Esp Needs Analysis: the Case of Mechanical Engineering Students at the University of Sciences and Technology, Oran U.S.T.O

تحليل احتياجات اللغة الإنجليزية لأغراض معينة: طلاب الهندسة الميكانيكية بجامعة علوم والتكنولوجيا وهران O.T.S.U

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Abstract

This research is concerned with ESP and Needs Analysis. It is conducted to investigate the needs of the Mechanical Engineering students when dealing and/or using English for Specific Purposes (ESP) at The University of Sciences and Technology, Oran U.S.T.O. In order to achieve the research's objectives, a questionnaire was administered to a total of 50 students selected through a purposive sampling. The major findings show that university students of Mechanical Engineering demonstrate positive attitudes towards ESP. However, when it comes to the teaching method, they prefer to be taught in a mixture of ESP and General English (EGP). It is also found that the informants are not satisfied with EGP instruction and demonstrate willingness to cope with the ESP course's requirements even if they are challenging.

Key words: *ESP (English for Specific purposes), NA (Need Analysis), Mechanical Engineering, Technical English.*

ملخص

هذا البحث يهتم باللغة الإنجليزية لأغراض معينة وتحليل الاحتياجات حيث أجري من اجل التحقيق في احتياجات طلاب الهندسة الميكانيكية عند التعامل ب / أو استخدام اللغة الإنجليزية لأغراض معينة (ESP) في جامعة العلوم والتكنولوجيا بوهران U.S.T.O. لتحقيق اهداف البحث تم أجراء استبيان على مجموعه 50 طالبا تم اختيارهم من خلال أخذ عينات هادفة. اشارت النتائج الرئيسية ان طلاب الجامعات الهندسة الميكانيكية يظهرون مواقف الإيجابية نحو اللغة الإنجليزية لأغراض معينة (ESP) ومع دالك عندما يتعلق الأمر بطريقة ألتدريس فهم يفضلون أن يدرسوا بخليط من اللغة الإنجليزية لأغراض معينة و اللغة الإنجليزية لأغراض عامة (EGP). اد تبين كدالك ان الطلاب العينة ليسوا راضين عن تدريس اللغة الإنجليزية لأغراض عامة (EGP) و هم على استعداد تام للتعامل مع متطلبات دروس اللغة الإنجليزية لأغراض معينة (ESP) حتى وان شكلت تحديا.

الكلمات الدالة: (ESP) اللغة الإنجليزية لأغراض معينة، (NA) تحليل الاحتياج، الهندسة ألميكانيكية، الإنجليزية التقنية.

1-INTRODUCTION

Owing to the on-growing process of globalization, the continuing increase of international communication in various fields and the demand for English for Specific Purposes is evidently expanding especially in countries where English is taught as a second or foreign Language.

In Algeria in particular, where English is taught as a foreign language, ESP has recently become popular since it has been given impetus especially after introducing it as a university requirement in the LMD system programs. However, most Algerian institutions and universities fundamentally do not propose a balanced and well-equipped ESP programs to their learners. Most ESP practitioners ignore the learners' personal interests and needs. Rather, they focus substantively on the teaching of grammatical and morphosyntactic aspects of the English language. It is also observed that research made by the Algerian ESP scholarly community on ESP needs analysis and syllabus design is very limited and for most of the time unpublished.

It is the objective of this paper to shed the light on the teaching of ESP at the department of Mechanical Engineering at the University of Oran, USTO. We chose to undertake this research in this particular department as we did notice that not a single study has been conducted to investigate Mechanical Engineering students' ESP needs. Such a factor was the underlying motivation behind the elaboration of this research work.

The current research paper addresses the issue of English for Specific Purposes (ESP) and Needs Analysis at the department of Mechanical Engineering. In this respect, the researchers made an attempt to investigate the language needs of the Mechanical Engineering students and examine the students' perceptions and attitudes towards ESP in order to provide Algerian ESP syllabus designers

with insights into Needs Analysis support. The research project attempts then to find answers to the following research questions:

• What are the students' attitudes towards English? Are they positive or negative?

• What are the students' expectations from a future ESP course?

• What skills-in order of importance-are needed by mechanical engineering students?

• How do the subjects evaluate their English level?

• What is the subjects' mostly preferred approach to learning English?

