Assessing an ESP Course at the Computer Science Department: The Case study of the University of M'Sila, Algeria

Linda Belabdelouahab-Fernini[*]

University of M'sila (Algérie)

Linda.belabdelouahab@unimsila.dz

Abstract ;	Article info
In the twenty-first Century, the mastery of the English language and skills in computing has become an international imperative in education. In recent years, the status of the English language has shifted from a mere means of communication to a language taught in different fields to fulfill manifold purposes. Even though English for Specific Purposes (ESP) emerged in the 1960s, the last twenty years witnessed a proliferation of literature regarding the topic. This research attempts to evaluate an ESP course at the Computer Science Department of the University of M'Sila. It investigates the difficulties encountered during the teaching process and displays the different changes	

[*]*Corresponding author*

brought to counteract them. The study sample targets a five-year period covering students from Bachelor to Master's Degree. The choice of this interval meant to explore the students' outcome in the English course and shed light on the needed measures to improve the teaching of English in this field. The study also examines the impact of these adjustments and suggests some recommendations for more effective teaching of English for Computer Science students based on the surveys and results during their learning process.

I/ INTRODUCTION

The purpose of a course of teaching English for a specific purpose is to ascertain the needs of a precise group of learners. The assessment in ESP tests the knowledge of learners in a specific field, in our case Computer Science. ESP aims at developing both linguistic and professional skills, knowledge and competence. Consequently, teaching English for Computing in an EFL context is a task that requires a double effort. First, one needs to solve the problems students may have in general English. Then, one has to teach ESP, English for Computing. Throughout the years, different methods have been used to attempt to teach English in a homogeneous way. This task revealed tough as translation seemed to be the means used by most students in acquiring the language. Making them get rid of that acquainted habit was a priority. In addition, the issue of methodology soon emerged. Students hadn't been accustomed to having activities in groups and with a time restriction. This paper provides a brief account of a case study on the teaching of English as a foreign language for students at the Computer Science Department of M'Sila University. It enumerates the difficulties faced in the teaching process for undergraduate and graduate levels. The former one is represented by the second year of Bachelor's degree as for the latter, it is exemplified by the first and second year of Master's degree covering the period spanning from 2009 to 2014. This interval

has been targeted because the students showed discernible progress; thus, the method used could be profitable in the teaching of ESP in other environments. The paper also explores the changes that were brought to ameliorate the output of learning and the evaluation of students.

II/ THE LITERATURE REVIEW

ESP has been defined differently by various scholars. According to them, it is not only related to a specific discipline, but should be considered as an 'Approach' to teaching or an 'attitude of mind' as expressed by (Dudley-Evans, 1998). The drawback of an ESP course is the limited time. It can constitute an obstacle to the process of learning and teaching (Belcher, 2006).

One of the reasons of the appearance of ESP was the progress in linguistics that points out the ways in which language is utilised in genuine communications. (Hutchinson & Waters, 1987) stress that since learners' situations differ, language can be adjusted according to their needs in a specific context. The latter focuses on the communicative aspects of language and its linguistic features. It is also important to teach students the way to grasp a discourse in English. In the case of teaching computing English, a discourse approach is adopted.

According to Noam Chomsky (1965), communicative competence is the ability to use a language judiciously in any context. In fact, the linguistic competence and communicative competence complement each other. An understanding of the communicative value of the system of language should be related to use through different skills.

III/ RESEARCH METHODOLOGY DESIGN

The current paper assesses the teaching of ESP at the Computer Science department through the exploration of data collected from students during their years of study spanning from their second year of Bachelor's degree to their second year of Master's degree. The research is undertaken basically through an analytical approach.

A/ SAMPLING: THE TEACHING OF ENGLISH FOR COMPUTING

The teaching of English at the Computer Science Department comprises the four main skills: Reading, Speaking, Writing and Listening (Oxford, 2001). Reading Comprehension deals with texts in

Computer Science. In this section, students learn the necessary terminology through different types of exercises. The latter help them match words with their definitions, fill in the blanks with the right scientific words, or provide definitions for concepts and acronyms. Furthermore, they have target comprehension questions that help them synthesise the text and memorize the required information.

