which has been conducted with first year Master students of Computer Science at the University of Biskra as a serious try-out to put the issue under investigation into practice.

#### 4.1. Rationale

True experimental research designs are often considered as the standard for evaluating the success of an instructional programme or intervention in changing and/or improving students' performance. However, in certain cases, the random assignment of participants to experimental and control group is not viable. Hence, "quasi-experimental studies may be more feasible or appropriate" (Moore 2008). Levy and Ellis (2011) ascertain the difficulty to conduct true experiments in educational setting via the randomization of participants which certainly hinders the researcher "to have the luxury of complete control over the research" (152). Therefore, conducting research without randomly assigning participants into treatment and control group leaves the researcher with "pre-assigned group assignment" (Levy and Ellis 2011: 155) that may reduce the validity of results. However, quasi-experiments have

some features in common with true experiments, mainly to find out the causal relationship between variables that results from a specific treatment or manipulation.

Quasi-experiment studies may take different designs such as,

- The one-group pretest-posttest design
- The non-equivalent control group design
- The time series design (Cohen, Manion, and Morison 2007: 275)

All these designs cannot definitely prove changes in programme outcomes and establish absolute causality; however, they can provide helpful “discussions of cause and effect relationship” (Moore 2008) between the variables of the study.

The present study which explores the effectiveness of web-based language teaching in ESP classes opts for quasi-experiment for a number of reasons. To start with, the random assignment of participants into treatment and control groups had been of infeasible practice in the present case study due to pure administrative reasons. As Yount (2006: 08) argues:

A common problem in educational research is the unwillingness of educational administrators to allow the random selection of students out of classes for experimental samples. Without randomization, there are no true experiments.

Practically, the current study participants were administratively grouped into two sections of different specialties in Computer Science i.e. one group of ‘Artificial Intelligence’ and another group of ‘Imagery’. Therefore, the researcher could not undertake a true experiment and the two groups could not be randomly assigned into treatment and control group because of the departmental requirements and their different study schedule constraints. Following Cohan, Manion and Morison (2007: 282), quasi-experiment is the alternative research design “where the random assignment of schools and classrooms is quite impractical. Ergo, we decided to opt for the “one-group pretest-posttest design” to examine the outcomes that resulted from the integration of web-based language teaching in English for Computer

Science. The focal purpose is to gauge the relationship existing between the two variables (the experimental programme and students' achievement in tests).

The one-group pretest-posttest design is equated as follows:  $O_1 X O_2$ , in which  $O_1$  represents the dependent variable, the  $X$  is the experimental manipulation and the  $O_2$  is the measured group outcomes. According to Moore (2008), the application of quasi-experimental design can be very valuable especially by providing relevant information about the participants who are under treatment (experiment) in terms of their instructional background, attitudes and readiness. It also looks for the anticipated change and its magnitude in participants' performance and outcomes. In addition, it provides information on whether predictable changes are occurring in some subgroups and not others and if the treatment works better for some participants than for others (males Vs females for example). Quasi-experiment demonstrates constructive information on whether some outcomes are changing and others are not. For example, participants may show significant improvement in certain language skills and functions more than others while they are undertaking the experimental instruction.

One of the chief *raison d'être* which led to the utilization of quasi-experiment in the present study besides the infeasibility of the random assignation of groups is the fact that the experimental programme is still under elaboration. As Moore (2008) declares, "it is appropriate to wait until a programme is well developed and has settled into a clear and consistent set of activities before conducting a random assignment".

Another worth mentioning rationale for plumping for quasi-experiment is the inability to avoid the "contamination" of the control group by the treatment in the true experiment (Moore 2008). In the present case, it had been such an impossible practice to avert students of the control group to get in constant touch with the experimental group during the programme time or even outside the treatment schedule. Therefore, the control group would not be away

from the treatment contamination and influence during the experimental manipulation time span. This can occur as a result of students' exchange and discussions of lessons and activities in their usual study routine. In this case, the researcher had attained such a cautious attitude towards the reliability of applying the true experiment in the present case.

#### 4.2. The One-Group Pretest-Posttest Design

This type of design necessitates collecting data on the performance and outcomes of one group of participants before and after the experimental treatment. The purpose of having a pretest and posttest is to allow the researcher “to make inferences on the effect of the intervention by looking at the differences in the pretest and posttest results” (National Center for Technology Innovation- NCTI- 2007). Pretest-posttest scores aim at providing information about participants' performance and the learned competencies during the treatment. Moreover, a well-designed pretest-posttest “can help trainers [researchers] understand which concepts or competencies were well taught during the training [the treatment] and which ones need additional time, or need to be covered using alternative methods” (I-TECH, 01). The pretest assures certain level of sameness and equality of group members at the commencement of the treatment. It verifies the preexisting differences between the members of the group in terms of abilities or other characteristics (Ladico, et al. 2006). This design is represented in the following formula:

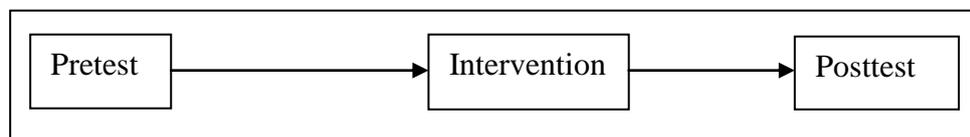


Figure 3. 7. Pretest-Posttest Design

The pretest-posttest design generally consists of a treatment level and a pre- and after measurement of the dependent variable to gauge the difference between means in the pretest

and posttest. Kirk (1995: 26) states that this design permits two hypotheses; the null and the alternative hypothesis as it is shown in the following formula:

$$H_0: \mu_1 - \mu_2 = \delta_0$$
$$H_1: \mu_1 - \mu_2 \neq \delta_0$$

$\delta_0$  is usually equal to 0

The pretest-posttest design allows the researcher to gauge the potential effect caused by a treatment during a period of time. Yet, one should be cautious when interpreting the results of the experiment by mulling over the undesirable impacts of the extraneous variables that may impinge the study outcomes and constrain its validity as it is claimed by Cambell and Stanley (1963) who believe that the internal validity in this type of design can be “jeopardized by several extraneous variables”.

For this type of research design, it is extremely recommended to collect multiple forms of data to make pertinent inferences, explanations and interpretations of the study results. Basically, we will look at the participants’ background information, the construction of tests, the purpose and context of the intervention (the experimental programme), and finally the outcome data. The quantitative data i.e. test scores will be supplemented by accommodating form of qualitative data to provide information detailing the quantitative results, which will be conducted in a form of course evaluation checklist filled out by the participants at the end of the programme.

#### **4.2.1. Participants**

The study sample comprised a total number of 50 participants of Computer Science students in Master one degree during the academic year 2011-2012. Having a sample of participants from the whole population permits the researcher to make appropriate generalizations as it is clearly stated by Ross (2005: 1) in the sense that “The information derived from the resulting sample is customarily employed to develop useful generalizations

about the population". The participants were administratively divided into two sub-groups according to their specialties with an allotted time of one hour and half per week to study English course. They consist of 27 females and 23 males. They have accomplished 6 study semesters (i.e. three years) in Computer Science during their License degree in the LMD system, in which they study English as a non-fundamental unit in the curriculum during this period.

To guarantee a substantial level of tests validity, participants were not informed that they go through a special treatment for research purposes in order to keep the ordinary study routine and avoid all sorts of anxiety, excitement or other attitudes towards the intervention. The attendance to the course was compulsory due to the LMD regulations; however, not all participants regularly attended the course for different reasons. To ensure the delivery of lessons, activities and assignments to all participants, the teacher (the researcher himself) created a classroom e-mail account to maintain the well-management and running of the experiment. The class e-mail account was used to ease the delivery and reception process for all students at once. Course activities were supported with germane web links and regularly sent to students via e-mail at the end of each unit. These web links contain further online reading and practice of what has been done in class. They were carefully selected to fit the level of students and the course objectives. Ergo, all participants have the chance to read the course documents, practice the activities and assignments, and participate in the experiment.

#### **4.2.2. Experimental Programme Description**

To ascertain the impact of the web-based language teaching on the performance of computing English students, the researcher designed a purposeful and focused course aimed at improving students' proficiency level, mainly productive skills, vocabulary and grammar. Two study units were built according to the Needs Analysis results. They essentially cover two chief themes: (1) computer applications and artificial intelligence and (2) website design

and computer security. The programme relies on three learning media: class lectures, web assignments, and web tools (e-mails, youtube videos, online dictionaries, and internet documents) that had been prepared to respond to students' needs as well as improving their study skills. The class lectures were regularly e-mailed to students for revision and feedback while the web assignments were designed for further practice, comprehension and exploration. The web tools were constantly varied to make use of the web potentials such as authentic materials, updated related videos and articles about computer science, multimedia tools, and enjoyable world of instruction.

In each of the two study units, the chief theme includes sub-themes that serve the objectives of the main unit and provide students with spaces to practise the different language skills and functions. Each unit with a warming-up activity (3-5 minutes video) about the theme of the unit to activate students' schema, remind them with the language they already know and get them ready for the intended skill practice, a reading or listening passage that presents information related to the unit theme, vocabulary consolidation (both technical and sub-technical), grammar practice and writing production.

The overall objective of the present experimental programme is to ensure both theoretical and pragmatic principles of ESP course (Hutchinson and Waters 1987). The theoretical principle stresses language behaviour as the end target of learners which maintains receptive and productive skills required to produce or comprehend any written or spoken discourse. However, the pragmatic principle permits learners to develop particular strategies and skills that will help them deal with any target discourse after the end of the programme in their discipline.

The teacher (the researcher himself) manages the course in collaboration with his students in the sense that ESP course stresses the role of the learner as a vital partner in taking the different decisions about the course. All along the programme, the teacher requires

students to have their own ideas, negotiate, suggest, share, and decide what fits them as activities, methods, and materials. In the present experimental programme, the teacher takes the role of “facilitator or consultant” (Dudley-Evans and St John 1998) as a prerequisite of ESP course. During the programme the teacher encourages team work, class collaborative practice and peer consultation as long as the course necessitates such learning routine. Meanwhile, students were encouraged to make personal feedback on the tasks and activities presented in the course and send them to the teacher via mail so that the programme will be flexible and enjoyable.

The process of “individualization of communication” is highly spotted in the programme through learner-teacher online interaction. All students are allowed to send or request any further clarification, explanation or additional learning materials from their teacher before or after the class time for the sake of having a secure and comfortable learning zone. Students’ assignments were supported by specialized online dictionaries and encyclopedias to make their completion feasible, quicker and successful.

#### **4.2.3. Tests Construction**

Following Cohen, et al. (2007: 414), “in tests, researchers have at their disposal a powerful method of data collection”. To collect relevant data about the participants’ performance before and after the experimental programme, a portion of participants (25 students) had gone through a pilot pretest-posttest in the first semester and then all participants had been set on an experimental pretest-posttest procedure in the second semester. Non-parametric tests are used in both phases (pilot and experimental) for they “offer teachers a valuable opportunity for quick, relevant and focused feedback on students’ performance” (*ibid.* 415). Moreover, non-parametric tests fit the requirements of small samples (as in the present case, 50 students) in very specific situations such as a class of students following a particular instructional programme.

The pretest was set in construction as a placement test which essentially aims to diagnose students' weakness, strength, and lacks as a preliminary procedure to determine the essential prerequisites to begin the programme. The posttest was set as an achievement test in which the practice of checking the effectiveness of the programme and the extent of students' progress will be permitted.

Practically speaking, the pilot pretest examines the theme of "computer uses and applications" in a considerably adjusted and balanced layout that encompasses language skills (reading and writing) in addition to vocabulary and grammar practice. The variation of activities (text comprehension questions, blanks filling, table completion, paragraph writing) is deployed to preclude the monotony in the test and meet the different learning styles. As far as the posttest is concerned, a modified and adjusted version of the pretest is utilized to test the students' performance at the end of the pilot programme. Table 49 below shows the components of the pilot tests

Reading comprehension	<ul style="list-style-type: none"> <li>▪ Suggest a suitable title to the text</li> <li>▪ Answer some questions about the text</li> <li>▪ Find similar meanings of some expressions in the text</li> </ul>
Language work (vocabulary and grammar)	<ul style="list-style-type: none"> <li>▪ Noun-verb transformation of some computer terminologies</li> </ul>
Writing	<ul style="list-style-type: none"> <li>▪ Short paragraph (07lines) about computer applications in students' everyday uses using relevant vocabulary items and expressions learnt during the course</li> </ul>

Table 4.49. Pilot Pre and Posttest Components

The experimental pretest deals with the theme of “website design and computer security” and its related issues as viruses and software recovery as a prerequisite to commence the experimental programme. Students were required to write an account of maximum 12 lines about the “characteristics of a good website” in which they use words, expressions and structures they already know. For guidance purpose, the teacher provides some key words for students to make use of them. However, the experimental posttest examines students’ reading and writing abilities as their most needed skills in ESP course. It consists of a set of different questions yet keeps the same theme of the pretest. The following table sums up the components of the posttest.

<i>Reading comprehension</i>	<p>Questions about the text “malware and viruses”</p> <p>Finding similar meanings of some key expressions from the text</p> <p>Synthesis questions</p>
<i>Writing</i>	<p>Writing a list of tips for novice web designer to avoid the common mistakes in website designing</p>

Table 4.50. The Components of the Experimental Posttest

### 4.3. Pilot Study

Following Ladico, et al. (2006: 135), “pilot test is a “dress rehearsal” when the researcher administers the survey [the experiment] to a representative group from the sample called the pilot group”. The pilot group, therefore, allows the researcher to generalize the treatment to the entire sample to ensure its validity. Likewise, Cohen, et al. (2007: 287) stress the importance of conducting a pilot study before embarking any experiment “to identify

possible snags in connection with any aspect of the investigation” besides having the experiment refined and elaborated in collaboration.

In the present study, the pilot group was formed after reckoning participants’ wants and needs to study English via Needs Analysis survey (see chapter three). To begin the pilot treatment, we designed a placement test as a pilot pretest to diagnose students’ proficiency level in language skills and functions. The pilot pretest layout encompasses reading comprehension questions followed by vocabulary and grammar practice and finally a piece of writing is required as a production phase in the test. To fulfill the requirement of ESP tests, the text represents the carrier content in the test to mirror the participants’ discipline, while the vocabulary, grammar and writing form the real content. After going through the pilot treatment, which was designed specifically to meet students’ needs in terms of skills, vocabulary and language functions, participants were tested again as a pilot posttest. Students were individually tested in a non-authorized documents test of one hour and half (1h: 30). The tests’ grading scale is noted on the question sheet so that students make appropriate decisions about their answers. The two tests’ scores were collected and put under statistical procedures to find out the difference in the two tests through measuring the Mean, the Variance and the Standard Deviation.

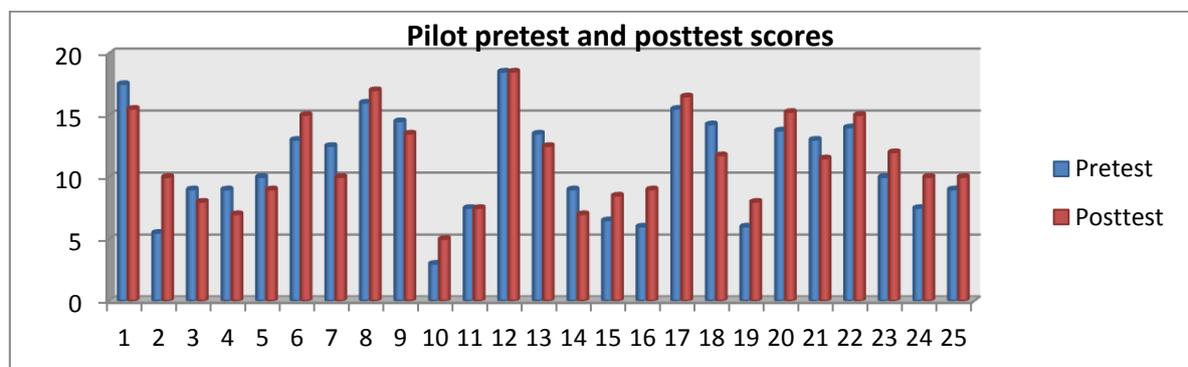
#### **4.3.1. Pilot Pretest and Posttest Scores**

After administering the pilot pretest and posttest to the pilot group (25 students), we obtained the following score values out of 20. For ethical reasons of research, the names appearing on table 51 are pseudo names of students who participated in the study. The pseudo name is constructed of two parts: “info” which stands for the word “Informatique”; the students’ discipline and students’ initials. For instance, “Info A.D”.

N	Students' names	Pretest	Posttest	Mean
01	Info A. D	17.5	15.5	16.5
02	Info B. Y	5.5	10	7.75
03	Info B. A	9	8	8.5
04	Info B. Ad	9	7	8
05	Info B. Z	10	9	9.5
06	Info B. F. E	13	15	14
07	Info B. N	12.5	10	11.25
08	Info B. Za	16	17	16,5
09	Info B. F	14.5	13.5	14
10	Info B. Ah	3	5	4
11	Info B. I	7.5	7,5	7.5
12	Info H. Y	18.5	18.5	18.5
13	Info H. M. Y	13.5	12.5	13
14	Info H. H	9	7	8
15	Info H. M	6.5	8.5	7.5
16	Info H. B	6	9	7.5
17	Info H. M. Ya	15.5	16.5	16
18	Info H. R	14.25	11.75	13
19	Info K. L	6	8	7
20	Info R. Ab	13.75	15.25	14.5
21	Info R. S	13	11.5	12.25
22	Info R. A	14	15	14.5
23	Info Z. Y	10	12	11
24	Info Z. O	7.5	10	8.75
25	Info S. E	9	10	9.5
<b>Sum of scores (<math>\sum x</math>)</b>		<b>274</b>	<b>283</b>	<b>278.5</b>
<b>Mean of scores (<math>\bar{X}</math>)</b>		<b>10.96</b>	<b>11.32</b>	<b>11.14</b>

Table 4.51: Students' Scores in the Pilot Pretest and Posttest

To present graphically the scores, the histogram is used.



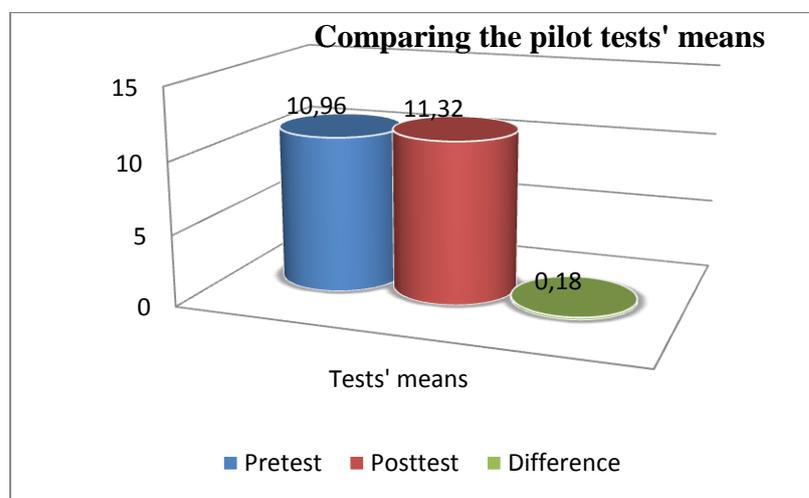
Graph 4.1. Histogram Representing Students' scores of the Pilot Pretest and Posttest

Table 4.51 indicates the considerable supremacy of the posttest scores over the pretest, which is expressed in terms of sum of scores (274 vs. 283). Statistical picture of how the participants have achieved in both tests, comparing the means of scores will certainly clarify the matter.

Tests	Pretest	Posttest	The difference in the means
Means	10.96	11.32	0.18

Table 4.52. Means of Scores in the Pilot Pretest-Posttest

These statistics are represented in the following graph.



Graph 4.2. The Pilot Tests' Scores Means Compared

According to the results displayed in table 4.52 and graph 4.2, we notice that participants scored in posttest better than in pretest with a difference in the means of 0.18, which leads us in a first interpretation to claim that this progress is a result of the web-based instructional treatment that participants had gone through during the first semester. The exposure to the online authentic material, the easy and comfortable communication between students and the teacher via e-mail, and the collaborative method of learning among other features of the web-based instruction allowed the participants to engage effectively in the course and receive immediate feedback in their mail box from the tutor in addition to the active role they had played as being vital agents and partners in the teaching/learning process. Therefore, they obtained better results in the posttest. The instructional advantages of the

treatment increases students' focus and efficacy, especially when integrating multimedia-based tasks and internet applications.

The participants' progress in the posttest reinforces the hypothesis set for the present study, which claims that the integration of web-based language teaching in ESP classes improves the performance of students and increases their motivation, hence helps them achieve better outcomes in different language skills.

#### **4.3.2. The Pilot Results: Analysis and Interpretation**

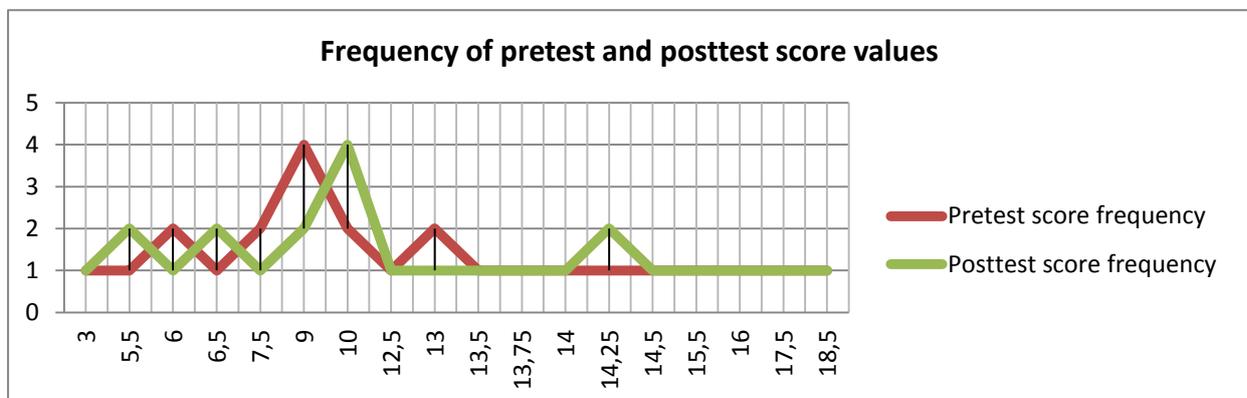
Any statistically- based research requires portraying how the participants performed on each test by means of “descriptive statistics” and “graphic representations” to “understand the logic behind experimental research” (Nunan 1999: 28). Descriptive statistics that can be applied in the pilot pretest-posttest study incorporates calculating the frequency distribution of scores in both tests, the variance, the standard deviation, and finally checking the validity of all the statistical results using the *t-test*. These statistics “are the most widely used measures in research reports and papers” (Calder and Sapsford 2006: 214).

Frequency distribution of the pretest and the posttest (the arrangement of score values from high to low and the frequency of each score value) is displayed in the following table.

Pretest		Posttest	
Score " $X_{pre}$ "	Frequency "F"	Score " $X_{post}$ "	Frequency "F"
03	01	05	01
05.5	01	07	02
06	02	07.5	01
06.5	01	08	02
07.5	02	08.5	01
9	04	09	02
10	02	10	04
12.5	01	11.5	01
13	02	11.75	01
13.5	01	12	01
13.75	01	12.5	01
14	01	13.5	01
14.25	01	15	02
14.5	01	15.25	01
15.5	01	15.5	01
16	01	16.5	01
17.5	01	17	01
18.5	01	18.5	01
<b>Sum of "F"</b>	<b>25</b>	<b>Sum of "F"</b>	<b>25</b>

Table 4.53. Frequency Distribution of Score Values in Pilot Tests

The frequency of score values are expressed in the following frequency polygon.



Graph 4.3. Frequency Polygon of Pilot Pretest and Posttest Scores

Table 4.53 and graph 4.3 reveal some statistical inferences about the score values in both tests in terms of the range of scores, the scores above and below the average, and the highest and the lowest score values. To start with the pretest, we observe the following.

- The score values in pretest range from 3 to 18.5 with the supremacy of the score 9
- 11 scores less the average 10 and 14 scores more than the average 10
- The scores 6, 7.5, 9, 10, 13 are the highest scores frequency while other scores have only one frequency in the pretest

As far as the posttest is concerned, table 53 reveals:

- The score values in posttest range from 5 to 18.5 with the supremacy of the score 10
- 9 scores below the average 10 and 16 scores above the average 10
- The scores 7, 8, 9, 10, 15 are the highest scores frequency while other scores have only one frequency in the posttest

#### **4.3.3. The Pilot Pretest: Statistical Considerations**

To ascertain the difference between the pretest and posttest performances in a detailed statistical depiction, we need to handle the quantitative data, chiefly through calculation of the mean, the variance and the standard deviation to check “to what extent the data are similar and the degree to which data differ” (Nunan 1999: 28)

##### **a. The mean**

The mean is the most frequently employed measure of similarity, which represents the average of a set of numerical data (numbers). It is symbolized in writing by  $\bar{X}$ . The formula of the mean is as follows:

$$\bar{X} = \frac{\sum Fx}{N}$$

$\bar{X}$  : Mean

$F_x$ : Score frequency

$N$ : Number of scores

$\Sigma$ : The sum

### b. The Standard Deviation

The standard deviation **SD** measures the dispersion of the mean i.e. “it gives the average distance of individual measurement observations from the group mean” (Fisher and Foreit, 2002), in order to compute the extent to which a set of scores varies in relation to the mean. The formula of this statistic is:

$$SD = \sqrt{\frac{\sum Fx^2 - \bar{X}^2}{N}}$$

The calculation of the Mean and *SD* of the pretest is shown in table 4.54.