• What do students identify as being the target situation?

The research paper develops in two main parts. The first one is a theoretical background part concerned with ESP and needs analysis. The second one deals with the case study part i.e. the practical part which consists of a needs analysis questionnaire administered to Mechanical Engineering students and a presentation of the main findings.
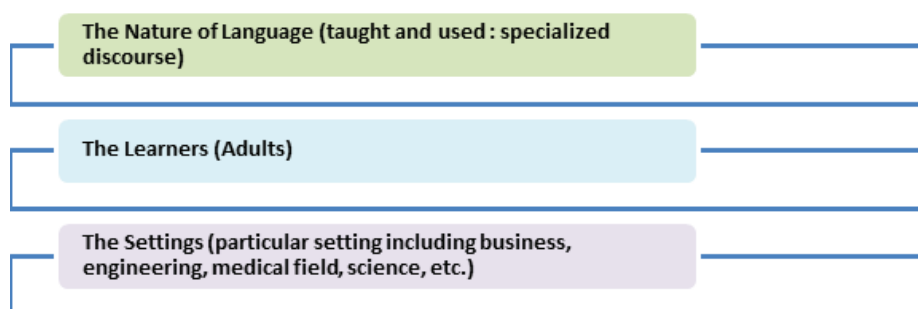
2. Literature Review

In the development of the present section, we have attempted to summarize the most prominent contributions related to the theoretical aspects of ESP and Needs Analysis.

2.1 Backgrounds of ESP

In 1987, Hutchinson & Waters suggest that there are three common reasons for the emergence of ESP[1] : the demands of a Brave New World [2] , a revolution in linguistics [3] , and the focus on the learner[4].

ESP (English for Specific Purposes) is a subdivision of a wider field called LSP (Language for Specific Purposes). It involves teaching and learning the specific skills and language needed by particular learners for a particular purpose[5]. Most of ESP definitions propose three main themes:

As to the different subdivisions of the field, it is

The Nature of Language (taught and used : specialized discourse)

The Learners (Adults)

The Settings (particular setting including business, engineering, medical field, science, etc.)

rather difficult to enumerate how many branches ESP counts [6]. ESP is divided into three prominent branches:

• English for Science and Technology (EST).

• English for Business and Economics (EBE)

• English for Social Studies (ESS).

Each of these branches falls into two categories: English for Academic Purposes (EAP) and English for Occupational Purposes (EOP)/English for Vocational Purposes (EVP). An example of EAP for the EST branch is «English for Medical Studies», whereas an example of EOP for the EST branch is «English for Technicians».

ESP in Algerian Universities

Algeria is devoting much efforts and money to promote international communication through a variety of ESP/EST courses to keep up most advanced English speaking countries

As a matter of fact, English is recognized by most Algerian students as a vital tool in a rapidly changing world, it gives them access to information which is not available in their native or second language to update their knowledge of specialization.

After introducing specific English courses in most Algerian universities and institutions, an issue arose concerning the syllabi of ESP courses where most Algerian ESP practitioners were confronted with questions like: WHAT TO TEACH? and HOW TO TEACH?

Up to now, these questions are left unanswered and most ESP teachers are left on their own, each one teaching an 'English', he thinks it suits the audience he faces every course time. Lakhdar Barka (2003)

notes:

"Cette instabilité des institutions (Instituts, Facultés, Centres, Ecoles,…) dans la mise en œuvre d'une politique linguistique, révèle leur inadéquation à atteindre des objectifs d'enseignement déterminés, ou l'absence d'objectifs…dans ce domaine précis, induira l'improvisation qui va marquer les politiques de formation de formateurs qui se sont suivies dans les langues étrangères."

(Lakhdar Barka, 2003: 88)

ESP and Needs Analysis

It is widely agreed that among the distinguishing features which are critical to ESP, needs analysis[7] is one of them. It is broadly defined as a procedure to collect information that serve as a solid foundation for designing and developing a stable and well-equipped ESP program that will meet the needs of a particular community or group of students.

In fact, the aim of conducting a students' need analysis experience is to discover WHO the learners are, WHAT they ALREADY KNOW, and WHAT THEY WANT from the course.

"The foundation of all ESP is the simple question: why does this learner need to learn a foreign language? From this question will flow a whole host of further questions, some of which will relate to the learners themselves some to the nature of the language the learners need to operate, some to the given learning context."