The second skill involves Speaking. In this section, learners are given the opportunity to interact with their peers on different relevant scientific topics. This skill helps them overcome their uneasiness in using a foreign language on the one hand and build self-confidence, on the other. Once the obstacle of the fear of making mistakes is removed, a readiness to learn and participate is observed for the majority of students. In addition to discussions relevant to manifold topics in Computer Science, subjects as how to succeed in a job interview, or how to excel in a viva are also introduced for a twofold aim. First, students are more motivated to voice their difficulties and participate almost spontaneously. Second, they acquire both the information and the foreign language that vehicles it. The use of the humanistic approach in the teaching of Computing in a foreign language helps students feel comfortable in their learning process and go beyond their constant concern of making mistakes, which often prevents them from participating in class.

Writing is the third skill that includes revision of the basic grammar and develops the necessary vocabulary and knowledge for Computing courses. It comprises two main parts. One helps students practice the writing of job application and motivation letters as well as the required techniques for research papers. The second part deals with paragraph and summary writing of texts pertaining to various fields of Computer Science.

To familiarise learners with native speakers, regular listening exercises are suggested for each chapter of Computing courses. Missing sentences have to be provided and comprehension questions have to be answered. In this section, students are also introduced to American and

British pronunciations. Besides, Phonetic rules aretaught to improve their abilities in both listening and pronunciation.

Learners are also trained for the TOEFL (Test Of English as a Foreign Language) in their second year of Bachelor's degree with split sections. In the first year of their Master, they take whole sections of this test. In their second year, they have at least two TOEFL tests. The correction of the latter in class, helps students subsequently avoid common mistakes and gradually perceive their own progress. This test is important because it includes the four skills and provides us with their level in English using international standards of evaluation.

B/ RESEARCH METHOD PROCEDURE

Teaching English for computing highlighted manifold problems. Various attempts have been undertaken to palliate to some drawbacks. The method used to spot them consisted in listing the difficulties encountered through different surveys, questionnaires and discussions. The latter contributed to the collection of data, their analysis and the drawing of conclusions.

1/ RESULTS: ISSUES IN TEACHING ENGLISH IN AN EFL CONTEXT

In recent years, a proliferation of literature recommending the use of technology in teaching EFL was observed (Hismanoglu, 2012). However, the teaching of Computing English in an EFL environment is not well documented. We identified three main issues in teaching English for Computing in an EFL environment at the Computer Science Department of M'Sila University.

a.   *The Unbalanced Level of Students in English*

The first problem that is encountered in teaching Computing English is the unbalanced educational level of students. According to the different teaching environments that were provided to them, learners show a bad, good or very good levels in English. Teaching becomes very strenuous with the lack of coherence between the different learners' standards. To make up for this lack of homogeneity, several upgrading courses are added to furnish them with a teaching of Computing English that meets the requirements of the course.

b.   *Students' Lack of Motivation*

Learners' motivation seems to be inextricably linked with the number of credits allotted to each course. In this sense, a high credit course is more likely to captivate the attention of students than a lower credit one. According to different years, they get two or three credits for the English course. Thu, their interest is impacted since good marks in high credit courses allow them to earn high scores. This entails that an impetus for a course becomes proportional to the number of credits it infers. Consequently, a lack of motivation is observed for this course, and students focus on evaluation rather than on the acquisition of knowledge.

c.   *Large classes and Instructional Time for English*

Any course presented in a foreign language is better comprehended in small groups. However, teaching large classes with a reduced or limited instructional time that varies between one hour and a half and three hours according to the undergraduate or graduate levels, is another problem one has to face in teaching Computing English at the University (Abadzi, 2009). The goals set for the course become very hard to achieve. Furthermore, we face numerous challenges when we teach large groups. We have to keep students on task while monitoring others. We must come up with engaging activities that keep all of our students interested and participating to ameliorate their communication skills. Besides, grading assignments and activities can be very time consuming.

