

Integrating Technology in the ESP Classroom in the Department of Biology- Tlemcen University (Algeria)

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Abstract

Since the mid-20th century, English has become the *lingua franca* for scientific research; technical English terms have been integrated into many languages. ICT and web access are considered as an open window into the world to acquire these terminologies. They also offer some truly unique opportunities that can give teaching new impetus and create quite a lot of fun for the students. Learners can quickly improve specific target vocabulary through various techniques. Most importantly, ESP (English for Specific Purposes) students get a feel for how English is used in their specific field of research. Scientific English instruction at Tlemcen University Department of Biology celebrates its 25th year. Most study courses require students to read and to translate scientific texts in English since they are expected to use recent articles and to attend international conferences. By using these recent techniques (i.e. internet and ICT) in the lessons, one can give students "real world" English in their specific field, and overstep their lacks deficiency in the target situation. One will also pick up quite a lot of useful materials that can be used in future lessons. This paper explores difficulties encountered by biology students mainly in listening and speaking skills and the benefits of using technology to reinforce the existing practice in teaching and learning ESP. This urges students to be more autonomous in the future and create an amalgam with the traditional methods.

Keywords: ESP Classroom - Technology (ICT) - Listening and speaking skills

Introduction

English has gradually achieved its significant identity as the world language during the globalization process. As the economy in the globalization process has engendered new knowledge, some problems have arisen, such as transferability from academic to professional contexts. Considerable research in second and foreign languages has shown that individual adult learners have different needs and learn English for different reasons. The teaching of a language should, thus, be carefully prepared to fit students' specific needs and purposes (Nelson, 2006). English for Specific Purposes (ESP) has become one of the most popular scholarly topics over the last decade, but has so far received less attention from researchers than it deserves. English for Specific Purposes implies meticulous research undertaken to produce pedagogically suitable materials and exercises for most adult learners defined in a specific context (Johns & Dudley-Evans, 1991). The main issues that hinder the teaching and learning process in the department of biology are:

- Biology students face difficulties in speaking and listening skills mainly.
- There is a lack of useful materials (ICT and Web access)
- Time allocated to English sessions is insufficient
- Students' level in English is poor

This paper explores the difficulties facing biology students, mainly in listening and speaking skills and the benefits of using technology to reinforce the existing practice in teaching and learning ESP. This will hopefully develop students' autonomy in the future and create an amalgam with traditional methods.

Research Methodology

This research work is divided into three parts: the first step describes the state of the art in the Department of Biology at the University of Tlemcen (the present teaching/ learning situation); the second part analyses students' needs through a questionnaire and the last part tests students before and after implementing ICT in the classroom and an interview to get students feedback at the end of the semester.

The sample population is First-Year Master's Students in the Department of Biology, Faculty of Sciences. The present study aims at introducing recent techniques (i.e. internet and ICT) in future lessons by teaching students « real world » English in their specific field. This helps them overstep their lacks deficiency in the target situation and reinforce the existing practice in teaching/learning ESP in order to become more autonomous.

Description of the teaching/learning situation at the Department of Biology

Today, the teaching of ESP is gaining popularity throughout the world. Algeria also stresses on the importance of English in the educational system in general and higher education in particular. Among other national institutions, the University of Tlemcen offers English courses to equip students in terms of specific needs. The university hosts several Faculties amongst which the Faculty of Sciences where students in the Department of Biology take English as a compulsory subject for both licence and master studies. Despite the growing demand for ESP instruction within Algerian Universities, ESP courses in the Department of Biology are still limited to learning specific lexicon and translating texts through reading scientific and technical articles. A method which fundamentally ignores the learners' personal interests and needs and leads to low motivation in their English studies and, in turn, low performance later when they use the language in their future profession. So the main problematic in that Department is the absence of an adequate ESP course and materials that suit the students' needs for using English in specific situations. Other issues are the shortage

of language teachers in general and ESP teachers in particular and low or no internet access facilities.

Course content

In this department, students are taught Reading Comprehension through different scientific articles in the target language. Here, the students are expected to be able to comprehend the reading materials and understand the meaning of the text, and to grasp the different technical words used in the article. As a second step, the lecturer teaches the students how to translate articles from English into French in order to use them as updated resources for their future scientific research. Unfortunately, no lecturer tries to include tasks that involve communicative skills within the sessions.