(Hutchinson & Waters, 1987:19)

However, pinpointing the students' needs is a challenging task since the concept need seems to

carry both ambiguity and imprecision. In this respect, Hutchinson and Waters (ibid) classify needs into three categories: necessities, wants and lacks: According to them, necessities are concerned with the demand of the target situations "what the learner has to know in order to function effectively in the target situation" (p.55). Lacks refer to the learner's existing language proficiency in order to help determination of the starting point of the teaching and learning process "necessities the learner lacks" (p.56). Wants relate to what the learner would like to gain from the language course "what the learners want or feel they need" (p.57).

Accordingly, we should make a distinction between objective and subjective needs analysis. Objective needs according to Brindley (1984) as cited by Nunan (1988) refers to information concerning facts about how learners will need to use the language in authentic communication scenarios in addition to their current level of language proficiency and language difficulties. Subjective needs refer to cognitive and effective factors that can impact on L2 acquisition such as, personality, confidence, attitudes, wants and expectations of the course[8].

Dudley-Evans and ST John (1998) propose that a complete model of Needs Analysis in ESP should encompass the eight following aspects [9] :

1. Professional information about the learners: the tasks and activities learners will be using English for.

2. Personal information about the learners: factors which may affect the way they learn such as reasons for attending the course and subjective needs.

3. English language information about the learners: what their current skills and language use are.

4. The learners' lacks: the gap between the current and desirable skills of the learners.

5. Language learning information: effective ways of learning the skills and language determined by the lacks

6. How to communicate in the target situation: how language and skills are used in the target situation

7. What is wanted from the course: learners' needs from the course

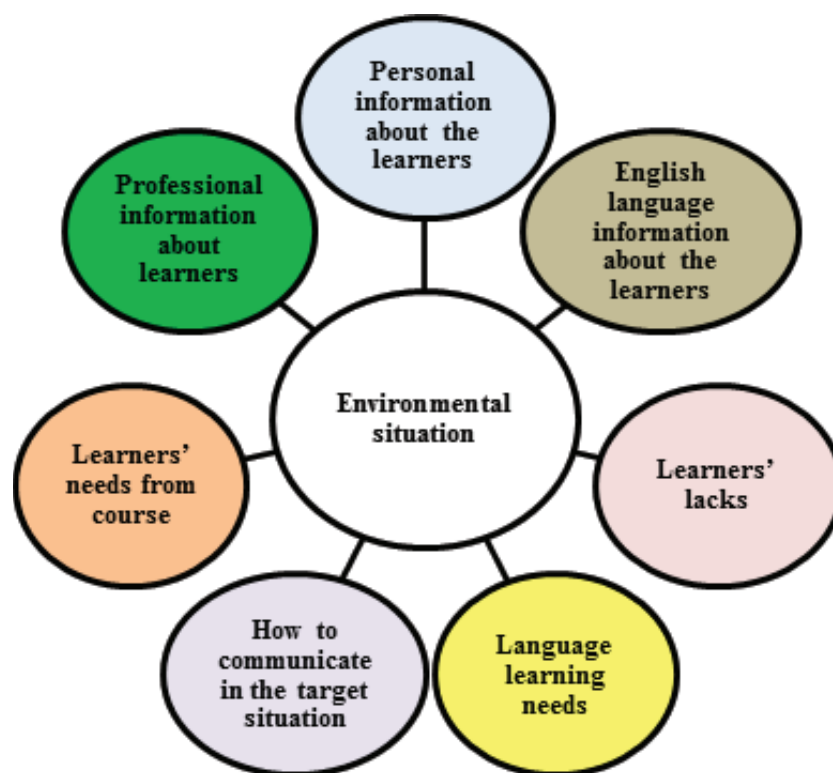8. Information about the environment in which the course will be run.

Figure 1: Needs Analysis Model (Adapted from Dudley-Evan & ST John. 1998)

3. Case Study

The second part of the paper- the empirical part of the study- is presented in two main sections. The first section allows us to go step by step, together with the researchers, through the data collection process through which a Needs Analysis experience is conducted to gain insights into the learners' current language needs at the department of Mechanical Engineering. This part provides an overview on the participants, the department where the course is supposed to take place and the means used to collect data. The second section highlights the main results obtained after achieving the analysis of the questionnaires.