Pilot Pretest			
Score “ $X_{pre}$ ”	Frequency “ $F$ ”	Frequency score $Fx$	Square of frequency score $Fx^2$
03	01	03	09
05.5	01	05.5	30.25
06	02	12	144
06.5	01	06.5	42.25
07.5	02	15	225
09	04	36	1296
10	02	20	400
12.5	01	12.5	156.25
13	02	26	676
13.5	01	13.5	182.25
13.75	01	13.75	189.06
14	01	14	196
14.25	01	14.25	203.06
14.5	01	14.5	210.25
15.5	01	15.5	240.25
16	01	16	256
17.5	01	17.5	306.25
18.5	01	18.5	342.25
<b>Sum of “<math>F</math>”</b>	<b><math>N=25</math></b>	<b><math>\sum Fx = 274</math></b>	<b><math>\sum Fx^2 = 3202</math></b>

**Mean**

$$\bar{X} = \frac{\sum Fx}{N} = \frac{274}{25} = 10.96$$

$$\bar{X}_{pre} = \mathbf{10.96}$$

**Standard Deviation**

$$SD_{pre} = \sqrt{\frac{\sum Fx^2 - \bar{X}^2}{N}} = \sqrt{\frac{3202 - 120.12}{25}}$$

$$= \sqrt{123.27}$$

$$SD_{pre} = \mathbf{11.10}$$

Table 4.54. Pilot Pretest Scores: the Mean and the Standard Deviation

#### 4.3.4. The Pilot Posttest: Statistical Considerations

The table below represents the calculations of the Mean and the Standard Deviation of the pilot posttest scores.

Posttest			
Score “ $X_{post}$ ”	Frequency “ $F$ ”	Frequency score $Fx$	Square of frequency score $Fx^2$
05	01	05	25
07	02	14	196
07.5	01	07.5	56.25
08	02	16	256
08.5	01	08.5	72.25
09	02	18	324
10	04	40	1600
11.5	01	11.5	132.25
11.75	01	11.75	138.06
12	01	12	144
12.5	01	12.5	156.25
13.5	01	13.5	182.25
15	02	30	900
15.25	01	15.25	232.56
15.5	01	15.5	240.25
16.5	01	16.5	272.25
17	01	17	289
18.5	01	18.5	342.25
<b>Sum of “<math>F</math>”</b>	<b><math>N=25</math></b>	<b><math>\sum Fx</math> <math>=283</math></b>	<b><math>\sum Fx^2= 3734</math></b>

**Mean**

$$\bar{X} = \frac{\sum Fx}{N} = \frac{283}{25} = 11.32$$

$\bar{X}_{post} = 11.32$

**Standard deviation**

$$SD_{post} = \sqrt{\frac{\sum Fx^2 - \bar{X}^2}{N}} = \sqrt{\frac{3734 - 128.14}{25}}$$

$$= \sqrt{144.23}$$

**$SD_{post} = 12.00$**

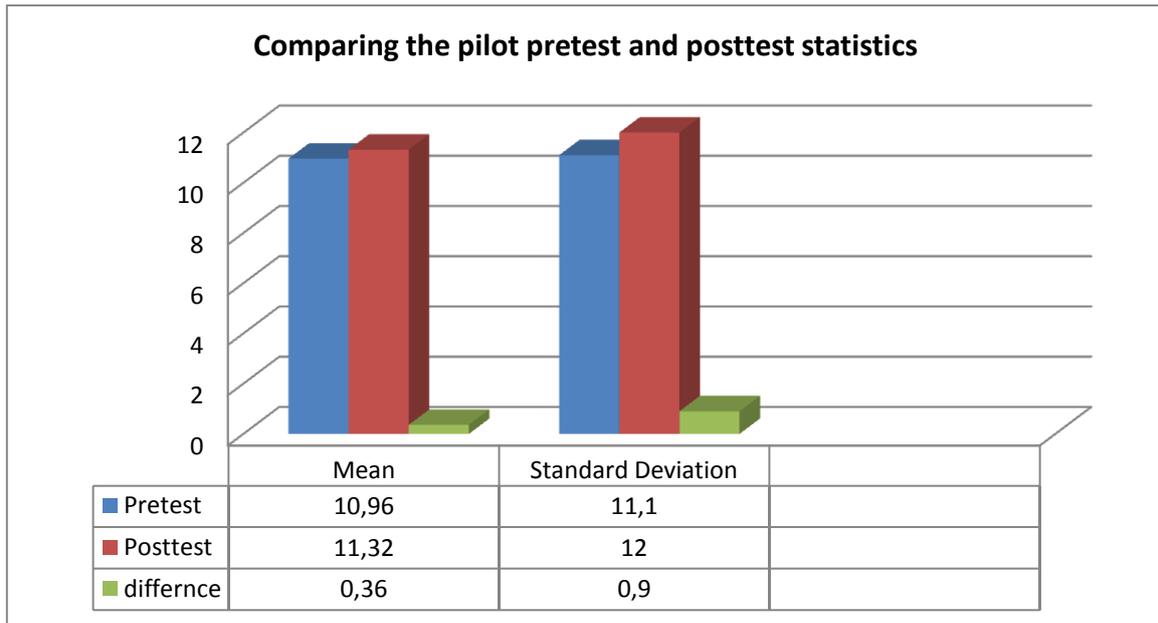
Table 4.55. Pilot Posttest Scores: The Mean, and the Standard Deviation

Comparing the two tests’ descriptive statistics portrays the expected differences between them in table 4.56 and graph 4.4 respectively.

Descriptive statistics	Pretest	Posttest	The difference
Mean	10.96	11.32	0.36
Standard deviation	11.10	12.00	0.90

Table 4.56. Pilot Pretest and Posttest' Mean and Standard Deviation Compared

To represent graphically the above statistics, a histogram is used to show the difference in the Mean and Standard Deviation of both tests.



Graph 4.4. Pilot Pretest and Posttest Statistics Compared

According to the results presented in table 4.56 and graph 4.4, one can argue that web-language instruction (the treatment which the participants had gone through) resulted in better achievement of the participants in the posttest. The difference in the means (0.36) and the standard deviation (0.90) of both tests are evidence of the participants' improvement in their tests' scores. The differences in the statistical descriptions further reinforce the research hypothesis which claims that web-based instruction enhances students' performances in language skills.

#### 4.4. Final Experimental Study

After piloting the programme in a class of 25 participants during the first semester, we received valuable feedback from students via course evaluation forms submitted for them at

the end of the experimental programme as a summative evaluation of the course. A number of amendments, revision and reconsideration at different levels (pedagogical and structural) have been made to prepare for the conduction of the final study with the entire sample (50 students). The purpose of the pilot study is to permit the programme for generalization and enable “the researcher to establish reliability and validity” (Ladico, et al. 2006: 109). During and at the end of the pilot study, participants have persistently put forward some undeniable remarks, comments, and suggestions to improve the structure, the content and the delivery of the course. These suggestions that made an afterward significant difference in the well-running of the course came out consequently as a sign of participants’ engagement and interest in the programme.

To illustrate, participants have proposed shortening the length of *youtube* videos (maximum 5 minutes) or breaking up the lengthy trucks into separate short clips to allow better understanding of the discourse content and enable students to follow the speech rate at comfortable pace. The selection of internet texts was partially revised and amended upon the participants’ recommendations, notably at the level of text difficulty, the jargon level and vocabulary selection. As far as writing is concerned, a new web-based task was added to the programme which is the web assignments in which the teacher addresses certain writing issues (paragraphing, spelling, generating of ideas, etc) to overcome students’ writing impediments. The team work and the collaborative tasks were also reinforced based on students’ preference due to the remarkable proficiency level disparity between students in the same class, so that they support each other and create a contesting atmosphere. Some participants went further to suggest creating a website for the class in which students will have a complete access to the course lectures, activities and resources and enjoy a complete online instruction based on asynchronous learning; however, the pedagogical and administrative constraints obstructed the idea.

As in the pilot study, the participants commenced the treatment with a pretest for initial examination of their language level similarity. The pretest was structurally a writing-based task of one hour and half that involves other sub-skills (grammar and vocabulary) and the posttest is an adjusted reading-comprehension version of the pretest with a range of questions requiring vocabulary knowledge and writing competency. The participants, then, were exposed to the intended treatment that deploys the integration of web tools and internet materials in ESP course. The criteria of ESP course was deliberately taken into instructional consideration such as the specialty-based content (carrier content) and the academic and professional needed language functions for students' discipline (computer science), in addition to the linguistic features that serve well the requirements of the course. The utilization of web tools (e-mail, videos, online encyclopedias, internet documents, etc) was purposefully limited by the lesson objectives and the thematic nature of the unit. To emphasize the principle of learner-centered approach of ESP course, students teamed up as active partners in the programme through their comments, suggestions and feedback on the content, material selection and classroom management.

At the end of the intervention, participants' scores in both tests (pretest and posttest) were collected and analyzed statistically and represented graphically using the experimental research conventional statistical descriptions, namely the Mean, Standard Deviation, T-test and hypothesis testing. To begin with, table 57 shows the participants' scores of final pretest and posttest and their Mean followed by a histogram picturing the scores of each participant.

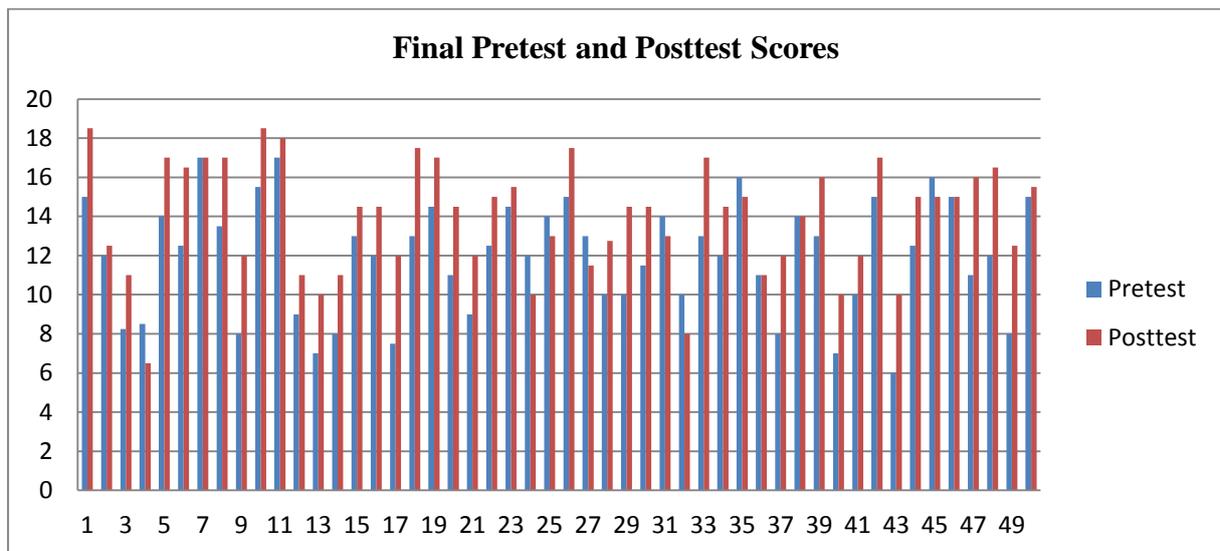
#### **4.4.1. The Final Pretest and Posttest: Students' Scores**

The scores shown in the table below are obtained in the pretest and posttest respectively. To remind, the names appearing in table 4.57 are pseudo names of participants which are composed of "Info" that stands for "Informatique" and students' initials

N	Students' names	Pretest	Posttest
01	Info A. D	15	18.5
02	Info B. Y	12	12,5
03	Info B. F	8.25	11
04	Info B. Ad	8.5	6.5
05	Info B. F. E	14	17
06	Info B. N	12.5	16.5
07	Info B. Za	17	17
08	Info B. F	13.5	17
09	Info B. I	8	12
10	Info H.Y	15.5	18.5
11	Info H. M. Y	17	18
12	Info H. H	9	11
13	Info H. Ml	7	10
14	Info H. B	8	11
15	Info H. M Ya	13	14.5
16	Info H. R	12	14.5
17	Info K. L	7.5	12
18	Info R. A	13	17.5
19	Info R. S	14.5	17
20	Info R. A	11	14.5
21	Info Z.Y	9	12
22	Info Z. O	12.5	15
23	Info S. I	14.5	15.5
24	Info S. S	12	10
25	Info S. H	14	13
26	Info S. N. E	15	17.5
27	Info S. A	13	11.5
28	Info S. M. M	10	12.75
29	Info S. Ab	10	14.5
30	Info S. I	11.5	14.5
31	Info S. Am	14	13
32	Info S. D	10	8
33	Info T. A	13	17
34	Info T. L	12	14.5
35	Info A. M	16	15
36	Info A. S. E	11	11
37	Info A. H	8	12
38	Info A. Ab	14	14
39	Info F. O	13	16
40	Info K. L	7	10
41	Info K. A	10	12
42	Info K. Y	15	17
43	Info L. S	6	10

44	Info M. M. R	12.5	15
45	Info M. A	16	15
46	Info M. R	15	15
47	Info M. F	11	16
48	Info M. K	12	16,5
49	Info M.Re	8	12.5
50	Info N. I	15	15.5
<b>Sum of scores <math>\sum x</math></b>		<b>596,25</b>	<b>697.75</b>
<b>Mean of scores (<math>\bar{X}</math>)</b>		<b>11.92</b>	<b>13.95</b>

Table 4.57. The Final Pretest and Posttest: Students' Scores



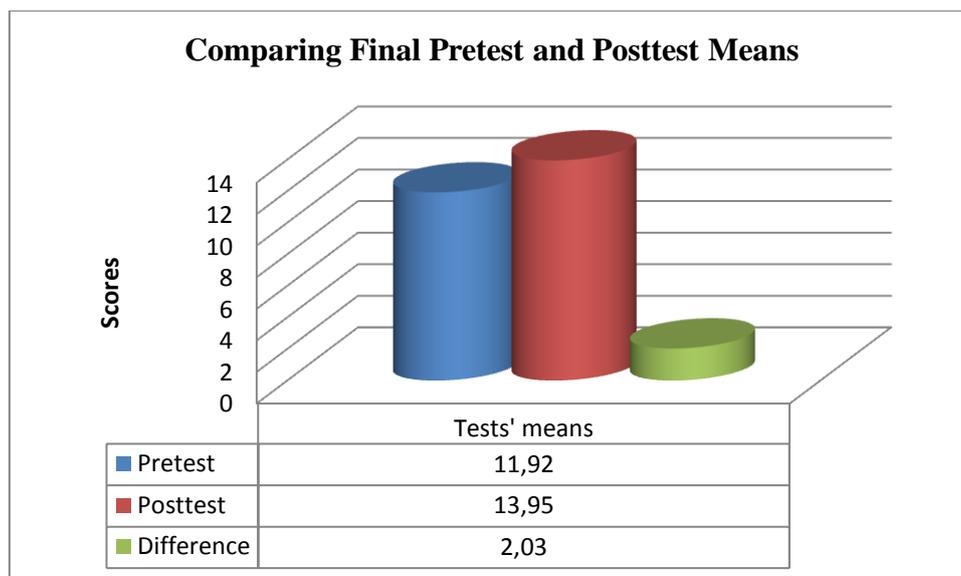
Graph 4.5. Final Pretest and Posttest Scores

The instant interpretation of table 4.57 and graph 4.5 suggests noticeable progress in participants' scores from pretest to posttest, which is expressed in the sum of scores (**596.25 vs. 697.75**) and the difference in the means (**11.92 vs. 13.95**). Table 58 depicts how the participants achieved in both tests by comparing statistically the means of scores.

Tests	Pretest	Posttest	The difference in the means
Means	11.92	13.95	2.03

Table 4.58. The Final Pretest-Posttest: Means of Scores

The overall picture of the Means of Scores in the Final Pretest-Posttest Study is represented graphically in graph 4.6.



Graph 4.6. The Final Pretest and Posttest Means Compared

According to the results displayed in table 4.56 and graph 4.6, we notice the significant difference in participants' scores from pretest to posttest, which is expressed by the difference in the score means (2.03) that initially indicates participants' progress in the test performance. One may immediately make preliminary inferences on the participants' better achievement to cautiously claim that it is due to the amended web-based instructional treatment that participants had gone through during the second semester.

To explain the overscoring in the posttest, it is therefore necessary to acclaim the role of the intervention and the advantages of the web-based teaching in ameliorating students' scores in the posttest. The integration of short *youtube* videos about the theme of the unit led students to be familiar with the vocabulary used in a particular situation to express certain function, in addition to augmenting their vocabulary knowledge and its diverse usages. It is also necessary to pay tribute to the role of web assignments in provoking students' writing ability and improving their writing techniques through the different instructions that each assignment is accompanied with. Likewise, the utilization of online specialized dictionaries and encyclopaedias increases the amount of vocabulary items that students are expected to look up and check their spelling, meaning and use. Moreover, the internet texts for reading

comprehension received remarkable praise and appreciation from students as being authentic, updated and specialty-based content which permit them to be acquainted with a wide range of sentence structures, grammar usages and above all the up-to-date information presented in each of the selected text. The other outstanding factor in assisting students to keep pace with the entire course package is the trouble-free communication and effortless interaction between the teacher and the entire class via mail communications, which contributed to the well-management and delivery of the course.

The participants' better scoring in the posttest initially confirms the hypothesis set for the research, which claims that the integration of web-based language teaching in ESP classes improves students' achievements.

#### **4.4.2. Analysis and Interpretation of the Results**

As in the pilot study, the descriptive statistics that can be applied in the final pretest-posttest study necessitates calculating the frequency distribution of scores in both tests, the variance, the standard deviation, and finally checking the validity of all the statistical results using the *t-test*.

Frequency distribution of the pretest and the posttest scores is shown in the table 4.59.

Pretest		Posttest	
Score “X <sub>pre</sub> ”	Frequency “F”	Score “X <sub>post</sub> ”	Frequency “F”
6	1	6.5	1
7	2	8	1
7.5	1	10	4
8	4	11	4
8.25	1	11.5	1
8,5	1	12	5
9	2	12.5	2
10	4	12.75	1
11	3	13	2
11.5	1	14	1
12	5	14.5	6
12.5	3	15	5
13	5	15.5	2
13.5	1	16	2
14	4	16.5	2
14.5	2	17	6
15	5	17.5	2
15.5	1	18	1
16	2	18.5	2
17	2		
<b>Sum of “F”</b>	<b>50</b>	<b>Sum of “F”</b>	<b>50</b>

Table 4.59. The Final Pretest and Posttest: Frequency Distribution of Score Values

To assort the required statistical procedures for the above score values, one needs to determine the range of scores in both tests, the highest and the lowest score values, and the scores above and below the average. The purpose of highlighting these elements is to make relevant assumptions and implications of the score values in relation to the experimental treatment that participants had experienced. To start with the pretest, we observe the following:

- The score values in pretest range from 6 to 17 with the supremacy of the scores (12, 13 and 15)
- 12 scores less than the average 10 and 38 scores more than the average 10
- The scores 10, 12, 13, 14, 15 being the five highest score frequency

As far as the posttest is concerned, we observe the following points.

- The score values in posttest range from 6 to 18.5 with the supremacy of the score (17)
- Only 2 scores are below the average 10 and 48 scores above or equal the average 10
- The scores 12, 14.5, 15, 17 have the highest score frequency

#### **4.4.3. The Final Pretest: Statistical Considerations**

Dealing with the quantitative data of the final pretest through calculating the Mean, the Variance and Standard Deviation helps us to measure the degree of difference and similarity of pretest and posttest scores. Descriptive statistics are used to “reduce raw data to a more meaningful form” (Yount 2006: 3). They are often used in quantitative studies to validate the numbers shown in the table or the figure as Sapsford (2006. 189) recommends “never let the figures speak for themselves”; therefore, analyzing the scores statistically allows better understanding of the logic behind the numbers.

The calculation of the Mean and *SD* of the pretest is presented in table 4.60.

Pretest			
Score “X <sub>pre</sub> ”	Frequency “F”	Frequency score F <sub>x</sub>	Square of frequency score F <sub>x</sub> <sup>2</sup>
6	1	6	36
7	2	14	196
7.5	1	15	225
8	4	32	1024
8.25	1	8.25	68.06
8.5	1	8.5	72.25
9	2	18	324
10	4	40	1600
11	3	33	1089
11.5	1	11.5	132.25
12	5	60	3600
12.5	3	37.5	1406.25
13	5	65	4225
13.5	1	13.5	182.25
14	4	56	3136
14.5	2	29	841
15	5	75	5625
15.5	1	15.5	240.25
16	2	32	1024
17	2	34	1156
6	1	6	36
Sum of “F”	N=50	∑F <sub>x</sub> = 603.75	∑F <sub>x</sub> <sup>2</sup> = <b>26202.31</b>

**Mean**

$$\bar{X} = \frac{\sum Fx}{N} = \frac{603.75}{50} = 12.07$$

$$\bar{X}_{pre} = 12.07$$

**Standard Deviation**

$$SD_{pre} = \sqrt{\frac{\sum Fx^2 - \bar{X}^2}{N}} = \sqrt{378.36}$$

$$SD_{pre} = 19.45$$

Table 4.60. Frequency of Scores, the Mean, and the Standard Deviation of the Final Pretest Scores

**4.4.4. Final Posttest: Statistical Considerations**

Table 4.60 demonstrates the score frequency, the Mean, and the standard deviation of the posttest scores.

Posttest			
Score “X <sub>post</sub> ”	Frequency “F”	Frequency score F <sub>x</sub>	Square of frequency score F <sub>x</sub> <sup>2</sup>
6,5	1	6,5	42,25
8	1	8	64
10	4	40	1600
11	4	44	1936
11,5	1	11,5	132,25
12	5	60	3600
12,5	2	25	625
12,75	1	12,75	162,56
13	2	26	676
14	1	14	196
14,5	6	87	7569
15	5	75	5625
15,5	2	31	961
16	2	32	1024
16,5	2	33	1089
17	6	102	10404
17,5	2	35	1225
18	1	18	324
18,5	2	37	1369
Sum of “F”	N= 50	∑F <sub>x</sub> = 697.75	∑F <sub>x</sub> <sup>2</sup> = <b>38624.06</b>

**Mean**

$$\bar{X} = \frac{\sum Fx}{N} = \frac{697.75}{50} = 13.95$$

$$\bar{X}_{post} = 13.95$$

**Standard Deviation**

$$SD_{post} = \sqrt{\frac{\sum Fx^2 - \bar{X}^2}{N}} = \sqrt{577.88}$$

$$SD_{post} = 24.03$$

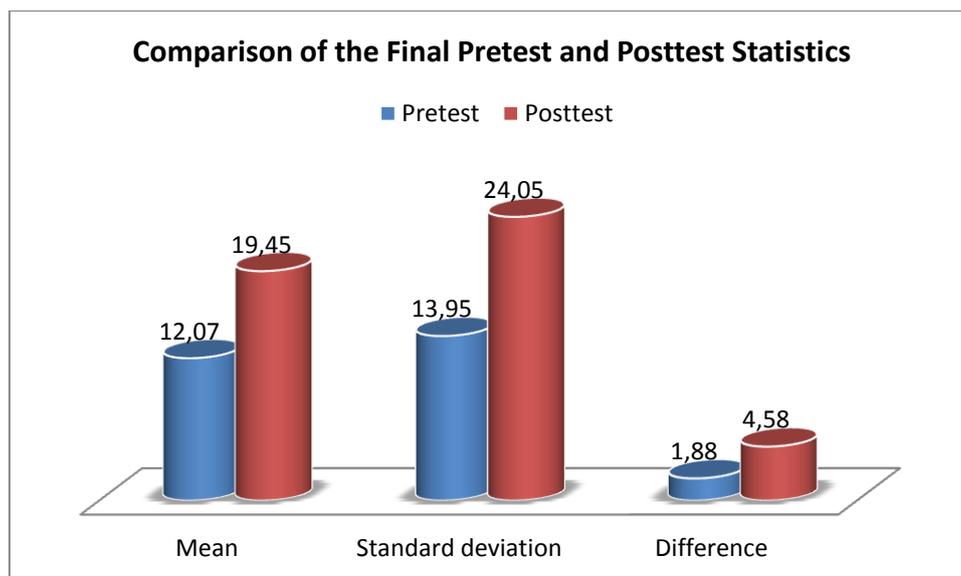
Table 4.61. The frequency of Scores, the Mean, and the Standard Deviation of the Final Posttest Scores

The comparison of the two tests’ descriptive statistics reveals the difference between the pretest and the posttest Mean and Standard Deviation.

Descriptive statistics	Pretest	Posttest	The difference
Mean	12.07	13.95	1.88
Standard deviation	19.45	24.03	4.58

Table 4.62. Comparison of the Final Pretest and Posttest’ Mean and Standard Deviation

To represent graphically the above statistics, a histogram is used to show the difference in the Mean and Standard Deviation of both tests.



Graph 4.7. Comparison of the Final Pretest and Posttest Mean and Standard Deviation

The results displayed in table 4.61 and graph 4.7 suggest that web-language teaching (the treatment which the participants had gone through) has slightly increased the participants' scores in the posttest. However, the differences in the Mean and the Standard Deviation are not highly remarkable to the extent to claim that the intervention has greatly improved students' performance. Meanwhile, one should undeniably state the impact, even though not exalted, that the treatment had left on students better scoring which is expressed in the noticeable progress of the majority of the participants. To confirm statistically this slight, but irrefutable progress in students' performance, it is therefore required to seek extra descriptive statistics for better consolidation of results, namely through calculating the t-test.