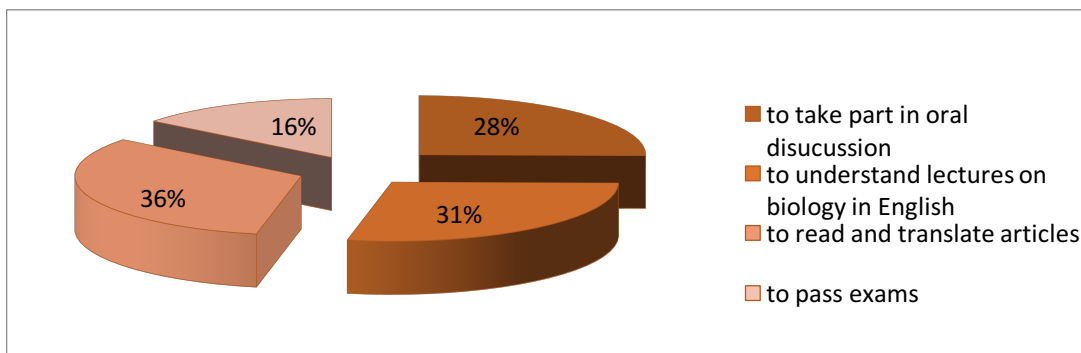
The timing that is set for the English module in that Department is not sufficient to reach the appropriate objectives. At the Department of Biology, the English module is introduced officially within the curriculum during the first three years of study within the LMD System, where only one hour and half per week are devoted to this module from first to sixth semester. Then, two hours weekly during the first and second semester at Master level. The present course content in that Department is summarised in the table below although terminology and translation are the main contents of the English courses, there is no variety of lessons and activities to make them practice the four skills in integration.

Course Content	Number of Sessions	Percentage
Terminology & Translation	25	65.5%
Vocabulary & Grammar	5	12.5%
Listening & Speaking	0	0%
Reading & Writing	0	0%
Other*	10	25%
* Total absence of English sessions		

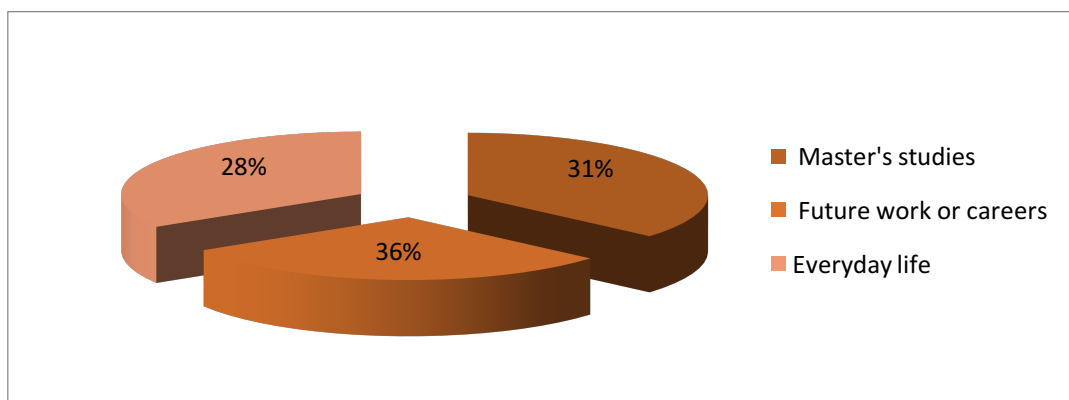
Table 1: Present Course Contents

Needs Analysis

Identifying students’ needs is considered as the starting point for ESP teaching and understanding of how and why adult students learn since learning and teaching are determined by the learners themselves. As shown in the following graph, most participants claimed that reading, translating scientific articles and understanding lectures on biology in English are their reasons for studying English. Taking part in oral discussions (with 28%) is also an important skill to acquire. Whereas, taking exams (16%) is considered as a second step for them