3.1 Data Collection

3.1.1 An overview on the Environment and the Participants: The Department of Mechanical Engineering

At the department of Mechanical Engineering, all subjects are taught in French, while English is included in the second and third year curriculum as a compulsory subject.

However, the situation in the department is quite complex since as there is not clear cut between ESP and EGP. Needs assessment, which is a major component of ESP, have never been used to design any ESP course in this department; it is also observed that most ESP teachers prepare their syllabi on the basis of their own intuition[10] . Here are some other relevant data about the participant and the department:
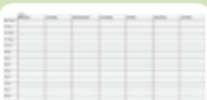

Progressive increase in the flow of students in the Department induced to overloading the groups. The average group size is between forty and fifty students.

Programs of the Science courses are devised by the Ministry of Higher Education and Scientific Research. For ESP courses, no program is available or has been advanced or proposed by the Ministry.

Science courses , at the Department of Mechanical Engineering, are given impetus and weight as compared to ESP courses which have no effect on the success or the failure of the students.

ESP course timetable is restricted to ONLY one hour and a Half course time per week : the interval between ESP course's meetings is quite long.

3.1.2 The Sample and the Questionnaire

The study population includes second year undergraduate students of Mechanical Engineering at the University of Sciences and Technology of Oran U.S.T.O. A group of 50 participants is selected through a purposive sampling among which 33 were males and 17 females.

The methodology underlying this research is quantitative through the implementation of a questionnaire containing 11 items (10 Closed-Ended questions and only 1 Open-ended question). The answers are given in the form of multiple choices ranging from a dichotomous response to a four multiple choice response.

Since we had no idea about the participants' level of English language proficiency, the original questionnaire designed in English was translated into French to ensure students' understanding of the different item questions. The general purpose of this questionnaire is to identify the students' needs, reveal their attitudes to ESP, as well as their expectations towards an ESP course.
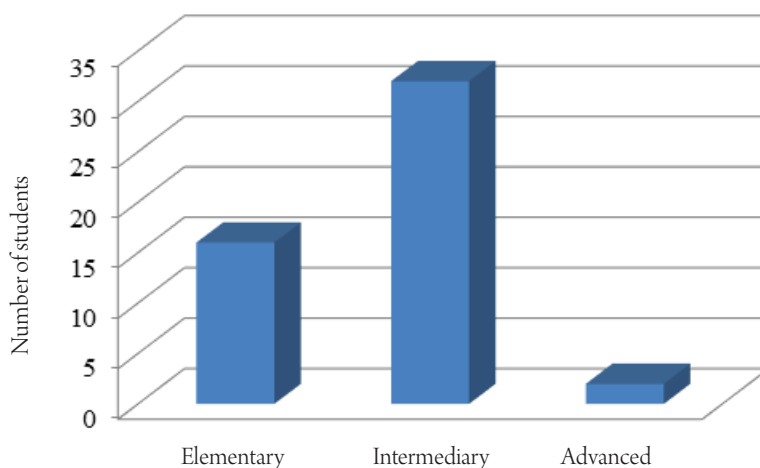
3.2 Data Analysis

In this part, we will represent the questionnaires' results through a quantitative method of data analysis. Comments on the different graphs will be provided in the Findings and Recommendation section.