#### 4.4.5. T-test Calculation

The **t-test** is considered to be the most suitable test to compare two means. It is used to find out whether there are statistically significant differences between two groups or two tests. To calculate the **t** value, the following formula needs to be applied (Cohen, et al. 2007: 543):

$$t = \frac{\text{sample(or test)one mean} - \text{sample (or test)two mean}}{\text{Standard Error of the difference in means (SE)}}$$

To calculate the Standard Error (*SE*), we need to apply the following formula:

$$SE = \frac{SD}{\sqrt{N}}$$

**SD:** Standard Deviation

**N:** The number of the sample, which is  $N=50$

We need to consider also these statistics:

$$\begin{aligned}\bar{X}_{post} &= 13.95 \\ \bar{X}_{pre} &= 12.07 \\ SD_{post} &= 24.03 \\ SD_{pre} &= 19.45\end{aligned}$$

So,

$$SE = \frac{SD}{\sqrt{N}} = \frac{24.03 - 19.45}{\sqrt{50}} = \frac{4.58}{7.07} = 0.64$$

$$SE = 0.64$$

Standard Error of the difference in means is **0.64**

Applying the above t-test formula, we obtain the following:

$$t - test = \frac{\bar{X}_{post} - \bar{X}_{pre}}{SE} = \frac{13.95 - 12.07}{0.64} = \frac{1.88}{0.64} = 2.93$$

$$t = 2.93$$

- **Degree of Freedom**

Following Brown (1995:167), “the degree of freedom (*df*) for the t-test of independent means is the first sample size minus one plus the second sample size minus one”.

It helps to find the critical value for “t”.

$$\begin{aligned}df &= (N_1 - 1) + (N_2 - 1) \\ &= (50 - 1) + (50 - 1) = 98 \\ df &= 98\end{aligned}$$

- **Alpha Decision Level**

“The language researcher should once again set the alpha decision level in advance. The level may be at  $\alpha < .05$  or at the more conservative  $\alpha < .01$ , if the decisions must be more sure” (Brown 1995:159).

In the present pretest and posttest studies, we decided to set alpha at  $\alpha < .05$  which means only 05% chance of error can be tolerated. The test is directional (tailed) because there is a theoretical reason and a sound logic to expect one mean to be higher than the other (web-based instructional treatment). Having a one-tailed test means predicting that the group will score more highly in the posttest than the pretest. It is consequently opted for because “it is stronger than the two tailed test as it makes assumptions about the population and the direction of the outcome”(Cohen, et al. 2007: 504)

- **Critical Value**

Since alpha is set at  $\alpha < .05$  for a one-tailed decision,  $df = 98$  and the corresponding critical value for “ $t$ ”, in Fisher and Yates’ table of critical values, is **1.67**, then we get  $t_{obs} > t_{crit} (2.93 > 1.67)$ .

- **Hypothesis Testing**

Now, we have collected in table 63 the necessary information for testing the hypothesis.

**Statistical hypotheses:**  $H_0 : \overline{X}_{post} = \overline{X}_{pre}$

$H_1 : \overline{X}_{post} > \overline{X}_{pre}$

The null hypothesis  $H_0$  means that there is no statistically significant difference between the means of the group in the pretest and posttest. The alternative hypothesis  $H_1$  suggests that there is statistically significant difference between the means in the pretest and posttest.

**Alpha level:**  $\alpha < .05$ , one-tailed (directional) decision.

**Observed statistics**  $t_{obs} = 2.93$

**Critical statistics:**  $t_{crit} = 1.67$

**Degree of freedom:**  $df = 98$

Table 4.63. Hypothesis Testing Rule

#### 4.4.6. Statistical Significance and the Size Effect of the Tests

Since the observed statistics is greater than the critical value (2.93)1.67), the null hypothesis  $H_0$  is not supported at  $P < .05$ . Having rejected the null hypothesis, then the alternative hypothesis  $H_1$  is automatically accepted. This means that there is only 05% probability that the observed mean difference:  $\overline{X}_{post} - \overline{X}_{pre}$  (13.45)12.66) occurred by chance, or a 95% probability that it was due to other factors than chance factors. The null hypothesis is rejected which means that we are 95% sure that the relationship between the dependent variable “ $D$ ” (the posttest scores) and the independent variable “ $ID$ ” (web-based instructional treatment) did not occur by chance. Ergo, we are in a position to support the causal alternative hypothesis  $H_1$  which suggests that students’ better output is affected by the instructional input (the web-based treatment).

The statistical significance of the tests results is numerically proved which indicates that “chance is an unlikely explanation” (Kirk 1999, Quoted in Cohen, et al. 2007: 515). However, “the blunt edge of the statistical significance” (*ibid*, 521) does not measure the effectiveness of the treatment and is seen as “an unacceptable index of effect” (*ibid*, 520). Therefore, the researcher needs to ascertain what is called “the effect size” of the treatment. For a paired sample t-test (it assumes that the same group deals with two different points in time about the same variable (*ibid*, 522)) the effect size (Eta squared) is calculated by the following formula:

$$\text{Eta squared} = \frac{t^2}{t^2 + (N1 - 1)} = \frac{8.58}{8.58 + 49} = \frac{8.58}{57.58} = 0.14$$

The effect size is **0.14**

The corresponding effect of this value (0.14) from Cohen guidance (1988) indicates that there is a very large effect of the input (*X*) on the output (*Y*), in which the input is the web-based instructional treatment and the output is the students’ scores in the posttest. Hence, the effect size statistically indicates the substantial difference between the scores of the pretest and the posttest which is due to the exposure to an instructional manipulation designed to find out the impact of integrating web-based teaching in ESP class on students’ performance in language skills’ tests.

## CONCLUSION

During the period of the web-based instructional treatment, participants had been exposed to authentic material, online resources and diverse internet applications to ascertain the effect of such treatment on ESP students' achievement. The noticeable progress of the participants in the posttest has statistically proved the advantages of the web-based teaching in enhancing the ESP students' performance. Ergo, the null hypothesis is rejected at an alpha level  $P > .05$  which denotes that the output of the treatment were a mere result of the treatment rather than other chance factor, which in turn has been eliminated by the calculation of the size effect. Confirming the alternative hypothesis reinforces the assumption claiming the substantial impacts of the web-based manipulation as an innovative teaching media in ESP arena. It is worth mentioning that the pilot study has enormously contributed in the administration and conduction of the final version of the treatment through students' feedback and suggestions.

## CHAPTER FIVE

### STUDENTS' EVALUATION OF THE PROGRAMME EFFECTIVENESS

#### INTRODUCTION

Students' evaluation of programme effectiveness has become a paramount source of data for teachers to make judgments on the course running and determine the success or failure of their instruction. The students' ratings, even though they are not the only informants of teaching effectiveness, are seemingly instruments among others to gauge the value of the course and the extent of the instructor's accomplishment in bridging the objectives of the course to the needs of the learners. The present chapter first overviews the programme evaluation process in relation to ESP arena. It then describes the present students' course evaluation and highlights its significance. Last, it discusses the chief findings for further recommendations.

#### 5.1. Students' Evaluation of the Programme Effectiveness

Evaluation generally refers to a series of procedures carried out on different instructional levels to ascertain the worth of a particular programme and improve its quality. It is "a tool which can be used to help teachers judge whether a curriculum or instructional approach is being implemented as planned, and to assess the extent to which stated goals and objectives are being achieved" (Fleishman and Williams 1996). Likewise, Richards and Schmidt (2002: 188) view evaluation as a process which is "related to decisions about the quality of the programme itself and decisions about individuals in the programme" since there is a powerful and durable bond between effective teaching and students' outcomes (Mathers, Oliva and Laine 2008). Johnstone (2005: 2) also defined evaluation as "the means by which a course or a curriculum change can be monitored to see if, in fact, it is what it claims to be and if it achieves, in students, the intended outcomes".

As far as students' evaluation is concerned, Little, Goe and Bell (2009) consider it as a form of questionnaire that requires students to measure and judge different aspects of teaching including course content, classroom practices and teacher behaviour to get their feedback. Moreover, Boggino (2009) sees that evaluation of teaching effectiveness has become beneficial and inevitable in the sense that it helps teachers make suitable instructional decisions that fit learners' potentials and keep up with the outcomes they achieve for better improvement of output. Hence, the purpose of evaluating programmes is to "improve educational efforts" (Taylor-Powell, Steele and Douglass 1996: 3) and empower instructors to improve learners' performance and make appropriate adjustments regarding the objectives, materials and programme sequence besides obtaining an ongoing feedback from students to better the teaching standards (McNamara 2002). In this context, Keane and Labhrainn (2005) believe that the effectiveness of the evaluation leads to relevant changes in a course or programme. It also measures the extent of the programme implementation and objectives attainment to report a further amendment in the instruction.

Although it is not the only and the best tool, the use of students' evaluation as an instrument to appraise the success or failure of any language instructional programme has been increasingly applied in many educational institutions over the world as primary determinants of the teaching effectiveness (Emery, Kramer and Tian 2003; Keane and Labhrainn 2005; Marsh and Roche 1997). To illustrate, Murray (2005: 1) report that students' evaluation of teaching has been practised in North American institutions for over 40 years. The controversy caused by students' evaluation of teaching among academics has not held back the educational institutions and tutors on an individual level to keep conducting it despite its limitations. He expressed the situation in North American countries saying:

Student evaluation of teaching got accepted and spread like wildfire across North America [...] according to surveys I have seen, something like 70-75% of faculty members support the use of student evaluations.

This is a sound evidence of the worth of such an evaluation in pursuing the perfection in education and improving the excellence of the instruction to hopefully attain the desired objectives. The consent of the parties involved in the teaching enterprise on the use of students' ratings in evaluating programmes provided legitimate reasons to be a widespread procedure to assess teachers' performance, course running and students' outcomes.

Chen and Hoshower (2003: 71) also appreciated students evaluation and considered it as "a routine in most colleges and universities" to promote and assure the quality of course delivery and obtain direct feedback to teachers. They report three main purposes of students evaluation: (1) to offer a formative feedback to develop the instruction, course content and structure; (2) to set out a measure of teaching effectiveness for decision making; and (3) to provide necessary information to students about the courses and the teachers. In the same context, Keane and Labhrainn (2005: 5) summed up the aims of any programme evaluation in the following points.

- As a formative and diagnostic feedback mechanism (for use, for example, in efforts to improve teaching and courses);
- as a summative feedback mechanism (for use, for example, in personnel and administrative decision-making);
- as a source of information for prospective students when selecting course units and lectures; and
- as a source of data for research on teaching.

The teaching programme will be more valuable if learners make relevant ratings on its usefulness and convenience in preparing them for their end targets. Learners' evaluation is also regarded as a genuine reflection of the instructor's performance, learners' outcomes and the worth of the instruction they receive. Accordingly, teachers are requested to reflect on the students' ratings to make the relevant changes in the programme via considering their beliefs

and attitudes towards goals, strengths and weaknesses of the course. To sum up, evaluation is seen as a process to assess the programme in terms of the level of implementation and objectives attainment. Metz (2007: 4) expresses well this idea by stating that:

Process evaluations assess whether an intervention or programme model was implemented as planned, whether the intended target population was reached, and the major challenges and successful strategies associated with programme implementation.

In the case of ESP courses, the evaluation has taken a more complex version for having a number of variables that may affect its parameters and results; therefore, “it has accordingly become much more difficult” (Hatam and Shafiei 2012).

## **5.2. ESP Course Evaluation**

As far as ESP teaching is concerned, evaluation is seen as an essential ingredient in the course development which provides responses to certain questions related mainly to the course effectiveness, the attainment of objectives and the appropriate application of teaching materials. In this sense, Dudley-Evans and St John (1997: 129) claim:

Evaluation in ESP is concerned with the effectiveness and efficiency of learning; with achieving objectives (assuming that the Needs Analysis has set valid objectives). Has learning been maximized? Have resources been optimally employed?

Therefore, programme evaluation in ESP instruction is done to make out the extent of meeting learners’ target goals and make relevant inferences about the well-functioned instructional components and the ill-functioned ones as well. The significant role of NA in the evaluation process lies in sensing learners’ objectives and needs at early stages of the course and setting out appropriate measurements to fulfil them. Furthermore, ESP course evaluation regards NA as the inevitable prior procedure that must be conducted to justify the existence of all the course elements via the learner’s thoughtful and diagnostic eye. Setting up clear and precise needs and objectives right from the beginning does also ease the burden of thorough evaluation for the instructors and the other co-partners in the entire ESP enterprise.

Hutchinson and Waters (1987: 152) consider evaluation in ESP as “the starting point for any necessary revisions of the course, and may also help to guide the design of other similar courses” that may serve alike purpose in approaching the desired academic or professional / occupational requirements. They, in the same sense, declare that “Evaluation of the learners reflects not just the learners’ performance but to some extent the effectiveness or otherwise of the course too” (152). Consequently, any pitfall in the course that learners may signal in the evaluation is often referred to as a weakness in the course design.

Similarly, Momeni and Rasekh (2012) view ESP course evaluation as a must-have phase that takes both summative and formative form and is carried out to make critical decisions on “curriculum changes, documenting events, measuring cost effectiveness, estimating the needs for a teaching staff, identifying unintended outcomes and clarifying the objectives” (220). Evaluation, hence, exists to attain productive feedback that leads to a well-revised and worked up course aiming at coping with certain learning tasks. Dudley-Evans and St John (1998: 128) consider it as a source of input to be “fed into repeated versions or related activities” since it provides judgments and qualities of successful and less successful aspects in the course.

### **5.3. Aspects of ESP Course Evaluation**

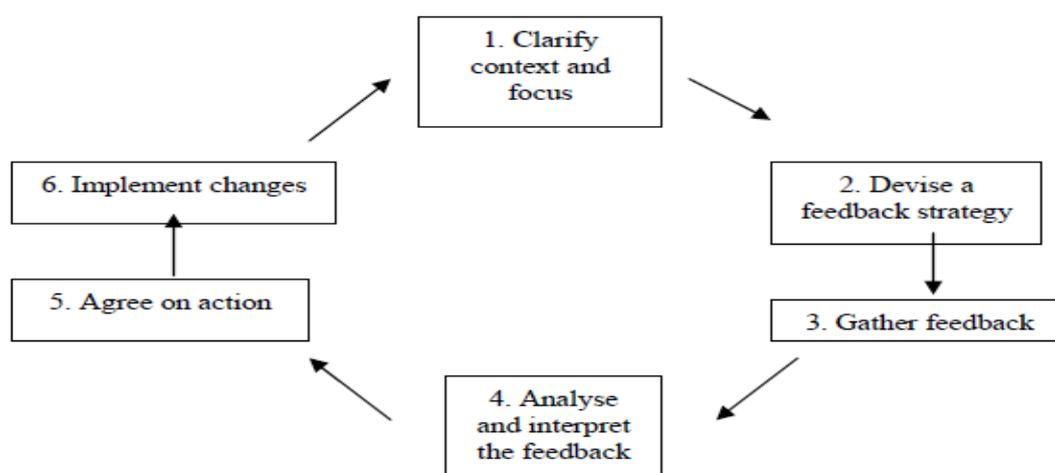
It is often recognised that every component in the course is to be evaluated as to syllabus content, objectives, teaching methods, classroom practices, testing and assessment criteria, learning materials and administrative arrangements. This is due to the fact that “evaluation showcases your [the teacher] achievements and helps to make your programme better” (Pope and Jolly 2008). Meanwhile, who evaluates, how and when the evaluation may take place are amid the predestined enquiries to be responded to in the course of ESP evaluation. Following Hutchinson and Waters (1987: 152), there are four main aspects of ESP course evaluation that should not be overlooked. These are inquiries as:

1. What should be evaluated?
2. How can ESP course be evaluated?
3. Who should be involved in the evaluation?
4. When (and how often) should evaluation take place?

To begin with, the primary reason for conducting an evaluation in ESP is concerned with “the effectiveness and efficiency of learning” (Dudley-Evans and St John, 1998: 129) in the sense of meeting learners’ needs as “language learners and language users” (Hutchinson and Waters 1987). Ergo, if both aforementioned needs are not met, then it turns out to be necessary to search the sources of such failure, whether it is due to the course design or due to the course application. In both cases, evaluation fetches the grounds of the imperfection in the syllabus, the materials, the teaching and learning techniques, the testing procedures, the logistical arrangements or the course evaluation system (*ibid*). So, the answer to “what should be evaluated?” is that almost everything needs to be evaluated, even though it is “unrealistic” (Dudley-Evans and St John 1998) to simply review decisions and make constructive changes to amend versions of the course. To briefly respond to the inquiry, evaluation might focus on the materials used, the classroom activities, the out-of- class support, the course design, methodologies, the role of assessment, that is any aspect of the teaching-learning situation (*ibid*: 129)

To do such exhausting task requires the involvement of the institution, tutors, administrators and most importantly learners besides everyone of far or near bound to the course for fair, comprehensive and well-managed evaluation that leads to fruitful decisions. Yet, a constructive evaluation is not remote of serious constraints that are of the ability to collect valid information and the ability to honestly use them without concerning one’s pre-judgments and worrying of others’ annoyance (Hutchinson and Waters, 1987).

As far as the second question in ESP evaluation that inquires the ways in which ESP course can be evaluated is concerned, practitioners and instructors often use a wide range of techniques according to the given teaching scenarios as simulations, suggestions, questionnaires, discussions and interviews, observations and checklists. Students' outcomes in assignments, study projects and standardized test are also dependable sources for teachers to evaluate their programmes (Fenwick 2001). Even though there is no particular evaluation recipe which can be relied on as being "the good" method due to the various interpretations of the term "evaluation" (Taylor-Powell, Steele & Douglah 1996), most programme evaluations practise a cyclical process that begins with data collection and ends with implementation of findings. According to Hutchinson and Waters (1987), evaluation starts with data collection, results analysis and then findings' discussion with all partners involved in the operation. This process is eventually accompanied with a report containing a detailed depiction of conclusions that lead to further suggestions to improve the quality of the course by promoting the strengths and precluding the weaknesses. Hounsell (2003), in Keane and Labhrainn, (2005) suggested a more elaborated evaluation process that encompasses six stages as diagrammed in the cycle below.



Graph 5.8. The Evaluation Cycle Diagram (Hounsell 2003, cited in Keane and Labhrainn 2005)

The evaluation cycle Diagram begins with the identification of the objectives and the setting to set the adequate strategy for gathering data. Analysis and interpretation of results lead to a decision for improvement in the quality of instruction.

When it comes to the bodies involved in the evaluation process, it is accordingly clear that there are inside and outside parties in the ESP enterprise that contribute in the useful feedback of the instruction. They often vary according to their “own interests and concerns” (Hutchinson and Waters 1987: 154) about the whole idea of evaluation since it reflects their perceptions and values that might have a constructive or unconstructive impact on the outcomes of the evaluation. Learners and their counterparts, teachers and the tests records are seen as the main sources of evaluation in ESP course (Dudley-Evans and St John 1998). The collaborative and honest nature of relationship between these elements must be ensured to guarantee and “promote frank and useful feedback” (Hutchinson and Waters 1987: 154).

The last consideration in ESP evaluation is the time and the frequency of conduction. Summative and formative evaluations are seemingly necessary in any course for better improvement although “it is difficult to prescribe how often course evaluation should be done” (*ibid*, p. 155) since it varies from one teaching scenario to another. Evaluation may take place in different intervals of the course. Hutchinson and Waters (1987) recognise four times to do an evaluation; (1) in the first week of the course, (2) at regular times throughout the course, (3) at the end of the course and (4) if possible after the course. The type of the evaluation determines the time of conduction i.e. formative or summative. Having it done in different times throughout the course indicates its ongoing nature to collect as much as possible relevant data about the delivery of the course. For ESP practitioners, the different periods of the course (pre, during, post) are fit evaluation opportunities to track the good running of the instruction and permit for adjustments if necessary. Therefore, it is

recommended to seize the different course intervals to pursue the management of the teaching and learning setup for better achievement of objectives.

#### **5.4. Rationale of the Present ESP Course Evaluation**

The ESP web-based course that students of Computer Science at Biskra University had followed aimed to develop learners' academic communicative skills. The course was organised into two terms of instruction that ended up with a summative evaluation which is intended to check up students' rating of the level of the course success or failure and "provide feedback for programme improvement" (Bailey 2009: 707) besides their evaluation of the teaching effectiveness. As Lodico, Spaulding & Voegtle (2006: 18) state, "summative data focus on determining whether a programme's goals were met". In the current ESP programme evaluation, the researcher applied the "objective-based approach" which measures the extent to which the course objectives are brought about as they are stated earlier in the programme design.

Unquestionably, e-learning and web-based instruction in particular has become the trend in nowadays field of educational training. However, its effectiveness has not been empirically proved in a wide scale because "these innovative approaches to training have been limited by the shortage of scientifically credible evaluation" (Atwell 2006: 7). Therefore, the present web-based Computing English course evaluation comes as a contribution to improving the standards and qualities of e-learning which are currently under extensive and intensive experimenting to gauge its usefulness in increasing learners' outcomes and improving their engagement in the process of teaching and learning. Atwell (2006) explained that the lack of serious empirical evaluation studies on e-learning was a result of the heavy focus on the technical improvements of programmes and software at the expense of pedagogical implications and adjustments. If they exist, they are purely "descriptive rather than analytical or predictive" (*ibid*, 9) or they, in most cases, are

comparative studies that demonstrate the difference between traditional classroom instruction and the newly implemented e-learning programmes including the web-based platforms.

The necessity to evaluate e-instruction has become widely approved by institutions and instructors for better comprehension and consideration of challenges existing in the field. To do so, a number of pedagogical approaches have been utilised using different data gathering tools to make the evaluation of such courses feasible and fruitful. The present evaluation form of web-based Computing English course relied on a checklist survey as an evaluation tool to fulfil the requirements of the rating with Likert scale of evaluation in which participants were asked to agree or disagree with the given statements. The checklist is used because “checklists are valuable evaluation devices when carefully developed, validated, and applied” (Stufflebeam 2000).

### **5.5. Layout of the Evaluation Form**

The evaluation form (see appendix 3) consists of two parts. The first part covers aspects of the course related mainly to the instructor’s teaching approach, the assignments, learning materials, lessons and activities, course objectives and tests. The second part consists of two sections of different rating systems to evaluate the web assignments. The first section encompasses a range of statements to ‘agree’ or ‘disagree’ with the assignments design, level of difficulty, their fitness to the course objectives and students’ needs, and their usefulness to their learning. The second section probes the students’ frequency of web-assignments’ accomplishment. The summative evaluation checklist was administered to students at the end of the course to obtain students’ ratings of the effectiveness and significance of the programme they followed on their overall achievements. The distribution of the checklist took place during the course session and their collecting was immediately done after students finalising the responses. Out of 50, 42 students participated in the course rating process.

## **5.6. The Results: Analysis and Interpretation**

The summative evaluation was conducted with 42 students who filled in the forms. The rating system of the first part relied on Likert scale of agreement and disagreement expressions, while the second part on both agreement and frequency scales. Students were asked to complete the form by assigning each statement a number that corresponds to their opinion. The first part evaluates the instructor, class assignments, learning materials, lessons and activities, objectives and tests. The results are portrayed as follows.

### **5.6.1. Evaluating the Instructor**

The ESP instructor/teacher has been a matter of controversy in the literature due to the often raised question of who is best qualified to teach ESP: the EFL teacher or the specialist teacher of the discipline. Although untrained to be instructors in the ESP field, EFL teachers are widely involved in an unfamiliar area of specific genres and discourse that require a comprehensive exposure to the discipline's authenticity. The common assumption considers the ESP teacher as a specialist in students' field; however, his/her primary goal is to ensure communicative competence in the situation where English is needed to be practiced (Riabtseva and Arestova 2006). Hence, the instructor's knowledge about the subject remains a central issue in students' evaluation for its controversy and importance.

In this part of the checklist, students were asked to agree or disagree with statements about the teachers' knowledge of the subject, lesson preparation, encouraging participation during the course, answering students' questions, and demonstrating enthusiasm. The objective is to measure students' satisfaction with the teacher's instructional behaviour and the extent s/he succeeded to meet their expectations. The results are summarised in table 64.

Statements	Strongly agree	Agree	Unsure	Disagree	Strongly disagree	No answer
Instructor is knowledgeable about the subject	14	24	04	00	00	
	33.33%	57.14%	09.52%	00%	00%	
Instructor is prepared	22	10	06	04	00	
	52.38%	23.80%	14.28%	09.52%	00%	
Instructor encourages participation	23	15	04	00	00	
	54.76%	35.71%	09.52%	00%	00%	
Instructor answers students' questions	25	11	06	00	00	
	59.52%	26.19%	14.28%	00%	00%	
Instructor is enthusiastic about teaching	17	20	05	00	00	
	40.47%	47.61%	11.90%	00%	00%	

Table 5.64: Students' evaluation of the instructor

Table 5.64 demonstrates students' ratings of the various instructional ingredients that are directly bound to the instructor's teaching behaviour. To begin with, out of 42, 24 participants (57.14%) agree that the instructor is knowledgeable about the subject, 14 participants (33.33%) strongly agree, and 4 are unsure (9.52%) about the statement. Having over half of the participants considering the teacher knowledgeable about the subject (Computing English) confirms the assumption which claims that ESP teacher needs a reasonable understanding of the students' specialist area by "taking an interest in the disciplines and professional activities the students are involved in" (Dudley-Evans and St John 1998: 14). Being in an alien environment (a discipline which is not within ELT field, science or technology for instance) for ESP teacher requires him/her to frequently contact the subject teachers for any difficulties s/he encounters in understanding some technical areas in the subject, otherwise "students probably become less confident in what he says, as experience has revealed" (Khuwaileh 1995: 46). Many ESP teachers consider themselves as learners of science, technology or business because of the challenges they overcome when dealing with the students' subject area, especially when it comes to technical and semi-technical lexis.