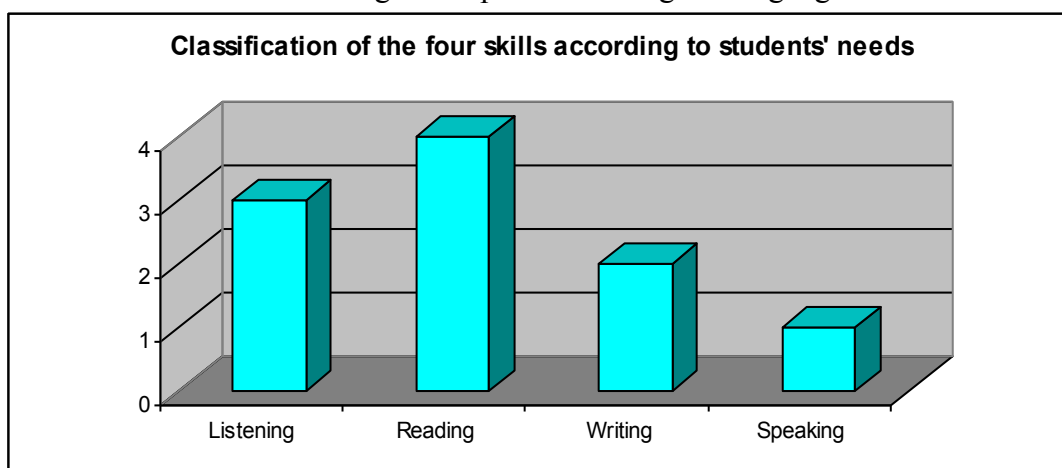


Pie chart1: Reasons for studying English



Pie chart 2: Students' Specific Needs in English

As shown in graph 2, the informants consider English as a prominent language to take into consideration as their target needs for their future life. 36% of students need English in their Master's studies, 31% for their future work or careers and 28% need English in everyday situations. These results show the great impact of the English language on Master's students.



Bar Graph 1: Students' Needs in the Language Skills

In Graph 1, students have classified the four skills according to their needs and the results rightly illustrate the previous results, where they are asked to evaluate their levels in the four skills. The reading and listening skills are their top priorities for improvement. However, the writing and speaking skills are rated at lower levels.

In this section, a multiple-choice question was asked to identify students' deficiencies in the English language. The results are shown in the following table:

Students' difficulties in the EFL		
Options	Number of informants	Percentage
Communication	34	85%
Speaking	26	65%
Grammar	24	60%
Pronunciation	20	50%
Vocabulary	19	47.5%
Listening	18	45%
Writing	9	22.5%
Reading	9	22.5%

Table 2: Students' Weaknesses in the English Language

The results show the negative attitudes of students towards their English competence in speaking. The great majority of the informants (85%) feel that they have difficulties in expressing themselves orally in English; grammar and pronunciation are also considered by students as a major failing with 60% and 50% respectively. 47.5% of the students admit that they do not have adequate and enough vocabulary in English; however, 22.5% consider writing and reading as the skills they master most. .

This research evolves around two main skills which the students' need, mainly speaking and listening, to propose the necessary materials adapted to their needs and objectives. The results obtained from the collected data are summarised in the following tables:

Responses to the First Two Levels of Importance*			
Speaking Skills	Item No	Count	Percentage
Taking part in conferences	14	30	75%
Giving oral presentations	15	27	67.50%
Asking questions in class	16	26	65%
Speaking to English foreign colleagues	17	22	55%
Speaking to English foreign visitors	18	18	45%
Short talks	19	16	40%

*Two Levels of Importance are "Very Important" (VI) and "Moderately Important"(MI)

Table 3: Rank Order of Six Items of Speaking Skills

Responses to the First Two Levels of Importance*			
Listening Skills	Item No	Count	Percentage
Listening to teacher talk	23	27	67.50%
Following oral questions/answers	21	22	55%
Listening to spoken presentations	22	21	52.50%
Following lectures	20	17	42.50%
*Two Levels of Importance are “Very Important” (VI) and “Moderately Important”(MI)			

Table 4: Rank Order of four Items of Listening Skills

Tables 3&4 present the ranking order of four items of perceived language skills mainly speaking and listening according to the percentages of the students’ frequency responses to combined categories of “Very Important” and “Moderately Important”. As can be seen from Table 3, taking part in conferences (75%), giving an oral presentation (67.5%) and simply asking questions in class with 65% seem to be perceived as most important among these four items of English-language skill needs in the research questionnaire. However, the frequency data shows that these biologist informants consider the listening activities as important with a great emphasis on being able to follow lectures in English with very high percentages of students’ responses (67.5%).

INTEGRATING ICT TO ENHANCE STUDENTS’ LEVEL IN LISTENING AND SPEAKING

The analysis of learning needs of the target learners leads to the adoption of several principles in the writing process of the course materials. First, the course should be based on authentic materials and should be made interesting at the same time. Second, it should motivate learners to take an active role in the language learning process. Third, it should help learners improve their communication skills. Finally, the course should make learners feel secure when practising listening and speaking integrated with writing and reading. Making use of results analysis of the collected data obtained from informants in this research, some concrete and practical suggestions for reforming the existing course in the Department of Biology and classroom teaching practices are proposed; as pointed out by Hutchinson and Waters (1999), “If learners and teachers know why the learners need English, that awareness will have an impact on the content of the course and on the positive side, what potential can be exploited” (p. 53). One of these suggestions is integrating ICT during the lectures such as data show, language laboratory and use of online courses. By integrating technology, the methodology and the content of the courses should turn around different activities to enhance students’ level in speaking and listening and to encourage students to communicate in class. As pointed out by all respondents in this study, the integration of audio-visual materials is of paramount importance to fulfill their needs mainly in speaking and listening skills. As already suggested, the frequent use of power point presentations as well as the use of language laboratory might increase their interest and motivation in learning a language. The students will feel more confident and at ease during the sessions. Each activity is used for different reasons but to fulfill the same and one common objective is to encourage students to communicate in class. Some of these activities are presented below:

- Power point presentation: The students are asked to prepare a project on a specific scientific subject. The aim is to make them aware of how to present scientific research in English orally by using technology.