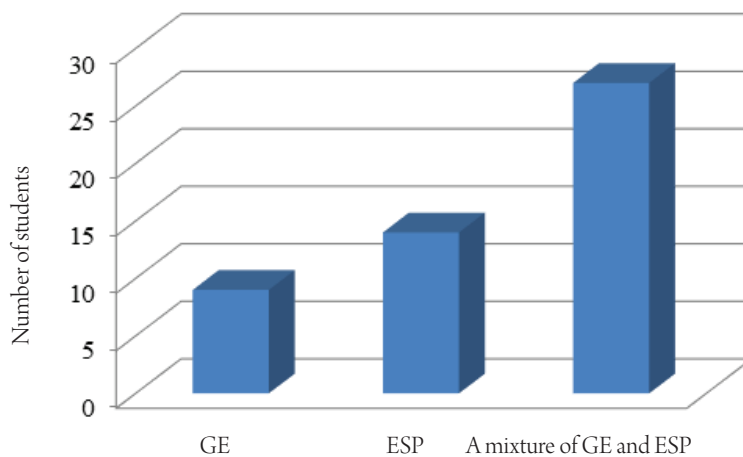**Question N°1: Do you enjoy learning English?**
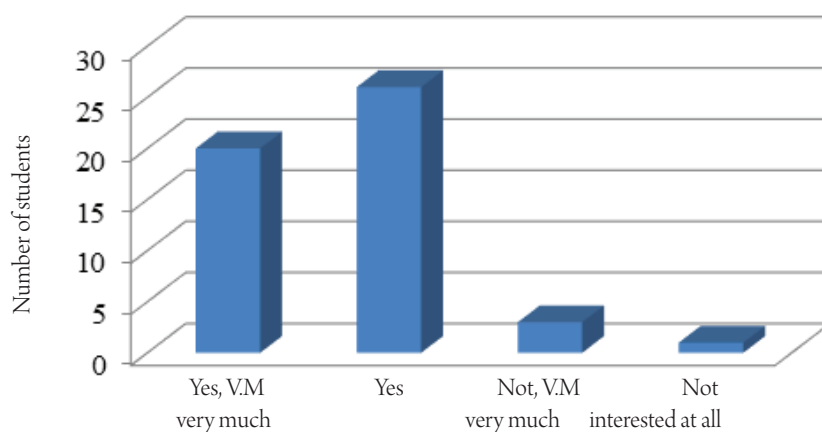
Figure 2: Students' attitudes towards English

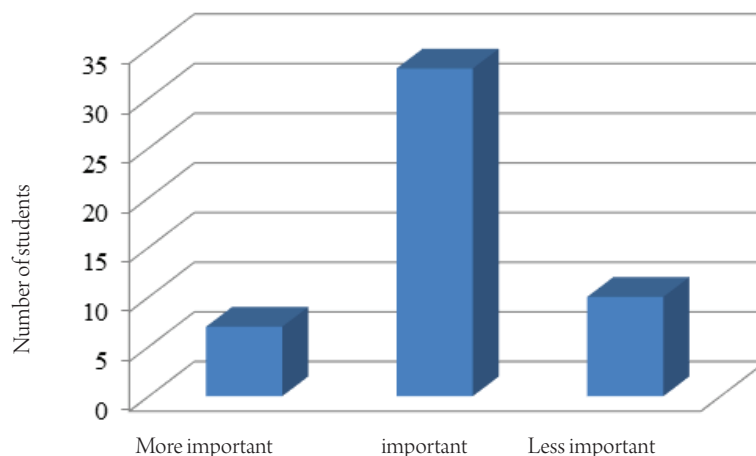**Question N°2: What do you think your level of English is?**

Figure 3: Students' level of English

Question N°4: Do you prefer your course will be in EGP, ESP or a mixture of both
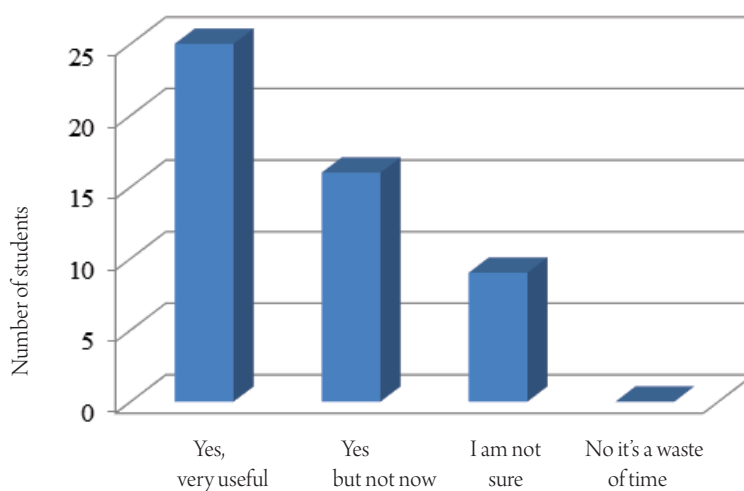