Teaching ESP necessitates understanding of students' discipline; therefore, for the ESP teacher to be familiar with students' area of expertise, s/he should be well prepared and

well-acquainted with the different thematic knowledge the discipline encompasses. Hence, Table 64 shows that 22 students (52.38%) strongly agree that the teacher is prepared, 10 students (23.80%) agree with the statements, 6 (14.28%) are unsure and 4 students (9.52%) disagree. The majority of students positively evaluated the teacher's preparation of the course subject, which is due to the well-planning of the lesson and activities and the logic sequence of the lesson stages. It is therefore important to put preparation in the list of teaching priorities for its decisive impact on the well-running and delivery of the lesson during classroom practice. Preparation entails a full pedagogical and psychological readiness to handle all the lessons anticipated and unanticipated periods of instruction along with students' learning behaviour. A prepared teacher receives learners' appreciation and full engagement during lesson sequences in addition to their overall contentment of the course management, which positively affects the end outcomes.

As far as encouraging participation is concerned, 54.76% of students strongly agree that their ESP teacher motivates them to demonstrate effective involvement during classroom practice. 35.71% agree with the given statement and 9.52% of the respondents are unsure. This high percentage of pleasant evaluation reflects the instructor's perception of ESP practice which considers participation as one of the essential "predictors of academic achievement" (Willms 2003) and a "productive work habit" (Turner and Patrick 2004). Moreover, classroom participation improves students' communication and interaction with peers as well as the instructor via demonstrating the specialist knowledge in a communicative framework that is out of the rigidity of students' area of expertise as in science and technology. Therefore, the teacher's encouragement of students' participation in ESP class aims at opening gates for passive learners to show active engagement habits with language tasks and activities using what they already possess as speciality's background. In a wider

picture of the participation benefits for both the learner and the teacher, Turner and Patrick (2004: 1760) state:

Participation provides students with opportunities to learn and practice new knowledge and strategies, to explain their reasoning, and to examine their thinking processes and recognize the need to revise thinking. It also allows teachers a window into student thinking processes and learning, allows them to diagnose learning problems or evaluate student progress, and provides teachers an opportunity to scaffold, or provide cognitive and affective supports, for students' understanding.

Accordingly, participation bridges students' thinking to teachers' strategies of instruction to mutually sustain a successful communication that serves the academic or professional requirements of the learners. By doing so, the ESP teacher achieves one of the ideals of ESP practice which is the practical use of language in students' academic or professional environment.

Practically speaking, students participated in class in different manners that reflect their characters and their perception of language classroom participation. Although it entails a wide range of practices as "preparation, contribution to discussion, group skills, communication skills, and attendance" (Dancer & Kamvounias 2005, quoted in Rocca 2010), answering voluntarily the teachers' questions or when called on, sharing thoughts with peers, explaining and commenting on certain ideas are the common participation strategies that students deployed during the ESP course treatment. The challenging issue with Computer Science students concerning classroom participation was their perception of the whole idea of engagement, which is extremely different in their speciality course, i.e. they are used to passively participate in computing classes through individual completion of exercises, assignments and practical projects. For that reason, changing students' mind concerning language classroom participation from passive to active engagement (productive work habit) was of no question an instructional triumph in which the learner was the biggest winner after all.

The next criterion of students' evaluation of the instructor is the teachers' answering learners' questions. The associated link between the present item and the previous one sounds 'intimate' in the meaning that they stem from the pedagogical nature of classroom practice which recommends the interaction of the teacher and learners mainly through question-answer scenario. Table 5.64 shows that out of 42 students, 25 (59.52%) admit strongly that the teacher answers their questions. Other 11 students (26.19%) also agree with the statement, while other 6 (14.28%) are unsure of their opinion. Although in ESP context the students may know more about the carrier content than the teacher, answering students' enquiries establishes a sense of confidence between the teacher, who may not be the primary source of knowledge in the speciality-oriented courses, and the learners who seek immediate and convenient replies for their queries. It also reflects the extent of the teacher's preparation, knowledge and readiness on the one hand and the degree of learners' engagement in the classroom activities on the other. The student who finds a convincing reply of his/her query tends to be more enthusiastic and motivated to frequently ask questions which boost the rate of the instruction and enhance the interactivity in the classroom.

The last item in the evaluation of the instructor rates the enthusiasm towards teaching. Table 64 shows that 17 students (40.47%) strongly agree that their ESP teacher is enthusiastic about teaching. 20 students (47.61%) agree with the statement and 5 other students (11.90%) are unsure of their opinion. These affirmative statistics prove that showing passionate interest and energy while teaching impresses students and creates a stimulating and motivating environment for effective learning. Wood (1998) considers teacher's enthusiasm as achievement booster and motivational agent inside and outside language classroom. Teachers who are enthusiastic about their teaching generally empower their learners and energise their learning practice as long as they are motivated and wholehearted. Metcalfe and Game (2006: 93) described teachers' energy and its impact on students. They state:

A good teacher is not one who provides all the energy that a class needs; good teachers are those who allow the production of an energy that is not the teachers and not the students, but shared between them. Energy is only given when it can be received.

This suggests that classroom energy is a product of both the teacher's enthusiasm and the students' feedback. Non-enthusiastic teachers will not certainly receive a positive reaction from the part of learners simply because they do not energise them. The frequent recorded boredom in classrooms, whether in General English or ESP, is a causal result of teachers' lack of 'spark' and inspiration. The amazing thing about teachers' enthusiasm in classrooms is the durability and the 'contamination' of their energy to spread to every individual who will inspire his/her learning passion from the teacher's enthusiasm in an interactive instructional process called "give and take" (Metcalf and Game 2006: 100).

In ESP context, enthusiasm and motivation are crucial. Barrantes (2009: 131) believes that "the teacher can increase motivation by bringing to class enjoyable, meaningful materials and attractive activities in which those materials may be used". Therefore, the ESP teacher needs to be highly enthusiastic especially when dealing with content knowledge subjects in which the learner is the knower of the content and the teacher "is often more a consultant than a teller, giving advice, suggesting alternatives and allowing the learner to make informed decisions" (Dudley-Evans and St John 1998: 189). All the aforementioned teaching strategies require ESP teachers to understand that showing interest towards what they teach meets students' expectations and encourages them to make better decisions about their learning.

### **5.6.2. Evaluating the Assignments**

In this part of the evaluation, students are requested to express their approval on statements related to classroom assignments, namely their level of difficulty, the way they help students learn the material, their level of interest and their extent of meeting students' needs. The common assumption of the assignments and homework is that they "contribute to effective learning through practice, knowledge enhancement, and active involvement with

course material” (Doorn, Janssen & O’Brian 2010). Assignments give opportunities for learners to further practice what they learned in class to expand their intake as a part of their engagement with the learning material. They also develop their autonomy, responsibility, and time management habits. However, students often nag about homework as being a course chore that should be accomplished otherwise they will be penalised. As a result, teachers pay attention to the difficulty, the purpose and the meaningfulness of the homework they assign for the course. Thus, the following table displays Computer Science students’ opinions on the assignments they were given in ESP class. Here are the results.

Statements	Strongly agree	Agree	Unsure	Disagree	Strongly disagree	NA
Assignments are in the right level of difficulty for the course	10	18	07	04	00	03
	23.80%	42.85%	16.66%	09.52%	00%	07.14%
Assignments help me learn the material	12	18	09	02	00	01
	28.57%	42.85%	21.42%	04.76%	00%	02.38%
Assignments given for class are interesting	15	21	06	00	00	00
	35.71%	50%	14.28%	00%	00%	00%
Assignments meet my learning needs	12	17	08	02	00	03
	28.57%	40.47%	19.04%	04.76%	00%	07.14%

Table 5.65. Students’ Evaluation of the Assignments

The overall remark that table 5.65 suggests is the students’ noticeable contentment of the usefulness of assignments in understanding the lessons. Statistically, a sum of 30 students (71.42%) reported their agreement (agree or strongly agree) on all the given statements concerning the significance of assignments in learning.

To start with, the difficulty of class assignments is often seen as an obstruction against their well-accomplishment. Students tend to be enthusiastic about doing assignments in case they are feasible and achievable since they are not time and effort consuming. However,

having effortless and comfortable assignments decreases their value and lessens their usefulness in achieving the course objectives. Ergo, keeping balance in the difficulty level of assignments i.e. not too easy and not too difficult increases the students' performance and stimulates them to continue doing them without feeling bored, challenged or underestimated. It is then up to the teacher to estimate the difficulty of the assignments so that learners will be encouraged to complete them. As it is shown in table 65, 18 students (42.85%) find that assignments are in the right level of difficulty for the course, 10 students (23.80%) strongly agree with the statement and 7 of them (16.66%) are unsure. These statistics attest the good design of the assignments and their positive impact on students' evaluation of the programme. The class and the take-home assignments aimed at consolidating students' understanding of the course material through further practice and production-based activities (writing a short paragraph about the studied subject, summarising a given text, answering post-listening questions, etc).

Practically speaking, the assignments were often given at the end of each unit sequence so that students go through the different points and practice the needed skills. At the beginning of the programme, some students did not complete the assignments due to their prejudgments on their function in the learning routine; however, the teacher insists on the usefulness of the assignments in bettering students' performance, which convinced them to come around their opinions. Eventually, all the class get used to the routine of the assignments and ascertained their convenience in achieving the learning objectives. Yet a considerable percentage of students (9 students, 21.42%) stated their uncertainty of the role of assignments in ameliorating their learning performance, which could be due to their already-made impression on assignments as being a study chore that needs time, effort and extra devotion.

### **5.6.3. Evaluating Learning Materials**

For many instructors, learning materials stand at the core of the instruction since they provide the input and expose students to the course content. It is then recommended to pay extreme attention to their fitness to the course objectives, variety, authenticity, motivating factor and above all their level of stimulating students to effectively engage in the course. Moreover, the well-prepared and designed course materials assist learners to learn effectively instead of being a mere accumulation of content knowledge that obstructs their better learning.

In ESP context, the role of learning material is crucial since it is bound to the students' academic or professional content area which requires instructors to be careful when selecting the appropriate material to meet students' needs and establish a meaningful instructional connection between content knowledge and language features of the field. This implies four strategies to be considered by ESP practitioners when providing materials (Dudley-Evans and St John 1998: 173), which are related to (a) the appropriate selection from the available printed or multi-media materials, (b) creativity with what is available, (c) modification of activities and tasks to suit learners' needs, and (d) provision of supplement input. ESP instructors are hereafter required to integrate "language skills, structures, functions and vocabulary that will be needed by the members of a chosen target group in their professional and vocational environment" (Vičić 2011: 108); therefore, it is necessary for them to be acquainted with and interested in the students' field of expertise in order to make material selection an easy and comfortable practice.

In the present rating form (see appendix 3), Computer Science students are asked to evaluate the course learning materials, both class-based and web-based materials in terms of the features shown in the table below on the basis of their agreement on the following statements.

Statements	Strongly agree	Agree	Unsure	Disagree	Strongly disagree	N.A
The instructor uses a variety of learning materials, internet materials in particular	09	15	07	06	02	03
	21.42%	35.71%	16.66%	14.28%	04.76%	07.14%
The learning materials fit the course objectives	11	20	08	01	00	02
	26.19%	47.61%	19.04%	02.38%	00%	04.76%
The materials help me learn better	12	26	04	00	00	00
	28.57%	61.90%	09.52%	00%	00%	00%
The materials motivate me to learn more	07	21	11	03	00	00
	16.66%	50%	26.19%	07.14%	00%	00%
The materials help me engage effectively in the course	12	23	03	03	00	01
	28.57%	54.76%	07.14%	07.14%	00%	02.38%

Table 5.66. Students' Evaluation of the Learning Materials

Table 5.66 indicates that most students agreed with the statements related to the role of the learning materials in assisting them to cope with the course requirements. Starting with the variety of the materials, a sum of 24 students (57.14%) out of 42 strongly agree or just agree that the instructor uses a variety of materials including both class-based (printed materials) and web-based, 7 students (16.66%) are unsure of the statement, 6 students (14.28%) disagree, 2 students (04.76%) strongly disagree and 3 students (07.14%) did not express their opinion. Overall, over half of the students reported the variety of materials used in the course which reflects the concern of the instructor to cover a wide range of content knowledge to evade monotony and keep the course dynamic.

ESP material selection varies from adapting textbooks to writing tailored materials to fit students' needs. Since the present programme aims to integrate web-based materials in ESP course, the teacher in the first term selected blended materials before going completely online in the second term. The in-class materials are adopted from textbooks designed exclusively for Computer Science students who need to develop their proficiency in English language and apply it in their academic or workplace field. This includes texts of different

computing- related topics accompanied with grammar and vocabulary practice and occasionally production activities (writing or speaking). The students' familiarity with such type of materials stimulated them to engage in the course but with different degrees. Meanwhile, internet-adopted materials range from listening extracts to WebPages reading texts accompanied with pre-while-during phases of a discourse study. The authenticity of the material made a huge difference in the performance of students, especially in the content-based instruction in which students were exposed to a variety of authentic-focused materials prepared by native academics and professionals in the students' area of interest. The amalgamation of authenticity and specificity of materials stimulates learners to make sense of learning and simulates the real world in the classroom. In this connection, Baghban and Pandian (2011) point out that "Authentic materials, being a part of the real world, can serve as excellent resources for introducing language in its real form to ESP learners whose final goal in taking ESP courses is to communicate properly in real-world contexts". Therefore, authenticity generates not only genuine communicative context but also sense of learning and engagement.

As far as the suitability of the learning materials to the course objectives is concerned, students in the evaluation form confirmed this relation. Out of 42 students, 31 (73.80%) of them agreed or strongly agreed that the materials correspond to the course objectives which indicates that ESP instruction outcome is to enable students to exhibit certain knowledge, skills, attitudes by the end of the course. Setting up objectives for the course gives a guided vision of instruction for both the teacher and the learner to identify priorities and make relevant decisions (Graves 2000). Teachers should be cautious when deciding on the selection of appropriate materials that fit the course objectives since it clarifies the purpose of the instruction and guides it to the end target.

As a result of the variety of materials used for the course and their fitness to the objectives, students stated that they learn better due to the good selection of materials, especially when they build a meaningful link between students' real world and the communicative purpose of the language learning. Statistically, table 64 shows that 38 students (90.74%) out of 42 agreed or strongly agreed with the statement declaring the helpfulness of the materials in bettering students' learning. It is therefore obvious that students learn better in the environment which provides learning materials that range from subject-specific to general materials to meet the different learning needs as they are stated in the NA survey. In practice, the teacher used subject-specific materials when the objective focuses on the academic or job requirements of students; however, general materials were utilised to help them come with the various aspects of general communication (oral or written). Hence, the comfortable learning reported by students came as a result of the appropriateness of the materials to their specialty as they equip them with the necessary knowledge and skills needed for study purposes.

The relation between materials appropriateness and motivation to learn is of no doubt very significant. As it is shown in table 5.64, a total of 28 students (66.66%) declared that the learning materials motivate them to learn more because they focus on "purposeful learning" (Skela 2008, cited in Vičič, 2011). Purposeful learning motivates ESP learners to make sense of the information through eliciting specialty-related language functions and patterns as they get exposed to the discourse and structures that most frequently appear in the materials which exist in students' subject area. Above all, making sense of learning is the factor that distinguishes ESP learning from General English instruction and makes a difference in students' motivation. Therefore, during the course practice, most students demonstrated an active involvement as a sign of motivation particularly when dealing with materials related to Computer Science discipline.

The last item in the evaluation of the learning materials is the effective engagement in the course. What table 5.66 displays is that a total of 35 students (83.33%) out of 42 agreed or strongly agreed with the statement reporting the relationship between effective engagement and the selected learning materials for the course. The effective classroom engagement is often seen in students' rate of participation, assignment completion, interaction, and most importantly learning achievement. With the assistance of relevant materials, students may demonstrate their classroom engagement in many ways as an indication of the "purposeful learning" that ESP teaching aims to achieve.

Consequently, ESP learning materials which expose students to a variety of interesting and authentic subject-related discourses and stimulate their involvement in the different classroom practices are what ESP instructors need to pay attention to when selecting, writing or adopting learning materials as a procedure to motivate students to better their learning habits.

#### **5.6.4. Evaluating Lessons and Activities**

The learning materials essentially constitute the set of lessons and activities which provide the instructional exposure to the range of study and practice package. It is referred to as "material development" (Graves 2000: 161) that entails a planning process of creating units and lessons, including activities so that the objective will be achieved. No course of whatever nature stands and survives without already planned and designed lessons and activities that serve the requirements of students' study or job areas. For that reason, the delivery of lessons and activities demands an entire process that begins with NA in which the content of lessons and activities is conceptualised and ends with students' feedback which gives insights into content adjustment and improvement.

The conceptualisation of the lessons and activities content is determined by the purpose of the course, its objectives, and the learners' area of interest so that 'the carrier

content’ and ‘the real content’ stand together in a purposeful context which allows a meaningful learning atmosphere. Moreover, the classroom practice of lessons and activities often penetrates into a more complex procedure of the course design in which the decisions on the skills, knowledge, competencies and tasks are taken.

As far as the students’ evaluation of lessons and activities’ content is concerned, it is important to note that the statements are adopted from the absolute and variable characteristics of ESP which are suggested by Hutchinson and Waters (1998). Hence, students are asked to measure the extent to which the lessons are related to their field of expertise and whether they prepare them to use English in their future academic and/or professional setting. They are also asked to rate the fitness of the language features (grammar, vocabulary, skills) to their discipline (Computer Science). Table 67 shows the results.

Statements	Strongly agree	Agree	Unsure	Disagree	Strongly disagree	N.A
1. Lessons and activities are related in content to my discipline	20	14	05	00	01	02
	47.61%	33.33%	11.90%	00%	02.38%	04.76%
2. Lessons and activities prepare me to use English in academic and workplace settings	08	16	09	08	01	00
	19.04%	38.09%	21.42%	19.04%	02.38%	00%
3. The language used in the lessons (grammar, vocabulary, and skills) is related to my discipline	16	20	06	00	00	00
	38.09%	47.61%	14.28%	00%	00%	00%

Table 5.67. Students’ Evaluation of Lessons and Activities

What is remarkable in table 5.67 is the agreement of students with the first and the last statements and their disparity on the second statement. Concerning the relation of the lessons and activities to students’ discipline, the table indicates that there is a considerable

agreement with the statement; 20 students (47.61%) strongly agree, 14 students (33.33%) agree, 5 students (11.90%) are unsure and one student (2.38%) strongly disagrees.

The fact that the lessons and activities are related to Computer Science originated from one of the most prominent characteristics of ESP instruction which is the appropriateness of the content to the learners' subject-specific area. As an implementation of this principle, the teacher selected a range of lessons and activities, both adopted and ready-made in coursebooks, which cover skills and knowledge depicting discipline-bound themes such as computer applications, database, website design, artificial intelligence, etc. This is of course a strategy to motivate students to effectively demonstrate involvement in both lessons and activities through interacting with the teacher and peers via sharing their already existing knowledge of the subject since they are supposed to be much more familiar with the theme content rather than the teacher. It is also worth mentioning that language productive skills (speaking and writing) comprise the structure of the lessons with respect to the objective of the unit; however, activities take a wide spectrum that covers brainstorming, guessing, problem-solving, and production tasks.

As far as the statement probing the idea assuming that ESP prepares learners for academic and professional world is concerned, the table 5.67 shows only 8 students (19.04%) strongly agree with the statement, 16 students (38.09%) agree, 9 students (21.42%) are unsure, 8 students disagree (19.04) and 1 (02.38%) student strongly disagrees. This is perhaps due to the status of English in students' study and job domain, which is considered as a foreign language with limited practical uses in real world compared to the status of French and Arabic, which are the working languages in the Algerian academic and professional context. Despite being a language of academia and job market, it is still not recognized as so in the present scenario. Therefore, the students who stated their uncertainty or disagreement with the statement expressing this idea doubt the potentiality of ESP course for computing to

prepare and train them to be ready to survive in the competitive world of academia or occupation unless this scenario takes place abroad where English is the currency of knowledge and business.

However, the majority of students agreed with the statement declaring the fitness of the language features of the course, namely grammar, vocabulary and skills to the learners' discipline. Statistically speaking, the table shows a total of 36 students (85.71%) out of 42 who stated that the linguistic features they are exposed to during instruction reflect the nature of computer science, which is regarded as an area with a technical jargon, functional language and discourse. The good illustration is the one dealing with vocabulary teaching i.e. the use of technical and semi-technical word items related to computer science helps students understand better the materials in whatever skill under practice since they bring their background knowledge and learning experience to the classroom. Even the so called macro skills (reading, speaking, writing and listening) also portray the technical nature of the field (technical writing for instance) to meet students' needs; the ultimate goal of the entire ESP teaching.

#### **5.6.5. Evaluating Objectives**

Even though objectives and goals do not represent the same meaning, they are used here interchangeably. For any instruction, objectives should be set at the very beginning as one of the decisive procedures of course design that determines its success or failure. They channel the teacher in every step of the course in terms of lesson sequence, activities and assignment completion, assessment and evaluation of students' achievement and learners' expectations. The attainment of objectives is not an exclusive worry of the instructor; learners also are involved as active partners in the teaching/learning process, especially in ESP that considers instruction as learner-centered approach. Therefore, the present item in the

evaluation examines the attainment of objectives and checks objectives' clarity and specificity. Here are the results as reported by students.

Statements	Strongly agree	Agree	Unsure	Disagree	Strongly disagree	N.A
The course objectives are clearly identified	14	09	16	02	00	01
	33.33%	21.42%	38.09%	04.76%	00%	02.38%
The course objectives are very specific	21	09	06	02	02	02
	50%	21.42%	14.28%	04.76%	04.76%	07.14%
My learning objectives are entirely achieved	03	11	15	12	00	01
	07.14%	26.19%	35.71%	28.57%	00%	02.38%

Table 5.68. Students' Evaluation of the Course Objectives

Out of 42 students, a sum of 23 of them (54.76%) agree that the course' objectives are clear, 16 (38.09%) are uncertain, 2 students disagree and 2 others are of no answer. It seems that half of the students find the course objectives well-defined in the sense that they help them constitute a straightforward vision of learning and guide them towards their target need. According to Graves (2000: 79), "stating goals helps to define priorities and to make choices. Clear goals help to make teaching purposeful". Hence, the purposeful teaching which is based on clear objectives does definitely lead to purposeful learning that fulfills the learners' needs, which is in turn the essential ideal of ESP instruction.

When it comes to the specificity of objectives, 21 students (50%) strongly confirmed that the objectives are specific, 9 students (21.42%) agree with the statement expressing the specificity of objectives, while 2 of them (04.76%) reported their disagreement with the statement. Table 5.68 shows 6 students (14.28%) who are uncertain of the specificity of objectives. It is commonly believed that specific objectives make teaching and learning "useful and comprehensible" (Brown, 1995, cited in Graves, 2000: 87) and above all they make the course 'objective-oriented' to effectively bridge the goals to needs through specifying well-identified criteria of classroom performance as well as assessment and

evaluation. Specific objectives in ESP are seemingly among the basics of the teaching-learning practice. Accordingly, they shorten and ease the way to meet learners' needs when broad objectives are eliminated from the course objectives' list. By doing so, the teacher and students find themselves well-channeled by specifically-identified statement of objectives which is one of the principles of effective instruction.

In this context, it is worth mentioning that the objectives set for the current ESP course revolve around preparing learners to apply the knowledge, skills and competencies they learn in ESP class for specific academic and workplace purposes in accordance with their target needs.

The last item in the evaluation of the objectives examines the students' attainment of their learning objectives during the first term of the ESP course. Expectedly, a good number of students did not achieve their objectives at this point of the course because of the short period of learning they had gone through, which does not permit a full attainment of objectives. Learners often need to wait till the end of the instruction to confirm or deny their achievement of objectives that is why table 68 shows that 15 students (35.71%) are undecided about the fulfillment of their objectives. Moreover, 12 students (28.57%) totally disagree with the statement declaring the achievement of objectives; meanwhile, a total of 14 students (33.33%) confirmed that they achieved them at this phase of the course. For the simple reason that students often measure their attainment of objectives according to their improvement in tests and exams performance, they usually demonstrate their dissatisfaction with the scores and their desire to gain more. So, what the table shows as results confirmed the assumption stating that students evaluate their learning according to the scores they obtained, not to the knowledge and competencies they acquired as they are stated already in the objectives list. This in fact leads to talk about tests and exams evaluation.

### 5.6.6. Evaluating Tests

Although they are different, testing and assessment refer in the present context to the same process of evaluating learners' performance in official exams and tests. The concept of testing in ESP is often viewed as a "feedback and an aid to learning" (Dudley-Evans and St John, 1998: 210) rather than measuring the performance in terms of scores. It provides learners with feedback on their performance and consolidates it. Tratnik (2008: 5) describes well the characteristics of ESP test; she states that:

Specific purpose testing is primarily concerned with facilitating learners to perform particular communicative tasks, providing feedback on learning, confirming what students have mastered and highlighting those skills needing further attention, encouraging learning, and monitoring progress.