- Pair or group work activities: Different students with different levels in English are put together to achieve a given exercise. The aim is to help students with a poor level in English to feel more confident during the sessions.

- Data show projection: Displaying drawings and figures taken from various scientific courses on the data show instead of using long articles in handouts is done on purpose. It is used to define concept or object from a non-verbal presentation, a procedure that Widdowson (1987) calls 'information transfer'. Information transfer develops comprehension and interpreting when it is oriented from non-verbal to verbal mode and vice versa.

However, using audio-visual aids also includes maps, tables, various types of charts, pictures and photographs of objects, apparatus, etc. They could be a motivating and productive strategy in ESP context. These are especially useful when teaching EST because they constitute some of the most typical means of presenting and organizing information in written scientific discourse. This new methodology in organizing English courses in this department could not be possible and fruitful for students without additional sessions weekly. Thus, the lack of time described earlier, was resolved for the achievement of this research.

Students' Feedback

When proposing a new methodology for ESP course content, the first step is to analyze the target situation to define the problematic. The second step deals with the analysis of learners' specific needs to point out their wants, necessities and lacks. The last step is the analysis of students' feedback through an interview at the end of the semester to find out how they felt about the different aspects of the course, especially its efficiency and relevance and finally, its advantages and drawbacks.

Results' analysis: This is the last but not the least important section of this survey. In this final open evaluation question, the researcher tried to examine different aspects that are not specified in this survey in order to give students the opportunity to express their ideas and feelings regarding the course and find out if all subjects were fruitful and interesting. Therefore, some advantages and drawbacks proposed by students are presented below:

Advantages:

- Exposing the learner to listening activities using as many authentic materials as possible
- To develop good listening skills
- To encourage students to speak with a correct pronunciation
- To help students learn more through attention and concentration during the sessions
- To help the shy learners get more benefits
- To establish an atmosphere of motivation and security

Drawbacks:

- The lack of competency in using such a system both by the teacher and the students (or NOT familiar with the computing technology)
- Lack of training in using technology
- According to them, it's not the only way to get proficiency in English
- Inability to handle unexpected situations
- Time consuming to coordinate between the proposed program and technology
- Frequent problem of power and web access

Concluding remarks: Computer-based activities are becoming important in our university. This popularity does not come from a vacuum; on the contrary, it has solid foundation in all

areas where the computer is used. In terms of language teaching and learning, computer use in the classroom has more advantages than drawbacks. It helps teachers and learners to quickly access documents addressing individual student's needs, thereby improving motivation and effectiveness.

Conclusion

Designing a course for particular students in specific situations is a very difficult task and time demanding. The course designer has to organize courses and activities according to the students' needs and interests but due to the lack of materials for ESP courses, she/he is expected to plan her courses well and to provide adapted materials when published ones are unsuitable. With reference to a particular classroom experience, the design of the course should be prepared. The levels of attainment are described by Kaosar Ahmed (2014) for each skill area as follows:

1. Survival Level – The person can use language for basic purposes in extremely limited way.
2. The way stage level – The person can communicate very simply in limited range of topics.
3. The Threshold level – The person can use the language for most everyday situations and topics at simple level.
4. The adequacy Level – The person can use the language for range of situations and topics and can show awareness of appropriate style and variety.
5. Proficiency Level – The person can respond flexibly to complex ideas and expressions.
6. The mastery Level – The person has no problem in using the language.
7. The ambi-lingual Level – The person's use of language is indistinguishable from that of any educated native speaker (p. 42)

An ESP teacher carrying out a needs analysis, designing a course, or writing teaching materials needs to be capable of incorporating the findings of the research and be confident that they know what is involved in terms of skills. The teacher should focus on the learners' interaction 'student-centered approach' (Hutchinson & Waters, 1987) rather than overwhelm the course with exhaustive list of words and boring grammar exercises. In ESP settings, most students come to courses with mixed-abilities which is why teachers should employ a variety of teaching methods and assessment techniques based on students' capacity and learning styles. Consequently, they have to make use of modern technologies in class or other traditional audio-visual aids to meet the learners' needs and to motivate them. Technology has long played a major role in the teaching of English for Specific Purposes. It has been used to create context mainly for listening and communication, and it is also used to motivate the learners in acquiring a language in a specific context.

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