Figure 5: Students preferred approach to learning ESP

Question N°5: How important ESP course is in comparison with other subjects
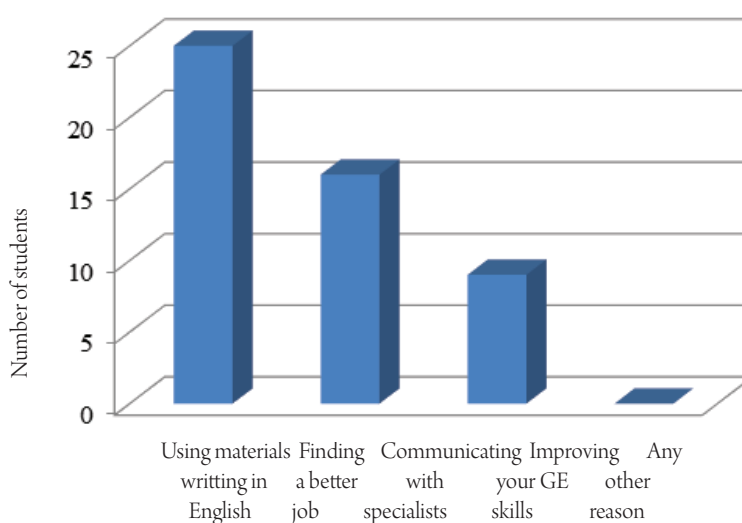

Figure 6: The importance of English course in comparison to other subjects

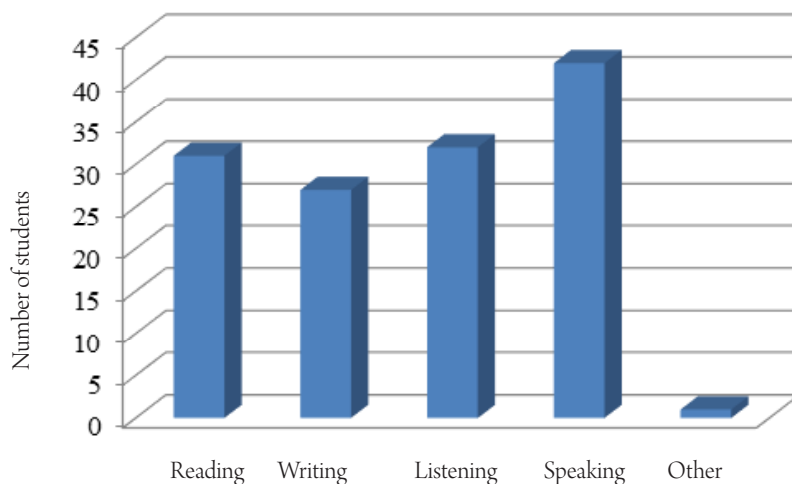**Question N°6: Do you think ESP will be useful for you?**

Figure 7: The usefulness of ESP for students

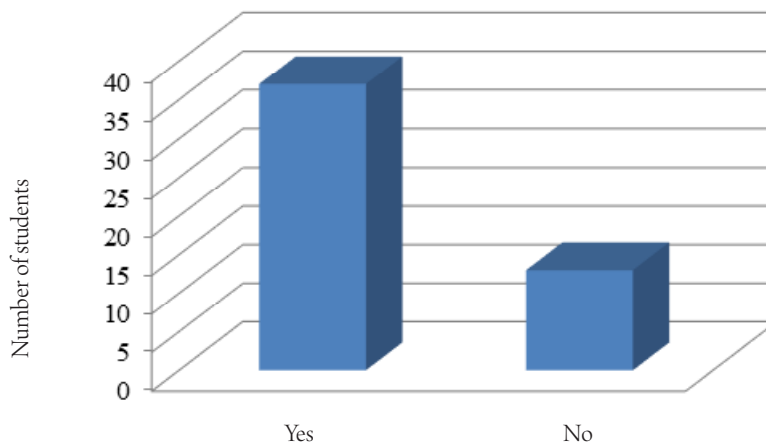**Question N°7: Do you think ESP will be useful for**