Hence, tests in ESP are often carried out to measure learners' proficiency level, to ensure their learning development and eventually determine what language skills, functions and competencies should be reviewed, adjusted and consolidated. They usually take place as classroom tests for three purposes; placement test, progress test and proficiency test (Dudley-Evans and St John 1998; Hutchinson and waters 1987).

Computer Science students in ESP course underwent two proficiency tests to check out their ability to perform language tasks in the target situation. In the present evaluation form, students are asked to evaluate the proficiency tests difficulty level, the content, and the grading scale. Table 5.69 shows the findings.

Statements	Strongly agree	Agree	Unsure	Disagree	Strongly disagree	N.A
1. The level of tests was just right.	12	14	09	03	02	02
	28.57%	33.33%	21.42%	07.14%	04.76%	04.76%
2. The tests covered all the learning points	15	20	02	04	00	01
	35.71%	47.61%	04.76%	09.52%	00%	02.38%
3. The tests' grading scale is acceptable	18	09	14	00	00	01
	42.85%	21.42%	33.33%	00%	00%	02.38%
4. The grades are convincing	20	10	06	03	00	03
	47.61%	23.80%	14.28%	07.14%	00%	07.14%

Table 5.69. Students' Evaluation of Tests

According to the table 5.69, most students (sum of 26, representing 61.90%) agree that the tests' level was handy and acceptable; not too easy and not too difficult. 9 (21.42%) students are unsure, and 5 of them (11.90%) disagree or strongly disagree with the statement. The right level of the test gives chance to all students to score well since the instructor aims not to challenge their ability but to evaluate their performances in ordinary setting. For that reason, the tests were composed of items that have been dealt with and practised in class and online via web assignments so that students will be able to carry out similar tasks.

The good test content often covers the learning points that students have dealt with and were exposed to during the course units and sequences so that they feel comfortable when responding to the test questions. Following Dudley-Evans and St John (1998: 225) "every item type that is used on a test should also be being used in teaching, although they would be handled differently". Hence, the content of tests matches what is taught as skills and competencies in a different fashion to see the ability of students to apply what they learned in the target situation. Learners get easily disappointed in case they are tested in items which they were not exposed to and therefore may fail in coping with the different tasks and activities given in the test.

So, the present item in evaluating tests probes students' attitudes towards the match existing between the content of tests and the taught items. As it is shown in table 5.69, 35 students in total (83.33%) reported their satisfaction with tests' content since it covered what they learned in the course. Meanwhile, 4 students (09.52%) didn't agree with the statement claiming the match between the tests' question items and what is learned as skills and competencies. The tests' responses revealed that most students successfully tackled the items which had been focused on and extensively covered during the course.

As far as the grading scale is concerned, it is seen as one of the success factors in any test. In the present course evaluation, students were asked to evaluate the acceptability of the rating scale in the tests. The table shows that 18 students (42.85%) strongly agreed that it is acceptable, 9 students (21.42%) agreed that it is as so, while 14 students (33.33%) reported their uncertainty of the acceptability of the grading scale.

Thus, it is preferred to fairly grade the different sections in a given test to create a balanced grading scale because the "perception of our students' success or failure will depend upon how many marks are given to each section of the test" (Harmer 2007: 386). A well-written test grades one section equally as another so that students may have better chances to turn out well after all. In the test that students had gone through in present ESP course, the scores were equally distributed on the tests sections, for instance five scores for each of the four sections of the test. As a result of the balanced grading scale, students reported their approval to the tests scores they obtained. Table 69 shows that the majority of students (30 students out of 42) are satisfied with their tests' scores.

As a conclusion, the main objective of the first part of the evaluation form is to rate the effectiveness of the course programme and its impact on students' outcomes. It revealed students' overall approval to different components of English for Computer Science course that they had gone through during the two terms of study. The component of the web-based

instruction has not been purposefully dealt with in this part; therefore, the second part of the evaluation form focuses mainly on all the instructional elements containing a web-based nature such as web-based materials and assignments.

#### **5.6.7. Evaluating Web Assignments' Design**

Web assignments, which are “the possible alternative for the traditional pen and paper methods” (Demirci, 2010: 159), are integrated in the web-based instruction as a fundamental ingredient that increases students’ engagement with the course via interactivity element provided by the web applications. Students receive their homework at once with the ability to log in and log out whenever they like without feeling the pressure of having the assignment done on papers and being seen by peers and corrected by the teacher. Although the controversy over their effectiveness in improving learners’ performance and achievement (Bonham, Beichner & Deardorff 2001; Doorn, Janssen, and O’Brian 2010; Williams 2012) for their monotonous and mechanical practice and are often found ready-made and downloadable, Altun (2008) listed a number of benefits that online assignments have, namely gaining new abilities and skills from the further practice of the lesson activities, improving the retention level, learning autonomously and receiving immediate feedback; therefore, web-assignments, for Altun “ increase student motivation and academic achievement and should continue to take a part in educational process” (16). Besides these benefits, web-assignments “automate” the homework tasks and enable teachers to practice other tasks inside classes instead of wasting time in distributing, collecting, and correcting assignments (Demirci 2010)

In some of the highly elaborated web assignments, it is only required to have a password registration at the beginning of the course to have authorised access to the assignments’ system so that students accomplish their assignment and receive immediate instructional feedback on their responses and have the chance for more attempts to get successful completion of the assignment. While others have individualised content that fits

students' levels (Chua-Chow, Chauncey and McKessock 2011). The role of the teacher is to post, update, activate and delete any particular assignment, which is basically done in various formats as quizzes, multiple-choice questions, text entries or interactive activities in highly structured and technically advanced designs. Besides saving time and effort for the teacher in collecting and correcting assignment papers, web assignments allow students to monitor their progress and practise self assessment which simultaneously promote students' learning autonomy and develop their self-awareness of their weaknesses and strengths. Moreover, designing this type of assignments necessitates attaching web links for further practice and revision which in turn contribute in widening students' scopes of the course content and objectives.

The number of papers that have been conducted to evaluate the effectiveness of web/online assignments in improving students' performances (Hodge, Richardson & York 2009; Johns 2008; Shen 2005) concluded that they effectively provide individualised feedback on students' performances and motivate them to perform better than in the traditional homework. Likewise, Doorn, Janssen, and O'Brian (2010) in a survey done on 680 students of different disciplines reported that the majority of participants admitted the benefits of online assignments in deepening their understanding of the learning material, increasing their motivation and enabling them to prepare effectively for exams. Richards- Babb, Drelick, Henry, and Robertson-Honecker (2011: 83) consider web-assignments as "time-saving system" in terms of distribution, collection and grading. Therefore, the online paperless assignments have become widely used in the web-based instruction even though their advantages over traditional homework have not been practically proved in ameliorating learners' performance and outcomes.

In this section of the evaluation form, we survey students' attitudes and opinions on the appropriateness and effectiveness of web assignments in meeting their needs. The first

part probes students' opinions on the general design and construction of the assignments. Students had received regular assignments via their common e-mail once a unit and they were asked to check and accomplish them for many purposes that range from preparing for the next practice, revising the previous material or testing their understanding of the lesson. Table 5.70 reports students' agreement and disagreement with some statements about the layout of the assignments.

Statements	Strongly agree	Agree	unsure	Disagree	Strongly disagree	N.A
1. Web assignments are clearly written and properly instructed.	14	22	04	00	00	02
	33.33%	52.38%	9.52%	00%	00%	4.76%
2. Web assignments are the right level of difficulty for the course.	08	15	12	04	00	03
	19.04%	35.71%	28.57%	9.52%	00%	7.14%
3. Activities and web-delivered assignments help me learn the material.	08	19	09	02	01	02
	19.04%	45.23%	21.42%	4.76%	2.38%	4.76%
4. Web assignments given for class serve the objectives of the course.	13	21	04	01	00	03
	30.95%	50%	9.52%	2.38%	00%	7.14%
5. Web assignments have motivated me to develop the needed language skills for the course.	13	18	08	01	00	02
	30.95%	42.85%	19.04%	2.38%	00%	4.76%
6. Web assignments meet my learning needs.	06	16	17	02	00	02
	14.28%	38.09%	40.47%	4.76%	00%	4.76%
7. Web assignments make learning dynamic.	08	21	09	01	00	03
	19.04%	50%	21.42%	2.38%	00%	7.14%

Table 5.70. Students' Evaluation of Web Assignments

Out of 42, 14 (33.33%) strongly agree that the assignments had a clear instruction, 22 (52.38%) agree with the statement; however, 4 respondents (9.52%) are not sure of the well-

instruction and proper writing of the assignments and 2 (4.76%) had no opinion. The majority of respondents (sum of 36) who declared that the web assignments are clearly written and instructed indicate that the teacher pays careful attention to the general layout of the assignments for successful accomplishment. The writing and the instruction of the assignments generally guide learners to the right keys of the questions and keeps them in the right track without being hampered by the ambiguity of the instruction which eventually leads to misunderstanding and therefore misinterpreting the assignment and failure in accomplishing it. This can be avoided by the appropriate choice of sentence structures that include goal-oriented instructions besides the simple and clear questions that channel into answers.

It is widely believed that most learners find difficulty in accomplishing their assignments because they were poorly written and ambiguously instructed, which confuse their minds and hence mislead them to other sides of the assignment that is not intended at the first place to be considered by the instructor. Therefore, web assignments are to be appreciated if they are “easy to use, carefully planned and integrated seamlessly with course material, and supported by the instructors and teaching assistants.” (Arasasinghma, Martorell, and McIntire 2011 as cited in Weimer 2013).

Another key element in the web-assignments is the level of difficulty for the course. Even though the assignment is clearly instructed and written, it might be of a huge challenge to accomplish it successfully if it does not reflect the level of the course and suit the level of the learners. Table 5.70 shows that 8 respondents (19.04%) strongly agreed that the web assignments are at the right level of difficulty, other 15 (35.71%) participants agreed with the given statement. Meanwhile, 12 (28.57%) of them were uncertain of the level of the assignments' difficulty and gave neutral opinion. Other 4 respondents disagreed with the statement and consider that the difficulty level of assignments does not correspond to the

course level while 3 participants gave no answer. The statistics suggest that a total number of participants who consider the assignments not easy and not difficult constitute the majority of respondents (23). Ensuring the right difficulty level for assignments encourages learners to do them and take advantage of them. Therefore the instructor needs to be careful so that assignments will not be easy or difficult to the level that surpasses the course objectives. Sometimes, the teacher intends to have the assignments a bit challenging which leads some learners to question their difficulty level; therefore, 12 respondents opted for the “unsure” item in the evaluation form. The challenge that some assignments raise aims at stimulating learners’ intellectual abilities to go beyond the normal rate of assignments which usually tend to be very monotonous and do not provoke creativity. Hence, the difficulty level of assignment needs to be well-thought of and purposefully intended to achieve precise objectives that serve the overall aim of the course. Moreover, assignments are not intended to test learners’ skills but rather to expand the lesson span and motivate learners to take active roles in learning through experiencing the different dimensions of the lesson.

The other function of the assignments is to help students learn the material through accomplishing them. A sum of 27 respondents (64.28%) strongly agree or just agree that the web-assignments help them learn better the material. 9 participants (21.42%) are unsure, 3 respondents strongly disagree or disagree with the given statement and 2 of them gave no answer. What these statistics suggest is the fact that learning does not end by the end of the lesson but it might last with assignments, which can be viewed as a learning aid in the sense that they help learners understand the material through further practice. When it comes to ESP teaching, the principle of “learner-centred” is clearly demonstrated in the web-assignments in which students are self-oriented and independent in responding to the questions and taking advantage of the internet application to deepen their understating of the

material. So, learning online through assignments for ESP learners makes them lifelong autonomous learners.

The second part in evaluating the web-assignments is related to the rate of accomplishing them. The aim is to seek whether students do regularly check and complete the assignments and whether the completion is enjoyable or imposed.

### 5.6.8. Evaluating Web Assignments' Accomplishment

Statements	Always	Often	Sometimes	Rarely	Never	N.A
How often do you check the online assignments?	22	10	06	03	00	01
	52.38%	23.80%	14.28%	07.14%	00%	02.38%
How often do you accomplish the assignments?	17	12	09	02	02	00
	40.47%	28.57%	21.42%	04.76%	04.76%	00%
How often do you copy the answers from a classmate?	02	09	06	05	20	00
	04.76%	21.42%	14.28%	11.90%	47.61%	00%
How often do you enjoy doing the assignments?	08	07	11	09	05	02
	19.04%	16.66%	26.19%	21.42%	11.90%	04.76%
How often do you find the assignments useful and relevant to the course?	14	13	11	03	01	00
	33.33%	30.95%	26.19%	07.14%	02.38%	00%
How often do you receive feedback from the teacher?	17	06	09	01	06	03
	40.47%	14.28%	21.42%	02.38%	14.28%	07.14%
How often do you use the Internet tools to accomplish the assignments?	08	09	10	09	04	02
	19.04%	21.42%	23.80%	21.42%	09.52%	04.76%

Table 5.71. Students' Evaluation of Web-assignments Accomplishment

Every time the assignment was posted on to students via class e-mail, the instructor ensures that they need to check and accomplish it. Table 5.71 reveals that over half of respondents (52.83%) reported that they always check the assignments, 23.80% often do so, while 6 respondents (14.28%) claimed that they sometimes check the web-assignments, and finally 7.14% of respondents asserted that they rarely check them. No one said that s/he never checks the assignments. The immediate interpretation of the statistics implies that students are notably interested in doing the assignments as a requirement of the course and for the purpose of receiving the feedback on their responses. Yet, half of the participants did not

check the posting of the assignments on a regular basis which denotes lack of interest, unfamiliarity with the method, and the non-positive attitude towards the task.

When it comes to the accomplishment of the homework, the table shows different statistics. Although half of respondents claimed that they always check the assignments, only 17 students (40.47%) always accomplish them. 12 students (28.57%) reported that they often do so and 9 students (21.42%) expressed their irregularity in doing their assignments. 4 students rarely or never do them. These statistics create certain doubts on the utility of the web-assignments in motivating students to do their homework as a requirement of the course. In fact, it was anticipated that most students will show enthusiasm towards web-assignments; however, homework is still unappealing practice for learners whether in traditional manner or online since it features students' anxiety towards negative feedback. Yet, one should not dramatize the situation since the highest percentage in table 5.71 (the 40% of respondents who stated their regular checking and accomplishing the assignments) represents the number of students who always accomplish the assignments for they find them appealing and effective in widening their knowledge and providing them chances to self-test their abilities.

As in traditional assignments, many students tend to copy the keys of the assignments in the last moment from classmates who have already done them. This is considered as cheating, which is reported to be one of the cons of online assignments since there is no 'human' control over the process of completion. In this item of the evaluation form, the researcher aims to check students' autonomy in learning. As table 5.71 shows, 20 students (47.61%) out of 42 claimed that they never copy their answers from others; however, 9 respondents said that they often do so. Theoretically speaking, web applications and tools ease and practically promote the process of learning and make it independent in terms of self-pacing and progressing; therefore, most respondents claim autonomous accomplishment of web-assignments. Students who often or sometimes copy the keys of homework activities are

usually uninterested in the course itself, and what matters to them is the teachers' contentment. A possible reason for copying the answers is their inability to cope with the activities for their low proficiency level that might hinder them from successful completion of the assignments.

Assignments, whether traditional or online, have always been the 'nightmare' for many learners for the effort and time they require, besides the anxiety and pressure they create. The negative attitude of learners towards assignments is often featured in their incompletion of homework if given and their constant nagging of being overloaded. Hence, students generally are not 'fond' of homework, unless it will be graded and considered as a part of their achievement average. In the present ESP course that computing learners had gone through, the web assignments took versatile roles; to check students' commitment, to test their comprehension, to grade them for evaluation sake, and to monitor their progress through feedback. Hence, learners accomplish them accordingly i.e. most of them generally do the assignment for the purpose of evaluation.

For the aforementioned reasons, table 5.71 indicates that students vary in their responses concerning their enjoyment when doing the assignments. 8 students (19.04%) said that they always enjoy doing the assignments; however, 5 students (11.90%) never find pleasure in doing them. Yet, 11 students (26.19%) are in between (they sometimes appreciate the benefits of the assignments and enjoy completing them). This can be due to the insufficient encouragement from the part of the instructor that led them to be unmotivated and not delighted to accomplish their assignments.

As far as the relevance and usefulness of the web-assignments to the course is concerned, the majority of respondents replied positively; 14 students (33.33%) always find them relevant, 13 students (30.95%) often do as well, and 11 students (26.19%) sometimes find the usefulness of the assignments. Unquestionably, the online assignments have

significant benefits for they allow further practice of the lesson materials, widen learners' knowledge and foster their skills. The homework given to the learners in the present study was often a follow-up of the course to consolidate their comprehension through a number of questions that are usually accompanied with relevant web links to assist them for keys and offer them extra navigation space. Their usefulness creates a sense of learning especially for ESP learners whose objective is to bridge their learning of English to their study discipline in purposeful practices. Therefore, the majority of learners who declared the relevance of the web-assignments to the course confirmed the assumptions claiming that they are gaining popularity in many learning settings and institutions.

One of the pros for web-assignment is its immediate feedback, especially if the system of correction is technically elaborated for the 'trial and error' strategy that permits a chance for more than one attempt; however, in the present assignments the feedback is done both online via e-mail and in class through remedial sessions for target skills. Statistically, a sum of 23 respondents (54%) declared that they always/often receive feedback from the teacher, and only 7 respondents (16.66%) who said that they never/rarely receive it. The sessions of feedback were purposefully devoted to work on weaknesses of learners and provide remedial practices in class or attach relevant web links of similar objectives. Learners who claimed receiving no feedback were those who did not regularly attend the course or check the assignments' feedback via email.

The last item in evaluating assignments' accomplishment is the reliance on the Internet tools (encyclopedias, web pages, blogs and chatrooms, etc) to complete them. Out of 42, 8 students (19.04%) always use them and 9 (21.42%) often do as well. However, 9 students (21.42%) rarely use these tools to accomplish their assignments and 4 students (9.52%) never use them. 10 students (23.80%) sometimes rely on internet tools to look for keys to the assignments exercises. This disparity in opinions reflects students' different

attitudes towards the utility and helpfulness of the internet tools in successful completion of assignments. Some students find it useful to seek convenient knowledge related to the homework questions in the abundant sources of the web of similar content; while others tend to rely on the course information and make appropriate inferences to cope with the queries of the assignments. They perhaps find the abundance of information in the web a hindering element than helpful in the sense that it distorts them from the assignment target. For that reason, the teacher often attaches useful links to similar content of the questions such as tutorials, videos, and web pages.

So, the evaluation of the assignments' design and accomplishments revealed considerably positive attitude of Computer Science learners towards the web assignments for the advantages and benefits they offer in terms of "high-quality and interactive materials and activities" (Sims-Mohammed and Wooddell 2012: 49) needed for individual completion of tasks and instant feedback.

## **CONCLUSION**

Despite its limitation and single rating dimension, students' evaluation of the course effectiveness has always been a dependable source to rate the instruction they receive. The present evolution of the web-based ESP instruction for Computer Science students disclosed a number of pros and cons. The well-planning of the course has encouraged students to engage effectively in the different class and online practices. Moreover, the feedback that students received was appreciated since it allows them to adjust their learning. The autonomous learning has also been approved by the majority of respondents. One of the unanticipated attitudes towards this course is its failure to practically prepare them for the real world challenges because of the overwhelming dominance of French and Arabic in their discipline. Hence, some students learn English for computing as a requirement to attain the degree, not as a needed course for their real life (academic or professional) purposes.

## CHAPTER SIX

### SUGGESTIONS AND RECOMMENDATIONS

#### INTRODUCTION

Needs Analysis, quasi-experiment and course evaluation are the data gathering tools utilized in the present study to investigate the usefulness of integrating web-based language instruction in English for Computer Science. The results uncovered a range of controversial issues that have a tight bound with ESP teaching in a web-based platform. As a contribution to the field of ESP education, the present chapter attempts to put forward some germane recommendations that might set a solid ground for better traditions and practices in the academic and professional arena of ESP instruction on the web. Therefore, this chapter first reconsiders the notions of NA and ESP course design to fit the increasing demands and needs of learners in the information age. It also reviews the role of the teacher in ESP and examines the must-have qualities that fit the context of both EAP and EOP teaching scenarios in the different web courseware as a part of teacher education and training that have become an indispensable requirement in ESP profession. Finally, the chapter gives instructional tips to design web-based courses that entail both pedagogy and technology to promote the teaching and learning of ESP.

#### **6.1. Recommendations for Developing Needs Analysis**

NA has always been considered in the literature the central process and a must-have procedure in ESP course design for it bridges ESP learners' needs to their aims (Basturkmen 2006; Dudley-Evans and St John 1998; Hutchinson and Waters 1987; Jordan 1997; Munby 1978; Richards 2002; West 1998). It is the pre-requisite for objectives since no course can be successfully accomplished unless it begins with whatever data gathering tool for NA; it decisively determines every aspect of instruction that is related to different partners in the ESP enterprise i.e. the content, methodology, priorities and course policy among others in the

course design arrangements. Furthermore, it is a crucial procedure that must be processed insightfully since it uncovers all the queries related to learners' reasons of learning and comes up with decisions to be implemented in the course design regarding both present and target-situations of learners. Therefore, the following considerations needed to be accounted for in order to maintain the well-planning, processing and analysis of data.

### **6.1.1. Multiplicity of Data-Gathering Tools**

For convenient results in NA, one ought not to rely on a single data-gathering tool in order to have a wider spectrum of learners' needs, which might not be fully uncovered unless multiple tools are deployed as questionnaires, interviews, observation checklists, administrative records, tests' scores, assessment reports, learners previous profiles, one-on-one discussions and currently online surveys are also deployed to reach a wider population and partners of the instructional institution. Therefore, all stakeholders (teachers, learners, former teachers and learners, administrators, etc) should be summoned in one way or another to be practically involved in the process of NA by taking their experience, background and positions into considerations for better interpretations of the findings and hence appropriate decisions. Participatory NA (Robinson, 1991) in which students take an active part in designing course syllabus has shown its effectiveness in motivating students and provoking their interest to learn ESP in their study or workplace environment because the course content and methodology have been better adopted to meet their needs. The multiplicity of data-gathering tools asserts the inclusion of relevant data from different partners (insiders and outsiders) of the institutions to collect as much as possible input about learners' profiles that might ensure a better understanding of their needs.

### **6.1.2. Ongoing Process of Assessment**

NA is often conducted as a starting point in ESP course design that channels all the pertinent steps in the design process, including material selection, programme design and

assessment methods. It is often carried out at the beginning of the course as a diagnostic evaluation of learners' target needs and proficiency level. However, it is recommended to consider it as an ongoing assessment of the course to see the progression of learners and to have a chance to evaluate the course running and make appropriate adjustments that serve the objective of the course. Hence, pre, while and post NA are required to pace the course progression in different phases. Pre- NA acts as a formative evaluation of the course in the sense that it aims at collecting data before or at the beginning of the course to assess the present situation of learners and measure their proficiency level in accordance to the course objectives, while Post- NA is performed to measure students' outcomes at the end of the course to see how far they have achieved their target needs. While- NA is often carried out during the course period to have initial evaluation of learners' achievements and make relevant adjustments in the course if needed to fit the requirements of learners at this phase of the course. Therefore, the three stages of NA are indispensable to ensure the well-running, progress and accomplishment of the course and meet students' learning needs and target needs.

## **6.2. Recommendations for Developing a Web-Based ESP Course**

Online-course delivery has overwhelmingly taken over the nature of EFL education in the recent decades to keep pace with the increasing progress in the field of educational technology. The growing number of websites, blogs, encyclopaedias and interactive sites creates certain e-traffic that hinders more than it helps the easy and smooth learning of language, especially with the emergence of non-authentic web-based materials and the professionally uncontrolled content due to the accessibility and availability of internet tools and applications in a wide scale. Therefore, it becomes a necessity to set regulations that determine the dos and the don'ts in every sphere of web-based course design.

The case of ESP course is of no exception, despite the less overspread of such instruction due to its specificity and complexity. The ESP web-based courses are generally more professionally and technically supervised than GE, yet some of them have a limited or unauthorised access that requires a subscription and fees which are not handy for many students. Other ESP web-based courses focus more on the technology than pedagogy i.e. they insert a bulk of multimedia and text-based content without clear objectives and assessment methods of learning, which really mislead learners and hamper them from better achievement of target needs. Moreover, the often nagging and dissatisfaction with the absence of human interaction in online delivered course and the entire reliance on the e-instructors reduced the value of learning which is basically human and led certain voices to call for the integration of face-to-face instruction in the web-based courses or what has become conventionally known as “Blended Learning” to take the most of both types.

The present experimental study is basically a web-based course that relies on web materials and content to be integrated in Computing English course as one of the growing trends in ESP. However, the instructor (the research himself) combined it with face-to-face learning in classroom as a traditional practice that still proves its efficacy especially in some cooperative tasks that require the involvement of all students and the direct monitoring of the teacher. This experiment has been evaluated by students on different levels related to content, objectives and assignments, which resulted in a number of issues and remarks concerning the organisation, the management and the delivery of the course. These issues have been considered in the following recommendations about the development of web-based ESP courses.

### **6.2.1. Setting Clear Objectives for the Target Needs**

Any purposeful web-based course with a compelling content begins its design with a well-thought of conception that is interpreted in terms of statement of objectives. The aim is

to draw up a clear map for the well-running and delivery of instruction which basically aims to bridge the learners' target needs to their objectives. Therefore, a successful web-based course meets clearly identified instructional goals that guide learners all over the course delivery and motivate them to sustain their learning in their own pace without being lost or confused. At the end of the instruction, students will be able to measure and evaluate their achievement on the basis of the previously set objectives.