2. NEW STRATEGIES AND OUTCOMES

To counteract the issues encountered in Teaching English at the Computer Science Department, three strategies have been set up.

a.   *Placement Tests*

As the contents of Computing courses are provided in English, to offer a more balanced course, a placement test in the English language is often suggested to students at the beginning of each academic year. This test determines the students' level in English. It is useful since it helps identify the common difficulties they face in this foreign language. Unfortunately, as many students score below the expected level, a

number of upgrading courses are advocated to adjust to the needs of most of them to reach the needed university level. These remedial courses are proposed to support them acquire the skills required prior to taking the course of Computer Science in English. (UWCPT, 2011), (Nunn, 2006).

b.   *Activities and ECIT*

To substitute the passive role of students as mere receivers in their learning process, a series of activities have been introduced. These activities include the four skills conceived according to the curriculum of Computer Science (Aykut, 2008). Every course comprises varied activities that point out communicative competence as proposed by (Canale and Swain, 1980) and performed in groups that learners choose. The use of references is authorised, but a time limit announced before the activities commence should be respected.

This new strategy comprises many advantages. It applies the communicative approach and makes students relax in their process of learning as they choose their own group. It also helps them develop teamwork. This tactic is stress-free as students can use all kinds of references. Moreover, they need to master the management of time as this restriction prepares them for exams as the TOEFL test. The initiation of group work stimulated even the less interested students. The spirit of competition nourished their incentive as the activities are scored. The sum of the scores earned in all activities is added to the mark of the final exam. This continual evaluation motivates learners as it allows them to enhance their chances to pass the final test.

To improve the interest of students, a challenge has been introduced between the different groups of the same level: the ECC (English Challenge in Computing). The latter has also been extended to students of the same level belonging to two different departments. The challenge is organized at the end of the semester or the year. Two students are chosen to answer on behalf of each group. The challenge comprises thirty questions for each group. It is divided in five sections related to the four skills and one for general culture in Computer Science. At every section of the challenge, students can change members

to augment their chances to win. In the different ECCs, learners have shown excitement, motivation and willingness to discover the exact answers. The sixty-question challenge helped students have a general revision of the whole semester or year as well as develop their teamwork and spirit of competition. The only drawback in introducing such activities concerns the weekly corrections that are very time consuming for the teacher. However, they are rewarding in the long term for the students as they raise their awareness regarding the mistakes they should subsequently avoid.

c. Small groups with higher levels

Teaching large classes has revealed difficult, time consuming and a source of discouragement for both students and teachers. However, in small groups, the identification of problems for each learner is easier, the frequency of activities enhances linguistic understanding, and the teaching environment is highly ameliorated with the use of multimedia rooms.

All these factors impact evaluation. The scores in the course of Computing English have been compared for students in the second year of Bachelor's degree, then in their first year and second years of Master's degree. The aim of this comparative study was to see whether the number of students effected the learning and evaluation processes of the three levels mentioned above.

The scores for each level have been studied during the two semesters but Master two since English is taught only in the first semester.
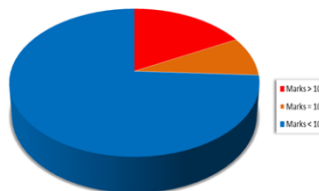

Fig 1. Semester 1 Scores: 2nd year of Bachelor's degree
2009-2010

The sum of marks more and equal to ten is 25,86% of the total number of students.
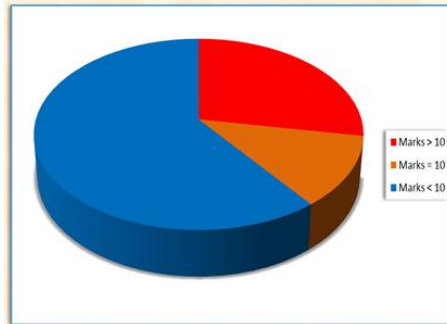

Fig 2. Semester 2 scores: 2nd Year of Bachelor's degree
2009-2010.

The sum of marks above and equal to 10 is 43,1% of the total number of students.
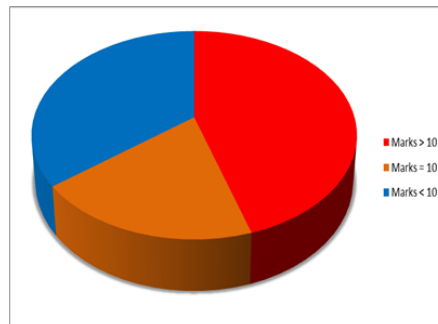

Fig 3. Semester 1 scores: 1st Year of Master's degree
2011-2012.