Figure 8: Areas where ESP might be of use

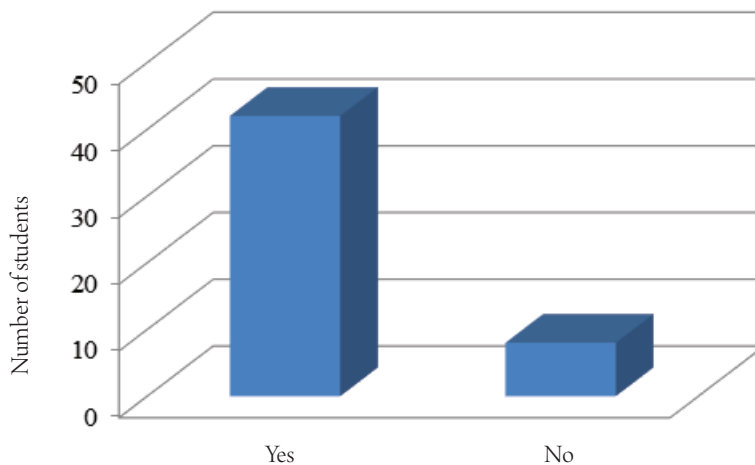**Question N°8: During your ESP course do you think you need to develop your**

Figure 9: Language skills ranking in order of importance

Question N°9: Can you get a job without knowledge of ESP?

Figure 10: The necessity of knowing ESP in order to get a job

Question N°10: Do you think you will use English in the future for your work

Question N°11: Students' recommendation for a future English course

Proceeding to the last question which invited the respondents to express any other wishes or recommendations that could be taken into account when planning ESP future courses, many of the respondents left the question unanswered. To be more precise, approximately 58% did not answer this open-ended question. On the other hand, some students gave more than one suggestion. The suggestions given by the respondents are compiled as follows:

• "The Teacher should take into consideration our level of English"

• "The Teacher should explain more"

• "The Teacher should start from the beginning "

• "The Teacher should explain slowly"

• "The Teacher should write the lesson on the blackboard"

• "The Teacher should teach us English using Arabic"

• "The Teacher should enhance our presentation skills, we need to receive monthly presentation home works to be presented during ESP English course time "

• "The course should be based on oral expression and presentations"

• "The Teacher should provide technical words related to our specialty"

• "More time should be assigned, at least 2 or 3 units per week"

• "Our course should be in ESP"

• "We have no English social and or linguistics environment to be exposed to".

3.3 Findings and Recommendations

The main points raised by this research prove that our target population -mechanical engineering students- is completely not homogenous because of variability of students' levels of English and learning objectives and preferences. The data suggests that most students expressed an overall interest in learning English. As a matter of fact, students do not take English as a compulsory subject in their curriculum but as an enjoyable learning subject. Furthermore, the majority of the students put the English course on the same level of importance in comparison to other subjects even if the English course has no significant impact on their academic grading. A large number of them believe their English level is intermediary which is up to the level needed to cope with the ESP course requirements.

Students favored ESP more than EGP but they preferred a mixture of the two when it comes to learning methodology. A possible explanation for this opinion is that students are not satisfied with the existing EGP instruction and hope for a change.

The study reveals that college students identify a future job as being the target situation where English is going to be used. Consequently, students perceive a positive relationship between ESP courses and their future careers. They think ESP is very useful to find a better job but it is not necessary in order to get one since they believe they can get a job without knowledge of ESP.

The most prominent reasons students consider ESP will be useful for are to communicate with specialists from other countries and to use materials related to their specialty. Accordingly, speaking skill emerged as the most important area students wished to develop, and writing was the area they thought they had the least problem with.

Since students need to have a satisfactory grounding in EGP before they advance to ESP learning, close attention needs to be paid to the small group of students with elementary level of English. There exist many possibilities of presenting ESP activities in an attractive way for Algerian learners. A very suitable mode of instruction for ESP adult learning would be E-learning through the integration of Information and Mutimedia Technology (IMT). The investment of these facilities represents a natural continuity towards a future research that might change the Algerian traditional classes to a more modern style and enhance language learning.

4. Conclusion

In this research project, we have made an attempt to investigate the language needs of the Mechanical Engineering students and to examine the students' perceptions and attitudes towards ESP.

Although the current research is far from being an exhaustive one, it seems to have paved the terrain for Algerian ESP syllabus designers at the department of Mechanical engineering to produce a more efficient syllabus.

One of the obvious limitations of this study concerns its methodological design; only a questionnaire was adopted to collect research data. Other types of instruments, such as individual or focus group interviews, should be included in further studies to obtain more in-depth information.

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