Therefore, it is highly recommended that the more concrete and specific the objectives are, the more students make sense of the learning. In ESP context, objectives are put in the centre of the process since ESP is seen as goal-oriented course that meets learners' needs and establishes meaningfulness of learning. Löffström, Kanerva, Tuuttila, Lehtinen and Nevgi (2006) point out that the goal-oriented input in a web-based instruction makes learning meaningful and enables learners to engage effectively in the process of knowledge and skills acquisition. They introduced the notion of "intentionality" i.e. goal-oriented studies (*ibid*, 23) that stresses learning orientations through self-identifying objectives in a web-based environment. This implies that learners are required to have their own objectives of learning so that they can be discussed and considered in the overall course objectives. Löffström et al. (2006: 33) view that the cooperative objectives lead to high quality learning. They state:

High-quality learning results are influenced by the students' own expectations, attitudes, motivation and learning objectives. Students should also be encouraged to analyze their personal goals for learning. The final objectives can then be determined in cooperation with students.

Having the objectives determined cooperatively in a web-based course requires the use of some web tools such as electronic journals and diaries , which are widely available online some of which give accessibility to immediate feedback and reflections by teachers who stimulate their learning and assess their progress through chatrooms and discussion forums that can be created for such purpose.

### **6.2.2. Selecting Appropriate Web Environment**

As the internet provides a host of web environments that have become widely accessible and applicable; it is recommended to distinguish between what helps and what hinders learning. The appropriate selection of instructional medium ascertains the quality of learning and raises learners' enthusiasm and involvement in tasks and assignments. To do so, teachers need to make the most of what the technology offers in terms of new interactive formats that support the integration of animation, audio-visual materials and hypertext and hypermedia structures. These potentials constitute helpful illustrative that eases information processing and knowledge construction, besides being learning-boosters and attributes to active participation that could not be found in the traditional learning environment.

As far as ESP course is concerned, the web environment offers a huge multimedia and interactive materials in different formats that serve variety of EAP and EOP disciplines. Blogs, online forums and chatrooms of different professional and academic activities and events have invaded the web some of which are free to log in, participate and share. ESP teachers are recommended to seize this opportunity of having such rich space to give their learners chances to actively involve and interact with people of similar interest and needs, especially if the participants in these web environments are native experts who might add authenticity to the online communication. Therefore, well selected environments contribute to purposeful learning and help achieve the identified learning objectives. The role of the teacher in selecting the appropriate web medium for the instruction is crucial since it necessitates acquaintance with web tools and their proper applications in addition to their advantages and drawbacks in order to avoid any pitfall during the course of instruction. Likewise, learners are also required to have prior training on the well processing of these media to make the instruction less artificial and smooth aiming at reflecting the principles of web-based learning. The administration must also have roles to play in the entire enterprise

through arranged schedules, sufficient internet equipments and learning manuals for both teachers and learners. Caring for all these considerations in a web-based course might reduce the risks of failure and disappointment especially for the newly introduced learners and teachers to the web learning environments.

### **6.2.3. Learning Differences and Preferences**

Designing a convenient web-based course in ESP demands a careful attention to learners' styles and preferences in learning to offer the best possible support to learning. Taking into account that learners receive and produce knowledge differently necessitates course designers to think of appropriate web tools and applications in which learners work best online according to their learning styles. NA reveals all what is related to their personal interests, competences and pre-existing experiences which allow course designers to act accordingly. To illustrate, visual learners enormously benefit from the visuals available on the web that range from charts and graphics in webpages to video conferences, while auditory learners certainly enjoy listening to a variety of audio materials as online radio and TV broadcastings, lectures, dialogues and explanations.

Web-based course designers need also to consider introverted and extroverted learners by integrating suitable learning tools and mediums that fit their differences. For introverts, individual monitoring, assessment and feedback can work best via reserving a personal space in which they can learn and achieve better including individual e-mail messages, private password to their accounts, and personal one-on-one discussions with their instructor. These private web environments permit introverted learners to feel more secure and self-confident about their learning abilities besides monitoring their own progress without being exposed to their classmates and being watched over by the teacher and peers. However, extroverts work and achieve better in collaborative atmosphere that is based on sharing, communicating, comparing, competing and interacting. All these attributes can be fully practised online via

the social networking, chatrooms, forums and blogs in which extroverted learners join groups and peers of similar target needs, competencies and interests. Accordingly, course designers and teachers accommodate ideal teaching techniques as group work, collective projects and class assignments for this type of learners.

#### **6.2.4. Compelling Content Design**

Deciding upon the content of instruction is one of the most critical decision making in web-based ESP course design. Unlike General English, ESP content is centered on the language, grammar, lexis, register, skills, discourse, and genres proper to the learners' discipline, which makes the selection of teaching and testing materials really a challenging work that requires good knowledge of the learners' area of interest. It is therefore necessary to have a collaborative effort of both the language teacher and the specialist teacher to come up with a compelling content that reflects all the needed aspects of learning. This harmonious combination of both types of contents (carrier, i.e. discipline-related content and real content, i.e. language-related content) creates a sense of learning and increases learners' motivation which is the often targeted objective of ESP enterprise.

The massive progress in the Internet publications and uploading of materials from institutions and individuals offer ESP teachers and learners a treasure of learning materials some of which are freely accessed. However, it is not always safe and fit to integrate whatever content appeals compelling unless it is well studied and analyzed in terms of its language and knowledge features that fit the needs of learners. Making use of a variety of multimedia study materials as images, audio and video files enriches the content and provides illustrative formats for complex subjects. Moreover, learners are also welcome to create their own learning content and share it online with class community giving learning another dimension which fosters learners' independence, autonomy and involvement which are in turn among the principles of ESP instruction.

When selecting the content for the course, a special attention should be given to its level of complexity and clarity of information in order to help not to hinder the easy processing and constructing of knowledge and skills. The ideal reference of the level of content is the NA in which students rate their language level so that the teacher has a clear image of their present situation abilities and competences. It is also worth mentioning that the course content should be regularly updated, edited and adjusted according to students' needs to break the traditional monotony of textbooks and syllabi that do not go through updating procedures during the life span of the course. In fact, web-based course makes full use of the Internet facilities and services in updating its content whenever it is needed in collaboration with learners and administration. This advantage makes the web-based course so vivid and flexible to meet the ongoing challenges that may face ESP instructors.

#### **6.2.5. Assessing the Course for Future Adjustments**

Course assessment and evaluation is the indispensable ingredient in whatever type of course to identify the strengths and weaknesses of the instruction and promote attainment of learning objectives through feedback. This latter attribution i.e. feedback is immediate and constructive in the web environment through the different software provided by the internet services which allows teachers to synchronically send comments, remarks and recommendation via e-mails, bulletin boards and class blogs for learners on the different phases of the course as in web assignments. The online feedback can be done not only by the teacher but also by peers in a cooperative effort to make a constructive feedback that benefits the learner to make the appropriate adjustments and improvements in his/her learning. In ESP, the feedback and assessment of students' achievements may involve experts in learners' discipline to make it sound more authentic. Practically, the web suggests ideal applications to carry out both summative and formative assessment of the course in a form of newsletters, online surveys and questionnaires administered to all partners in the course enterprise

(teachers, learners, administrators, sponsors, etc) and the results are automatically and statistically displayed in a number of ways as percentages, graphic representations and diagrams.

What is pleasant about the online assessment is that the learners' obtained feedback can be automatically stored and retrieved when necessary to make archives and records for the course running for future improvements. The web-based course assessment is not only practised to evaluate the attainment of objectives and the end behaviour of learners but also to evaluate the well-functioning and quality of the implemented web-environment and its suitability to the context and discipline of the learners. So, the assessment should follow an ongoing scenario to document the function of both aspects of the course i.e. pedagogy and technology for the sake of balancing its general layout and structure. Unlike the traditional assessment and evaluation of the ESP course, web-based ESP course saves time and efforts and gives immediate feedback to act accordingly albeit its technical sophistication that requires assistance from networking and computing experts.

#### **6.2.6. Novice Practitioners and the Web-Based Instructional Basics**

Getting into a new teaching atmosphere without sufficient knowledge and training is undoubtedly a risk taking for the unexpected problems and increasing challenges that need familiarization and minimum of prior practice to cope with the newly emerged issues in the teaching/learning platform. Therefore, acquainting novice teachers with the principles of web-based teaching needs to be a prerequisite to begin the instruction on the web. Web designers often stress the idea of simple and friendly-user environment that does not hinder the smooth running of learning and helps achievement of objectives. They recommend the following tips for novice web-based instructors:

- Avoid information overload i.e. inserting too many links to the main webpage, which confuses learners of what is necessary and less necessary.

- Use simple and clear design that attracts the user through the safe choice of colors, shapes, sizes and fonts.
- Create a well-scheduled programme that clearly identifies the session timing, tasks, assignments and other class activities. Inserting a calendar in the master page is often recommended to stick to the schedule.
- Create a class e-mail account that allows all students to receive notes, feedback, changes in the programme and assignments' deadlines at once.
- Organize prior workshops and sessions for learners to acquaint them with the implemented web environments and train them to utilize the new learning platform.
- Allow learners to be active agents and partners in the design of the course in terms of layout, content and execution to empower them to be responsible, independent and team members that need to be often consulted.
- Try a variety of web-based teaching and assessment techniques to meet as much as possible the various learning styles and preferences.
- Move gradually from simple to sophisticated web tools to avoid any sort of mismatch between learners' abilities and course objectives.

All the above tips need to be applied in parallel with the technical knowledge of networking, web surfing, security and updating techniques.

### **6.2.7. Principles of Web-Based Practice**

Novice practitioners of web-based instruction are advised to frequently consult a computer scientist for the good running, delivery and administration of the course. Such tips were summed up in what is called “the seven principles of good practice” (Chickering & Gamson 1987, cited in Graham, Cagilty, Craner, Lim, & Duffy 2000) which guide the web-based instruction. These principles encourage the following practices:

### 6.2.7.1. Student-Faculty Contact

It can be successfully done privately via e-mail and publically via listserv and bulletin boards as communication strategies to motivate students and involve them in and out of class besides tracking their progress. Contacting students and replying to their queries via mail must be clearly scheduled through an already set timeline to avoid the delays or any sort of misunderstanding. The following figure is an e-mail inbox screenshot for the present study.

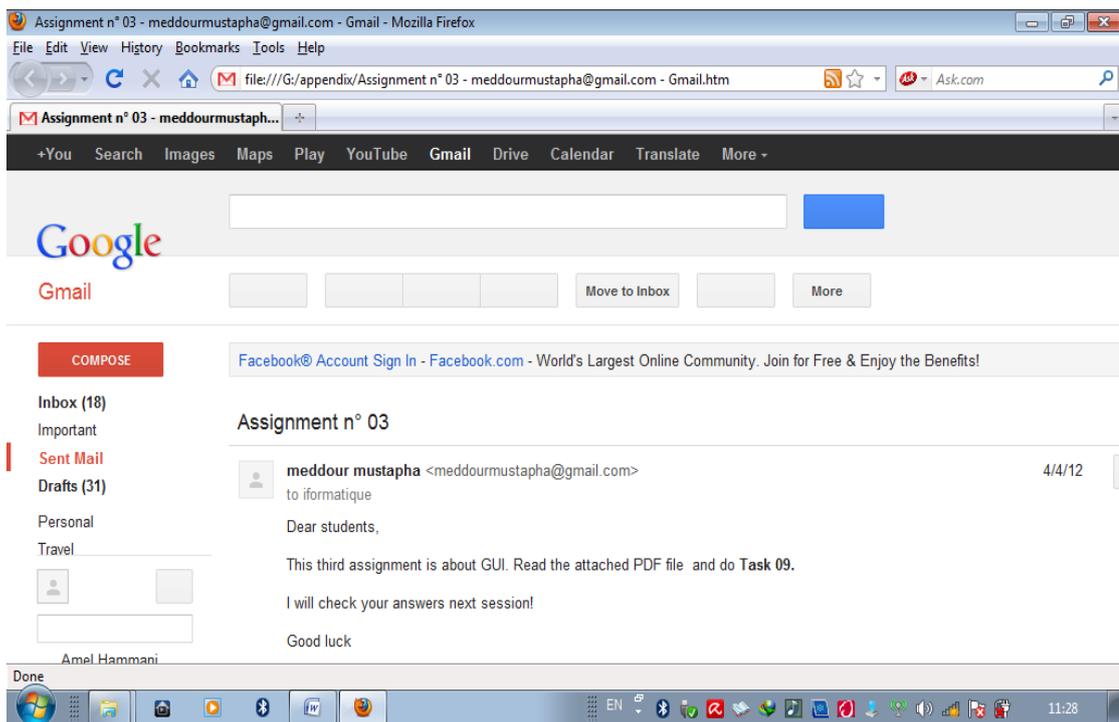


Figure 6.8. Screenshot of an E-mail Inbox Page

### 6.2.7.2. Cooperation Among Students

It fosters team work and promotes social relations leading to effective learning. It can be well implemented through online group projects and assignments. It aims at increasing the sense of belonging to an online community of mutual academic and/or professional interests. The cooperation increases as the tasks and assignments are meaningful and purposeful in which peers comment, evaluate their accomplishments as an extra source of feedback other than the instructor's. A face-to-face session is often recommended prior to online interaction to give learners an opportunity to know each other and assign their groups that can be

developed into a more collective interaction between all students in later stages of the course. Grading learners' contribution and cooperative projects is an ideal solution to boost their participation and motivate them to take active parts in online group tasks

#### **6.2.7.3. Active Learning**

It encourages learners to make their learning experiences part of their daily routine of which they can reflect upon and make sense of learning. By doing so, learners get highly enthusiastic when they relate what they learn to their real world experiences which best fit the context of ESP in which students learn the language for its practical uses in their academic or professional world. Practically, online bulletin boards and social networking provides facilities for learners to post their works and assignments for instructor and peer's evaluation and receive their comments and questions as an active strategy to involve all the class in meaningful and real experience of learning.

#### **6.2.7.4. Prompt Feedback**

All learners accomplish their tasks for the sake of feedback to assess their knowledge and rate their performance. It can be prompted through replying to learners' enquiries and answering their questions, commenting on their performance, grading their assignments and projects, appraising their tasks and acknowledging their contribution. Setting a clear policy on feedback in terms of enquiries schedule, replying timeline, posting deadlines facilitates and encourages learners to provide constructive feedback. Creating a class blog or bulletin board to discuss the assignments and post comments on each learner's accomplishment is a perfect practice to prompt feedback online. If the instructor receives an enquiry via e-mail, sending a quick note to the learner acknowledging the reception of his/her e-mail, then if possible replying accordingly will leave a pleasing impression and establish trust between the instructor and the learner.

#### **6.2.7.5. Time on Task**

Time management is one of the best qualities a good learner masters due its effectiveness in ameliorating the sense of responsibility and punctuality, especially in task accomplishments. Setting timely assignments and due time for the task urges learners to schedule their performance on the basis of the deadline and the allotted time. By doing so, a steady pace of the course is to be followed and a study routine is to be practised all over the course. An ideal way to set time on task is via a calendar or reminder displayed on the main page of the website, blog or bulletin board. In addition, to help learners accomplish the task or assignments on their due time it is recommended to attach useful links containing relevant materials and study resources.

#### **6.2.7.6. Communicating High Expectations**

Instructors are often required to set high expectations for learners to motivate them make reflection on their performance and seek excellence and quality in accomplishing them. Listing the expectations at the beginning of the course on the master page of the website energizes learners to look for the best ways to show their performance to be exemplified for the class. Therefore, it is recommended for the teacher to provide modals for task achievements to prompt learners' performances.

#### **6.2.7.7. Respect of Diverse Talents and Ways of Learning**

Every learner brings his world and experience to the class differently from others which enriches the learning environment and flavors its learning habits and practices. Thus, every session is a unique experience because of the versatile styles of learning and diverse talents shown during the instruction procedures. This diversity in learning and talents should be highly respected and prompted to incorporate all learners in the teaching scenario by considering their opinions and accepting their differences. Therefore, in a web-based course implementing various methods, tools and applications to meet the diversity of learning styles

guarantees that learners are given equal opportunities to have their says and communicate their viewpoints.

These seven principles require knowledge and skills in web-based instruction obtained from periodic training and practice. Therefore, it becomes an urgent necessity to set novice teachers for training to maintain the quality and excellence in teaching and learning as well.

### **6.3. ESP Teacher Training and Development in Web-Based Course**

The ESP teacher has traditionally been an issue of controversy i.e. who is best qualified to teach ESP; the ELT teacher or the specialist teacher? In many teaching scenarios, the ESP teacher comes from GE background with no training and knowledge of teaching language through content. Dealing with the specific jargon and register that are embedded in particular discourses of learners' disciplines remains the biggest challenge for the language teacher since s/he is not the 'primary knower' of the content subject and his/her learners may know better about it. Therefore, language teachers find themselves as intruders in the city of ESP with no clear map and equipments. The transfer from a GE teacher to ESP practitioner demands periods of training and preparation for the new profession with the cooperation and assistance of specialist teachers in course design, material selection and task assignments. This alliance helps to produce quality ESP practice especially if it is intentionally and willingly planned and executed under the supervision of the charged institution and the financial support of sponsors in both EAP and EOP areas.

It is taken for granted that the ESP teacher possesses a range of attributes and knowledge mainly related to pedagogy, subject matter content, learners' discipline and course design; however, the job of the ESP teacher is to teach the "real content" i.e. the language, and leave the "carrier content" to the specialists (Dudley-Evans and St John 1998). Yet, a number of ESP learners consider the language as mere vehicle to the end target which is understanding the content and developing certain skills, which leaves the teacher in a

dilemma of language and content especially in technical and scientific disciplines that require a full exposure to the styles and genres of the discourse. Thus, the concept of teacher training and teacher education in ESP arises as an inevitable requirement for teachers of GE background.

In the present case i.e. Biskra University, almost all departments having ESP course in their curricula hire GE teachers to be in charge of the course with all its specificity and complexity. Most teachers find themselves in an alien environment where there is no place for grammar and phonology teaching which necessitates a “get to know” phase to explore the newly landed on territory. The absence of programmes for such courses remains the “nightmare” for all teachers and novice teachers in particular which deepens the gap between what they had been taught or trained to teach and the shocking reality. The level of awareness of all parties in ESP enterprise constitutes the other problem for ESP teachers to cope with, especially in fields where French or Arabic is the language of specialty. These issues among others such as insufficient allotted time, low status of ESP course, and learners’ lack of interest call urgently for a serious step towards ESP teacher training and education as immediate and effective solution to minimize the rates of failure in the field of practice. The training aims to equip teachers with the necessary knowledge, skills and competencies to familiarize themselves with the “landscape of the occupied territory” and establish a friendly and intimate partnership with the “local inhabitants”.

It is relatively difficult to draw a clear and unified script for the training scenario because of the specificity of every discipline whether in EAP or EOP arena. Yet, one may suggest big headings and outlines for the training procedures that correspond to the requirements of ESP teachers. Moreover, ESP teachers have usually an ELT profile that demonstrates their linguistic and pedagogic competencies and lacks proficiency in the content area, which suggests the idea of collaboration between ESP practitioner and subject specialist

(content) teacher. Dudley- Evans and St John (1998), quoted in Almagro and Vallejo (2002:

11) recommend these formats for this collaboration:

1. The content teacher provides the subject content (*carrier content*) to introduce the linguistic point (*real content*).
2. The ESP teacher prepares linguistically the learners to have the necessary competence in academic or professional situations.
3. The content teacher guides the ESP practitioner to teach the topics selected by the latter.
4. Finally, team-teaching is the last of the stages in which each of the teachers focuses on their field, the ESP teacher on English skills and the content teacher on professional skills.

Although this multidisciplinary team collaboration comes as a subsequent phase in the training, it has to be planned ahead and documented in the administrative regulations of the faculties. Prior to this collaboration and as a starting point in the ESP training and education, ELT department is inevitably required to integrate special courses and workshops during the graduation years syllabus aiming at familiarizing students with the theories and practices of ESP instruction in collaboration with specialist teachers of different disciplines (science, technology, business, etc).

As far as web-based instruction in ESP is concerned, teachers may benefit greatly from the Internet services and facilities in assigning appropriate platforms for training. To illustrate, video conferencing (asynchronous conferencing) with native language trainers and content specialists is an authentic experience for non-native ESP teachers that enriches their professional development. The Internet offers also online tutorials and training workshops periodically in both EAP and EOP for teachers who have just started their career. The faculty can also create a specific website or blog in which novice and experienced teachers are given

space to share experiences, discuss classroom issues and exchange remedies in an interactive environment that eases these activities. Moreover, collaboration between the language department and the specialist department should be fostered and encouraged through organizing frequent seminars and workshops under the supervision of experts in the field of language and the specialty. The seminars' discussions and findings should be posted online for future sustainable and ongoing contributions and feedback for the next seminar. Awards and acknowledgment might also be encouraged to improve quality and excellence. Similarly, ESP teachers may promote their practices and exchange successful experiences online via new social interactive networks as facebook and twitter in which they enjoy and support each other in an attempt to form a teaching community that stands together and keeps up with the new developments ESP instruction frequently witnesses in the world.

#### **6.4. Online and Face-to-Face Learning: Blended Learning**

Blended learning combines the potentials of web-based instruction and the advantages of traditional face-to-face learning to make the most of both delivery methods. Even though online teaching is widely occupying a noticeable attention and application in many ESP institutes with high technological expansion, the lack of one-on-one interaction reduces the effectiveness of the feedback and increases the automation of learning activities to the extent that learners get bored and in many cases unmotivated due to the virtual blockage between learners and their instructor. Moreover, the unavailability of highly developed internet technologies in many parts of the world, Algeria among them hinders greatly the smooth implementation of online instruction especially in ESP field which requires not only knowing about technology but also language pedagogy in content. The lack of experts and trained teachers in the field and the absence of the web-based instruction culture and practice lessen the instructors' enthusiasm towards going entirely online. Therefore, it is recommended to

bring back the human attribute to learning, which was considerably deserted in online instructional fashion.

The present experience has revealed that although Computer Science learners were interested in such course, they were not consistent in pursuing the excellence in web-based learning due to their overloaded study programmes and unequipped classes with the internet facilities. As a compromise, blended learning has come out to offer the best of both worlds (Gonzalez 2005) according to the availability of equipments, experts, and appropriate environment. It takes different flexible forms that allow practitioners to adopt it according to the convenience of web tools and give learners opportunities to experience different learning fashions.

#### **6.4.1. The Class Website**

Creating a class website using ready-made templates provided by different websites and search engines like Google and Yahoo allows the instructor to post all what is related to the course as the schedule, the syllabus, activities and assignments in order to allow students to visit it as needed and have no claim of losing them. The lessons and activities take place in the traditional classroom where students receive explanations, discuss privately and publically the controversial issues with peers and the teacher, and practise all the regular class activities. Meanwhile, the teacher uploads the lesson and activities with relevant links of similar learning materials to the website for further online discussion and feedback. Learners are also encouraged to post their own contributions, evaluations, comments and recommendations for future improvement in the course, especially learners who tend to be introverted and self-centered in traditional class. Following Bender (2003), online course design stands on a set of necessary elements that every educational website must have as an instructional extension of the traditional class:

- Biographical statements of the instructor and learners with contact details and personal photos.
- A syllabus containing course description, course goals and objectives, reading materials, learning activities, grading policy, schedule, and expectations. A “learning agreement” (Shank 2007: 10) can be attached to the syllabus section as a commitment to the course and a clarification statement of proceeding it prior to the instruction.
- The lecture materials that preferably have to be unfold and sequential all over the course instead of posting them all at once at the beginning of the course to make a simulation of what happens in the traditional class. The arrangement of materials needs to be in crisp and clear format that can be divided thematically or chronically. Bender (2003: 43) recommends that “the instructor posts short, succinct, snappy lectures, more appropriately called “mini-lectures” attached to a discussion forum. The purpose is to encourage students to read from the screen without feeling bored or exhausted and get enthusiastic to discuss the content of the lecture.
- A discussion forum for learners to become acquainted and exchange their personal experiences and post their enquiries and concerns.
- Announcement bulletin board that should appear in the homepage of the website so that learners will be informed if there are changes in the schedule, new projects to be prepared, upcoming tests, etc. it can be used as a welcoming room where the instructor and learners exchange greetings and salutations whenever they log in.

Figure 6.9 is a screenshot of a Computing English website which is created specifically for the present study.



Figure 6. 9. Screenshot of the Computing English Course Homepage

#### 6.4.2. Online Content Templates

This idea is attributed to Summers and Selzer, the online learning specialists (cited in Shank 2007). Content template is implemented in blended learning to consult content experts on what appropriate instructional content is needed for a given class. The experts' assistance minimizes the content design time and provides a well-organized content material that “incorporated real-life application and best practices into the classroom” (*ibid*, 228). After filling in these templates by content experts, the instructor implements its results to develop the course content. This idea fits well the field of ESP instruction in which content experts and language teachers collaboratively develop the course content.