The sum of marks above and equal to ten is 64,51% of the total number of students.
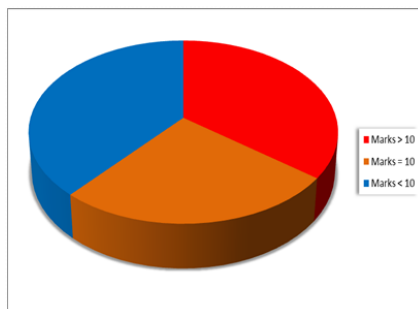
Fig 4. Semester 2 scores: 1st Year of Master's degree
2011-2012

The sum of marks above and equal to ten is 61,28% of the total number of students.
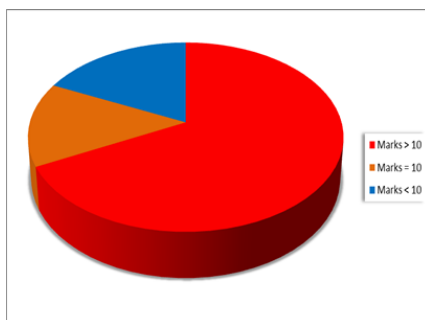

Fig 5. Semester 3 scores: 2nd Year Master's degree
2012-2013.

The sum of marks above and equal to ten is 82,20% of the total number of students.

d. ANALYSIS AND DISCUSSION OF THE FINDINGS

A close analysis of the scores of students from their second year of Bachelor's degree to the second year of their Master's degree clearly reveals that large classes impact on the learning process and thus on the scores of students. According to the different percentages displayed above, those of the students who passed the test of Computing English in the second year of the Bachelor's degree are very low compared to those of first year and second year of Master's degree. There are two major reasons for these differences: the outstanding number of learners and the reduced instructional time.

In their second year of Bachelor's degree, students have a lecture of just one hour and a half a week. Whereas, in their first and second year of Master, they have a course and a workshop of one hour and a half each. Besides, the total number of students in a course of Master is one fourth of that of students in Bachelor's degree.

This empirical study reveals that the teaching of English as a foreign language in Computing is better performed and provides very good results with small groups and adequate instructional time.

IV/ CONCLUSION

Based on a twenty-year teaching experience at the Computer Science Department and on the feedback of the annual surveys of learners studying English for Computing, two kinds of recommendations can be made in our attempt to target better learning and teaching processes.

The first type concerns the learners' suggestions. They expressed their desire to study in groups as they appreciated the activities and the interactivity they experienced with the use of multimedia. They also proposed to have a language Center with a Media Lab at their department where they could learn foreign languages and practice different activities during scheduled times and learn at their own pace.

Another suggestion has been drawn from the several methods used throughout these years in our attempt to balance our teaching objectives with the genuine needs of students. The best method, which seems to have given better results in teaching students in Computing English can be summed up in the following acronym: 'PTAM.' P and T stand for placement test. A stands for activities, and M signifies multimedia. The placement test gives us the framework on which we can start the first step of teaching. Activities in the four skills are crucial to vehicle the required scientific information. Multimedia is the means through which these aims are fulfilled. This method may allow us to provide a 'PTAM' teaching. A Proficient Teaching that provides Advanced levels with Motivation.

Another approach in teaching English for Computing could also be the integration of the recent technologies and Computer Assisted

Language Learning (CALL) that could enable the students acquire the knowledge in Computer Science and the required English language skills. (Swann, 1992), (Garrett, 1991). We can also help our students develop their foreign language skills by adding the supplement of technological tools (Esteras, 2007).

This paper explored the approaches used in Teaching English as a foreign language at the Computer Science Department of M'Sila University. The symbiosis of several methods directed by the teaching requirements and students' needs as foreign language learners, helped the achievement of improved teaching techniques that ultimately impacted the feedback of students as shown in the graph below:
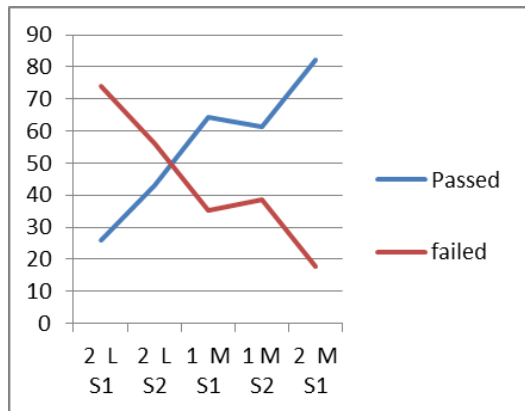

Fig 6. Rates of success and failures in five different semesters

This graph clearly displays the rates of success and failure of students throughout their five-semester-Studying of English for Computing. The rate of success has been raised from the second year of Bachelor's degree to the second year of Master's degree by almost 60% .

Computer Science topics are embedded parts in the English teaching process (Esteras, 2009). They are tightly interrelated and impact one another. By teaching Computing in English, we achieve two goals: provide Computer Science courses and teach English as a Foreign Language. The methods provided above has been adopted as a framework of teaching of English for computing. The results have been satisfactory ever since.

REFERENCES

Abadzi, Helen. (2009). Instructional time loss in developing countries : concepts, measurement, and implications, *The World Bank research observer,24,* (2), 24. Retrieved from http://documents.worldbank.org/curated/en/2009/07/17702783/instructional-time-loss-developing-countries-concepts-measurement-implications.

Aykut,Arslan. (2008). Implementing a Holistic Teaching in Modern ELT Classes: Using Technology and Integrating Four Skills, *International Journal of Human Sciences,. 5,* (1), 20., Retrieved from https://mpra.ub.uni-muenchen.de/20707/

Belcher, D. (2006). *'English for Specific Purposes: Teaching to Perceived Needs and Imagined Future in the Worlds of Work, Study and Everyday life. TESOL Quarterly'.* Retrieved from http://www.personal.psu.edu/kej1/APLNG_493/old_site/belcher.pdf

Canale, M., & Swain, M. (1980). *Theoretical Bases of Communicative Approaches to Second*

Language Teaching and Testing. Applied Linguistics, 1, 1-47. Retrieved from

http://dx.doi.org/10.1093/applin/I.1.1

Chomsky, N. (1965). *Aspects of the Theory of Syntax*. Cambridge, MA: MIT Press.

Dudley-Evans,T., and St.John, M.J. (1998). '*Developments in English for Specific Purposes: A Multi-disciplinary Approach'* Cambridge, England: University Press. Retrieved from https://www.scirp.org/(S(351jmbntvnsjt1aadkposzje))/reference/ReferencesPapers.aspx?ReferenceID=1164861

Esteras, S R., & Fabré, E. M. (2007). *Professional English in Use ICT*. Cambridge: Cambridge University Press.

Esteras, S. R. (2009). *Infotech English for Computer users*. Cambridge: Cambridge University Press.

Garrett, N. (1991). *Technology in the service of language learning: Trends and issues*, Modern Language Journal, *75*(1), 28. Retrieved from https://www.learntechlib.org/p/144329/

Hismanoglu, M. (2012). *Heralding an ICT Environment in Initial EFL Teacher Training Programmes through a Curricular Innovation*, Journal of Language Teaching and Research, 3,(1), 10. http://www.asian-efl-journal.com/September_06_home.php.

Hutchinson, T. &Waters, A. (1987). *'English for Specific Purposes'* Cambridge: CUP.

Nunn, R. (2006). Designing Holistic Units for Task-Based Learning, *Asian EFL Journal*, *8*, (3)., 24. Retrieved from

Oxford, R. (2001). Integrated Skills in the ESL/EFL Classroom, *ESL Magazine., 6*, (1), 8

Straightforward Upper Intermediate and Advanced Placement test. (2012). Retrieved from http://www.macmillanstraightforward.com/resources/tests/

Swann, P. (1992). Computer assisted language learning for English as a foreign language, *Computer & Education, 19,* (3), 15. Retrieved from https://www.sciencedirect.com/science/article/abs/pii/036013159290119P?via%3Dihub

University of Wisconsin-Center for Placement Testing (2011). English Placement Test   Retrieved   from http://testing.wisc.edu/centerpages/English%20Practice%20Exam_2011.pdf