#### 6.4.3. Moodle Platform

A more sophisticated class website management system is called “Moodle” (see [www.moodle.org](http://www.moodle.org)), which “provides the virtual learning environment for the asynchronous communication in the course” (Gonzalez 2005: 43). A number of modules exist in Moodle system that allows learning in various web environments and tools. The forum module is an e-space for learners to exchange their opinions, post contributions, discuss lecture-related issues and hand in assignments. The wiki module is used for collaborative works and group projects, especially in cooperative writing activities, while the journal module grants learners to write privately by e-mail to their instructor anything as reflections on the learning

materials, personal experiences and further applications of the course in their academic or professional domains. These journals can be selected to be posted for the class. The glossary module is used to check up word definitions, terminologies usages and also for vocabulary-related discipline quizzes. In this module, online dictionaries and subject-specific encyclopedias are recommended to be integrated especially in ESP disciplines in which the teaching and learning of technical and semi-technical vocabulary is highly important. Besides these modules, Moodle platform can be easily linked to research engines and related websites.

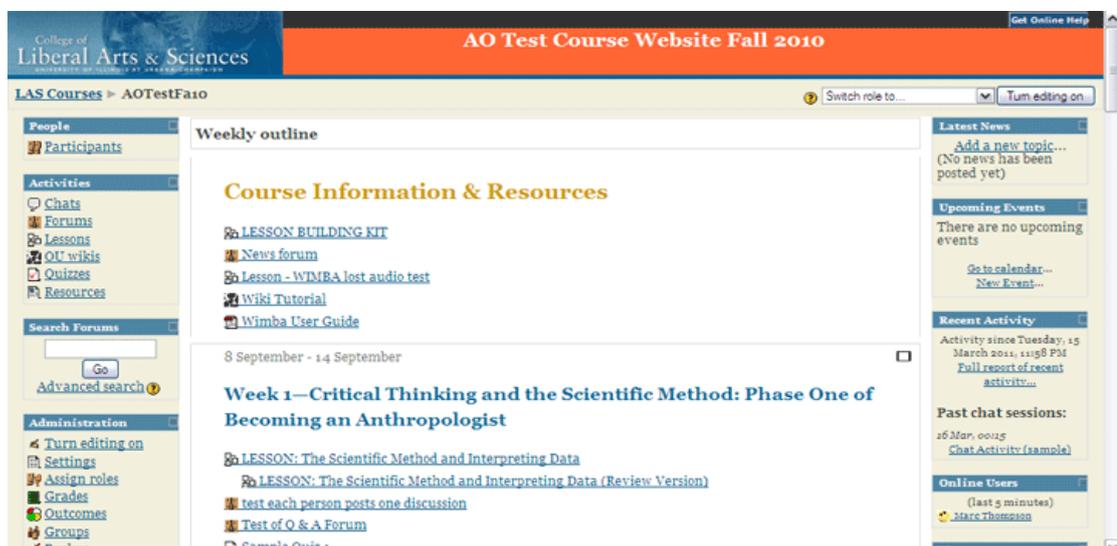


Figure 6.10. Online Course in Moodle System ([http://presentations.cita.illinois.edu/2011-03-csun-lms/images/moodle/moodle\\_navigation.gif](http://presentations.cita.illinois.edu/2011-03-csun-lms/images/moodle/moodle_navigation.gif))

Figure 6.10 is a front page of an online course in Moodle platform in which the course information and resources are posted up besides the course schedule.

Blended learning can take other forms than the three aforementioned according to the sophistication of technology equipment, the experience of the instructor and the familiarity with the internet applications. It really makes learning an ongoing process that starts in classroom and continues online to break the exhausting routine of traditional “chalk and talk” classroom and bring zest and passion to learning. Its ultimate aim is to take the best of both features of delivery to meet the learners’ needs and motivate them to make sense of learning.

## **CONCLUSION**

Designing web-based ESP course requires regarding NA more seriously and differently to unfold the different learners' target needs. Moreover, it necessitates a better understanding of the theory, methodology and practice of ESP in a way that reflects learners' expectations of learning. This cannot be accomplished unless ESP instructors are properly trained to pursue such profession in multidisciplinary collaboration between language teachers and subject-specific experts. Similarly, going online to teach ESP requires training, exposure, experience, and availability of equipments to make smooth transition from traditional classroom to online or blending learning environment. The suggested recommendations, if properly considered, will certainly take ESP instruction to another level in which technology, pedagogy and subject content are intricately interwoven in both real and virtual settings aiming at helping learners achieve their learning targets.

## GENERAL CONCLUSION

The current status of ESP teaching at Biskra University, Computer Science department in particular exposes an exigent situation that requires immediate actions and convenient remedies in different pedagogical and administrative levels related chiefly to theory, practice and methodology. For that reason, the present study investigates the usefulness of web-based teaching in ESP as an updating instructional platform that is increasingly implemented in international institutions and academic settings to make use of the potentials and facilities that the internet offers to education. Hence, this study is carried out to confirm or reject the hypothesis stating that web-based teaching enhances learners' achievements in ESP and motivates them to make sense of learning. Computer science learners were chosen to be the case study representing the entire ESP enterprise at Biskra University.

To do so, triangulated research method that encompasses NA questionnaire, Quasi-experiment and course evaluation form was utilized to gather relevant data on the subject and make fitting inferences for future recommendations. The present situation and target situation analysis revealed computer science learners' need to develop their productive skills proficiency, speaking and writing in particular. They also reported their dissatisfaction with the classroom practices of ESP tasks and their readiness to integrate new teaching fashions as web-based courses. Hence, a quasi-experiment was conducted as an intervention to integrate web-based course in English for Computer Science class in an attempt to examine its utility and investigate its significance in bettering learners' language achievement. The statistical tests and results demonstrated a sound progress in their performance due to the exposure to the Internet authentic materials and the application of web tools which consequently led to rejecting the null hypothesis and confirming the alternative one through the statistical procedures mainly the T-test and the calculation of the size effect. Finally, the experiment

results were strengthened by the course evaluation checklist form to gauge the success level of the web-based course that students had experienced through their ratings of different aspects related to the design, the materials, objectives and tests. Although they praised some attributes of the intervention as interactivity, immediate feedback, and the usefulness and relevance of web assignments to their discipline, they disclosed a number of limitations of online instruction as the artificial human-machine interaction that does not pedagogically resemble the one-on-one interaction.

To address all the uncovered issues in web-based ESP practice, it is recommended at the first place training language teachers for the profession of ESP in collaboration with subject-specific teachers to create a multidisciplinary alliance aiming at promoting the theory and the practice of ESP as a preliminary requisite for practitioners to run a constructive ESP instruction based on learners' needs. This latter cannot be fully determined unless a variety of data gathering tools is implied in NA process. Furthermore, the innovative and updated teaching fashions as blended learning are highly recommended to integrate web-based education in ESP traditional settings due to the merits it offers in terms of making the best of both types of design and delivery. The ultimate aim is to obtain accommodating teaching implications that might help ESP practitioners make use of technology to meet the learners' needs and promote their academic or occupational achievements.

Although the present study has attained its objectives, it still undergoes some limitations and shortcomings. To start with, the inaccessibility of participants resulted in a limited scope of the sample i.e. having conducted the study on only two groups of Computer Science Master Students prevented the overgeneralization of results to a larger sample of ESP learners. The study, therefore, should have involved more participants of different ESP disciplines for more credibility of results. Second, the web-based course treatment that participants had gone through lasted for only two study semesters, which is considerably a

short period to test and gauge the effectiveness of the treatment on the participants' performance. In addition, the one session per week of studying English in class and the weekly web-assignments for students were not a sufficient instructional load that allows for appropriate inferences from participants. It would be better if it was done for a longer duration. Third, the limited range of the utilized web-applications (course website, e-mail, and web-assignments) during the experiment might lessen its standing and rationality. We wished if more available web-tools were also implemented in the scope of this experiment as WebQuests, blogs, podcasts, etc. Fourth, the one group pretest/ posttest quasi-experiment used for the present investigation seems not to provide soundness for a true experiment that calls for a mean difference between experimental and control group. Therefore, empirical evidence might appear rather weak in the implied experiment. Last, the conduction of the experiment and the course evaluation was done by the researcher whose subjectivity may intervene in many scenarios all over the analysis and interpretation of results. So, it could sound fairly objective if a co-researcher(s) or external observer takes part in the process. Acknowledging such limitations would call for future research in the field of web-based instruction in ESP on a more empirical and objective-based rationale that strengthens the soundness of the findings and overcomes the already stated shortcomings.

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## Appendix 1

### Pilot Needs Analysis Questionnaire

This Needs Analysis Questionnaire is intended to reveal Computer Science learners' needs in order to develop a Web-based ESP course in computing English for first-year Master students at the department of computer science -Biskra University-.

Your responses to these questions will help us plan web-based program to meet your needs in learning English. *Your answers will be kept confidential.*

#### I. Personal Information

- 1- Gender : female  male
- 2- Nationality : Algerian  others:  specify: \_\_\_\_\_
- 3- Age: 20-25   
25-30   
Over 30
- 4- Mother tongue: Arabic   
Berber   
French   
Others  specify: \_\_\_\_\_
- 5- How long have you been studying English? \_\_\_\_\_ years
- 6- Have you ever studied in an English-speaking country? Yes   
No
- If yes, for how long? \_\_\_\_\_ years

#### II. Present Situation Analysis

- 1- Do you use English in your study? Yes   
No
- 2- If yes, is this mainly: spoken English   
Written English   
Both
- 3- How many hours a week are you likely to use English? \_\_\_\_\_ hours

- 4- How do you describe your interest in English course? Not interested at all
- Somehow interested
- Very interested

- 5- Do you learn English in: Traditional class
- Audio-visual class
- Internet-based class
- All of these

- 6- Do you use English in: English class only
- Computer science classes
- Both classes

7- How often do you perform the following tasks in English:

<i>Tasks</i>	<i>Never</i>	<i>Rarely</i>	<i>Sometimes</i>	<i>Often</i>	<i>Always</i>
Writing e-mails					
Making phone calls					
Internet chatting					
Writing letters and CVs					
Writing lessons, paragraphs, essays and research papers					
Writing articles for publication					
Writing blogs and wikis					
Writing computer programs					
Reading articles related to your discipline					
Speaking to the teacher and classmates					
Speaking in conferences and seminar					
Translations (French-English, Arabic-English)					
Others, specify					

- 8- Do you study English elsewhere to improve your proficiency level? Yes
- No

- 9- If yes, is this mainly: English for specific purposes (ESP)
- General English (GE)

10- Describe your current English proficiency level in the following language areas by putting a tick(√) in the appropriate box:

<i>Language areas</i>	<i>Very weak</i>	<i>Weak</i>	<i>Acceptable</i>	<i>Good</i>	<i>Very good</i>
<i>Grammar</i>					
<i>General vocabulary</i>					
<i>Specific vocabulary</i>					
<i>Pronunciation</i>					
<i>Speaking</i>					
<i>Listening</i>					
<i>Reading</i>					
<i>Writing</i>					

11- Rank from **01** to **08** the following skills according to their importance in your academic discipline (which one you need most?).

<i>Language areas</i>	<i>Rank</i>
<i>Grammar</i>	
<i>General vocabulary</i>	
<i>Specific vocabulary</i>	
<i>Pronunciation</i>	
<i>Speaking</i>	
<i>Listening</i>	
<i>Reading</i>	
<i>Writing</i>	

12- Describe your attitude towards the following course components (tick (√) where appropriate):

<i>Course components</i>	<i>Very satisfied</i>	<i>Satisfied</i>	<i>Fairly satisfied</i>	<i>Not satisfied</i>
Achievement of objectives				
Amount of lectures/lessons (quantity)				
Level of lectures/lessons(quality)				
Students' participation				
Number and level of activities				
Schedule (class time and duration)				
Materials used (printed, audio, video, internet)				
Teacher's method and style of teaching				
Teacher's qualification and performance				

13- If you tick "fairly satisfied" or "not satisfied", give your reasons

<i>Course components</i>	<i>Reasons of dissatisfaction</i>
Achievement of objectives	
Amount of lectures/lessons (quantity)	
Level of lectures/lessons(quality)	
Students' participation	
Number and level of activities	
Schedule (class time and duration)	
Materials used (printed, audio, video, internet)	
Teacher's method and style of teaching	
Teacher's qualification and performance	

14- Does the English course content have a relation with your discipline(Computer Science):

Yes

No

Some of it

15- Which aspect(s) of the course you want the teacher to focus on more:

<i>Grammar</i>	
<i>General vocabulary</i>	
<i>Specific vocabulary</i>	
<i>Pronunciation</i>	
<i>Speaking</i>	
<i>Listening</i>	
<i>Reading</i>	
<i>Writing</i>	

16- Is the current course designed: By the teacher only

By students and their tutor

According to students' needs

### III. Target-situation Analysis

1- Are you interested in taking an ESP course designed according to your needs to improve your proficiency level?

Very interested

Interested

Fairly interested

Not interested at all

2- How important do you think ESP is in comparison with other subjects?

More important than many other Computer Science subjects

As important as other Computer Science subjects

Less important than other Computer Science subjects

3- Do you have a goal to : Get a job which requires English after graduation

Continue academic studies in your discipline

4- Do you have a goal to work/ study in an English-speaking country?

No

5- If no, why?

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6- What topics you need ESP course to cover?

Artificial intelligence	
Blogging	
Computer animation	
Data base administration	
Desktop publishing	
Graphic designing	
Hardware engineering	
Network administration	
Online teaching	
Programming	
Security	
Software engineering	
Website designing	
Others, specify	

7- What language priorities you need ESP course for?

- To become more fluent speaker
- To become more accurate speaker
- To expand my general vocabulary
- To expand my specific vocabulary
- To improve my pronunciation
- To improve my reading skill
- To improve my writing skill
- To improve my listening skill

8- How much importance do you give to the following language skills:

<i>Language skills</i>	<i>Not important</i>	<i>Important</i>	<i>Very important</i>
<b>a- Reading</b>			
Computer manuals and instructions			
Web pages and internet related materials			
Printed documents related to your discipline (books, magazines, articles, etc.)			
Others, specify			
<b>b- Speaking</b>			
Speaking to the teacher			
Speaking to classmates			
Speaking to foreign visitors			
Speaking on the phone/ chatting online			
Speaking in conferences and seminars			
Giving presentations			
Others, specify			
<b>c- Listening</b>			
Lectures/lessons (in class and online)			
Online presentations and reports			
TV and radio shows			
Movies and songs			
Others, specify			
<b>d- Writing</b>			
Articles			
Thesis			
Web pages			
Blogs and wikis			
e-mails			
Letters and CVs			
Reports			
Programs			
Translation			
Others, specify			

**IV. Strategy Analysis**

1- as a computer science student, do you prefer the ESP class to be in:

- Traditional classroom
- Web-based class
- Blended class

2- How familiar are you with the following web tools?

<i>Web tools</i>	<i>Know</i>	<i>Want to know more</i>	<i>Don't know</i>
e-mail			
Website			
Blog			
webQuest			
Conferencing			
Wikis			
Listserv			

- 3- What type of class work you prefer?
- Individual work
  - Pair work
  - Group work
  - Project-based work
  - Others, specify

- 4- What type of tests you need to take?
- In class tests
  - Take-home tests
  - Online tests
  - All of these
  - None of these

- 5- Do you prefer to study in:
- small-size group (10 students)
  - Medium-size group (10-25 students)
  - Large-size group (25-50)
  - Very large-size group (more than 50)

6- Comment on the following statements:

Statements	Strongly agree	Slightly agree	Agree	Slightly disagree	Strongly disagree
Web-based ESP course will motivate me to learn English better than traditional classroom.					
Web-based ESP course will improve my study skills (reading, speaking, listening, writing, and researching).					
Web-based ESP course will encourage me to engage in authentic communication online.					
Web-based ESP course will develop my autonomous learning.					
Web-based ESP course will empower to be a life-long learner.					

7- Say what else you need to be integrated in a web-based ESP course.

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## Appendix 2

### Final Needs Analysis Questionnaire

This Needs Analysis Questionnaire is intended to reveal Computer Science learners' needs in order to develop a Web-based ESP course in Computing English for first-year Master students at the department of Computer Science -Biskra University-.

Your responses to these questions will help us plan web-based programs to meet your needs in learning English. **Please tick (✓) the appropriate box or make full answers to express your opinion.** *Your answers will be kept confidential.*

#### I. Personal Information

- 1- Gender : Female  Male
- 2- Age:
- a) 20-25
  - b) 25-30
  - c) Over 30
- 3- Mother tongue:
- a) Arabic
  - b) Berber
  - c) French
  - d) Others  please specify: \_\_\_\_\_
- 4- How long have you been studying English? \_\_\_\_\_ years
- 5- Have you ever studied in an English-speaking country? Yes  No   
If yes, for how long? \_\_\_\_\_ years

#### II. Present Situation Analysis

- 6- Do you use English in your study?
- Yes
- No
- If yes, is this mainly:
- a) To speak
  - b) To write
  - c) To do both
- 7- How many hours a week you study English? \_\_\_\_\_ hours
- 8- How interested are you in the English course?
- a) Not interested
  - b) Interested
  - c) Very interested

- 9- Do you learn English in:
- a) Traditional class
  - b) Audio-visual class
  - c) Internet-based class
  - d) All of these

- 10- Do you use English in:
- a) English class only
  - b) Computer science classes
  - c) Both classes

11- How often do you perform the following tasks in English?

<i>Tasks</i>	<i>Never</i>	<i>Rarely</i>	<i>Sometime s</i>	<i>Often</i>	<i>Always</i>
1. Writing e-mails					
2. Making phone calls					
3. Internet chatting					
4. Writing letters and CVs					
5. Writing lessons, paragraphs, essays and research papers					
6. Writing articles for publication					
7. Writing blogs and wikis					
8. Writing computer programs					
9. Reading articles related to your discipline					
10. Speaking to the teacher and classmates					
11. Speaking in conferences and seminar					
12. Translations (French-English, Arabic-English)					
13. Others, specify					

12- Do you study English elsewhere to improve your proficiency level? Yes  No

If yes, is this mainly:

- a) English for specific purposes (ESP)
- b) General English (GE)

13- Describe your current English proficiency level in the following language areas by putting a tick(√) in the appropriate box:

<i>Language areas</i>	<i>Very weak</i>	<i>Weak</i>	<i>Acceptable</i>	<i>Good</i>	<i>Very good</i>
1. <i>Grammar</i>					
2. <i>General vocabulary</i>					
3. <i>Specific vocabulary</i>					
4. <i>Pronunciation</i>					
5. <i>Speaking</i>					
6. <i>Listening</i>					
7. <i>Reading</i>					
8. <i>Writing</i>					

**14-** Rank from **1** to **8** the following skills according to their importance in your academic discipline (which one you need most?). (1. Highly important.....8. not important at all)

<i>Language areas</i>	<i>Rank</i>
1. <i>Grammar</i>	
2. <i>General vocabulary</i>	
3. <i>Specific vocabulary</i>	
4. <i>Pronunciation</i>	
5. <i>Speaking</i>	
6. <i>Listening</i>	
7. <i>Reading</i>	
8. <i>Writing</i>	

**15-** Describe your attitude towards the current English course

<i>Course components</i>	<i>Very satisfied</i>	<i>Satisfied</i>	<i>Fairly satisfied</i>	<i>Not satisfied</i>
1. <i>Achievement of objectives</i>				
2. <i>Amount of lectures/lessons (quantity)</i>				
3. <i>Level of lectures/lessons(quality)</i>				
4. <i>Students' participation</i>				
5. <i>Number and level of activities</i>				
6. <i>Schedule (class time and duration)</i>				
7. <i>Materials used (printed, audio, video, internet)</i>				
8. <i>Teacher's method and style of teaching</i>				
9. <i>Teacher's qualification and performance</i>				

If you tick “fairly satisfied” or “not satisfied”, give your reasons.

<i>Course components</i>	<i>Reasons of dissatisfaction</i>
1. Achievement of objectives	
2. Amount of lectures/lessons (quantity)	
3. Level of lectures/lessons(quality)	
4. Students’ participation	
5. Number and level of activities	
6. Schedule (class time and duration)	
7. Materials used (printed, audio, video, internet)	
8. Teacher’s method and style of teaching	
9. Teacher’s qualification and performance	

**16-** Does the current English course content have a relation with your discipline

(Computer Science):

- a) Yes
- b) No
- c) Parts of it

**17-** Is the current English course designed:

- a) By the teacher only
- b) By students and their teacher
- c) Imposed by the administration

### III. Target Situation Analysis

**18-** How much are you interested in taking an ESP course designed according to your needs to improve your proficiency level?

- a) Very interested
- b) Interested
- c) Fairly interested
- d) Not interested at all

**19-** Do you have a goal to :

- a) Get a job which requires English after graduation
- b) Continue academic studies in your discipline

**20-** Do you have a goal to work/ study in an English-speaking country?

- Yes
- No

If your answer is “no”, why?

**21-What topics do you need to study in ESP course?**

1. Artificial intelligence	
2. Blogging	
3. Computer animation	
4. Data base administration	
5. Desktop publishing	
6. Graphic designing	
7. Hardware engineering	
8. Network administration	
9. Online teaching	
10. Programming	
11. Security	
12. Software engineering	
13. Website designing	
14. Others, specify	

**21- How much importance do you give to the following language skills?**

<i>Language skills</i>	<i>Not important</i>	<i>Important</i>	<i>Very important</i>
<b>e- Reading</b>			
Computer manuals and instructions			
Web pages and internet related materials			
Printed documents related to your discipline (books, magazines, articles, etc.)			
Others, specify			
<b>f- Speaking</b>			
Speaking to the teacher			
Speaking to classmates			
Speaking to foreign visitors			
Speaking on the phone/ chatting online			
Speaking in conferences and seminars			
Giving presentations			
Others, specify			

<b>g- Listening</b>			
Lectures/lessons (in class and online)			
Online presentations and reports			
TV and radio shows			
Movies and songs			
Others, specify			
<b>h- Writing</b>			
Articles			
Thesis			
Web pages			
Blogs and wikis			
e-mails			
Letters and CVs			
Reports			
Programs			
Translation			
Others, specify			

**22-** What language priorities you think you need ESP course for? You can choose more than one option.

- a) To become more fluent speaker
- b) To become more accurate speaker
- c) To expand my general vocabulary
- d) To expand my specific vocabulary
- e) To improve my pronunciation
- f) To improve my reading skill
- g) To improve my writing skill
- h) To improve my listening skill
- i) Others, please justify

**23-** How important do you think ESP is in comparison with other subjects?

- a) More important than many other Computer Science subjects
- b) As important as other Computer Science subjects
- c) Less important than other Computer Science subjects

#### IV. Strategy Analysis

**24-** As a Computer Science student, do you need the ESP class to be in:

- a) Traditional classroom?
- b) Web-based class?
- c) Blended class?

25- How familiar are you with the following web tools?

<i>Web tools</i>	<i>Know well</i>	<i>Want to know more</i>	<i>Don't know</i>
1. e-mail			
2. Website			
3. Blog			
4. webQuest			
5. Conferencing			
6. Wikis			
7. Listserv			

26- What type of class work do you need?

- a) Individual work
- b) Pair work
- c) Group work
- d) Project-based work
- e) Others  please specify.....

27- What type of tests you need to take?

- a) In class tests
- b) Take-home tests
- c) Online tests
- d) All of these
- e) None of these

28- Comment on the following statements:

<i>Statements</i>	<i>Strongly agree</i>	<i>Slightly agree</i>	<i>Agree</i>	<i>Slightly disagree</i>	<i>Strongly disagree</i>
Web-based ESP course will motivate me to learn English better than traditional classroom.					
Web-based ESP course will improve my study skills (reading, speaking, listening, writing, and researching).					
Web-based ESP course will encourage me to engage in authentic communication online.					
Web-based ESP course will develop my autonomous learning.					
Web-based ESP course will empower you to be a life-long learner.					

*Thank you for your cooperation*  
 Mr. MeddourMostefa  
 Doctorate research student  
 Department of English, Biskra University  
 June 2011

### Appendix 3

#### COURSE EVALUATION FORM

Dear students,  
 Please complete this course evaluation form by assigning each statement a number which corresponds to your opinion. Place an (X) in the column that corresponds to your choice.  
 DO NOT PUT YOUR NAME ON THIS EVALUATION! I wish to get objective and anonymous responses from the class. By remaining anonymous, you can be honest and I can get a more accurate impression of how you feel about the course.

#### Rating system

1- Strongly Agree 2-Agree 3-Unsure 4-Disagree 5- Strongly Disagree

<b>The instructor</b>	<b>01</b>	<b>02</b>	<b>03</b>	<b>04</b>	<b>05</b>
a. Instructor is knowledgeable about the subject					
b. Instructor is prepared					
c. Instructor encourages participation and answers students' questions.					
d. Instructor is enthusiastic about teaching.					
<b>Assignments</b>					
a. Assignments are in the right level of difficulty for the course					
b. Assignments help me learn the material					
c. Assignments given for the class are interesting					
d. Assignments meet my learning needs					
<b>Learning materials</b>					
a. The instructor uses variety of web-based learning materials such as YouTube videos, encyclopaedias, Internet texts and email.					
b. The learning materials fit the course objectives.					
c. The materials motivate me to engage more effectively in the course.					
<b>Lessons and activities</b>					
a. Lessons prepare me to use English in academic and workplace settings.					
b. Lessons and activities are related in content to my discipline (computer science).					
c. The language used in the lessons (grammar, vocabulary, skills) is related to my discipline.					
<b>Objectives</b>					
a. The course objectives are clearly identified.					
b. The instructor has fully achieved the course objectives.					
c. My learning objectives are entirely achieved.					
<b>Tests</b>					
a. The level of tests was just right					
b. The tests covered all the learning points					

c. The tests' grading scale is acceptable					
d. The grades are convincing					
<b>Web assignments</b>					
a. Web assignments are clearly written and properly instructed.					
b. Web assignments are the right level of difficulty for the course.					
c. Activities and web-delivered assignments help me learn the material.					
d. Web assignments given for class serve the objectives of the course.					
e. Web assignments have motivated me to develop the needed language skills for the course.					
f. Web assignments meet my learning needs.					
g. Web assignments make learning dynamic					

What do you recommend to improve this course?

March, 2012

**Appendix 04**

Mohammed Kheider University – Biskra-  
Faculty of Science and Technology  
Department of Computer Science  
Level: 1<sup>st</sup> year Master

FULL NAME:
GROUP NUMBER:

**PILOT PRE TEST**

*What can computers do?*

Computers and microchips have become part of our everyday lives: we visit shops and offices which have been designed with the help of computers, we read magazines which have been produced on computer, we pay bills prepared by computers. Just picking up a telephone and dialling a number involves the use of a sophisticated computer system, as does making a flight reservation or bank transaction.

We encounter daily many computers that spring to life the instant they're switched on (e.g. calculators, the car's electronic ignition, the timer in the microwave, or the programmer inside the TV set), all of which use chip technology.

What makes your computer such a miraculous device? Each time you turn it on, it is a tabula rasa that, with appropriate hardware and software, is capable of doing anything you ask. It is a calculating machine that speeds up financial calculations. It is an electronic filing cabinet which manages large collections of data such as customers' lists, accounts, or inventories. It is a magical typewriter that allows you to type and print any kind of document — letters, memos or legal documents. It is a personal communicator that enables you to interact with other computers and with people around the world. If you like gadgets and electronic entertainment, you can even use your PC to relax with computer games.

**A. READING COMPREHENSION**

1. Suggest another title for the text.

.....

2. List five different computer applications mentioned in the text.

- 
- 
- 
- 
- 

3. Find in the text words or phrases that have similar meaning with the following:

a. Include →

.....

b. High level →

.....

- c. Booking →  
.....
- d. Machine →  
.....
- e. Computer peripherals →  
.....
- f. Computer programs →  
.....
- g. Database →  
.....
- h. Entertainment →  
.....

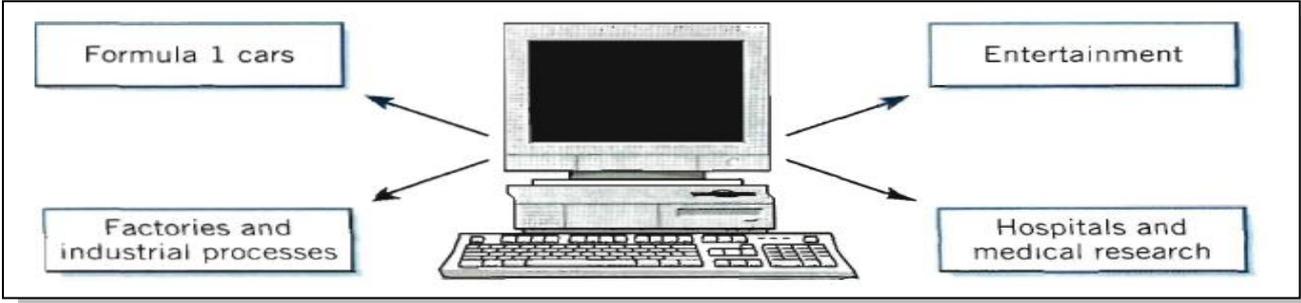
**B. LANGUAGE WORK**

- Fill in the following table

Noun	Verb
Production	
	Sophisticate
	Involve
Speed	
Management	
	Interact
Entertainment	

**C. WRITING**

- Choose one of the areas in the diagram below and write a short paragraph about what computers can do in this area.



## Appendix 5

Mohammed Kheider University – Biskra-  
Faculty of Science and Technology  
Department of Computer Science  
Level: 1<sup>st</sup> year Master (G2+G4)

FULL NAME:

GROUP NUMBER:

### PILOT POST TEST

- Read the following text and answer the questions below.

People use computers in many ways. In business, computers track inventories with bar codes and scanners, check the credit status of customers, and transfer funds electronically. In homes, tiny computers embedded in the electronic circuitry of most appliances control the indoor temperature, operate home security systems, tell the time, and turn videocassette recorders (VCRs) on and off. Computers in automobiles regulate the flow of fuel, thereby increasing gas mileage, and are used in anti-theft systems. Computers also entertain, creating digitized sound on stereo systems or computer-animated features from a digitally encoded laser disc. Computer programs, or applications, exist to aid every level of education, from programs that teach simple addition or sentence construction to programs that teach advanced calculus. Educators use computers to track grades and communicate with students; with computer-controlled projection units, they can add graphics, sound, and animation to their communications. Computers are used extensively in scientific research to solve mathematical problems, investigate complicated data, or model systems that are too costly or impractical to build, such as testing the air flow around the next generation of aircraft. The military employs computers in sophisticated communications to encode and unscramble messages, and to keep track of personnel and supplies.

**Microsoft ® Encarta ® 2009.**

#### QUESTIONS

1. Suggest a title to the text (0.5pt)

.....

2. List all the areas in which computers are used. (3.5pts)

-  
-  
-  
-  
-  
-  
-

3. Add two other areas in which computers are widely used. (2 pts)

-  
-

4. Find words/expressions that have similar meaning with the following: (4 pts)

- Extremely small →
- Multimedia →
- High-tech and developed →
- Characteristics →

5. Language work (3 pts)

Noun	Verb
	Entertain
Addition	
	Employ
Digitize	
	Apply
Program	

6. Computers are widely used at homes. Give two other computer home applications that are not mentioned in the text. (2 pts)

- 
- 

7. “Computer programs, or applications, exist to aid every level of education.” As a student of Computer Science, explain how the computer helps you in your studies. (5 pts)

.....

.....

.....

.....

.....

.....

.....

.....

.....

**Appendix 6  
(Final Pretest)**

Mohammed Kheider University – Biskra-

Level: **1<sup>st</sup> year Master**

Department of Computer Science

Course: **English**

Date: **January 29<sup>th</sup>, 2012**

**ANSWER MODEL FOR FIRST SEMESTER EXAMINATION**

**I. Say whether these statements are true or false, and then correct the false ones. (4 pts)**

1. (AI) is the study and engineering of human thought capable of performing the same kinds of functions that characterize intelligent machines. **(False) (0.25 pt)**

- (AI) is the study and engineering of **intelligent machines** capable of performing the same kinds of functions that characterize **human thought**. **(1 pt)**

2. AI programs are often better than people at predicting stock prices, and they can create successful long-term business plans. **(True) (0.25 pt)**

3. When Deep Blue lost to Kasparov, the idea of intelligence has changed. **(False)**

- When **Kasparov** lost to **Deep Blue**, the idea of intelligence has changed. **(1 pt)**

4. There are surprisingly difficult things that people can do, however computers are not good at. **(False) (0.25 pt)**

- There are surprisingly **simple** things that people can do, however computers are not good at. **(1 pt)**

**II. Rearrange the following words to make meaningful sentences. (5 pts)**

1. Life, AI, increasingly, our, dominated, has

- AI has increasingly dominated our life. **(1.5 pt)**

2. Has, Intelligence, defined, artificial, extensively, been  
Artificial Intelligence has been extensively defined. **(1.5 pt)**

3. Education, applications, every, level, computer, exist, of, to aid
  - Computer applications exist to aid every level of education. (2 pts)

**III. Briefly explain the following terms. (04 pts) (01 pt each)**

1. Brute force computation: **processing millions of chess positions per second**
2. ASIMO: **a humanoid robot designed by Japanese engineers at the Honda Motor Company**
3. Heuristics: **problem-solving method by trial and error**
4. Deep Blue: **IBM supercomputer that challenged Kasparov in chess game**

**IV. Match the AI applications in column (A) with their corresponding fields in column (B)**

(3 pts)

A	B
a. Play games	1. Medicine
b. Predict stock values	2. Art
c. Diagnose disease	3. Engineering
d. Translate language	4. Business
e. Design complex machineries	5. Learning
f. Compose music	6. Entertainment

(0.5each)

a	b	c	d	e	f
6	4	1	5	3	2

**V. Write four sentences in which you use the following words. (Use one word in each sentence). (4 pts)**

Simulation, performance, robots, education

1. AI is the **simulation** of human thought and behaviour on computers. (1 pt)
2. Computers' **performance** is getting much higher and more sophisticated. (1)
3. **Robots** are humanlike machines that are intended to perform different tasks.

Computers are widely used in different levels of **education**. (1 pt)

**Appendix 7**  
**(Final Postest)**

Mohammed Kheider University – Biskra- Level: **1<sup>st</sup> year Master**  
Faculty of Exact Sciences and Sciences of Nature  
Department of Computer Science

Course: **English**  
Date: **May 29<sup>th</sup>, 2012**

**SECOND TERM EXAM**

**Answerkeys**

**QUESTION 01:** Read the following text and answer the questions below. **(13 pts)**

1. Suggest a suitable title to the text **(1 pt)**  
**Viruses and malware**
  
2. Pick up words from the text having similar meaning to the following. **(5 pts)**  
*Reproduce: duplicate*  
*Destruction: damage*  
*Malware: malicious software*  
*Remove: erase/delete*  
*Damage: harmful effects/ harm*
  
3. What do all these malicious programs have in common? **(1 pts)**  
**All of them have harmful effects on the computer security and applications (delete/change files, steal information, send unwanted docs, etc)**
  
4. What is the difference between viruses and other malicious programs? **(1pt)**  
**Viruses have the ability to replicate itself; whereas other malware are not self-duplicating programs.**
  
5. Mention two other types of malicious software that you know. **(2 pts)**
  - **Spyware**
  - **Warms**
  
6. State four ways to prevent the infection of your computer files and applications from viruses? **(4 pts)**
  - Creating backups of original software of the computer system
  - Install current anti-virus and regular updates
  - Using encryption techniques
  - Mandating passwords and installing firewalls

**QUESTION TWO:** **(6 pts)**

As a Computer Science student, write a set of numbered points to advise someone thinking of designing a website. Advise them of things to do and not to do.

**Things to do**

1. Set your objectives
2. Choose compelling content
3. Use clean and simple design

**Things not to do**

1. Avoid using inappropriate colours
2. Don't overuse animation and music
3. Don't neglect your audience

Unit  
1

# ARTIFICIAL INTELLIGENCE

“They say: the machine has won.” (Garry Kasparov)



# A RTIFICIAL INTELLIGENCE

## WARM-UP

a. These concepts are related to AI. Underline the odd words.

Programs	human behaviour	robotics	database	bytes
Simulation	multimedia	intelligent machines	desktop	website
Modem	memory and speed	human mind	IQ tests	

b. Add more words to the list.

c. Complete these statements using words from the box

Applications, predicting, sophisticated, development, learn, performing

1. (AI) is the study and engineering of intelligent machines capable of .....the same kinds of functions that characterize human thought.
2. AI has taken two major directions: psychological and physiological research into the nature of human thought, and the technological development of increasingly ..... computing systems.
3. AI programs have a broad array of ..... They are used by financial institutions, scientists, psychologists, medical practitioners, design engineers, planning authorities, and security services, to name just a few.
4. AI programs are often better than people at ..... stock prices, and they can create successful long-term business plans.
5. However, it remains unknown whether computer programs could ever ..... to solve problems on their own, rather than simply following what they are programmed to do.
6. An important branch of AI research involves the .....of robots, with the goal of creating machines that can perceive and interact with their surroundings.

**Microsoft ® Encarta ® 2009. © 1993-2008 Microsoft Corporation. All rights reserved.**

## LISTENING

### What is Artificial Intelligence?

A. Listen to the interview with Astro Teller talking about the definition of Artificial Intelligence and decide whether these statements are true or false. Watch the video at <http://www.youtube.com/watch?v=fYkF7WDLgOU>



1.

2. Artificial Intelligence has been extensively defined, so it has many definitions. (...)
3. AI is the process of trying to get computers perform human intelligent activities.(...)
4. Computers have historically been able to do things that people were not able to do.(...)
5. When Casparov lost to Deep Blue, the idea of intelligence has changed.(...)
6. The big lesson out of AI is that people still resist the idea that computers cannot be able to do what they believe is special about them.(...)
7. It turns out that people have seriously over-forecast the rate of AI.(...)
8. There are surprisingly difficult things that people can do, however computers are not good at. (...)
9. AI has increasingly dominated our life.

**B.** Work in pairs. Listen again to Astro Teller and answer the following questions.

1. How has the idea of intelligence historically changed?
2. Can computers nowadays be considered as human-like intelligent machines?

## READING

### A. Pre-reading

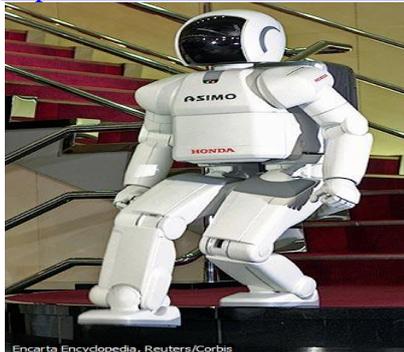
Before reading the text, list some applications of AI.

- 
- 
- 
- 

# A

## pplications of AI

<http://www-formal.stanford.edu/jmc/whatisai/whatisai.html>



Q. What are the applications of AI?

A. Here are some.

### Game playing

You can buy machines that can play master level chess for a few hundred dollars. There is some AI in them, but they play well against people mainly through brute

force computation--looking at hundreds of thousands of positions. To beat a world champion by brute force and known reliable heuristics requires being able to look at 200 million positions per second.

### **Speech recognition**

In the 1990s, computer speech recognition reached a practical level for limited purposes. Thus United Airlines has replaced its keyboard tree for flight information by a system using speech recognition of flight numbers and city names. It is quite convenient. On the other hand, while it is possible to instruct some computers using speech, most users have gone back to the keyboard and the mouse as still more convenient.

### **Understanding natural language**

Just getting a sequence of words into a computer is not enough. Parsing sentences is not enough either. The computer has to be provided with an understanding of the domain the text is about, and this is presently possible only for very limited domains.

### **Computer vision**

The world is composed of three-dimensional objects, but the inputs to the human eye and computers' TV cameras are two dimensional. Some useful programs can work solely in two dimensions, but full computer vision requires partial three-dimensional information that is not just a set of two-dimensional views. At present there are only limited ways of representing three-dimensional information directly, and they are not as good as what humans evidently use.

### **Expert systems**

A "knowledge engineer" interviews experts in a certain domain and tries to embody their knowledge in a computer program for carrying out some task. How well this works depends on whether the intellectual mechanisms required for the task are within the present state of AI. When this turned out not to be so, there were many disappointing results. One of the first expert systems was MYCIN in 1974, which diagnosed bacterial infections of the blood and suggested treatments. It did better than medical students or practicing doctors, provided its limitations were observed. Namely, its ontology included bacteria, symptoms, and treatments and did not include patients, doctors, hospitals, death, recovery, and events occurring in time. Its interactions depended on a single patient being considered. Since the experts consulted by the knowledge engineers knew about patients, doctors, death, recovery, etc., it is clear that the knowledge engineers forced what the experts told them into a predetermined framework. In the present state of AI, this has to be true. The usefulness of current expert systems depends on their users having common sense.

### **Heuristic classification**

One of the most feasible kinds of expert system given the present knowledge of AI is to put some information in one of a fixed set of categories using several sources of information. An example is advising whether to accept a proposed credit card purchase. Information is available about the owner of the credit card, his record of payment and also about the item he is buying and about the establishment from which he is buying it (e.g., about whether there have been previous credit card frauds at this establishment).

*By John McCarthy  
2007-11-12*

## B. Answer the following questions

1. How can a computer play chess against people?
2. When did computer speech recognition reach a limited practical purpose?
3. How did United Airlines benefit from the developments in computer speech recognition? Did they fully succeed?
4. Why has the computer to be provided with an understanding of the domain the text is about?
5. Has the computer successfully achieved the simulation of the human's three dimensions vision?
6. "Knowledge engineer" turned out to be a complete failure in certain domains. What was the main reason?
7. Do you think that heuristic classification is a very reliable expert system using AI?

## C. Post-reading

In a short paragraph, describe how the computer makes use of AI to simulate human behavior. Do you think that it has failed or succeeded in doing so?

## LANGUAGE WORK

### Contextual references

Read more about pronouns on <http://www.new.towson.edu/ows/pronouns.htm>

Transitional markers are words used to link ideas together so that the text is easier to read. When pronouns such as *it, they, them, I, he, she, which, who, whose, that, such, one*, and demonstrative adjectives such as *this, that, these and those*, are used as transitional markers, they refer to a word, or words, mentioned earlier in the sentence or paragraph. Their function is to take your thoughts back to something that has already been mentioned. Other words which are often used to refer backwards are *the former, the latter, the first, second, etc., the last*.

Sample paragraph:

A computer, like any other machine, is used because it does certain jobs better and more efficiently than humans. It can receive more information and process it faster than any human. The speed at which a computer works means it can replace weeks or even months of pencil-and-paper work. Therefore, computers are used when the time saved offsets their cost, which is one of the many reasons they are used so much in business, industry, and research.

oxford english for computing.pdf - Adobe Reader  
File Edit View Document Tools Window Help

**Exercise 1**

Using the sample paragraph as a model, draw a rectangle around the word, or words, that the circled words refer to. Then join the ○ and the □ with arrows.

Modern accounting firms use spreadsheet software to do complicated calculations. They can provide their clients with an up-to-date report whenever it is needed. This software has many functions and can be integrated with other software. The spreadsheet's basic component is a cell. This may contain a formula which performs a mathematical operation. It could also contain a label or data. The former describes the information on the worksheet. The latter is the information itself.

The worksheet is the basic work area of a spreadsheet program. It is made up of cells arranged in rows and columns. The number of these varies depending on the software you are using. You can change the width and format of cells. Such parameters are usually quite easy to change with just a few keystrokes.

11

## **Exercise 2**

READ THESE SENTENCES FROM THE TEXT IN READING SECTION AND FIND THE REFERENCE FOR THE WORDS IN BALD.

1. There is some AI in **them**, but **they** play well against people mainly through brute force computation.
2. Thus United Airlines has replaced **its** keyboard tree for flight information.
3. There are only limited ways of representing three-dimensional information directly, and **they** are not as good as what humans evidently use.
4. A "knowledge engineer" interviews experts in a certain domain and tries to embody **their** knowledge in a computer program.
5. One of the first expert systems was MYCIN in 1974. It did better than medical students or practicing doctors, provided **its** limitations were observed.
6. It is clear that the knowledge engineers forced what the experts told **them** into a predetermined framework.
7. Information is available about the owner of the credit card, **his** record of payment.

## **SPEAKING**

With a partner, discuss the various applications of AI in modern life. You strongly believe that computers have the potentiality to replace humans in different life situations; however, he strongly disagrees. Here are some useful expressions.

### **STATING OPINIONS & PREFERENCES**

I think..., In my opinion..., I'd like to..., I'd rather..., I'd prefer..., The way I see it..., As far as I'm concerned..., If it were up to me..., I suppose..., I suspect that..., I'm pretty sure that..., It is fairly certain that..., I'm convinced that..., I honestly feel that, I strongly believe that..., Without a doubt,...

### **DISAGREEING**

I don't think that..., Don't you think it would be better..., I don't agree, I'd prefer..., Shouldn't we consider..., But what about..., I'm afraid I don't agree..., Frankly, I doubt if..., Let's face it, The truth of the matter is..., The problem with your point of view is that...

### **GIVING REASONS AND OFFERING EXPLANATIONS**

To start with, The reason why..., That's why..., For this reason..., That's the reason why..., Many people think..., Considering..., Allowing for the fact that..., When you consider that...

View all the agreeing and disagreeing expressions on:

<http://www.englishclub.com/speaking/agreeing-disagreeing-expressions.htm>

Prepared by:  
Mr. MeddourMostefa  
Department of English  
Biskra University

## Appendix 9

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Gmail

COMPOSE

Facebook® Account Sign In - Facebook.com - World's Largest Online Community. Join for Free & Enjoy the Benefits!

Inbox (18)  
Important  
Sent Mail  
Drafts (31)  
Personal  
Travel

Amel Hammani  
Benchouia Ahmed Al  
Chourouk Guettas  
Department of Englis  
Houria Rouabah  
kenza daoudi  
lakhdar djaafar  
Master's Informati...

### Assignment n° 03

 **meddour mustapha** <meddourmustapha@gmail.com> 4/4/12  
to ifomatique

Dear students,

This third assignment is about GUI. Read the attached PDF file and do **Task 09**.

I will check your answers next session!

Good luck

 **0-19-457470-9-a.pdf**  
148K View Download

 Click here to [Reply](#) or [Forward](#)

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Google

Gmail

COMPOSE

Facebook® Account Sign In - Facebook.com - World's Largest Online Community. Join for Free & Enjoy the Benefits!

Inbox (18)  
Important  
Sent Mail  
Drafts (31)  
Personal  
Travel

Amel Hammani  
Benchouia Ahmed Al  
Chourouk Guettas  
Department of Englis  
Houria Rouabah  
kenza daoudi  
lakhdar djaafar  
Master's Informati...

### Assignment n° 04

 **meddour mustapha** <meddourmustapha@gmail.com> 4/12/12  
to ifomatique

Dear Students,

**Task:**

Define the following computing terms using the **FOLDOC (Free- online Dictionary of Computing)**: <http://foldoc.org>.

**OR** the Computer Glossary: [http://www.iwebtool.com/computer\\_glossary/](http://www.iwebtool.com/computer_glossary/)

- Browser
- Malware
- Dialogue box
- Wiki
- Client

Good luck!

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Google

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Amel Hammani  
Benchouia Ahmed Al  
Chourouk Guettas  
Department of Englis  
Houria Rouabah  
kenza daoudi  
lakhdar djaafar  
Master's Information

Home assignment n° 01

meddour mustapha <meddourmustapha@gmail.com> 2/29/12  
to ifomatique

Dear students,

This is the first assignment of the second semester. Please download the video and answer the following questions:

**\*Listening comprehension: what makes a good web design?**

\*Listen to the web designer Christopher Merrill talking about the factors that make a good website and answer the questions below. Watch the video at

<http://www.youtube.com/watch?v=t5bnG4mth7o>

Best of luck

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Home assignment n° 02

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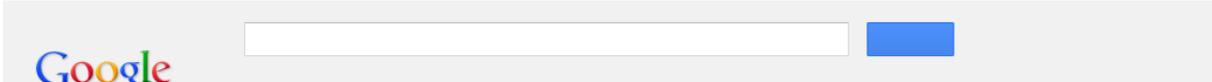
Dear students,

This the second assignment (reading comprehension)

Read the text and answer the following question

**A. Find in the text words that have the following meaning**

1. Holding attention
2. Follow through links
3. Website opening page
4. Concentrated on a particular thing



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Mestres Informatiq

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### Last assignment

 **meddour mustapha** <meddourmustapha@gmail.com> 5/8/12  
to ifomatique

Dear students,  
Read the following text <http://kb.iu.edu/data/aehtm.html> and answer these questions:  
1- What is a computer virus?  
2- What is the difference between virus, worm and trojan horse?  
3- How can you avoid threats to your computer?  
You need to bring your assignment next srsion (the last session) for final evaluation.  
Good luck!



## ملخص:

اكتسب تعليم اللغة عن طريق الواب (شبكة الإنترنت) حاليا أهمية بالغة، وذلك لتطبيقاته التعليمية المبتكرة. فقد أصبح أداة متاحة لأقسام اللغة تضمن على حد سواء التعلم المتزامن وغير المتزامن. لهذا فإن هذه الدراسة تبحث في مدى تأثير إدراجه كوسيلة تعليمية في تدريس الإنجليزية للأغراض الخاصة ESP، طلبة الإعلام الآلي كدراسة حالة خلال العام الدراسي 2011-2012. وتهدف بالأساس إلى النظر في مدى فعالية هذه الوسيلة في خلق فضاء تعليمي يراعي احتياجات الطلبة اللغوية ويتعامل مع نقائصهم ومرادهم. و لتحقيق هذا الهدف تم تطبيق طريقة البحث الثلاثي التي تنطوي على ثلاث أدوات لجمع البيانات لوضع مجموعة من الاستدلالات لفرضيات البحث. وتشمل هذه الأدوات البحثية استبيان تحليل الاحتياجات، دراسة شبه تجريبية واستمارة تقييميه للبرنامج وذلك لمزج طرق البحث الكمية والنوعية. وقد خلصت نتائج الدراسة إلى مدى أهمية وفعالية التعلم عن طريق الواب في مساعدة الطلبة لتحصيل نتائج أفضل في الاختبارات وتدعيم التعليم الذاتي إلى جانب تجاوز عراقيل الأقسام التقليدية. إلا أن الطلبة في هذه الدراسة عبروا عن استياءهم من التفاعل الاصطناعي الذي يوفره الواب كبديل عن التفاعل الطبيعي في القسم. لهذا خلصت الدراسة إلى اقتراح مزج كلا النوعين التعليميين في فضاء واحد يوفر أفضل ما في عالم التكنولوجيا والبيداغوجيا ويجمع بين التعلم عبر الإنترنت والتعلم المباشر من أجل تحقيق الأهداف المنشودة. وقد يتم ذلك بإدراج موقع عادي على الشبكة، أو وضع المحتوى التعليمي في نماذج عبر الإنترنت، أو من خلال منصة مودل Moodle أو غيرها من أشكال البيئات التعليمية على شبكة الإنترنت التي تأخذ عملية تدريجية تبدأ في الأقسام الدراسية وتستمر على الواب.